

## CONSERVATION PROBLEMS IN BIHAR

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The conservation of wild life in Bihar is both important and difficult. It is important because the indigenous animals of the State are threatened with extinction.

Bihar probably still has one or two solitary Rhinoceros (*Rhinoceros unicornis*), a herd or two each of Wild Buffalo, and three or four herds of Elephants (*Elephas indicus*). Bihar lying in the heart of the country is crossed by the most important air, rail and road routes and if wild life could be protected and preserved here the educative value would be much greater than elsewhere. This is a point that all conservationists should take a note of to decide on the question of priority for conservation.

There is another advantage as well. Bihar has scenic varieties and could be attractive to tourists without asking them to go out of the way of the general itinerary. To have preserved wild life on view here would be a greater tourist attraction than elsewhere.

The difficulties of conservation are inherent in the dense population of the State and in the intensity of land hunger. In more than four districts there are over 600 persons to the square miles. Thick population there is little of sanctity attached to wild life. Except for a thousand square miles of Reserved Forests in the Singhbhum District in the extreme south, woodland and cultivated land intersperse each other and animals tend to interfere with agriculture and in their turn are more open to destruction.

There is an additional difficulty in the land reclamation schemes. In North Bihar huge Chaur (low, water-logged meadows) are being reclaimed to grow much needed crops and, therefore, habitats are being destroyed. The forests that have grown up in the wake of the Kosi river are being felled to make room for the plough. There too wild life is being robbed of its habitat.

Against these losses which may be estimated at over 5,000 square miles, there are minor compensatory gains. The Damodar and Mayurakshi projects may give an aggregate water storage of a hundred square miles. We do not yet know if the migratory birds which used to visit the North Bihar Chaur will fly the extra 200 miles south to these new storages. And it is certain these new storages would not by themselves (unless special measures are undertaken) provide adequate food for the visiting birds.

Shooting restrictions have been extended to 10,000 square miles of private forests taken over by the Government for management. On the other hand all Reserved forests have been thrown open to grazing; fire protection has dwindled in its rigour and poaching has increased.

The situation at present is critical, and only a determined conservation policy may save enough to pay its way. The will to pursue such a policy has to be developed and the policy formulated. Naturalists can be of advisory aid in that direction. The decisions lie with the authorities. If clear demarcation of conservation areas is made a great deal can be achieved. By conservation areas are meant Chaur, meadow, grassland and forest which would be so rigorously kept away from villages and fields that no preserved animals would stray into fields and no grazing would be allowed in the conservation areas. By adequate provision of food in the conservation areas and attaining the bionomic balance it should be possible to do so. Grazing can be stopped by adequate watch and ward personnel.

Since the species requiring urgent and adequate protection have become too few, stocking of the conservation areas would be necessary. This is specially true of the Rhinoceros (*Rhinoceros unicornis*), wild Buffalo (*Bubalis bubalis*), and Bison (*Bibos gaurus*). But even in the case of the Sambhar (*Rusa unicolor*) and Cheetal (*Axis axis*) it might be necessary to stock the sanctuaries adequately so that carnivora may not stray out of the sanctuaries.

Provision of adequate watch and ward including re-stocking and supply of enough food will cost some money. It will be unfair to make the ordinary citizen pay for this. Rightly this burden should be borne by those who shoot. By legislation nobody should be allowed to kill an animal anywhere in the state unless he has taken a shooting license. At present even in the Reserved Forests where game licenses are issued for a charge but the officials are exempt. This might have been alright for a bureaucratic regime but under a popular Government this should cease immediately. None should be exempt from game fees and not a single animal should be shot without an adequate contribution to the State coffers for expenditure on wild life preservation.

In a previous contribution to this Journal (Vol. XXVI, pp. 68-74, 1953) the present writer had described the existing sanctuaries in Bihar. In this article attention will be confined to what can be done in regard to conservation. Wild Elephants (*Elephas maximus*) have responded to conservation in the Sasangdaburu and Bamiaburu sanctuaries in the Saranda and Kolhan forest divisions. Another sanctuary for elephants near the Dublabera area in the Dhalbhum forest division should adequately protect the existing herds in Bihar. For showing to tourists a few pairs may be transferred to the Netherhat-Baresand sanctuary. Sanctuaries that may be established in north Bihar along the Nepal border may offer refuge to elephants wandering off from the Nepal terai. A few animals may be transported from Singhbhum to these sanctuaries to lessen the number of elephants in Singhbhum.

The protection of the deer species is difficult because these tend to stray into cultivated fields, wherever excessive grazing is allowed in the forests. The food supply in the forest is reduced by cattle grazing in the day and the hungry deer by night search for food the fields. Deer are prized for meat, are easy game and there is little hazard in their shooting.

Sambhar (*Rusa unicorn*) and Cheetal (*Axis axis*) have multiplied in the last 15 years in the Singhbhum sanctuaries but for

fleet footed animals like them (as for all *Ungulates*) bigger sanctuaries than the present ones are necessary. On the Ranchi plateau deer are scarce and since Ranchi town is the tourist centre in Bihar it is necessary that the Horhap Reserve Forest, 15 miles from Ranchi, and the adjoining forests should be declared a sanctuary. The Horhap Reserve has an area of only four square miles and cannot function as a proper deer sanctuary unless another 20 square miles of private Protected Forest around it are declared a sanctuary.

If the forests on Parasnath Hill—a place of Jain pilgrimage are declared a sanctuary area, Sambhar, Cheetal, Kakar (*Muntiacus muntjac*) and Mouse-Deer (*Moschiola mominna*) would benefit from such protection. In a similar category should come the Rajgir Hills—a Buddhist pilgrimage—which are now being afforested.

The *Chinkara* or the Indian Gazelle (*Gazella benneti*) occurs in the plains district and sanctuaries for it are needed in Palamau, Shahabad, and the border of the Gaya and Hazaribagh districts. The Swamp Deer (*Rucorvus duvaucelli*) needs sanctuaries for its protection in the Kosi area, in Champaran forests and on the Rohtas plateau. At present only the Champaran forests and the bamboo forests of Rohtas in Shahabad district are under State management; the Kosi swamp-forest areas are under reclamation without any plan for leaving a forest area for timber and fuel supply and incidental wild life conservation. The forests in Purnea have not been taken over by the State though some areas are under investigation.

Two antelopes used to occur in Bihar. The Nilgai (*Boselaphus tragocamelus*) is still plentiful in the plains districts, but the Chausingha (*Tetraceros quadricornis*) has probably disappeared from Palamau where it was last noticed. Nilgai are a beautiful sight to watch and might be a tremendous tourist attraction if a sanctuary in the plains was established for them. The Chausingha needs to be reintroduced in the Baresand sanctuary in the Palamau district.

The carnivores are closely related to the deer population. There are now not more than a hundred tigers left all over Bihar and since the sanctuaries are small they tend to wander with the deer into village areas. Grazing by cattle in the forests also contributes to tigers becoming cattle-lifters. Other factors which are responsible for making tigers a menace to human life or live-stock are the large scale destruction of deer and wounds inflicted on tigers by people shooting unsuccessfully at them from cars at night. Bigger sanctuaries in which grazing will be forbidden would help preservation of tigers (*Panthera tigris*) and leopards (*Panthera pardus*)—the latter only occur isolatedly.

The bison (*Bibos gaurus*) must be reintroduced in the Saranda and Champaran forests. Its occurrence in a single block in Palamau is a threat to its continued existence specially when grazing cattle may pass on to it an epidemic disease. Occasionally bisons can be seen at Neterhat, which is a tourist centre, but to encourage these shy animals to come out more frequently on the Neterhat plateau forests to the south and east of the plateau (the Oria, Hasomar, and Rajadera blocks) too must be constituted into a sanctuary. At present the sanctuary, the Baresand block, is to the west of the plateau.

The last rhinoceros was shot in Champaran in 1939. The Ramnagar Dun forests which adjoin the Nepal terai came under the State management only in 1950. The Bettiah forests near Bagaha are still not under direct State management. A sanctuary extending from the Nepal border to Bagaha across the Ramnagar Hills would help protect the rhinoceros, deer, tiger, leopards and the Kalij pheasant (*Lophura leucomelana*) which occurs in Bihar only in the Ramnagar hills. It might be necessary to reintroduce rhinoceros from the Assam or Bengal sanctuaries though it is possible that some animals may seek refuge here from the Nepal terai. Elephants may similarly be established here but transplanting from Singhbhum may be faster and is advisable.

Rhinoceres may also be established by stocking in the Purnea district if the vast grassy plains near Araria are afforested or the existing forests protected. The Araria plains may be

excellent sanctuary for the Nilgai and some deers. Being close to the tourist route to Darjeeling a sanctuary in Purnea may be of importance.

The ground birds—peafowl (*Pavo cristatus*), Partridges (*Francolinus spp.*), Jungle fowl (*Gallus spp.*), Moorhen (*Gallinula chloropus*), etc., would receive automatic protection if grazing is forbidden in sanctuaries and restricted in other forest areas. These birds also suffer from fires but fire-control is a measure that the forest authorities are striving for economic reasons.

The Kalij, the only pheasant found in Bihar, is urgently in need of protection in the Ramnagar hills. Its introduction at Neterhat and in the Horhap reserve is desirable.

There are five ducks breeding and resident in Bihar. These are: the Pink-headed Duck (*Rhodonessa caryophylacea*), the Nukta (*Sarkidiornis melanotos*), the Silli (*Nettapus coromandelianus*), the smaller Silli (*Dendrocygna fulva*), and the Whistling Teal (*Dendrocygna javanica*). The Pink-headed duck at the turn of this century was known to occur only in north Bihar and is feared to have been exterminated. A pair shot late in the 1920's is on exhibition in the Patna museum. A sanctuary in the Kosi area should afford protection to these resident ducks and might even allow an isolated pair of Pink-headed ducks to breed and multiply in safety.

The migratory birds cannot be protected adequately in Bihar where they come only in winter, a non-breeding season. A sanctuary *chaur* or lake should, however, enable visitors to see hordes of birds without the latter being gun-shy. Such a sanctuary could be established anywhere in north Bihar but the administration of such a sanctuary could be feasible only if it is situated close to a State forest area. If the forests at Bakhtiar-pur Simri (in north of the Monghyr district) are taken over by the State, a *jheel* nearby would be an excellent sanctuary. So could be any of the *jheels* at Champaran near the Ramnagar forests.

To induce migratory birds to frequent the lakes of the Damodar and Mayurakshi valleys all shooting and netting on these lakes should be forbidden for the first five years.

After a general survey of this sort it would be helpful to indicate the order of their priority of the conservation schemes as follows:—

- (1) The Baresand sanctuary should be extended to include the Neterhat plateau and the forest blocks to the south and the east of that plateau. The area of the sanctuary should be increased from its present 50 square miles to nearly 200 square miles. Such a big sanctuary would afford adequate protection to deer and the carnivores, and give room to the bison to roam a bigger territory than the restricted one to which it has been confined. The Chausingha and wild elephants could be reintroduced here and Kalij pheasants let loose on the Neterhat plateau. Neterhat is a tourist resort and a big sanctuary around it well stocked with wild life should increase its attractions.
- (2) A small sanctuary should be established at the Horhap reserve primarily for Cheetal and Kalij which should be made so bold that tourists can see them on short trips from Ranchi, 15 miles away.
- (3) The Parasnath Hills should be declared a sanctuary area. This is a suggestion made by the 'Delhi Memorandum' on wild life preservation.
- (4) The hills at Rajgir under afforestation at present should be constituted into a sanctuary.
- (5) A large sanctuary about 100 square miles in area should be established in Champaran because that district (and Palamau) have the most interesting wild life in this State. The Champaran sanctuary should be stocked with rhinoceros and wild elephants from other sanctuaries.
- (6) The Araria plains should be constituted into a sanctuary for deer and Nilgai, but Rhinoceros may be introduced.

- (7) A forest and marsh area in the Kosi area must be saved from land reclamation and constituted into a sanctuary. Such a forest will yield considerable revenue, mitigate fuel shortage in the plains districts and preserve deer, wild hog (*Sus cristatus*) and carnivores. It would afford a safe breeding area for our resident ducks and might even help reappearance as a noticeable species of the Pink-headed duck.
- (8) A jheel in north Bihar (in Champaran or north Monghyr) should be constituted a sanctuary for migratory birds.

Other proposals are the establishment of sanctuaries at Rohtas plateau, in Dhalbhum forest division and stoppage of all grazing in those sanctuary areas.