



## CHAPTER – V

### HABITAT MANAGEMENT

#### Introductory

**11.1.1** Habitat management had been given adequate importance in the management plan of the park for 2003-04 to 2012-13. Out of 11 theme plans consisting activities to be carried out during the 10 year period, three items (about 27 per cent) namely management of wetland, management of grassland and control of erosion were flagged. Besides, research and monitoring were also planned as issues to be covered during the plan period.

**11.1.2** Due to insufficient fund to manage the activities of the park and chanelising the majority of the funds towards anti-poaching activities which had been discussed in some of the preceding paragraphs, the habitat management has taken a back seat as evident from the following.

#### Funding

**11.2.1** In order to fund the items under habitat management which formed 27 per cent of the overall activities planned, the management plan forecast a financial outlay of ₹ 4.24 crore (as of 2002) for the five year period 2008-09 to 2012-13. Besides, an amount of ₹ 90 lakh was also planned on research activities. An analysis of the financial outlay *vis-à-vis* actual allocation revealed that ₹ 1.08 crore was actually made

Year	As envisaged in management plan		Actual allocation	
	HM	Research	HM	Research
(₹ in lakh)				
2008-09	84.50	18.00	Nil	Nil
2009-10	85.50	18.00	15.00	Nil
2010-11	84.50	18.00	49.60	6.00
2011-12	85.50	18.00	43.00	Nil
2012-13	84.50	18.00	Nil	Nil
<b>Total</b>	<b>424.50</b>	<b>90.00</b>	<b>107.60</b>	<b>6.00</b>

HM – habitat management.  
In addition, ₹ 2.10 crore was allocated as one time assistance for erosion control during 2010-11.

available for habitat management including desiltation of water bodies, ₹ 2.10 crore as a special assistance for erosion control and ₹ 6 lakh only was earmarked for research activities. The percentage of allocation *vis-à-vis* planned worked out to 25 per cent (habitat management including desiltation) and six per cent (research activities). As a result of such poor fund allocation, habitat management and research works which are amongst the vital components of conservation and

wildlife management had been largely affected. Some of the instances are discussed in the following paragraphs.

### Management of wetland

**11.3.1** In KNP, wetland consists of rivers and *beels*<sup>1</sup> cover about eight *per cent* of the park area which is the lifeline for the animals. The water bodies get filled up during the monsoons when the water of river Brahmaputra inundates the park, each year. However, the flood waters bring along silt which gets settled in the water bodies as the flood water recedes. This makes the *beels* shallow reducing the water holding capacity.



Animals enjoying water bodies

**11.3.2** In view of the natural phenomenon and to ensure availability of water in the *beels* throughout the year, it is imperative that de-siltation is regularly carried out. The management plan proposed for allocating ₹ 73 lakh each year. It means that for the period 2008-09 to 2012-13 ₹ 3.65 crore was required to be earmarked for desiltation of water bodies. Scrutiny, however, revealed that ₹ 19.75 lakh or **five per cent** was only allocated for the purpose during the five year period. Of this, ₹ 5 lakh each was earmarked during 2009-10 and 2010-11 while ₹ 9.75 lakh was earmarked for 2011-12. Thus, there was deficiency in funding to the tune of ₹ 3.46 crore on this account, besides there was no allocation during the years 2008-09 and 2012-13. Thus, the provision of fund as prescribed in the management plan was not met resulting in drying up of water bodies during peak summer forcing the Rhinos and other animals to move towards rivers flowing through both flanks of the park which are exposed to human habitats prone to poaching.

<sup>1</sup> Local names for lakes.

**11.3.3** The Department stated that desiltation of the water bodies is being planned during the current year provided that adequate funds are made available to the park authorities.

### Management of grassland

**11.4.1** Four main types of vegetation exist in the park namely alluvial inundated grassland, alluvial savanna woodland, tropical moist deciduous forests and tropical semi-ever green forests. An analysis of the area under different land cover types in the park<sup>2</sup> would reveal that more than 60 per cent of the area is covered

Land cover type	Area in sq km	% Area
Woodland	114.01	27.95
Short grass	12.30	3.01
Tall grass	248.85	61.01
Beels	24.32	5.96
Rivers	6.80	1.67
Sand	1.62	0.40
<b>Total</b>	<b>407.90*</b>	<b>100</b>

\* Excluding eroded area.

by grassland - both tall and short grass. Of the species available, there are a few namely *ekora*, *Lokosa* etc<sup>3</sup> which are preferred by the herbivores. Especially, *ekora*,



A glimpse of tall grass fields (*ekora* etc.)

*lokosa* are largely favoured by the Rhinos. Such tall grass not only provides shelter to all types of animals but also help them in breeding. These spreads are also liked by tigers.

**11.4.2** Physical verification and interaction with the wildlife Officers/guards revealed that the cover of *ekora* etc is diminishing day by day. The major reasons, *inter-alia*, are rapid increase in the numbers of *simul* trees, attack from *Mimosa invisa* (a kind of herb which creeps on the grassland resulting in its damage) and increase in the population of wild buffaloes as briefly discussed below.

**11.4.3** The *simul* seeds germinate very fast and even if the plants are removed it again gives rise to multiple saplings from the coppice. During field verification it was observed that large spread of grassland had been taken over by *simul* trees.

<sup>2</sup> based on visual interpretation of satellite imagery (kushwaha 1997).

<sup>3</sup> Local names of types of tall grass. Scientific names *Saccharum ravennae* (*ekora*), *Paspalum longifollum* Roxb (*lokosa*).



*Simul* plants depleting grassland cover in KNP

**11.4.4** *Mimosa* - (a shrubby herbaceous plant), the seeds are hard coated and can germinate even after five years. Concerted efforts by the park authorities to clear the herbs proved futile. It was only the devastating floods of 2012 which naturally cleared the herbs. However, some unorganised tea growers in Karbi Anglong Hills still use *Mimosa* for nitrogen fixation on the soil before the tea bushes are planted.



*Mimosa invisa*

These herbs then find their way into the park through the *nallahs*, rivulets *etc.* flowing through the hills and the park into the Brahmaputra.

**11.4.5** Thirdly, wild buffaloes move in herds and can eat up large spread of *ekora* very fast. The increase in the number of buffaloes in the park had put further pressure on these vegetation. The park authorities had in the past planned for translocation of some of the buffaloes to other areas having less or no buffalo population which did not materialise.



Herd of wild buffaloes

**11.4.6** The Department stated that efforts are being made to effectively manage the grassland by putting in place a well documented Habitat Improvement Plan. As regards the pressure of the animals, they also stated that the ecological carrying capacity of the park needs to be worked out at the earliest.

### **Erosion by River Brahmaputra**

**11.5.1** The KNP is situated in the flood plains of the Brahmaputra which flows through the eastern and northern part. The dynamic nature of the river Brahmaputra and constant erosion and creation of new *chapories* are common phenomenon. The maximum erosion of the river has been on the northern part of the core area of the park. This has serious implication as the core area of the park is landlocked between the Brahmaputra on its north and NH 37 with thickly populated villages on its south. **As per the conservative estimates, more than 84 sq km of the original 429 sq km has already been eroded by the river. However, till date no scientific approach had been made to arrest the erosion by river Brahmaputra.**



**Erosion on the north bank of KNP by river Brahmaputra**



**Glimpse of erosion ridden Arimora area**

**11.5.2** During interaction with the wildlife guards at the Arimora beat which has seen worst erosion through the years; it was observed that the beat had to be shifted from its original location to a safer spot in the wake of constant erosion by the river. The historic and highly sought after Arimora IB, which was about 100 mtrs from river bank when it was constructed in 1956, went as close as 28 mtrs in April 2011. During the visit it was ascertained that the IB had been completely washed away on 15 July 2013.

**11.5.3** It was observed that the Government had allocated ₹ 2.10 crore in 2010-11 for erection of porcupine posts<sup>4</sup> along the bank of the river at this point. But, during

<sup>4</sup> Reinforced Cement Concrete Posts are put together and made like (X) held with bolts and put in the water to divert the flow.

verification it was seen that even that initiative proved to be futile as the river had washed away/submerged all of these posts. Besides, no further reinforcement was arranged like putting stone barrier in addition to the porcupine posts. This not only resulted in washing away/ submerging the porcupine posts and continued erosion but also led to expenditure of ₹ 2.10 crore proving unfruitful. Besides, from the news clipping appearing in 'The Assam Tribune' dated 11 April 2011 it could be seen that the then Director of the park had stated that some concrete steps towards preventing further erosion would be taken soon. Copy of the news clip is enclosed as **Annexure 'C'**. Even after lapse of three more years, no concrete solution towards the perennial problem could be worked out while the mighty river keeps eroding the land mass silently and consistently.

**11.5.4** *The Department stated that the issue of erosion control is very complex and probably cannot be solved with simplistic solutions. They further stated that discussions are being held with the Water Resource Department to find some way out to contain erosion.*

**11.5.5 Response of Audit:** *In view of the urgency and importance of the matter, timebound action plan needs to be put in place for addressing the issue.*

### Recommendations (Habitat management)

- *Habitat management needs to be given special focus by deploying a dedicated team under the guidance of competent Officer.*
- *Specific long term goals need to be set, supported by short term action plan which is to be monitored closely.*
- *The Department may ensure sufficiency of funds for the items of works planned through the APOs under Habitat Management.*
- *Concerted and timebound action plan needs to be formulated immediately to contain the erosion by Brahmaputra.*