# CHAPTER I

# Introduction

The Indian elephant is a sub-species of Asian elephant which includes the Indian elephant , the Sumatran elephant , the Sri-Lanka elephant and the Borneo elephant . The Indian elephant is the most widely distributed of the four Asian elephant sub-species. The Indian elephant is found throughout south-east Asia including Bangladesh, Bhutan, Cambodia, China, Laos, Peninsular Malaysia, Burma, Nepal, Pakistan, Thailand and Vietnam, and although spread out, the wild Indian elephant population is thought to be around just 20,000 individuals.

Indian elephants have been domesticated for hundreds of years for foresting and often battle. There are many places across south-east Asia where Indian elephants are kept for tourists to ride, and are often treated fairly badly. All Asian elephants are well known for their immense strength and friendliness towards humans. The Indian elephant has smaller ears than the African elephant and the Indian elephant also has a more curved spine than the African elephant . Unlike the African elephants, the female Indian elephants very rarely have tusks, and if the female Indian elephant does have tusks, they are generally barely visible and can only be seen when the female Indian elephant opens her mouth.

Having been extirpated from most of the country, Indian elephants are critically endangered in Bangladesh (IUCN Bangladesh 2000). Bangladesh is one of the most densely populated countries in the world and having a still growing human population, elephant conservation faces many obstacles.

In general, Indian elephants are smaller than African elephants and have the highest body point on the head. The tip of their trunk has one finger-like process. Their back is convex or level. Indian elephants reach a shoulder height of between 2 and 3.5 m (6.6 and 11.5 ft), weigh between 2,000 and 5,000 kg (4,400 and 11,000 lb), and have 19 pairs of ribs. Their skin color is lighter than of *maximus* with smaller patches of

depigmentation, but darker than of *sumatranus*. Females are usually smaller than males, and have short or no tusks. The largest Indian elephant was 3.43 metres (11.3 ft) high at the shoulder. In 1985, two large elephant bulls were spotted for the first time in Bardia National Park, and named *Raja Gaj* and *Kanchha*. They roamed the park area together and made occasional visits to the females. *Raja Gaj* stood 11.3 ft (3.4 m) tall at the shoulder and had a massive body weight. His appearance has been compared to that of a mammoth due to his high bi-domed shaped head. His forehead and domes were more prominent than in other Asian bull elephants. Indian elephants have smaller ears, but relatively broader skulls and larger trunks than African elephants. Toes are large and broad. Unlike their African cousins, their abdomen is proportionate with their body weight but the African elephant has a large abdomen as compared to the skulls.

Indian Elephants are classified as megaherbivores and consume up to 150 kg (330 lb) of plant matter per day. They are generalist feeders, and both grazers and browsers. In a study area of 1,130 $km^2$ (440 sq mi) in southern India, elephants were recorded to feed on 112 different plant species, most commonly of the order Malvales, and the legume, palm, sedge and true grass families. They graze on the tall grasses, but the portion consumed varies with season. When the new flush appears in April, they remove the tender blades in small clumps. Later, when grasses are higher than 0.5 m (1.6 ft), they uproot entire clumps, dust them skillfully and consume the fresh leave tops, but discard the roots. When grasses are mature in autumn, they clean and consume the succulent basal portions with the roots, and discard the fibrous blades. From the bamboos, they eat seedlings, culms and lateral shoots. During the dry season from January to April, they mainly browse on both leaves and twigs preferring the fresh foliage, and consume thorn bearing shoots of acacia species without any obvious discomfort. They feed on the bark of white thorn and other flowering plants, and consume the fruits of wood apple, tamarind, kumbhi and date palm.

## Objective

- To know the status of Indian Elephant in Bangladesh.

# CHAPTER II

# Materials and Methods

## 2.1. Methods:

a. Visiting of the zoo
b. Observation
c. Photography
d. Interview of the authority.

## 2.2. Study area

Different zoo of Bangladesh (Dhaka Zoo, Khulna Zoo, Rangpur Zoo) and safari park (Bangabondhu Sheikh Mujib Safari Park, Dulahazr, Cox'sBazar and Bangabondhu Safari Park, Gazipur).

## 2.3. Study design

A cross-sectional study was done by pre-questionnaire.

## 2.4. Indian Elephant Related information:

### *2.4.1. Feeding*

Indian Elephants feed on grasses, banana plants, bamboo, tree barks, leaves, fruits and flowers. It is estimated that there are about 200 wild and 100 captive elephants in Bangladesh. Hindus revere elephant as an embodiment of Ganesh, the elephant-headed god of good fortune**.**

Indian Elephants eat between 149 and 169 kg (330-375 lb.) of vegetation daily. An Indian elephant at Busch Gardens Tampa Bay eating a palm frond. Sixteen to eighteen hours, or nearly 80% of an elephant's day is spent feeding. Elephants consume

grasses, small plants, bushes, fruit, twigs, tree bark, and roots. Nearly 80% of an elephant's day is spent feeding.

Tree bark is a favorite food source for elephants. It contains calcium and roughage, which aids digestion. Tusks are used to carve into the trunk and tear off strips of bark. They require about 68.4 to 98.8 L (18 to 26 gal.) of water daily, but may consume up to 152 L (40 gal.). An adult male elephant can drink up to 212 L (55 gal.) of water in less than five minutes.

Elephants drink up to 40 gallons of water a day. Elephants can use their trunks to spray water in their mouths. To supplement the diet, elephants will dig up earth to obtain salt and minerals. The tusks are used to churn the ground. The elephant then places dislodged pieces of soil into its mouth, to obtain nutrients. Frequently these areas result in holes that are several feet deep and vital minerals are made accessible to other animals. Ex: Over time, African elephants have hollowed out deep caverns in a volcano mountainside on the Ugandan border, to obtain salt licks and minerals. Hills have been carved by Asian elephants in India and Sumatra searching for salt and minerals. These carved areas in the landscape provide valuable food and shelter resources for a diverse array of native wildlife.

### *2.4.2. Breeding*

Elephants were seldom bred in Asian monitored breeding programme until the last decades, since it was a cheaper and easier method to get more elephants to catch and train wild-caught animals, but there was a regular production of off spring from females who were kept under semi-domesticated conditions, e.g. were let out in the forest in night-time, were they met wild bulls, and sometimes became pregnant. Among others, the elephant orphanage in Pinnawela, Sri Lanka, has had great succes, the first baby was born 1984. Thailand has also a large number of captive births, with places like Ayutthaya Elephant camp showing large numbers of new born babies lately. Burmese working camps may have the largest captive breeding in the world. Japan had a number of births in Zoos.

Females are reproductively receptive for about three weeks, but conception is only possible three to five days of that time. Reproductive receptiveness is often displayed

in females by greater interest and enthusiasm at the approach of a musth bull and/or exhibit an estrous walk. Receptive females may also exhibit an estrous walk, characterized by holding their head held high and frequently looking over their shoulders. Estrous females (reproductively receptive) will also vocalize at this time. These sounds travel long distances and help distant musth bulls locate the female. Competition for potential mates is settled by bulls through a trial of strength, usually pushing, tusking, wrestling, and ramming. The weaker of the two bulls is forced to retreat and gives up mating rights to the female. Rarely do these mating fights turn brutal, as they are a quick assessment of strength and virility. Males assess a female's reproductive status by testing her urine for hormones. Chemical information is picked up through the trunk, blown into the roof of the mouth, and then detected by the Jacobson's organ in the upper palate of the mouth. Refer to the Senses section - Olfactory. Successive mating occurs briefly from a few hours to four days. Males usually stay with the female after mating to prevent her from mating with other males. Both African and Asian elephants have a gestation period of almost two years (20-22 months). By the third month of pregnancy, the calf's ears, trunk, and tail are present.

### *2.4.3. Vaccination*

No vaccination is done in the captive Indian Elephant in any zoo of Bangladesh.

### *2.4.4. Habitation*

They preferred habitat where water was available and food plants were palatable. During the dry months of January to April, they congregated at high densities of up to five individuals per $km^2$ in river valleys where browse plants had a much higher protein content than the coarse tall grasses on hill slopes. With the onset of rains in May, they dispersed over a wider area at lower densities, largely into the tall grass forests, to feed on the fresh grasses, which then had a high protein value. During the second wet season from September to December, when the tall grasses became fibrous, they moved into lower elevation short grass open forests. The normal movement pattern could be upset during years of adverse environmental conditions. However, the movement pattern of elephants in this region has not basically changed for over a century, as inferred from descriptions recorded during the 19th century.

Wild Indian elephants in Bangladesh are limited to areas generally inaccessible to humans such as the isolated Chittagong Hill tracts or national parks, of which Himchari National Park and the Mainimukh and Pablakhali Wildlife Sanctuaries are protected areas. A very few are kept captive in different safari parks and zoo.

### 2.5. Data collection

All the data were collected with a pre-prepared questionnaire and by asking questions to the zoo and safari park authority. Web visiting, Readin related articles also contributed in gather the whole data and to complete the study.

# CHAPTER III

# Results and Discussion

### 3.1 Number of Indian Elephant in Bangladesh

In Bangladesh, there are about 196-200 elephants including both the captive and of the free range.( R Sukumar – A Brief Review of the Status, Distribution and Biology of Wild Asian Elephants Elephas maximus- International Zoo Yearbook 2006.)

**Table 3.1.1 Sex ration and Management:**

| | |
|---|---|
| Indian elephants | Bangladesh has about 227-250 wild Indian elephants. Source:Islam et al. (2011) |
| Location holdings | 17 location has kept 40 elephants in captivity |
| Sex ratio and Management | Male 15 / 40 38%<br>Female 23 / 40 58%<br>Free contact 39 / 40 98%<br>Protected contact 0 / 40 0%<br>No contact 0 / 40 0%<br>Unknown contact 0 / 40 0%<br>Wild 0 / 40 0% |

**Table 3.1.2 The captive elephants are in the different locations**

| Location | No. of Elephant | Purpose |
|---|---|---|
| The Lion Circus (Niranjan Sarker) | Kept totally 4 elephants | Circus |
| Yakub ALi | Kept 6 elephants | Private and circus |

| | | |
|---|---|---|
| Bangladesh Forest Industries Development Corporation (BFIDC) | 12 | Camping |
| Betbunia Police Special Training School | 1 | Training |
| Bangabondhu Safari Park, Gazipur). | 5 | Recreation |
| Bangabondhu Sheikh Mujib Safari Park, Dulahazr, Cox'sBazar | 3 | Recreation |
| Dhaka Zoo | 4 | Recreation |
| Khulna zoo | 2 | Recreation |
| Rangpur zoo | 3 | Recreation |

Beside these captive elephants there are about 150-160 elephants of free range in Bangladesh locating on different habitats including all the sanctuaries. (**R Sukumar** – A Brief Review of the Status, Distribution and Biology of Wild Asian Elephants Elephas maximus- International Zoo Yearbook 2006.)

### 3.2 Feeding status

In all zoo and safari parks the elephants are fed basically 300-400 pounds of vegetables including grasses, banana plants, bamboo, tree barks, leaves, fruits and flowers.

**Figure 3.1 Baby Indian Elephant**

Once a week they are supplied with vitamin and mineral ore-mix considering their health status, age and the feeds.

### 3.3 Habitat status

Although once elephants were found in the forests of Sylhet and Madhupur, now in Bangladesh they are available only in certain areas of Chittagong and Chittagong hill tracts.

**Figure 3.2 Wild Indian Elephant**

Occasionally wild elephants from Indian territory enter in Balijpur and Durgapur areas of Mymensingh, and Patharika areas of Sylhet. Therefore some of them are found in different sanctuaries and some are kept in captivity

**Figure 3.2 Trunk of an Indian Elphant**

**Figure 3.4 Indian elephant (trained)**

# CHAPTER IV

# Recommendations and Limitations

## Recommendations

- Govt. departments should take proper steps to make sure the conservation of the Indian elephants in Bangladesh.
- Human and elephant conflict should be controlled.
- Keeping people abstain from destroying the natural habitats.
- In zoo and safari parks the elephants should take proper care and should look for the appropriate breeding strategy of the elephants .

## Limitations

- The study period was too short.
- Difficulty in communication.
- The data about the elephants of free range were passively collected relying on the articles available.

# CHAPTER V

# Conclusion

The lack of financial resources and a dedicated government department as well as the almost total absence of any conservation work means the elephants of Bangladesh are reliant on their survival by living in areas isolated from human beings.

Bangladesh's elephant population is possibly the most threatened in Asia. A major commitment to securing the existing corridors seems to be the elephants' only chance of sustainable survival. Given the lack of resources available within the country, it requires a major commitment by the international communication.

# CHAPTER VI

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