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INDIAN PANGOLIN (*Manis crassicaudata*)

PHOTOGRAPH BY N.V.K. ASHRAF



# RHINOS OF JALDAPARA -- SOME PROBLEMS FOR SURVIVAL AND THEIR PROPOSED CONSERVATION MEASURES

Amal Bhattacharya \*

This article deals with some problems for survival of rhinoceros at Jaldapara and their proposed conservation measures in addition to the measures taken at PHVA workshop in an International conference on Indian/Nepali rhinoceros held at Jaldapara, W.B. from 6-10 December, 1993

## Abstract

Jaldapara is suffering badly from tremendous population pressure both from surrounding villages and from the populated lands existing in between two legs. It is recommended for acquisition of some parts of lands in between to avoid inside pressure, gene pool stagnation and for extension of grazing areas. Prior to this acquisition, a programme of exchange and translocation of younger, viable, breeding bulls and cows are also recommended. Emphasis should be given for taking sincere steps towards family planning measures in the fringe areas of Jaldapara and checking further immigration by strictest possible measures. Lastly, it is advised to make many more permanent water reservoirs in the western leg to get rid of dryness.

## Introduction

Jaldapara has become famous for its fauna and flora diversities, its wildlife heritage since long time. Its ideal rhino habitat and rhinos are the pride of this sanctuary as well as a pride of the state West Bengal. River Torsa, which is flowing down from the Himalayan mountain range of Bhutan, traverse pass through this sanctuary in a bifurcated direction. Its course changing nature has created a vast stretch of marshy land consisting of wallowing pools, mixed riverine forests intermingled with tall reeds, grasslands which has become inhospitable to mankind but favourable to the rhinos. Northern uplands become a temporary homeland for the rhinos in wet season when the apparently calm and quiet looking Torsa takes a fearsome appearance containing a stormy flow. Hectors of lands are submerged at that time.

## Acute Problems for Survival

Like other sanctuaries and national parks containing rhinos Jaldapara also faces the same acute problems - shrinkage of habitat and poaching, although in recent years poaching incidences have been reduced a minimum level. The highest population recorded was 80 during the year 1968-69 but it came down to 14 only, a record of all time low rhino population, in the year 1985 (W.Bengal Forest Department, 1993). Once upon a time, even in the beginning of this century, Jaldapara lied amidst a vast stretch of forest tracks and was connected with many forest corridors of the neighbouring states and countries. Gradually with the advent of tea planters hectors of lands went under tea cultivation leaving only a few, patchy, isolated forest islands. Jaldapara remained as one of those few isolated patches.

The situation added fuel to the fire when, after partition, a mass exodus from the erstwhile East Pakistan took place and many new settlers settled down near the southern boundary of Jaldapara. The condition, further, took worst shape during Bangladesh war (When Bangladesh appeared as a new developing neighbouring country) some 23 years back. Gradually the massive influx of population inserted into the sanctuary right from the middle of the southern boundary leaving only the two riverine habitats intact on both sides. That's why the sanctuary got a shape like a trouser and obviously it has got a very long boundary which may create many administrative problems. The land between the two legs has become the heavenly abode to the poachers. During the last four decades the legs have become narrower owing to tremendous population pressure from both sides, but unfortunately ideal rhino habitats persist in these two regions only which are practically devoid of any buffer zone. Specially the western leg is to be mentioned here for that which happened after the change of main course of River Torsa sine 1968 (Dey, 1994).

Another serious threat to the rhino population may be noted here that, the below density population may proceed towards a gene pool stagnation slowly. Since there is no chance of outbreeding the frequency of mixing of recessive, deleterious and inviable genes occur frequently in a low density community. Owing to continuous inbreeding the recessive deleterious genes come close to each other making the recessive ones dominant and accelerates the weak characters (having lesser immunity) to be expressed phenotypically in the population. This type of community suffers in the long run from inviability, lower rate of fertility, lower life expectancy rate at birth related with higher mortality and lower natality ratio. The same things are happening to Jaldapara rhinos of western and eastern legs.

## Conservation Measures

As a research worker on Great Indian one horned rhinoceros at Gorumara, Jaldapara and Kaziranga, I feel that, the problems of Jaldapara is something different than that of the other two rhino reserves. The following conservation measures may be taken into consideration in addition to the measures already taken at Jaldapara on 6-10 Dec. 1993 for further revival of rhino population in this sanctuary.

### 1. Acquisition of extra landmass and/or building up of corridors between western and eastern legs:

Some parts of the vast landmass between the two legs must be included in the administrative zone of Jaldapara Wildlife Division as it has already been done at its north side since 1992 connecting the sanctuary with Bhutan by a corridor. This may be done politically. Before that, the wildlife authorities with the help of local Panchayet leaders should make the

\* Lecturer, Ecology, Behaviour and Wildlife Unit, Deptt. of Zoology, University College, P.O. Raiganj, 733 134, Dist : Uttar Dinajpur, W.B. India.



neighbouring inhabitants realise that an undisturbed forest is a balancing factor to combat against all imbalances of nature. If this mission becomes successful Jaldapara can get back its glorious past, as well as, animals can enjoy greater home range and more grazing areas. In a nut shell their isolation must be checked.

## 2. Exchange of individuals between two rhino populations of east and west legs :

Before materialization of inclusion of extra landmass, another measure can be tried for, i.e., exchange and translocation of rhinos from one leg to another and vice versa. Younger, viable, breeding bulls and cows should be selected for translocation and proper age-sex ratio must be maintained (Hazarika et al., 1994). A high heterozygosity can be maintained by distributing rhinos over a larger geographic area (Hazarika et al., 1994).

## 3. Campaigning about family planning measures around the fringe areas:

The whole thing will be spoilt if the tremendous population pressure on Jaldapara is not controlled. The present population figure around Jaldapara shows a rapidly upward trend (Sengupta and Patnaik, 1994) which gives an indication of high fertility and high birth rate. To check this trend, a well arranged continuous programme on family planning must be undertaken in the fringe areas of Jaldapara in as-

sistance with the Block and Health Department Personnels. This can be done with the help of film and slide show, lectures, door to door campaign etc. The principal aim is to elevate the surrounding villagers by awakening general awareness. Simultaneously, further immigration from elsewhere and from Bangladesh is to be checked by strictest possible measures from the part of Panchayat and Block administration.

## 4. Creation of water channels, ponds in the western leg:

Since west leg is suffering badly from dryness after devastating flood of 1968 (river Torsa changed its course from west to east leg at that time) importance should be given to this area by creating profuse water channels, ponds, lakes, waterpools etc.

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## Serpentorium Construction Project at Kanpur Zoological Park, Kanpur.

Srivastava. S.S. \*

Here I came to learn a lot of things regarding management, designing, construction, of a new projects in a case if I can get a chance of developing some thing new in my Zoo. I found myself fortunate as my Director has assigned me with a special work of establishing a serpentorium.

Here we have certain constraints which going for a project. As the case may be in Kanpur Zoo, we are suffering money problems. No fund for construction and establishment and as per the directions of C.Z.A. We are to demolish our three enclosure that is peacock aviaries, small animal houses and enclosure of Python. In the present circumstances, if we have no fund to raise a new building, How can we demolish an older one. That is why I have to change our old constructions to the best suitability of a new variety of animals which we do not have at present.

So far as my studies are concerned here at Anna Zoological Park & auditorium, I found that the 32 enclosures of K.Z.P. "Small animal enclosures" can be converted to the reptiles house.

As I can see here, the climatic conditions are best suitable to reptiles and they are multiplying and never go for hibernation. The climate is warm & humid with little diurnal variation, however a winter & summer season rains are frequent throughout the year. Temperature vary from 19°C to 32°C in a year with a diurnal variation of 32° to 42° in summer and 22° to 13° in winter with humidity of 75 to 80 %. Thus there is apparently no acidity and cold. The direct result is high metabolism of the serpent and easy food supplies of insects & insectivorous prey.

In the Gangetic plain of U.P & Bihar, heavy frosting during winter & dry warm air blows in summer to the extent heat. Temperature variation of 41° to 35° in a year, with diurnal variation of 41° to 21° in summer and 22° to 35° in winter. Even then the reptiles survive in the nature and we have a good reptilian fauna.

But in captivity we can not seep them in open. We have to have certain arrangements for captivity that regulates the climates to a warm & humid one. That is the season that all the enclosures should be designed as thermostatic design. There should not be an open air place as it would result hard in maintaining humidity. But a proper ventilation and air changing measures are must.

Enclosures should be large enough to be divided into two parts, in case it requires for cleaning as well as for keeping two subspecies side by side for easy differentiation.

As we know, the snakes can be tackled by snake charmers very easily even then they may cause administration hazards because they are furious for human psychology. Snake's bite may not cause a death but it will result into a political exploitation for zoo administrations by workers tackling them as well as by visitors known to the very nature. So the enclosure designing should be safe enough for visitors as well as for workers, and it would result into a safe one for animal life as

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\* RFO, B/1 Allen Forest Colony,  
Kanpur Zoological Park, Kanpur