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RESOURCES

RED DATA BOOK

VOLUME 1: *MAMMALIA*

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With the advice and guidance
of the Survival Service Commission
and its Specialist Groups and
incorporating earlier work by
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GREAT INDIAN RHINOCEROS

Rhinoceros unicornis (Linnaeus, 1758)

Order PERISSODACTYLA

Family RHINOCEROTIDAE

STATUS Endangered. Confined to riverine grasslands in parts of northern India and Nepal. Total numbers (600-700) have remained fairly constant over the past decade but only because the decline in Nepal has been partially balanced by increases in India. The main threats are modification of habitat by burning and stock grazing, and poaching. Most of the surviving rhinos occur in sanctuaries but the protection and management of these areas need improvement.

DISTRIBUTION Formerly, a large part of Northern India and Nepal; to the west of the Hindu Kush foothills, west of Peshawar and the bush country south along the Indus River, to the south of Kashmir and along the Himalayan foothills, through Terai to the Burmese border. The southerly limit of the range is not known, but the rhino would not have extended its range into the arid areas.(5) Now, restricted to eight reserves or sanctuaries in India, and to the Rapti Valley region of the Nepal Terai. Occasional rhinos are reported elsewhere, but they are probably from the reserves.(5)

POPULATION There are a number of population estimates of Indian rhino for 1959-71, which can be summarised as follows:

	<u>India</u>	<u>Nepal</u>	<u>Total</u>	<u>Source</u>
1959	400	300	700	(E.P. Gee 1963, pers. comm.
1961	440	160	600	(
1966a	575	165	740	E.P. Gee 1966, pers. comm.
1966b	580	100	680	Spillet 1967
1971	550	70	630	Waller 1971

In summary, the bulk of the Indian population of rhino occurs at Kaziranga Sanctuary where numbers (approximately 400) have been fairly stable since the mid-1960's. Total numbers in India have declined recently, principally as a result of poaching in some of the smaller sanctuaries in Assam. In Nepal, virtually all rhinos are confined to Chitawan Sanctuary (Rapti river valley) where numbers have declined as a result of modification of habitat (see below) and poaching.(1; 4; 6) Poaching continues to pose a threat to the rhino. In 1971/72 poachers were estimated to have killed 29 of the surviving 60 rhino in Jaldapara Reserve in West Bengal.(7)

HABITAT Tall grass and reeds (Arundo donax, Phragmites spp. etc.) in wet areas of small lakes (bils) and interconnecting streams.(6) Modification of the habitat through stock grazing, grass burning and general human disturbance in recent years has posed the most serious problem to rhino conservation in Nepal and, to a lesser degree, in India. Long grasses are being replaced by turf grasses and swamp dried out by the combination of burning and stock grazing so that the rhinos are ultimately deprived of forage, cover and wallowing areas.(1; 4; 6) Foot and mouth disease from livestock is a further hazard to rhinos.(1)

CONSERVATION MEASURES TAKEN Eight sanctuaries have been established in India and one in Nepal principally for the rhino's conservation. Early in 1971, the Nepalese Government allocated funds to demarcate the Chitawan Sanctuary boundaries and to move the bulk of the 50,000 villagers to alternative areas.(6) Importation into the United Kingdom and United States is prohibited, except for scientific, educational or propagation purposes, under the terms of the UK Animals (Restriction of Importation) Act 1964 and the US Endangered Species Act, 1969.

CONSERVATION MEASURES PROPOSED Poaching should be eliminated from Indian and Nepalese Sanctuaries by increased guard patrols, withdrawal of firearms licences from these areas and imposition of exemplary penalties on poachers. Stock grazing, burning and general human disturbance must be stopped in the wet grasslands that comprise the rhino's principal habitat. Management plans should be prepared for all sanctuaries. Consideration might be given to translocating rhino to other areas of suitable habitat when the management of present sanctuaries has been improved.

REMARKS In 1971, 24 males, 20 females and 1 animal (sex unknown) were held in 24 collections.(3)

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JAVAN RHINOCEROS

Rhinoceros sondaicus (Desmarest, 1822)

Order PERISSODACTYLA

Family RHINOCEROTIDAE

STATUS Endangered. Known with certainty only from the Udjung Kulon Reserve in west Java (28-42 rhinos occurred in 1972) and very probably in the Leuser Reserve in north Sumatra (possibly 20-25 rhinos). Very seriously depleted by overhunting. Now starting to increase (from 21-28 in 1967) in Udjung Kulon as a result of protection, and similar plans are being implemented to improve the study and protection of the Leuser Reserve with technical and financial assistance from WWF. Protection, research and management of these areas must be maintained.

DISTRIBUTION Originally occurred in parts of India, Bangladesh, Burma, Thailand, Cambodia, Laos, Vietnam, Malaya, possibly over the Chinese border up the Song Koi and Mekong rivers, and throughout Sumatra and Java.(6) Now, known with certainty only from the Udjung Kulon Reserve (360 km^2) in extreme western Java, and very probably in the Leuser Reserve ($6,000 \text{ km}^2$) in north Sumatra. A few may still occur in Tenasserim, on the Thailand/Burmese border.(1; 2; 3)

POPULATION 28-42 animals in Udjung Kulon in 1971 (in 1967 the estimated population was 21-28). Numbers unknown in the Leuser but thought to be around 20-25 animals.(5; F. Kurt 1971, pers. comm.) Overhunting for so called medicinal products derived from their horns and blood has been the major cause of the rhinos' decline. Poaching is still the major threat to the few animals that survive.(1; 4; 6)

HABITAT Adapted to a transitional habitat between low, open (often secondary) vegetation and tropical forest. Its attraction to cleared areas has brought it into conflict with human beings, which increased with the growth of human populations. Largely as a result of this process, the surviving animals are now found principally in high mountains, dense forests and swampy areas where conflict with man is minimal.(4)

CONSERVATION MEASURES TAKEN In 1921, Udjung Kulon peninsula was declared a Nature Monument to preserve the Javan rhino, the banteng and the Javan tiger. All human habitation was excluded in 1937 when the area was accorded Nature Reserve status. In 1967 Schenkel commenced his ecological study and, in 1968, the World Wildlife Fund and the University of Basle formed the "Basle Patronage Committee for Udjung Kulon", to give practical help to the Indonesian authorities, notably in ensuring continuity of study for the rhino and its ecology. Since May 1967, WWF have provided special funds for the provision of effective anti-poaching measures, including buildings, guards' wages and uniforms, and equipment, a vehicle and a boat. A three-month preliminary survey of the Leuser Reserve, undertaken by Kurt in 1970, led to the formation of a "Netherlands Co-responsibility Committee for Gunung Leuser" which has similar functions and objectives to the Basle Patronage Committee.(6; F. Kurt 1971, pers. comm.; R. Schenkel 1970, pers. comm.) Importation into the United Kingdom and United States is prohibited, except for scientific, educational or propagation purposes, under the terms of the UK Animals (Restriction of Importation) Act, 1964 and the US Endangered Species Act, 1969.

CONSERVATION MEASURES PROPOSED Continued protection, research and management of the Udjung Kulon reserve. As the rhino population increases, however, a habitat management plan will need to be developed to improve the stocking and productivity of the rhino. The Leuser Reserve requires re-alignment of the boundaries to make use of natural barriers, the preparation and implementation of a comprehensive management plan, and elimination of all large-scale timber extraction, illegal cultivation and poaching.(1; 4)

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SUMATRAN RHINOCEROS

Didermocerus sumatrensis (Fischer, 1814)

Order PERISSODACTYLA

Family RHINOCEROTIDAE

STATUS Endangered. Occurs in small isolated populations over a wide area of south-east Asia. Overhunting has reduced its populations to critically low levels and its range continues to be restricted by logging operations and expanding human populations. Is legally protected throughout much of its range and occurs in a number of reserves, but protection is poorly enforced and the reserves often fail to cover the year-round movement of this wide-ranging animal. An IUCN/WWF programme has been prepared (in 1972) for the conservation of the species, which it is hoped to implement in the near future.

DISTRIBUTION Formerly ranged over much of south-east Asia from Assam to Vietnam, and Sumatra to Kalimantan.(6) Now, small isolated populations occur in a few widely separated localities in Burma, Thailand, Malaya, Sumatra and Sabah, and possibly India (Lushai Hills and Tirup Frontier Tract), Bangladesh (Chittagong Hills), Cambodie, Laos, Vietnam and Kalimantan.(6)

POPULATION There are insufficient data to make a precise estimate of the total world population but it is probably in the low hundreds. Recent estimates of populations by countries are as follows: Burma: 24 (Sithu Hla Aung 1968, pers. comm.); Thailand: possibly 10-20, more than half of which probably move between Thailand/Burma/Malaya and may already be included in these countries' totals(4); Malaya: 10-30(1); Sumatra: 45-85 the majority of which are located in or around the Leuser Reserve(2; 3). The species may still occur in Laos, Cambodia and Kalimantan. The principal cause of the rhino's decline has been overhunting throughout its range for the so-called medicinal products that are produced from its horn and, indeed, all parts of its carcass. In Thailand, for example, a rhino carcass is worth over \$2000 - 10-20 years' earnings for a Thai farmer.(4; 6)

HABITAT The species is very wide ranging and occurs in a variety of vegetation types, but principally tropical rain forest (primary and secondary) including forest clearings and fringes, regeneration areas and swamp forest and even dry deciduous forest. Preliminary data on its diet suggests that it has a strong preference for plant species characteristic of secondary or fringe forest areas. (1; 2; 4; 5) Forest exploitation and expansion of human populations is restricting the rhino's range in many regions.(1; 3; 4)

CONSERVATION MEASURES TAKEN Legally protected over most of its range, but in most areas little enforcement is possible.(6) The rhinoceros occurs, or is believed to occur, in the following national parks or reserves: Khao Salob National Park (400,000 ha), Kheo Luang National Park (205,600 ha) and a newly formed game reserve for rhino at Phu Kheo, in Thailand; Taman Negara National Park (134,000 ha), Sungai Dusun, Krau and Sungai Bernam Reserves in Malaya; the Leuser Reserve in Sumatra; and, possibly, in Kinabalu National Park (69,000 ha) in Sabah. Importation into the United Kingdom and the United States is prohibited, except for scientific, educational or propagational purposes, under the terms of the UK Animals (Restriction of Importation) Act, 1964 and the US Endangered Species Act, 1969.

CONSERVATION MEASURES PROPOSED IUCN/WWF formed a Rhino Task Force in 1972, which has prepared a project (No 884) for an international conservation programme for the Sumatran rhinoceros. The programme has two phases, the first calling for extensive surveys of the distribution and status of the animal, its current protection and the feasibility of long-term protection according to the physical and political factors of the individual areas of occurrence; and the second requiring intensive research in selected areas. Research methods and background

data have been compiled and the programme is at present awaiting funding.

REMARKS Copenhagen Zoo held a solitary Sumatran rhinoceros for some years. It died in February 1972.

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NORTHERN SQUARE-LIPPED RHINOCEROS OR WHITE RHINOCEROS

Ceratotherium simum cottoni (Lydekker, 1908)

Order PERISSODACTYLA

Family RHINOCEROTIDAE

STATUS Endangered. Principal range covers south-west Sudan, north Uganda and north-east Zaire. Reduced, principally by poaching, possibly to less than 250 animals. Recorded in a number of National Parks, game reserves and sanctuaries, but its survival in many of them is in doubt because of warfare and civil disturbances in much of its range. Re-introduction of surplus animals into these areas from currently protected populations will need to be considered when present political problems have been resolved.

DISTRIBUTION Formerly, occurred mainly between 13°N and 9°N from the Sudan westwards to Lake Ichad.(1) At present: Sudan (south-west): West of the White Nile, in the provinces of Bahr-el-Ghazal and Equatoria. Uganda (north): Parts of the West Nile Province (Madi, West Madi and Aringo districts) on the western bank of the Albert Nile, an area about 100 km long by 30-45 km wide. Zaire (north-east): Garamba National Park. Central African Republic: Known to occur in the Ndende and Birao areas of Northern Utangui in 1965.(2; 3; R. Paulian 1965, pers. comm.)

POPULATION Total population unknown but possibly less than 250. Sudan: Nothing is known of present status, but its range has been subjected to war and civil disturbance for more than 10 years. Uganda: In the Ajai Game Reserve, 90 rhinos were counted in the 1971 census; population relatively stable, possibly increasing. Twelve animals from Ajai were translocated to Murchison Falls National Park in the early 1960's; they have now increased to 18. Zaire: In Garamba National Park, 20-30 rhino in 1971. population relatively stable. Central African Republic: No recent information; there were probably no more than 10 animals present in 1965. (3; W.B. Banage 1971, pers. comm.; R. Paulian 1965, pers. comm.; J. Verschuren 1971, pers. comm.) Poaching for rhino horn has been the major cause of decline. Garamba National Park contained 1,200 rhino in 1963 but numbers were reduced to 20-30 by 1970 as a result of occupation of the Park by rebel forces from the Sudan for varying periods between 1963-1970. Ajai has also had poaching problems but the current situation in both areas is under control.(3; W.B. Banage 1971, pers. comm.; J. Verschuren 1971, pers. comm.)

HABITAT Woody savannah and dry forest. Extension of human settlement, stock grazing and cultivation is restricting or eliminating much of the rhino's range.

CONSERVATION MEASURES TAKEN Legally protected throughout most of its range but warfare and civil disturbances have prevented enforcement of the law in many regions. Recorded in two national parks (Southern National and Nimule) and two game reserves (Kumatinga and Shambu) in the Sudan(5); in a national park (Murchison Falls by re-introduction), a game reserve (Ajai and Lumunga) and two White rhino sanctuaries (Mount Kei and Mount Ote) in Uganda, and in a national park (Garamba) in Zaire, but rhino may have been lost from some of these areas as a result of disturbances. Importation into the United Kingdom and United States is prohibited, except for scientific, educational or propagation purposes, under the terms of the UK Animals (Restriction of Importation) Act, 1964 and the US Endangered Species Act, 1969.

CONSERVATION MEASURES PROPOSED Information on the current status of the rhino is required particularly from south-west Sudan and the Central African Republic. If rhino have been exterminated from some reserves, re-introduction programmes utilising surplus stock from presently protected areas should be considered when political problems have been resolved.

REMARKS In 1971, 75 males and 88 females were held in 53 collections.(4)

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BLACK RHINOCEROS

Diceros bicornis (Linnaeus, 1758)

Order PERISSODACTYLA

Family RHINOCEROTIDAE

STATUS Vulnerable; practically exterminated except where under constant guard in Parks and Preserves. The greatest threat today is illegal hunting for its horn.

DISTRIBUTION Formerly widely distributed in Africa from Cape Province and south-western Angola to eastern Africa, including Somalia, south-western Ethiopia and the southern Sudan. It also occurred in suitable areas between the southern edge of the Sahara Desert and the northern limits of the dense rain forest of the Congo and Nigeria, as far as Lake Chad and Cameroon. It now has an insecure existence scattered in small remnant populations throughout its former range but surviving mostly only in Parks and Preserves.

POPULATION A 1961 survey by IUCN's Survival Service Commission showed a total population of between 11,000 and 13,500. About half of this number were in Tanzania and Kenya. This represented about 15 percent of the numbers formerly estimated. Of the thousands once reported, there is now known to be under protective surveillance at least 110 in Ngorongoro Crater and 74 in the Olduvia Gorge adjacent plains, Tanzania(2); 100 in Tsavo(3) and 90 in Amboseli, Kenya(5); in Angola not more than 40-50 in Parque Nacional do Iona, and a few animals in the Cuando-Cubango controlled hunting areas. (E.J. Huntley 1972, pers. comm.); about 200 in Murchison Falls National Park, 70 in Kidepo National Park and 35-40 in areas surrounding Murchison Falls National Park. (W.B. Banage 1971, pers. comm.); in all of Rhodesia fewer than 600 in 1968 mainly in the Zambezi Valley where they were being so heavily poached that 41 were moved more than 600 miles to the new Gona-re-Zhou Game Reserve(1); though never abundant in South West Africa, there are now fewer than 100 animals, of which only 48 are in Etosha National Park where they are reasonably safe from poaching(4); in South Africa, where it was exterminated by the middle 1930's, ten pairs were taken to Kruger Park from the Hluhluwe Game Reserve in Zululand, with other releases planned for the future. (E. Bigalke 1971, pers. comm.)

HABITAT Range extends from arid, thorn-scrub country to the high forests of Mt. Kenya and the Aberdare Range at an altitude of 3,500 m.

CONSERVATION MEASURES TAKEN It is legally protected throughout its range but the high value of its horn makes protection nearly impossible.

CONSERVATION MEASURES PROPOSED The best hope for its survival rests with more adequate protection in Parks and Preserves. Eventually a prohibition on the importation and use of its horn as an aphrodisiac in Asian countries must be invoked.

REMARKS The rhino was incompatible with settlement and in many areas was systematically exterminated. The great decrease, though, in more recent years has been fully as great and is a result of habitat destruction and change, and wholesale slaughter for horn.

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