

and around type localities of these species in Assam, Arunachal Pradesh and Meghalaya had resulted in rediscovery of five out of nine species after a gap of nearly 85 years and also discovery of a few new species, which are still in the process of description (Ahmed 2001).

The results from Orang ... three species new to science, one range extension and one rediscovery after a gap of more than 85 years.

The study also revealed that a species of caecilian (limbless amphibian), *Gegenophis fulleri* discovered by A W Alcock in 1904 from Silchar in Barak Valley, has perhaps become extinct (!) from the region mainly due to destruction of evergreen forests through felling, encroachment and tea plantations.

Many amphibians are specialized for some specific habitat and destruction of such habitat may cause loss of a species forever before being discovered. It has been observed in some abandoned *jhum* fields that a few species do not return to the regenerated forests although they were hardly 50 meters away. However, a few species may return but the reduction of *jhum* cycle from 10 to 3-5 years has reduced the chances of such return.

Besides forest destruction, rampant use of chemicals like fertilisers and pesticides has led to an alarming decline of amphibians all over the world. We must come forward to save these species, which are indicators of an ecosystem.

The results of Orang survey (three new species of frogs in just one monsoon!) prompted me surmise

as to what could be there in the large contiguous and pristine forests of this region! This reminds me of the vast task ahead of us.

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## Big cats, Elephant, Rhino and Gaur in Guwahati

ANWARUDDIN CHOUDHURY

Guwahati, the capital city of Assam is also an important wildlife area with records of globally endangered 'mega' species such as the tiger, leopard, elephant, rhinoceros and gaur. Although bulk of the natural habitat has been lost, the leopard and elephant still occurs in parts of the city while the tiger, rhinoceros and gaur just outside. Perhaps no city in the world has such record. Time has come to conserve whatever is left within the city limits and its immediate environ for posterity.

### Introduction

Guwahati (26°05' - 12°N, 91°35' - 52°E), the capital city of Assam in northeastern India has the unique

distinction of having records of a number of 'mega' wildlife species, which are also globally endangered. Located on the floodplains of the Brahmaputra

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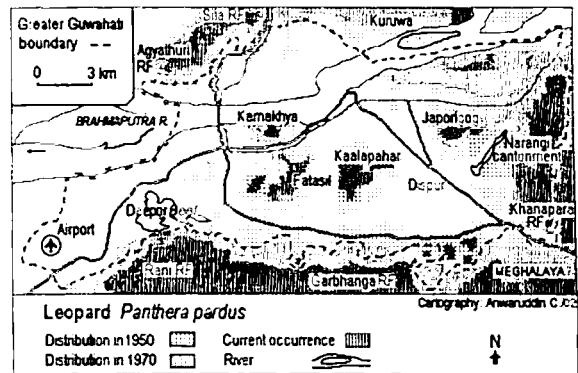
river, a few hilly outcrops of Shillong Plateau provided higher grounds (elevation ranged from <50 to >250 metres above the mean sea level). This largest city of northeastern India has witnessed a phenomenal growth between 1971 and 2001 during which its area shot up from 44 to 217 km<sup>2</sup> and population from 0.20 to 0.81 million, an increase of 400%! This rapid expansion has resulted in heavy destruction and encroachment of natural habitat. Many species of mammals and birds have vanished from the main city but still holding on in the vicinity awaiting extinction from the area. This rich diversity of biological wealth in a big city of nearly a million human population was not focussed to the outside world as it should have been.

I here summarise the records of five 'mega' mammals – tiger, leopard, elephant, rhinoceros and gaur in and around Guwahati – a city where I lived for more than two decades.

### Tiger and Leopard

The tiger *Panthera tigris* still strays into the city hills including those in the north bank. Till 1970s, a few were always met with in Kaalapahar, Fatasil Ambari, Kahilipara, Panjabari, Khanapara, Agyathuri, Sila, Mandakata, etc., hills in and around Guwahati. Stray animals were encountered in the hills of Kaalapahar-Fatasil Ambari even in early 1990s. Two tigers were reported from the hills near Changsari in 1998 (Choudhury 1999b). Once common in Garbhanga, Rani and Amcheng Hill RFs [RF - reserved forest], this big cat is now only occasional in those areas.

The leopard or panther *P. pardus* had a wider distribution in the city and occurred in all the hills including Sarania till 1950s. Its extent has remained fairly large but the numbers have come down to a handful and has become highly fragmented. Fatasil Ambari, Kaalapahar, Kamakhya, Kahilipara and the

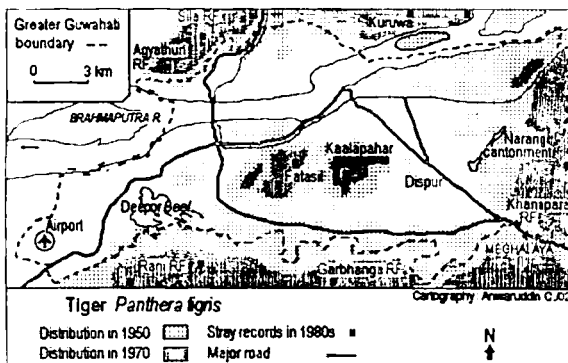


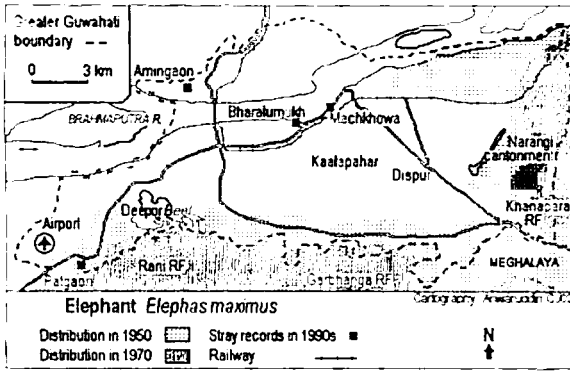
hills on the north bank still has survivors. It is not uncommon in Amcheng Hill RF and the adjacent forests from where it moves into Khanapara, Narangi, Noonmati areas. Garbhanga and Rani RFs also have panthers.

A leopard had strayed into Odalbakra area of the city and fell into a well in December 1997, then a year later, another fell into a well while chasing a dog in Birubari in December 1998. Both were rescued. Prior to that another animal which had strayed into Ulubari area was killed by some policemen on 5 March 1995. Three cubs were caught by locals near Fatasil Ambari on 11 April 1998. One was poached in Dirgheswari hills near North Guwahati on 31 May 1998. A large specimen stopped vehicles for about 10 minutes shortly after midnight when it came out of Nilachal (Kamakhya) Hills on 26 February 1998. More than a dozen leopards were rescued from different parts of the city during the last two decades.

### Elephant

Guwahati is perhaps the only metropolis where the wild Asian elephant *Elephas maximus* still occurs within city limits. The pachyderms from Amcheng-Panikhaity areas regularly move into Narangi cantonment, Khanapara RF near Panjabari and other areas of eastern part of the city (Choudhury 1999). A female and her calf fell into a reservoir in Narangi cantonment on 9 June 1999, both were rescued. Earlier (till 1970s), they used to come down to Hengrabari (Silsako) *beel* through Narangi and Panjabari but now it has stopped due to settlement but they still visit Khamranga *beel*. Even in 1950s, elephants from Amcheng area used to move up to the hills near Chandmari-Nunmati area of the city. The other population is found in Garbhanga and Rani RFs from where they come down to Deepor *beel*





and in the fields near Borjhar, mainly in winter. Till early 1980s, they also used raid crops all along the southern edge of the city. An adult and a calf were electrocuted near Deepor beel on 7 June 1999. A herd of about 40 came down to the fields near Patgaon, visible from the main road to the airport in November 1999. Two persons were trampled to death in Moirapur and Cholli of western part of the city in December 1999.

There were also a few stragglers from other areas. A *makhna* was washed down through the Brahmaputra and had entered the city at Machkhowa on 29 August 2000. It damaged a few vehicles near the idgah then again went down to the river. Then it crossed over to Amingaon and remained for some time in a beel. After a few days it crossed over to the south bank and vanished in the forests of Rani RF. Prior to that a tusker was washed down, which was then caught with the help of trained elephants at Bharalumukh.

### Rhinoceros

Till 1970s, there was a small but permanent population of the Indian one-horned rhinoceros *Rhinoceros unicornis* in Kuruwa, at the northeastern edge (across the river) of the city. Stray rhinos from Pabitora occasionally visit the *chapories* of the Brahmaputra towards northeast of the city. At Tatimora *chaporis* stray rhinos were regularly seen (Choudhury 1996).

### Gaur

A population of gaur or Indian 'bison' *Bos gaurus*, locally called as 'Methon' still occurs in Amcheng RF towards east of the Guwahati city (Choudhury, in press). Till early 1970s, the species used to move up to Bonda, Narangi, Noonmati and Panjabari

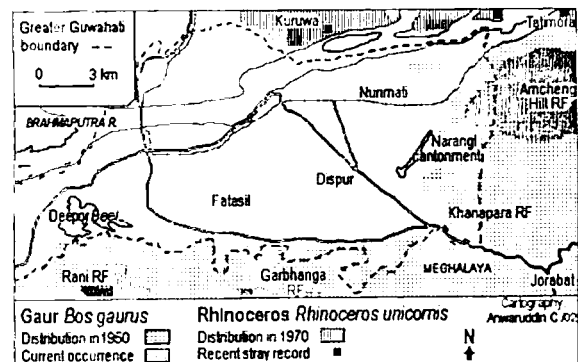
areas, however, expansion of habitation and loss of forest has forced the animals to move deeper in Amcheng hills. Still it is a privilege for a metropolis that the majestic gaur is only a few kilometres away from its eastern boundary! There are a few gaur survivors in Garbhanga and Rani RFs but there is little chance of coming nearer to the city due to habitat loss and human activities.

### Conservation problems

Being a fast-growing city, the foremost issue was destruction of natural habitat for habitation, fuelwood, as well as through illegal felling. Poaching was not a problem as such although a few leopards are still being killed occasionally but not for trade. Construction of refinery at Nunmati and setting up of large cantonment at Narangi, both in the eastern part of the city was the initial blow to the wildlife and their habitat in that part. The elephants still enter the cantonment almost every year and often raid the godowns looking for grains. The hills on the north bank of the Brahmaputra such as Agyathuri-Mandakata, which became famous in 1970s for their man-eaters, were entirely deforested through illegal felling and stone collection. The reserve forests of Garbhanga and Rani have also experienced large-scale felling and encroachment. The Silsako or Hengrabari beel, the virtual storage of flood waters in that part of the city has been reclaimed to a great extent. Whatever is left is going to be filled up soon to accommodate housing and even government offices as well as a sports complex. This was a major haunt of the wild elephants a few decades back.

### Discussion

The destruction of natural habitat, especially near-complete deforestation in the hills and filling up of vital wetlands had its impact on Guwahati.



Even a normal spell of rain floods the streets [result of filling up of wetlands] while the drains get filled up with silt [result of deforestation and earth cutting in the hills]. The situation is worsening year after year. While complete recovery is impossible, there is scope for 'repair'. One wonders why enforcement is so difficult in a capital city!

There are at least 16 reserve forests and proposed reserve forests that are within city or very near to it covering more than 380 km<sup>2</sup>. While restoration of ecology of Guwahati and its environ is for the betterment of its nearly a million human population, the presence of splendid natural features with key wildlife species has tremendous potential for ecotourism. The Nairobi National Park at the edge of Kenya's capital city is visited by many thousands every year. Very few cities have such opportunity and Guwahati was one such but it was never given any serious thought.

### Recommendations

1. Massive afforestation in the hills within the city as well as just outside. Wherever possible, encroachments should be cleared. These should be adequately protected. Leopards are still found in many of these hills.
2. The remaining wetlands including Silsako or Hengrabari *beel* should be preserved as wetland and further reclamation stopped.
3. Amcheng Hill RF, South Amcheng RF and some adjacent areas with a corridor to Khanapara RF should be declared a wildlife sanctuary with an eye on its elephant and gaur.

4. Eco-tourism should be developed in a big way in all such areas. A small part should be developed as 'picnic spot' in some of these areas as it is a very popular form of domestic tourism. Eco-tourism will also give employment to many. Kamakhya Hills may also be considered for a sanctuary on the line of Tirupati. The existing Deepor *beel* Sanctuary should be extended to cover some areas of Rani RF.

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[*Post Script*. Eviction to clear city's reserve forests of encroachments has already started in May 2002 and the bulk cleared. It was a welcome development but to prevent re-encroachment, adequate measures should be taken including formation of joint monitoring committees with leading citizens and NGOs since pressure on forest land in urban areas is usually very high]. □

## Book Reviews

(Reviewed by the editor)

1. PRIMATES OF NORTHEAST INDIA, by Arun Srivastava. Published in 1999 by Megadiversity Press, Bikaner. (21.5 x 14 cm), pp. 208. Price Rs 250, \$ 25.

The northeastern (NE) India comprising the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura has the highest primate diversity in India with nine species. A sizeable amount of work has been done on the primates in this region, however, more long-term research is required in view of fast changing scenario arising out of habitat loss and poaching. I was happy to have a copy of Dr Srivastava's book as I thought that the existing gap

