One solution is to set up trust funds for a protected area where money can be paid in the near term but disbursed over the long term.

**Recommendation**

The traditional short-term approach to ICDP has not been successful after more than two decades of trying. ICDPs need a different approach if they are to succeed. Making ICDPs operate over a longer term is a critical first step that will move the projects closer to the time frame of nature rather than the time frame of donors and give ICDPs a better change of helping to conserve biodiversity in developing countries.

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# STATUS OF *Rhinoceros unicornis* IN ORANG NATIONAL PARK, ASSAM

*by B. Hussain*

**Introduction**

Assam is the home land of the Indian One-Horned Rhinoceros (*Rhinoceros unicornis*), which at present it is found only in certain grassland swampy pockets of Assam and West Bengal in India and in Nepal. This endangered species is presently limited to three protected areas in Assam, namely Kaziranga National Park, Orang National Park and Pabitora Wildlife Sanctuary. The present study focuses on the status of *Rhinoceros unicornis* in Orang National Park.

**Study Area**

Orang National Park lies between 26°30'N-26°40'N and 92°15'E-92°30'E. Archaeological remains give evidence of a Shiva Temple, proving existence of a human settlement. The area was abandoned, perhaps due to some epidemic (Talukder and Sharma, 1995). It was first declared a Game Reserve with an area of 80.54 km$^2$. It was later upgraded to a Wildlife Sanctuary in September 1985, with an area of 75.6 km$^2$. Another 3.21 km$^2$ was added to the Sanctuary in 1991. In consideration of its importance, Orang was declared a National Park in April 1999, with an area of 78.81 km$^2$.

The southern part of the park has the natural barrier of the Brahmaputra River. The park is situated at the alluvial flood plains of the Brahmaputra River and most of its area is seasonally flooded by the Brahmaputra and its tributaries the Dhansiri and Pachnoi.The average annual rainfall is 3,000 mm. The annual average minimum and maximum temperatures are 7°C and 32°C respectively, and the humidity ranges from 66% to 95%. The altitude ranges between 30 m to 80 m above sea level.

About 50% of the area (36.45 km$^2$) of the national park is grassland and 12.6% (9.53 km$^2$) is swamp. The other parts of the park have mixed deciduous forest, i.e. natural forest patches of 1.98 km$^2$ (2.60%) and planted forest patches of 9.83 km$^2$ (13.60%). It also has a river island area of 9.04 km$^2$ (11.95%).

The park has pure grassland with associations of *Themeda villosa, Arundo donax, Phragmites karka, Erianthus ravannae, Apluda mutica,* etc.

The natural forest is mainly composed of *Sterculia villosa, Melia azadiratchta, Tooña ciliata, Dysoxylum binectariferum, Albizia procera, Callicarppa arborea,* etc. The planted forest patches are mainly composed of *Dalbergia sisso, Bombax cieba, Acacia catechu, Gmelina arborea, Anthrocephallus kadamba, Tectona grandis,* etc. (Nath and Chowdhury, 1994).

**Population Status**

Orang National Park provides an ideal habitat for the rhino and a census carried out in 1991 showed an increasing trend over the 1985 census. It is a matter of great regret that the authority could not maintain the increasing trend after 1995, and that during the period 1995 to 1999, the mortality rate increased significantly. The 1999 census showed a more than 50% reduction in the population of rhinos over the previous census. The census records show the population pattern of rhinos in the national park as follows:

| Year | Adult | | | Sub Adult | | Calf | Total |
|---|---|---|---|---|---|---|---|
| | M | F | Unsexed | M | F | | |
| 27.8.85 | 23 | 23 | — | 7 | 2 | 10 | 65 |
| 30.3.91 | 28 | 41 | 5 | — | 1 | 22 | 97 |
| 30.3.99 | 17 | 17 | 1 | 3 | 2 | 6 | 46 |

The main threat to the rhinos of Orang National Park is heavy poaching activity. The mortality among rhinos due to poaching from 1983 to 1994 was 41. But mortality due to poaching between 1995 to 1999 was about 35. Poachers take full advantage of the poor protection system in the national park, and rhinos also stray out of the park during the night to forage in the surrounding villages. The national park is surrounded on three sides by villages and this makes the park more vulnerable to poaching. The poachers used to take shelter not only in the villages, but also in the riverine island of the Brahmaputa. The poachers are mostly outsiders who hire local people as guides and take full advantage of the weak surveillance in the park. Nowadays, poachers use sophisticated guns to kill the rhinos. In addition to guns, they also use the pitfall method and poison. To cope with the problem, the Forest Department set up 22 camps inside the national park, but this is still not adequate.

**Rhino Conservation Approach**

The State of Assam has been taking initiatives since the beginning of the 20th century to protect this rare species. The Assam Rhinoceros Prevention Act was adopted by the Government of Assam in 1915, which prohibits hunting of rhinos in Unclassed State Forest. In 1954, The Assam Rhinoceros Prevention Act provided protection to this rare species in all areas of the State. In 1976, the Indian Wildlife Protection Act 1972 came into force, which provides stringent protection to the wildlife of Assam, including the rhinoceros.

The Indian Action Plan for Rhino Conservation includes the following components (Talukder, 1999):

1. Habitat protection and restoration
2. Creation of corridors for migration
3. Proper communication network
4. Anti-poaching squads and strike force
5. Training of wildlife personnel
6. Arms training to protection staff
7. Research and monitoring
8. Eco-development works
9. Education and Public Awareness Program
10. Relocation of enclaved villages through persuasion
11. Veterinary care

12. Translocation of animals for rehabilitation
13. Development of intelligence networks;
14. Rewards for good work and case detection

The main reason for poaching of rhino is the high value of rhino horn in the international market. Rhino horn is used in traditional medicines in China, Taiwan, Japan and South Korea. It is used in medicines as an anti-pyretic, for treating paralysis, high blood pressure and body pain. Also for the treatment of renal disorders, haematemesis, hepatic malfunctions, pulmonary disorders and proper circulation. Rhino horn is made into traditional dagger handles in Yemen and Oman. It is used in rings as a lucky stone and as an alleged aphrodisiac. It is also used in six principal Tibetan medicines marketed in India and in cutlery to detect poison (Hanfee, 1998).

Though there are many Acts and Action Plans to conserve the rhinos in Assam, the poaching of rhino is going on unrestricted in the State. The primary reason for this trend is the slackness in the implementation of the Acts by the Government of Assam. Sometimes political interference also helps the poachers escape penalties and punishment.

According to the last census (1999) records, there are 1,672 rhinos in Assam (Kariranga NP - 1,552; Pabitora WLS - 74; Orang NP - 46). It is encouraging news that the rhinos have increased favorably in Kaziranga National Park (in 1993 - 1,164 rhinos) and in Pabitora Wildlife Sanctuary (in 1993 - 56 rhinos). But no rhinos have been observed in Manas National Park or Laokhowa Wildlife Sanctuary at present. In 1983 there were about 80 rhinos in Manas NP and 50 in Laokhowa WLS. Now that Manas NP is occupied by an armed force, there is no hope for the survival of any rhinos. Laokhowa WLS was the habitat of 50 rhinos until 1983, but the entire population was wiped out by the poachers during the ethnic violence in Assam in 1983, when all arms were withdrawn by the Administration from the forest camps. Therefore, the government should make strong efforts to prevent Orang NP from becoming like Manas and Laokhowa.

Rhino poaching in Orang NP was nil in 1990. Two rhinos were taken in 1989, 1 in 1991, 2 in 1992, and 1 in 1993. Fewer incidences of poaching were the result of the efficient protection and conservation measures employed during that time by the authorities. However, between 1995 to 1999, about 35 rhinos have been killed by poachers, which reveals that the park is not receiving adequate protection measures to conserve and protect the rhinos from poachers.

It is now time for the Government of Assam to take strong initiatives to stop the poaching in the State of Assam by implementing and modifying the present existing laws, and the forest personnel should implement the acts and laws properly. NGOs should also take bold steps with their awareness program in the fringe areas of rhino habitats to give strong protest against political interference. This grave situation should be realized by all concerned and effective measures must be taken immediately to save this rare species from total extermination from its natural habitat.

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