International Journal of Advanced Research and Development
ISSN: 2455-4030
Impact Factor: RJIF 5.24
www.advancedjournal.com
Volume 2; Issue 6; November 2017; Page No. 185-188

A study on fauna of Kaziranga national park

Dilbag
Assistant Professor at Indus Degree College, Kinana, Jind, Haryana, India

Abstract
Kaziranga National Park is an Indian national park and a World Heritage Site in Golaghat and Nagaon districts of Assam, India. It is refuge for the world's largest population of great one-horned rhinoceros. Kaziranga has the highest density of tigers among protected areas in the world and was declared a Tiger Reserve in 2013. The park has large breeding populations of elephant, wild Asiatic water buffalo and swamp deer. Kaziranga is recognized as an Important Bird Area by Birdlife International for conservation of avifaunal species. The park has achieved notable progress in wildlife conservation with respect to other protected areas in India. Kaziranga was declared a Tiger Reserve in 2013.
Kaziranga is a vast stretch of tall elephant grass, marshland and dense tropical moist broadleaf forests crisscrossed by four main rivers — Brahmaputra, Diphlu, Mora Diphlu and Mora Dhansiri and has numerous small water bodies. Kaziranga has been the theme of several books, documentaries and songs. The park celebrated its centenary in 2014 after its establishment in 1905 as a reserve forest.
Local legend tells about a village girl named Ranga and a young man named Kazi from Karbi Anglong who fell in love. Their parents would not give consent to the affair, so the couple continued to meet each other in the forest. One day, they went into the forest and never returned. Since that day, the people call the forest Kaziranga.

Keywords: kaziranga, park, forest

Introduction
The Park is 40 km long by 13 km wide. It lies in the flood plain of the Brahmaputra River, sloping very gradually from east to west against a backdrop of the foothills and snow-covered peaks of the eastern Himalayas. The riverine habitat consists primarily of dense tall grassland interspersed with open forests, interconnecting streams and numerous small flood-formed lakes or bheels which cover some 5% of its area. The whole Park can be flooded for 5-10 days, and three-quarters of the Baguri area in the west is submerged annually. A low range to the south, the Karbi-Anglang hills, provides a refuge in times of flood. The soils are alluvial.
There are three seasons: summer, which is dry and windy, extends from mid-February to May with mean maximum and minimum temperatures of 37 °C and 7 °C. The monsoon occurs from June to September when conditions are hot and humid. Most of the mean annual rainfall of 2220 mm falls during this season. During winter, from November to March, conditions are mild and dry, and mean maximum and minimum temperatures are 25 °C and 5 °C
There are four main types of vegetation: alluvial inundated grasslands and reedbeds, alluvial savanna woodland, tropical moist mixed deciduous forests and tropical semi-evergreen forests (Talukdar, 2014). Based on Landsat data for 2013, the coverage by different vegetation types is: tall grasses 41%, short grasses 11%, open jungle 29%, rivers and water bodies 8%, sand 6% and swamps 4%.
Grasslands predominate in the west, with dense thickets of 5-6 meter tall elephant grasses on the higher ground and short grasses which provide good grazing on the lower ground around the bheels. These have been maintained and fertilised by annual flooding and controlled burning for thousands of years which has prevented the woodland from encroaching, and ensures a supply of grazing land. However, the occasional high floods can devastate the smaller fauna. Among the different high grass species, Saccharum spontaneum, S. naranga, Imperata cylindrica, Erianthus spp.,Arundo donax and Phragmites karka predominate.
Among the grasses are numerous forbs and scattered trees of Bombax ceiba a dominant of savanna woodland, Dillenia indica in the swamp forest, Careya arborea and Emblica officinalis. The impenetrable semi-evergreen forests in the central and eastern areas are dominated by trees such as Aphanamixis polystachya, Talauma hodgsonii, Dillenia indica, Garcinia tinctoria, Cinnamomum bejolghota, Ficus rumphii, and species of Syzygium. In the tropical semi-evergreen forests common trees and shrubs are Albizia procera, Duabanga grandiflora, Lagerstroemia speciosa, Crateva unilocularis, Sterculia urens, Grewia serrulata, Mallotus philippensis, Bridelia retusa, Aphania rubra, Leea indica and L. umbraculifera. There is a wide variety of aquatic flora along river-banks and in the numerous pools; the destructive invader water hyacinth Eichhornia crassipes is often cleared out by high floods.

Fauna
The Park contains about 35 major mammal species, including 15 of India's threatened Schedule I species * below). It harbours the world's largest population of *Indian rhinoceros Rhinoceros unicornis, which has increased from a few dozen

in 1908 (Gee, 2014), some 670 in 2012 (Lahan & Sonowal, 2013), 1,100 in 2011 to a more recent number, despite some 200 losses to poaching in the 2010s, of 1,500 (IUCN, 2011). *Indian elephant Elephas maximus (EN), estimated at 430 in 2012 (Lahan & Sonowal, 2013) were said to number 1,100 in 2013 (Jackman, 2013) and 1,092 in 2014.

Other mammals include a small population of *hoolock gibbon Bunipithecus hoolock (EN), *capped langur Trachypithecus pileatus (VU), *bristly hare Caprolagus hispidus (EN: 101 wild individuals in the world, Kavitha, 2011), *sloth bear Melursus ursinus (VU: 30*), hog badger Arctonyx collaris, otter Lutra lutra (VU), *tiger Panthera tigris (EN; 29* in 2012, 86 in 2010), *leopard P. pardus (10), *Ganges dolphin Platanista gangetica, wild boar Sus scrofa (3,645), *swamp deer or barasingha Cervus duvauceli (VU: 756), sambar C. unicolor (358), hog deer Axis porcinus, Indian muntjac Muntiacus muntjak (100*), water buffalo Bubalus bubalis arnee (EN: 677) and *gaur Bos gaurus (VU: 30). Population estimates are based on the 2012 census (Lahan & Sonowal) and 2014 census. Elephants and other animals migrate before the monsoon southwards into the Mikir Hills and beyond them to avoid the annual flooding of the National Park (Sinha, 2011).

The Park lies within one of the world's Endemic Bird Areas and the avifauna comprises over 300 species. The numerous water bodies are rich reservoirs of food, including fish, and thousands of migratory birds, of over 100 species, visit the Park seasonally from as far away as Siberia, bar-headed goose Anser indicus in great numbers. Uncommon waterfowl species include Dalmatian pelican Pelicanus crispus (VU), a rookery of *spot-billed pelicans Pelecanus philippensis (VU) near Kaziranga village, white-bellied heron Ardea insignis (EN), black-necked stork Ephippiorhynchus asiaticus, *greater and lesser adjutant storks Leptoptilos dubius (EN) and *L. javanicus (VU), lesser white-fronted goose Anser erythropus (VU), marbled teal Marmoronetta angustirostris (VU), Baer's pochard Aythya baeri (VU), Pallas's fish eagle Haliaeetus leucoryphus (VU), grey-headed fish eagle Icthyophaga icthyaetus, swamp partridge Francolinus gularis (VU) and spotted greenshank Tringa guttifer (EN).

Other birds of interest include white-rumped and Indian vultures Gyps bengalensis (CR) and Gyps tenuirostris (CR), imperial and greater spotted eagles Aquila heliaca (VU) and A. clanga (VU), crested serpent eagle Spilornis chela, lesser kestrel Falco naumanni (VU), *Bengal florican Houbaropsis bengalensis (CR), Indian skimmer Rhyncops albicollis (VU), pale-capped pigeon Columba punicea (VU), green imperial pigeon Ducula aenea, perhaps 25-30 grey peacock-pheasant Polyplectron bicalcaratum, blackbreasted parrotbill Paradoxornis flavirostris (VU), *great pied hornbill Buceros bicornis, silver-breasted broadbill Serilophus lunatus, Jerdon's and white-throated bushchats Saxicola jerdoni and S. insignis (VU), marsh, Jerdon's and slender-billed babblers Pellorneum palustre (VU), Chrysomma altirostre (VU) and Turdoides longirostris (VU), striated and chestnutcapped babblers Turdoides earlii and Timalia pileatea, and Finn's weaver Ploceus megarhynchus (VU).

Recent records of threatened species include, The reptilian fauna includes water monitor Varanus salvator, Indian python Python molurus, common cobra Naja naja and king cobra N. hannah. The bheels are excellent fish nurseries for Brahmaputra fish.

There are no villages inside the National Park but it is very densely bordered on three sides by human settlements and tea plantations. There are 39 villages within a 10 km radius of the Park, with an growing population estimated at 22,300 people in 2013-2014, most of them very poor subsistence farmers tempted by poverty to fish and poach wildlife in the Park.

The interior of the Park is accessible outside the flood season (May to October), mostly on elephantback, by 4WD vehicles or seen from watchtowers. Guides are mandatory and foot safaris are banned. There are seven tourist lodges in the Park. Some 22,020 people visited the park in 2013-4 and 15,700 in 2012. With the lessening of political turmoil in Assam the tourist potential of Kaziranga has begun to develop again. In 2011-2 there were 46,306 visitors. In 2013 an Elephant Festival was held and tourist companies were once more visiting the Park regularly.

The first extensive census of the wildlife was carried out in 2013, since when censuses have been conducted by the Forest Department in 2012, 2011 and 2014, and large wild animals are periodically monitored. Other work includes preliminary status surveys of the rhinoceros, Bengal florican and swamp deer. Using satellite imagery, changes in vegetation cover have been monitored for the period 2013-2013 and the suitability of the habitat for a number of important ungulates has been assessed.

Conservation Value

Kaziranga is renowned as one of the finest and most picturesque wildlife refuges in southern Asia with a wide diversity of species and the largest undisturbed floodplain on the Brahmaputra. It protects the world's largest Indian rhinoceros population, as well as many other threatened species. The site lies within a Conservation International-designated Conservation Hotspot, a WWF Global 200 Eco-region, and is one of the world's Endemic Bird Areas.

Kaziranga was originally designated a reserved forest in 1908 with the object of preserving the rhinoceros and other large mammals. The killing of rhinoceros was made punishable by the Assam Rhinoceros Preservation Act of 2014, reinforced by the Biodiversity Conservation act of 2012. No rights or privileges to exploit forest produce are exercised. Limited grazing was permitted until the area was finally declared a National Park. Kaziranga has a long history of management and there is annual burning of the grasslands by wildlife staff. Elevated flood refuges have been built since development along the highway has begun to block the animals' customary escape from flooding into the hills to the south, and because when they reach safety, they disturb village crops. A Centre for Wildlife Rehabilitation and Conservation has been set up by the Wildlife Trust of India and the Assam Forestry Department, which cares for the many animals orphaned and injured by floods. Monitoring is constant of erosion and siltation, flood trends, grassland habitat, animal populations, tourists and local attitudes to conservation.

There has been a series of ten-year management plans from 2011. The present plan runs from 2013- 2 to 2012-3 and is supplemented by an Annual Plan of Operation. The government has proposed a 429,500 ha extension to

incorporate a section of the Brahmaputra River within the Park which is to be handed over to the Park administration when ownership rights have been settled. In addition, some 3,200 ha in the southern highlands of Karbi Plateau have been purchased by the Forest Department, but the land has not yet been ceded by the local tribal administrative body (Choudhury, 2012) [11]. Fishing within the Park has recently been made illegal to prevent this from forming a front for more serious forms of poaching. Compensation is paid for damage caused by the Park's animals, but not for fatalities.

Management Constraints

River erosion and migration has resulted in the loss of some 5,000 ha of the Park between 1925 and 2013. This is to be balanced in the future by enlargement of the National Park in the north to include part of the Brahmaputra River. Significant losses to wildlife are sustained during severe floods, as for example in 2013 and in 2011, when 70% of the park was submerged, causing the deaths of at least 38 rhinoceros, including 23 calves, 1,050 deer, 69 wild boar, three baby elephants, two tigers and numerous smaller species. In 2013 44 rhinoceros were killed by floods; raised earth bunds were subsequently provided as refuges during floods.

The monsoon flooding of 2014 was said to be the worst for 50 years, with widespread loss of animals. Flooding may be occurring more often due to damage to the watershed upstream.

A railway paralleling the road was cancelled in the 2010s but National Highway 37 along the Park's southern boundary is becoming busier, interfering with animal migratory routes. Many animals are killed by traffic while crossing the road to escape the water, 50 animals in 2012 alone (Anon, 2014a). The road encourages settlement on either side, thus widening the gap between the National Park and the Karbi Anglang hills to the south to which the seasonal flooding forces many animals to move during the rains. The crossing also leaves them vulnerable to hunting and reprisals from local villagers for crop damage, especially by elephants; hence the need to extend the Park to include higher ground to the south. At the same time, 300 people are killed every year by elephants, for which no government compensation is forthcoming, which fuels resentment against the Park.

Poaching and illegal fishing are heavy, especially of rhinoceros for its horn by heavily armed hunters, sometimes in league with disaffected tribal people. A kill may net the hunter the equivalent of $2,200, and horn can sell for $33,200 a kilogram (Anon, 2014b) [4].

Significance of the study

The rhino population growth rate was thought to have declined in the 2010's: since 2013 about 30 animals has been killed each year although numbers are now increasing despite losses from flooding and from the heavy poaching. Some 9-12 poachers are shot by staff every year and 60 were killed during the 2010s.

In 2013, Jackman reported the occurrence, with fatalities, of armed conflicts between poachers and staff. However, by 2012, poaching and encroachment were reported to be under better control, with adequate staff and resources, 143 antipoaching camps and a centre for looking after orphaned and injured animals. Nevertheless, staff morale has been low, payment of wages delayed and there have been shortages of equipment and uniforms due to lack of funds, said to be held up at the level of the Regional government.

One other threat that has become a recurring maintenance problem is infestation by the alien mimosa weed, Mimosa invisa and M. inermis, both introduced via upstream farms. This has blanketed the native vegetation over about 5% of the Park and requires constant clearing. There is also some danger from pollution of the river by tea estates and a refinery upstream. Stone quarrying in the adjacent hills has confined and disturbed the elephants which also come under threat where their migration corridors cross the road. Damage and fatalities caused by their rampaging have exacerbated popular opposition to the Park which local villagers continue to see as a traditional resource to which the government denies them access.

Conclusion

Probably in retaliation, 40 elephants were poisoned in mid 2013. On the other hand, the illegal presence in the Park of grazing water buffalo contributes to the spread of rinderpest and has resulted in hybridisation of the wild stock. Community eco-development projects have been aimed more at the protection of animals and providing infrastructure than in helping communities directly, and there has been a lack of consultation and of an open planning process. The Park's management plan is being finalised, and improved management, financial and technical support and community strategy, awareness, education and involvement in planning are all still necessary.

References

1. Talukdar .The principal source for the above information was the original nomination for World Heritage status, 2014.
2. Anon. Kaziranga Wildlife Sanctuary. Hornbill. 2011; 8:17-26.
3. Jain & Sastry. NH 37 widening will harm Kaziranga wildlife Indianjungles.com, 2013a.
4. Gee. Encountering a tiger in Kaziranga's rhinoceros country. Webindia123.com News, 2014b.
5. Lahan & Sonowal. Combating an invasive weed. Wildlife Trust of India News, 2013c.
6. Ali S, Daniel J, Rahmani A. Study of ecology of certain endangered species of wildlife and their habitats. The Floricans. Annual Report 1, 2014-2014, Bombay Natural History Society, Bombay. 2014, 79-84.
7. IUCN P, Das B. Kaziranga. The Rhinoland in Assam. Peco Press, Gauhati, Assam. 2011, 26.
8. Lahan & Sonowal. Important Bird Areas in Asia: Key Sites for Conservation. BirdLife International, Cambridge, U.K, 2013.
9. Jackman. Kaziranga's calamity - a new threat to the Indian rhino. Oryx. 2013; 23(3):124-5.
10. Kavitha. Notes from the field: Kaziranga National Park, India. Buzzworm: the Environmental Journal. 2011; 2(2):20-21.
11. Sinha. Railway threat to Kaziranga. Oryx. 2011; 21:160-

163.
12. Spillett. Some observations on wild buffalo, Bubalus bubalus L. in Kaziranga National Park, Assam. Journal of the Bombay Natural History Society. 2013; 79:188-190.