
A REPORT ON RHINO SITUATION AND ACTION PLAN IN ASSAM

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INTRODUCTION

Rhinoceros unicornis (Indian One-horned Rhino) which had once a large area of its distribution along the flood plains of Indo-Gangetic and Brahmaputra riverine tracts has now been confined into few pockets in its former range. In Assam, even in the present century this species was distributed all along the Brahmaputra flood plain till the late sixties. But gradually with the influx of human settlements and agricultural practices coupled with ruthless killing, the animal has ultimately been pushed into a few pockets in the Brahmaputra Flood Plain.

The primary reasons for diminishing of the rhino population are :

1. The natural habitat of the rhino is most suitable land for agriculture and thus the human population started encroaching into the rhino habitats in the process of extending agriculture.
2. The rhino horn has traditionally been attributed to have powers of curing complicated human ailments, bringing good fortune and has for long time believed to be of aphrodisiac value. Thus, the species became vulnerable to large scale poaching.

By the turn of the present century, the status of the species even in the above areas went so precariously low that its future existence became extremely doubtful. But, due to timely measures taken up by the Government of Assam to save the rhinos in these areas, the status of the rhino population has gradually been increased.

The first effort made to conserve rhino was taken up as early as 1908 when Kaziranga was declared as a Reserved Forest with the primary objective of protecting the rhinos. The result of this conservation effort is highly encouraging from the fact that during a period of 90 years, rhino population has increased from about a dozen to 1,200. This conservation effort was extended to other rhino bearing areas in the State. Presently, the State has the following major rhino bearing areas:

- i) Kaziranga National Park,
- ii) Orang Wildlife Sanctuary,
- iii) Pobitora Wildlife Sanctuary,
- iv) Manas National Park,
- v) Laokhowa/Burachapori Wildlife Sanctuary.

Despite constant efforts of the Government, the rhino population of Laokhowa faced an unfortunate setback during 1983 in the wave of Assam Agitation. The entire rhino population of this sanctuary was eliminated by poachers. Similarly, due to the ethno-political uprising around Manas National Park since 1988-89, the situation became almost uncontrollable. The infrastructures were damaged, field staff were killed and kidnaped which demoralized the anti-poaching staff.

LEGAL ASPECTS

In the process of the conservation effort, the Assam Government took up various measures. The "Rhinoceros Preservation Act" was enacted during 1915, which prohibited hunting of rhino even in the unclassified forest areas of the State. Subsequently, in 1954, this act was made more stringent through promulgation of the "Assam Rhinoceros Preservation Act", which was made operative all over the State.

Besides, the "Assam Forest Regulation", 1891 also provided protection to the wild animals, birds and reptiles as well as their habitats in the reserve and unclassified forest areas.

Finally, the "Wildlife Protection Act, 1972" has been adopted in the State since 1976. This Act, amended from time to time and considered to be adequate to deal with the legal problems of all the species of wild animals and its habitats, particularly the endangered species including the 'Schedule-I' animals of the said Act.

LEGAL STATUS OF THE RHINO BEARING AREAS

1. KAZIRANGA NATIONAL PARK

Kaziranga was first declared as a reserved forest during 1908 with an area of about 208 km² with the primary objective of conserving the rhinos. It was declared as a Wildlife Sanctuary in 1950 and ultimately constituted to a National Park in 1974 with an area of 430 km². It was declared as *World Heritage Site* during 1985.

The habitat of the Kaziranga National Park is mainly composed of the following forest types:

- 1) Eastern wet Alluvial Grassland (1/4/4D/2S);
- 2) Eastern Dillenia Swamp Forest (1/4/4D/SS).

The area under different biomes are:

Tall Grassland	-	52%
Woodland	-	29%
Swamp/Marshy	-	5%
(Short Grass) Beels	-	7%
Sand cover	-	7%

2. MANAS NATIONAL PARK

Manas Wildlife Sanctuary was brought under Project Tiger in 1973 with a core area of 391 km². It was declared as a National Park in 1990 with an area of 500 km². Manas was declared as a World Heritage Site in 1985 and a Biosphere Reserve during 1989.

The habitat of Manas National Park is composed of the following forest types:

- 1) Sub-Himalayan High Alluvial Mixed Deciduous Forests (2B/C/S);
- 2) Eastern Malayan Moist Mixed Deciduous Forests(3C/C3);
- 3) Low Alluvial Savannah Woodland (3/S);
- 4) Assam Valley Semi-Evergreen Forests (2B/C/ (a,b)).

3. ORANG WILDLIFE SANCTUARY

Orang-Wildlife Sanctuary was proposed during 1985 and finally notified as a Wildlife Sanctuary in 1998 with an area of 78.807 km²

The habitat of Orang Wildlife Sanctuary is composed of the following forest types:

- 1) Eastern Himalayan Moist Mixed Deciduous Forest (1/3/3C/C b);
- 2) Eastern Seasonal Swamp Forests (1/4/4D/SS);
- 3) Eastern Wet Alluvial Grassland (1/4/4D/24) and
- 4) Khoir-Sissoo Forests (11/5/1S).

These forests cover the wooded and grass land areas except on the plantations raised since 1931 till 1985.

The land use pattern of Orang Wildlife Sanctuary is as follows:

Wood land (with plantation)	-	16.2%
Thatch area	-	18.8%
Tall Grass area	-	40.9%
Water Bodies/Swamp	-	12.6%
Chaporil/Sandy area	-	11.95%

4. POBITORA WILDLIFE SANCTUARY

Pobitora was proposed for wildlife sanctuary during 1987 and finally notified in 1998 with an area of 38.806 km².

The habitat of the sanctuary is almost similar to that of Orang Wildlife Sanctuary. The following forest types exist in the area:

- 1) Low alluvial Savannah Woodland (*Salmalia-Albizia*)(1/3/1S);
- 2) *Barringtonia* Swamp Forest(1/4/4D/SS);
- 3) Eastern Wet Alluvial Grassland (1/4/4D/25) &
- 4) Northern Moist Mixed Deciduous Forests (1/3/3C/C/2S).

Different biomes and their extents in the sanctuary are as follows:

- | | | |
|-----------------------|---|--------|
| 1) Woodland | - | 22.84% |
| 2) Grassland | - | 62.25% |
| 3) Swamp/Water bodies | - | 14.91% |

5. LAOKHOWA WILDLIFE SANCTUARY

Laokhowa Reserved Forest was declared as a Wildlife Sanctuary in 1996 with an area of 79.107 km².

The habitat of Laokhowa Wildlife Sanctuary contains the following forest types:

- 1) Low Alluvial Savannah Woodland (1/3/3C/C,2S,)
- 2) Riparian Fringing Forests (1/4/4/RS).

PRESENT CONSTRAINTS

1. POACHING

Though the poaching of rhino is not a recent phenomenon but the pressure on poaching has increased manifold. Primary reason for poaching is for its horn which fetches a high price in the international markets. The rhino has become the target of the organized professional poachers supported by national/internal smugglers. Containing poaching has thus become an extremely hard task. The poachers continually change their poaching techniques to outwit the anti-poaching staff. Though the age old practice of pit-poaching is still continuing, the electrocution method and use of sophisticated firm arms, sometimes fitted with silencers, are also used frequently. Moreover, the incidents of poaching take place any time of the day and night. The poachers take advantage of the difficult terrain of the rhino bearing areas. A statement showing the total number of rhinos killed by poachers in the State since 1988 is given below:

Year	K.N.P.	Orang	Pobitora	Manas	Other Areas
1988	24	8	-	1	4
1989	44	5	4	6	7
1990	34	-	2	1	6
1991	22	1	1	2	2
1992	48	2	3	11	2
1993	40	1	4	22	3
1994	14	7	4	4	2
1995	27	10	4	1	2
1996	26	9	4	-	1
1997	12	11	4	-	2
1998	8	12	4	-	1

In spite of all odds, the anti-poaching staff in the rhino bearing areas are combating the poachers with full dedication. A statement showing poachers killed during encounters, arrested, arms and ammunition seized in rhino bearing areas in the State is given below:

No. of poachers killed

Area	1994	1995	1996	1997	1998
K.N.P.	12	6	9	6	3
Manas	7	3	1	-	1
Total	19	9	10	6	4

No. of poachers arrested

Area	1994	1995	1996	1997	1998
K.N.P.	60	29	19	16	19
Manas	13	7	2	12	-
Pobitora	3	-	-	-	-
Orang	-	-	7	-	-
Total	76	36	28	28	19

Arms seized in K.N.P.

Arms	1994	1995	1996	1997	1998
Rifle	4	1	4	6	2
Gun	7	4	3	2	-
Carbine	1	1	1	-	-
Total	12	6	8	8	2

Ammunition seized (in rounds)

Area	1994	1995	1996	1997	1998
K.N.P.	72	25	71	57	435

2. BIOTIC INTERFERENCE

The rhino bearing areas are mostly devoid of human settlement but these areas are subjected to tremendous biotic pressure mainly in the form of cattle grazing and collection of forest produce illegally. Prohibition of cattle grazing in these areas is one of the very important aspects as this may prevent the spread of contagious diseases like Anthrax, FMD, Rinderpest, etc. In area like Pobitora, grazing pressure is tremendously high as the sanctuary is surrounded by human habitations and more than 3,000 cattle graze inside the sanctuary. About one third of Pobitora's rhino tend to stray out during night and about 75% of poaching incidents take place outside the sanctuary boundary. This biotic interference has created problems in the rhino bearing areas, particularly in Pobitora, Laokhowa and Orang Wildlife Sanctuary.

3. DEGRADATION OF HABITAT

As a result of heavy grazing not only have the habitat attributes been adversely affected but an ecological process of invasion of weeds is also occurring. In the long run, this will create forage problems for the rhinos.

Siltation of water bodies in the rhino bearing areas is also another major problem. Siltation in the rhino bearing areas, particularly in Kaziranga National Park, Orang and Pobitora Wildlife Sanctuaries is becoming prominent in the last two decades. The water bodies in these areas are gradually silted up causing reduction of short grassy areas which is vital foraging site of the rhino.

4. FLOOD/EROSION

The Indian Rhinos appear to prefer the grassland habitat along the rivers/*beels* where more moderate climatic conditions prevail. Climate is strongly influenced by monsoon and hence flooding is a regular feature.

Annual flood is essential for maintaining the ecology of the rhino habitat. The problem arises when there is an incidence of high flood. During high flood the infrastructures, like roads, bridges, anti-poaching camps are damaged along with loss of animal lives. During the recent high flood in Kaziranga National Park as many as 651 animals were drowned/washed away including 39 rhinos, apart from causing heavy damages to the infrastructure of the Park. In Kaziranga National Park and Orang Wildlife Sanctuary, the river Brahmaputra flows along the northern and southern boundaries respectively. Thus during the high flood, erosion takes place reducing the foraging areas of rhino.

Ecological process of reclamation of grassland by tree land is detrimental to the habitat requirements of the rhino population. Though annual control burning holds the natural successional process at grassland stage yet colonization of fire-hardy tree species thrive and gradually make burning ineffective. The invasion of tree land into the grassland is observed to be prominent particularly in Pobitora, where within a period of 20 years about 13% grassland is lost to tree land. Similarly, tree cover in Orang Wildlife Sanctuary and Kaziranga National Park is invading into the grassland areas.

5. STATUS OF RHINO IN ASSAM

Scientific census of rhino was first carried out in Kaziranga National Park in 1966. Since then, regular census has been carried out in every 6th year in Kaziranga National Park. Census of rhino has also been carried out in Orang and Pobitora Wildlife Sanctuary since 1985 and 1987 respectively. In Manas

National Park and Laokhowa/Burachapori Wildlife Sanctuary, no census have so far been carried out. As stated in the foregoing paragraph, the rhino population in Laokhowa Wildlife Sanctuary was wiped out during 1983 when 40 rhinos were killed by poachers during the Assam Agitation. Recently, a few stray rhinos were found to have taken shelter in the area. However, without firm protection measures, the future of the rhinos in this protected area cannot be ensured. Prior to the beginning of the ethno-political uprising during 1989, the rhino population in Manas National Park was estimated to be around 80 in number.

A statement showing the rhino population in different Rhino bearing areas of the State as per census is given below:

Kaziranga N.P.		Orang Wildlife Sanctuary		Pobitora Wildlife Sanctuary	
1966	366	1985	65	1987	56
1972	658	1991	97	1993	56
1978	939	1999	46	1995	65
1984	1080			1999	76
1991	1129				
1993	1164				
1999	1650				

ACTION PLAN

Assam has a century-long rhino conservation history. Both government and the people of this area are dedicated to the cause of conservation of this magnificent species. Unlike the situation in other parts of the globe, the rhino population despite all odds has increased favourably in the State of Assam. The State now is harbouring around 1,750 rhinos, which is about two-thirds of the world's One-horned Rhino population. The major problems in conservation of this species are due to increased agricultural practices, degradation of habitat and poaching for its horn. Poaching has been aggravated by easy availability of illegal sophisticated fire arms across the border taking advantage of the prolonged law and order situation in the region. In such a situation, strong anti-poaching activities with firm commitment for funding is essential. Effective implementation of international ban on rhino horn trade and generating public awareness for conservation are also necessary for sustaining the rhino population in the State.

ANTI-POACHING ACTIVITIES

The success story of increased rhino population in Kaziranga National Park and other rhino bearing protected areas of Assam is primarily due to effective anti-poaching network built up in these areas. The parks and sanctuaries are divided into various administrative compartments. Anti-poaching camps are set up in the vulnerable areas. Communication networks, like road, bridge and patrolling path are built up connecting the camps. Wireless facilities are also provided to most of the camps. For effective patrolling jeeps, boats and elephants are also provided. The facilities provided presently are not at all

adequate. From experience, it is found that poachers are armed with sophisticated fire arms. As such, supply of sophisticated fire arms to the anti-poaching staff is very essential.

HABITAT RESTORATION

Ecological management of rhino habitat necessitates the maintenance of sufficient areas of swampy grassland. The relative abundance of animals in an area changes as per the stand condition or successional stages consisting therein. In rhino bearing areas, emphasis has only been given to anti-poaching activities with the view of protecting the rhinos. In wildlife management, the ecological consideration is an essential and fundamental pre-requisite. This aspect has appeared to be not properly viewed. With increase in population of rhinos, future management plan will have to be cognizant of the new diverse problems and research will be obligatory to resolve such ecology related problems. Since 1966, the population of herbivores in Kaziranga National Park has more than doubled. This has become possible due to the fact that in this park, except for the rhino poaching, the poaching of other animals are almost negligible. Due to fragmentation and degradation of elephant habitat in the Karbi Anglong Hills the rotational grazing of elephants in its home range is disturbed increasing its population by 213% since 1966. Similarly, during this period, the buffalo population has also increased by 119%. These two coarse grazing animals have become the main competitor to the rhinos in the park.

Creation of artificial highland inside Kaziranga National Park to save the rhinos during the high flood is essential. Though this problem was not acute in the long past as the animals could migrate to the natural highlands in the Karbi Anglong Hills, adjacent to Kaziranga National Park but due to human settlement, establishment of tea gardens, markets, construction of highways, etc., the ecology of Kaziranga has been fragmented.

Restoration of *beels*/water bodies inside the protected areas is also another vital necessity. Due to siltation, swampy areas will be colonized by tall grasses. Aquatic flora as well as the short grasses which grow only around the water-bodies are of high forage value. Since 1967, about 25% of the wet land in Kaziranga National Park has been lost. Similarly, in other rhino bearing areas, particularly in Pobitora Wildlife Sanctuary, the wetland is gradually silted up. In view of such situation, de-siltation works are to be carried out in large scale in these protected areas.

FACILITIES TO THE FIELD STAFF

The anti-poaching staff posted in the protected areas have to perform a much more arduous and risky job. The field staff should be provided with sufficient incentives and other facilities, like accommodation in the form of transit camps for their families, health care, education for the children including regular supply of logistic support¹.

TRAINING OF PERSONNEL

Adequate training of field staff in Wildlife Conservation is a basic necessity. Such facilities are not available in the institutions of the State. Though the higher level personnel have the scope of undergoing wildlife management training outside the State, the lower level field staff do not have such scope. Hence, imparting such training to all levels of staff including arms training is also essential.

PEOPLE'S AWARENESS

¹ [Editors] The Rhino Foundation for Nature in North Eastern India, with a grant from the USFWS Rhino & Tiger Conservation Fund, has provided uniforms, boots and field equipment to field staff in most Conservation Areas in Assam.

To make the conservation programme more successful, people's participation in such conservation programmes are to be taken up, particularly in the fringe villages of the protected areas through various publicity media.

LEGAL CELL

Though, with the successive amendments, the Wildlife (Protection) Act, 1972 has been made more stringent, yet problem of effective implementation in the field is still inadequate. Field staff are to be trained about the legal provisions and their proper implementation. Various law enforcing and implementing agencies are to be sensitized in controlling the wildlife crimes. To pursue such activities, a legal cell is essential to be set up with eminent lawyers and counselors.

INTELLIGENCE NETWORK

Apprehension of poachers inside the protected areas is not an easy task. Particularly due to difficult terrain in the rhino bearing areas, the poacher can escape with less difficulties. It is, therefore, very essential to set up intelligence network to elicit information about poachers before they enter into the park.

VETERINARY CARE

In all the rhino bearing protected areas, working elephants are provided for anti-poaching and supply of ration during summer season. These working elephants need proper care and upkeep. Though there are veterinary units in Kaziranga and Manas National Park, no such units are available in other protected area. So, establishment of Veterinary Units in each protected area with all equipments and medicines including tranquilizing facilities are to be set up.

FLOW OF FUNDS

The development and maintenance works in the protected areas are time-bound. As such irregularity/delay in flow of funds will definitely upset the anti-poaching activities.

MONITORING

For effective management, monitoring of the rhino population in the protected area is necessary. For this, scientific census of the rhino population at a regular interval is a must.

TRANSLOCATION/RE-INTRODUCTION

As described in the earlier paragraphs, there are suitable rhino habitats apart from these 5 rhino bearing areas. These are - Sonai-Rupa, Pani-Dehing, Dibru-Saikhowa, etc. These areas have already been brought under the protected area network. In Laokhowa and Burchapori, though there is no settled rhino population, it can be restored by providing adequate protection.

In view of such a situation, rhino from adjoining rhino bearing areas can be translocated and rehabilitated in the above areas. Sufficient infrastructures have to be built up for such purpose. This will ensure the long-term in situ conservation of rhinos.

ECO-DEVELOPMENT

It is needless to emphasize that people's participation in the conservation effort is unavoidable. Particularly, people in the fringe villages are to be involved in conservation programme. It is apparent that in the process of building up of the Protected Area Network, the fringe villagers are the worst

sufferers. They are deprived of the forest produces required by them for their day to day livelihood. In addition, they become the victim of wildlife deprecations including loss of life. Thus, the people have to face severe economic hardship. To ameliorate the economic hardships of these people, economic support in the form of eco-development programme has become very essential.

RESEARCH WORK

With the passage of time, management in the rhino bearing areas has become critical. The management technique must be supported by proper research oriented work. Proper research about rhino and its habitat, siltation, fodder availability, burning etc., are necessary to carry out in the state, which have not been done so far.

FINANCIAL ASPECT

Initially, the entire effort for conservation of rhinos had been born by the State Government as part of the forestry budget. Thus, the financial input had obviously been very small and grossly inadequate. With the increase of rhino population in the protected areas and gradual change of management strategies, the requirement of financial input has enlarged.

The Government of India had introduced a scheme "Conservation of Rhinos in Assam" during 1985 for five years. In addition to this, Government of India has provided financial support in the form of 50:50 and 100% assistance for conservation of rhinos and other wildlife in the protected areas of the State.

Recently, various funding agencies, like WWF, UNESCO, EIA, etc. have come up with financial assistance for conservation and protection works in Kaziranga and Manas National Parks. This has helped in managing the protected areas, considerably. Such type of help is always welcome by the Government.

FINANCIAL AND PHYSICAL OUTLAY AND PHASING

The present budget allocated to different rhino bearing areas are too meager to the management of the protected areas. To implement the Action Plan, budgetary allocation has to be raised. An estimate of funds to be raised along with the present allocation is indicated below:

	Figures in Millions (Rupees)					
	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr.	Total
Fund available	42	48	54	60	66	270
Fund to be raised	65	70	75	80	80	370

(Total fund to be raised is 370 Million rupees)

Most major protected areas in Assam hold Rhino population and therefore are being dealt with priority. But, the total forestry budget itself is very poor and inadequate compared to the requirement.

Besides normal expenditures incurred in the protected areas, several schemes have also been introduced in these areas for better and more intensive management. These are:

STATE SCHEMES

- 1) Improvement/Strengthening of Wildlife Organization;
- 2) Development/Management of Other Wildlife Areas;
- 3) Development/Management of Protected Areas;
- 4) Conservation of Rhinos in Assam.

50 : 50 CENTRALLY SPONSORED SCHEME

- 1) Tiger Project.

100% CENTRALLY SECTOR SCHEMES

- 1) Eco-development Scheme around National Parks & Wildlife Sanctuaries;
- 2) Eco-Development Scheme in Manas National Park;
- 3) Biosphere Reserve;
- 4) Assistance for Development of National Parks and Wildlife Sanctuaries;
- 5) Project Elephant.

PHYSICAL TARGET

The following items of work have been selected to be funded, if, and when, funding is available on priority basis.

HABITAT IMPROVEMENT INCLUDING EXTENSION

- 1) Creation of highlands for providing shelters to the wildlife during floods,
- 2) Acquisition of high lands for addition to the natural habitats of the Rhinos as an added measure to provide shelter to the rhinos during floods,
- 3) De-siltation of the silted up water bodies,
- 4) Eradication of exotic weeds and water hyacinth for improvement of fodder,
- 5) Soil conservation measures,
- 6) Manipulation of habitat.

MANAGEMENT

- 1) Strengthening communication network,
- 2) Strengthening anti-poaching measures,
- 3) Strengthening enforcement and legal proceedings,
- 4) People's awareness and natural interpretation,
- 5) Improvement of veterinary care and research,
- 6) Training and research,
- 7) Relocation of villages.

ECO-DEVELOPMENT PROGRAMME IN THE FRINGE AREAS

This programme will be site-specific as such planning will involve peoples' participation in planning and also implementation. Some of the salient priority activities as identified by the Government of India for eco-development, as mentioned below, may be taken up:

- 1) Micro level eco-development planning;
- 2) Initiation of eco-development activities aimed at environmental conservation, biomass generation, income generation and protected area management;
- 3) Human resource development;
- 4) Research and development;

- 5) Environmental education and awareness;
- 6) Monitoring.

Besides, some other activities may be taken up prior to or concurrent with the project, more as a support than as a part of the project. These are:

- 1) Preliminary indicative planning;
- 2) Eco-development training for the Park Directors/Field Directors and other officers;
- 3) Management planning;
- 4) Captive breeding, translocation and rescue home;
- 5) Monitoring.

The demand for funds for the State of Assam is actually much higher than what has been projected here. Only the more important and salient programmes have been included in this plan.

SALIENT FEATURES OF THE RHINO BEARING PROTECTED AREAS

KAZIRANGA NATIONAL PARK

Declared Reserved Forest in 1908	-	Area - 228.830 km ²
Declared Game Reserve in 1916	-	Area - 277.654 km ²
Declared Wildlife Sanctuary in 1950		
Declared National Park in 1974	-	Area - 429.93 km ²
Declared World Heritage Site in 1985		
Present area in 1998	-	Area - 473.717 km ²

ORANG WILDLIFE SANCTUARY

Declared Game Reserve in 1915	-	Area - 80.679 km ²
Proposed as W.L. Sanctuary in 1985	-	Area - 75.608 km ²
Declared as W.L. Sanctuary in 1998	-	Area - 78.807 km ²
Present area in 1999	-	Area - 78.807 km ²

POBITORA WILDLIFE SANCTUARY

Declared as Reserved Forest in 1971	-	Area - 15.847 km ²
Proposed as W.L. Sanctuary in 1987	-	Area - 38.83 km ²
Declared as W.L. Sanctuary in 1998	-	Area - 38.806 km ²
Present area in 1999	-	Area - 38.806 km ²

MANAS NATIONAL PARK

Declared as Reserved Forest in 1905	-	
Declared as Game Reserve in 1928	-	
Declared as W.L. Sanctuary in 1950	-	Area - 391.00 km ²
Declared as Tiger Reserve in 1973	-	Area - 391.00 km ²
Declared as Biosphere Res. in 1989	-	Area - 2,837.00 km ²
Declared as National Park in 1990	-	Area - 500.00 km ²
Decl. as World Heritage Site in 1985	-	

RESULT OF CENSUS IN RHINO BEARING PROTECTED AREAS

1. KAZIRANGA NATIONAL PARK

Animal	Year of Census					
	1966	1972	1978	1984	1991	1993
Rhino	366	658	938	1080	1069	1164
Elephant	349	422	773	523	515	511
Wild Buffalo	471	555	6'10	677	1090	1034
Gaur	1	18	23	30	5	-
Swamp Deer	213	576	697	756	635	927
Sambar	120	105	215	358	55	34
Hog Deer	1311	4551	6855	987	2911	2048
Wild Boar	155	522	733	1645	555	140
Tiger	20	30	40	52	50	8
Bear	-	-	-	-	-	2
Capped langur	-	-	-	-	-	21
Gibbon	-	-	-	-	-	8

The other animals were sighted during rhino census. As per census, the population of tiger and elephant, in the Park are as follows:

	1993	1997
Tiger	72	80
Elephant	1094	945

2. ORANG WILDLIFE SANCTUARY

Animals	Year of Census	
	1985	1991
Rhino	65	8
Hog Deer	-	897
Wild Boar	-	421
Tiger	-	9
Elephant	-	5

During tiger and elephant census, following populations were found:

	1993	1997
Tiger	15	16
Elephant	6	5

3. POBITORA WILDLIFE SANCTUARY

Animal	Census Year		
	1987	1993	1995
Rhino	56	56	68

Besides rhinos, 9 feral buffalos and 30 wild boars were sighted during 1995 census.

STATE WILDLIFE WING

**CCF(WL)
CF(HQ)**

DFO ENFORCEMENT DFO PUBLICITY SR. WL. WARDEN RESEARCH & EDUCATION OFFICER

RHINO BEARING PROTECTED AREAS

DIRECTOR MANAS NATIONAL PARK

DIRECTOR KAZIRANGA NATIONAL PARK

Dy. DIRECTOR

FVO

ACF

RANGES

PANBARI BASBARI BHUYAPARA

DFO MANGALDOI WL. DIVN

RANGE

ORANG

DFO NAGAON WL. DIVN.

RANGES

PABITORA LAOKHOWA

DFO ASSAM STATE ZOO

GHORAKATI WESTERN KAZIRANGA EASTERN

DFO EASTERN ASSAM WL. DIVN.

ACF

AFPF(Bn)

RANGES

FVO

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