

**THE GREAT INDIAN ONE-HORNED RHINOCEROS (*RHINOCEROS UNICORNIS*) WITH SPECIAL REFERENCE TO ITS MAIN SANCTUARY, KAZIRANGA, IN ASSAM\***

By  
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There are five species of rhinoceros still in existence. Two of these are found in Africa and three in Asia; of the three in Asia only the Indian One-Horned Rhinoceros holds out any real hope of being preserved for future generations. The other two are the Javan One-Horned and the Sumatran Two-Horned, both of which are down to 20-50 individuals at the most,

The present status of the Great Indian One-Horned Rhinoceros is also that of an endangered species, and is entered as such in the 'Red Book' of the I.U.C.N. Its numbers are estimated at about 805 in all, and these concentrated in a limited area along the base of the Himalayan foothills from the Nepal terai in the west, through the north of West Bengal into Assam in the east.

The situation in Nepal is depressing as regards present numbers, but very hopeful in recent conservation legislation. In 1964 the estimate was 185 (E.P. Gee-Wildlife of India); in 1966 it was 100 or less (J. Spillett—Bombay Natural History Society Journal Vol. 63.3); but it is doubtful if more than 80 now remain—all in the Royal Chitawan National Park. The hopeful aspect is that Chitawan has recently been declared a National Park.

50,000 to 80,000 villagers live on the borders of the Park and upto recently, grazed many thousands of cattle within the Park whose rhino habitat has now been virtually destroyed, with the exception of the 150 acres around 'Tiger Tops'. This area has been leased to the company for 15 years by the Govt. of Nepal and the company protects it carefully so that their many foreign clients may see rhino. In 1970, and I quote from my own notes of two years ago, "The numbers of

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rhino are steadily diminishing and the last vestiges of habitat are being inexorably destroyed by the thousands of cattle and buffalo which over-run Chitawan."

However, events have been moving most hopefully there during the last year. The Govt., with the full backing of the King, allocated funds for the demarcation, re-habilitation and protection of Chitawan. The demarcation has been done, and it has been declared the Royal Chitawan National Park. The efficiency of protection against poaching increases monthly. Villages will be moved, where necessary, and alternative grazing will be found for the cattle and domestic buffalo. These are excellent steps, thanks to the interest of the former King of Nepal and his son, the present King, together with the keenness and presistence of John Blower, the U.N. Wildlife Adviser; and if continued with zeal, should ensure the existence of the rhino and the steady build-up of its numbers as its favourite habitat is gradually restored in the Royal Chitawan National Park.

In India, where this species of rhino is now confined to Assam and the north of west Bengal, its history over the last 65 years, in spite of various set-backs, is a triumph of wildlife conservation and efficient protection, especially in the famous Kaziranga Sanctuary in Assam. Early moves were made in the days of the British in India when, in 1906, the wife of the Chief Commissioner of Assam was most disappointed at failing to see rhino in this area after a day's search on an elephant. Reading the records of the earliest Kaziranga Reserve, her failure was not surprising as the numbers of rhino were estimated at about 40 and some put them as low as 20. The British Tea Planters had slaughtered nearly the lot. Luckily for the world, the Chief Commissioner's wife was a forceful lady and brought such pressure to bear on her husband that he ordered the formulation of the Kaziranga Reserve in 1907 and, with a fine disregard for the tea planters of his day, made the first step in saving this species of rhino from extinction.

Kaziranga went through bad times after World War II when poaching for rhino horn was at its height and the very people who were supposed to be protecting the rhino were in league with the poachers and shared their profits. In the early fifties there was a clean-up, followed by the excellent partnership of P.D. Stracy at the top as Chief Conservator, E.P. Gee at hand to advise and R.C. Das running the sanctuary. This combination firmly established Kaziranga as the best sanctuary for rhino, by controlling poaching and greatly increasing the numbers of all animals. India was lucky to have such men available at the time to ensure the future of the rhino and Kaziranga. It still has them, and the present staff, overall, is the keenest and more dedicated I have come across in India.

Further success has continued in the rehabilitation of the rhino since E.P. Gee (*Wildlife of India* 1964) estimated 440 for India (Assam 375 and West Bengal 65). The figure for India is now about 725, of which Kaziranga has 600+, Manas 40 with about 20 in other small reserves; while West Bengal has 65, mainly in Jaldapara and a few in Gorumara.

In 1966, Spillett (*Spillett B.N.H.S.* 1966) estimated 580 for India. There has been a decrease in certain areas due to heavy poaching for rhino horn in the small poorly protected reserves in Assam as well as outside these reserves, for which he estimated 70 and 40 respectively; of these rhinos very few remain. On the other hand, numbers in the well-protected sanctuaries have risen since 1966:—Jaldapara and Gorumara from 50 to 65, Manas 15 to 40 while Kaziranga recorded a marked increase from 400 in 1966 to over 600 in March 1972. This figure is not yet official and is being re-checked; it may well be 650. From these figures we can see clearly the effect of good administration and protection, and vice versa. There is absolutely no alternative when it comes to saving a species but the right men determined to do a good job.

The estimated status in 1972 of the numbers of Great Indian One Horned Rhinoceros can be given :—

Assam: (India)	Kaziranga Sanctuary	600+	} 660
	Manas Sanctuary	40	
	Small sanctuaries with little or no protection	20	
West Bengal: (India)	Jaldapara	60	} 65
	Gorumara	5	
	Nepal:	80	
	Chitawan	80	
		<hr/> 805	

Kaziranga Sanctuary in Assam is undoubtedly the best place for viewing this species of rhino, with Jaldapara in West Bengal a good second. In view of the importance of Kaziranga both from the rhino point of view and from good tourist facilities for viewing it and other animals, I think it is worth while giving a description of the sanctuary and some of my experiences there, during 1970 and 1972.

Its area is 430 sq. kms. (166 sq. miles), less about 38 sq. kms. (15 sq. miles) lost by erosion along the Brahmaputra river since 1950. It will shortly be increased by 30 sq. kms. (12 sq. miles) of the Mikir Hills to allow for protection of migrating elephant and hog deer.

The habitat is essentially riverine on the Brahmaputra flood plain. It consists of four main types:—

- (1) Open grassland or maidan with 70 to 200 cm. (2 to 6 ft.) high grass (*Erianthus* and *Saccharum* species), already partly flooded in the second half of May by early premonsoon rain. This is the main area for swamp and hog deer.
- (2) Tall grass and reeds (*Arundo donax* and *Phragmites* sp.) often over 4 m. (13 ft.) high and bordering:—
- (3) The many small lakes or 'bils' with interconnecting streams.

(4) Islands, usually just above flood level, covered with fairly open tropical semi-evergreen forest (*Bombax ceiba*, *Albizia* and *Lagerstroemia* species are dominant). Annual rainfall is 2,000 mm. (80").

Just as the first area, when dry or not too deeply flooded, is the favourite habitat of swamp and hog deer, with sambar largely confined to the forested islands, so the second and third areas are the ones in which rhino and wild buffalo are certain to be seen. Part of the grass-land area is burnt each year in January and February and the quickly growing new shoots attract the herbivores. The annual flooding is destructive in its erosion of the northern boundary, but beneficial in so far as it appears to be the only check on the insidious water hyacinth (*Eichhornia crassipes*) which covers parts of the lakes and water courses. Attempts are being made to rake this off the 'bils' by elephant or other power. The flood waters also irrigate the maidans and re-stock the lakes with fish for the numerous otters and water birds.

The following species and numbers were given based on a census done on the block system in March 1972:—

Rhino	600 + (though 650 were actually counted)
Wild Buffalo	550
Elephant	450
Swamp Deer	520
Sambar	200 +
Hog Deer	4,500 +
Tiger	7 sighted (probably about 20)

Of other species, pig and otter were common, both the black bears and barking deer are occasionally seen, while leopard and gaur are rare.

This well known sanctuary is rightly famous for its rhino and wild buffalo (*Bubalus bubalis*). The populations of both species appear to be in a healthy state with a good female: young ratio (178 cow rhino had calves in the recent census). Considering the area of Kaziranga and the difficulty of any extensive enlargement southwards into the Mikir Hills, it is quite possible that the present figures for these two species

represent the maximum that can be carried, and they should not be allowed to increase further, though range conditions do appear to be good. A careful study is needed, as social conditions could be aggravated with consequent fighting for territorial space.

There is, of course, the ever present danger of poaching for the rhino's horn, and killings do still occur as the poachers are professionals. They come in by night, lie up till dawn when they shoot a rhino or sometimes kill in a previously prepared pit, lie up again till night fall and then escape with their spoil. More regular patrols, in small groups and armed, since the poachers will fight, and equipped with two-way radio sets could almost eliminate rhino poaching. The present Divisional Forest Officer, who has a real love and knowledge of the sanctuary, takes the poaching hazard very seriously and is doing an excellent job, well backed by his Range Officer, Forest Guards and Game Watchers as well as fifty special armed Guards. There are 23 permanent guard camps in and on the edge of the sanctuary, with at least 3 men in each. Between all camps, lines are re-cut after the monsoon, in October, to facilitate movement of anti-poaching patrols as well as observation of animals. In certain cases where the terrain is very difficult, one or two elephants (normally for tourist use) will be sent out for a period to patrol a particular area. There is a patrolling staff of about 80 (mostly Forest Guards and Game Watchers) assisted by 50 armed Home Guards; the latter are expressly for use against the gangs of professional armed poachers. Rewards are paid to guards involved in fights with poachers: Rs. 200 to each guard directly involved in countering a poaching attempt, and between Rs. 50 and Rs. 80 to staff not directly involved but who helped in the operation.

I continue on a more personal note to give an idea of the richness of Kaziranga. We spent several evenings at a certain bridge over a water course in the Kaziranga block about 4 kms. into the sanctuary. From here, just before and after sunset, the wealth of this sanctuary's wildlife could be fully realised. There were never less than five rhino, either partly submerged in water or grazing on the banks, within 60 metres of us, and one evening there were eight. To one side and

beyond the tall reeds, where the swamp partridges (*Francolinus gularis*) were calling, stretched the open grasslands where swamp deer stags were grazing in the late sunlight and numerous hog deer were just discernible in the swaying grass. The whistle of an otter then drew our attention to the water below and there was a pair swimming past, their heads above the water. One of them, nearing the bank, stood on his hind legs and looked at us before they both dived off at speed, leaving lines of bubbles on the surface. On the silk-cotton tree (*Bombax ceiba*) above us, were two pelicans and five open-bill storks and, in the reed bed below, two purple herons, a large egret and a black bittern. *Dupetor flavicollis*, while a few minutes later a chestnut bittern (*Ixobrychus cinnamoneus*) flew in, his rich cinnamon colour as if lit from inside in the last rays of the sunset. Before the sun finally left us that evening the head of a swimming body was seen moving across a stretch of open water only about 50 m. away; we thought at first it was a large otter, but as we looked more carefully the creature swam into sunlit water and we could see the separate scales on the head of the fine monitor lizard.

Another evening in a nearby 'bil' I watched three rhino apparently cropping the underwater grass, recently flooded. All three were below the surface, showing only the horn and two ears clearly. Every minute or so, one or other of the rhino would submerge completely, disappearing from view for about 10 seconds and then re-surface with bits of mud and grass dropping from its lips. They must have been just in their depth most of the time, at nearly 2 m. of water, but now and again one of them would clearly swim in order to take up a fresh position on the bottom of the 'bil'.

Once I watched a bull rhino at close quarters alternately cropping grass and then water hyacinth. If only more of them would take to eating this insidious weed, it might not be such a menace !

It is unwise to walk much in highly populated rhino country unless one has a following domestic elephant. Rhino are not aggressive unless with calf, only curious to explore a certain smell or noise. Such a human smell must have agitated the two that came snorting and

crashing towards me through the tall grass one afternoon. Luckily I heard them sufficiently far off to be able to reach a convenient tree which I went up like a monkey. They then came up to the tree and one even appeared to look upwards to my precarious position on a low branch; afterwards, wheeling off, they made a circle through the reeds returning with snorts to the same tree. This was repeated yet again and made me so nervous I couldn't hold my camera still! Presumably they got my wind again each time they withdrew and this stimulated another sally. So, on the third circle when they reached the further point, I came down and ran the fastest half mile of my life to a waiting jeep.

There is much evidence of animals feeling a sense of security in a sanctuary. Recently an old bull rhino, sensing his end, came deliberately near a guard post on the edge of the park. The guards even fed and watered him for three days where he lay before he died.

Kaziranga has a great future and, by reason of its habitat and species, can combine most happily, wildlife orientation and development with tourist attractions. Animals can be seen easily and comfortably in their natural surroundings and although the sanctuary itself is flat, the backdrop of the snow-covered peaks of the Himalayas in the cold season, gives it a fabulous setting.

I hope to have given some idea of this magnificent sanctuary whose staff is doing such a fine job in protecting the Great Indian One-Horned Rhinoceros. They look after their tourists equally well and I strongly recommend a visit to any who can get to India.