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End of the road for the one-horned rhino?

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Under Siege

The greater one-horned rhinoceros

by Vivek Menon

This idyllic scene in Kaziranga, Assam, belies the disastrous situation that prevails thanks to the bloody poaching trade. Extracts from a hard-hitting report written by the author for Traffic India on the rhino are reproduced on the following pages. The data was collected by him between 1993 and August 1995 after making field visits to all the known rhinoceros habitats in India. Clearly the rhino has a bleak future. Given our government's ability to ignore even hard evidence we urge readers to write directly to the Prime Minister of India and to the Chief Minister of Assam asking that no effort or resources be spared in the task of saving the rhino.

Bittu Sahgal

Introduction

The greater one-horned rhinoceros *Rhinoceros unicornis* is perhaps the most endangered species of Indian megafauna. The number of animals in the wild is less than half that of tigers, and one-tenth the number of elephants, in India. In 1989, the IUCN/SSC Asian Rhino Specialist Group (AsRSG) proclaimed only three of the seven remaining refuges for greater one-horned rhinoceroses in India (Kaziranga and Manas National Parks and Orang Wildlife Sanctuary in Assam) to have a viable population of the species (Khan, 1989). Since then, Manas National Park has lost most of the 100 rhinoceroses it held, victim to a spell of poaching.

Today, perhaps only two sites remain with viable populations of greater one-horned rhinoceroses in India, with Chitwan National Park in Nepal providing a third such site. All these sites are extremely vulnerable to poaching and a sudden increase in rhinoceros poaching in the early 1990s has been a cause of grave concern. Between 1989 and 1993 official figures record India as having lost 266 rhinoceroses to poaching, which, over the four years, amounted to more than 15 per cent of the country's total population of the species. Unofficially, it is insisted that the toll is higher. Thus, only Kaziranga now seems to have a large enough population (1,200 rhinoceroses) to withstand further intensive poaching in the short term. Orang Wildlife Sanctuary with 90 rhinoceroses, Pobitara Wildlife Sanctuary with 68, Jaldapara Wildlife Sanctuary with 35, and Gorumara National Park with 18, could all lose their populations of the species in a matter of months, if determined poaching were to affect these areas.

Several disturbing trends in poaching and trade have emerged. Poachers are displaying more ingenuity, using novel methods, such as electrocution. With the influx of arms into Assam since the early 1980s, because of political unrest in the region, killing a rhinoceros has become easier for poachers. Guards armed with bolt action .315mm. bore rifles often come across poachers armed with semi-automatic weapons and other modern arms. The spurt in rhinoceros poaching has a definite connection to the upswing in political unrest, which at one level results in merely opportunistic killing of rhinoceroses, when law and order breaks down, but at another level in the altogether more purposeful process of procuring rhinoceros horns to finance extremist activities. Rhinoceros horns have begun to fetch as much as Rs. 300,000 (US$ 9,260),

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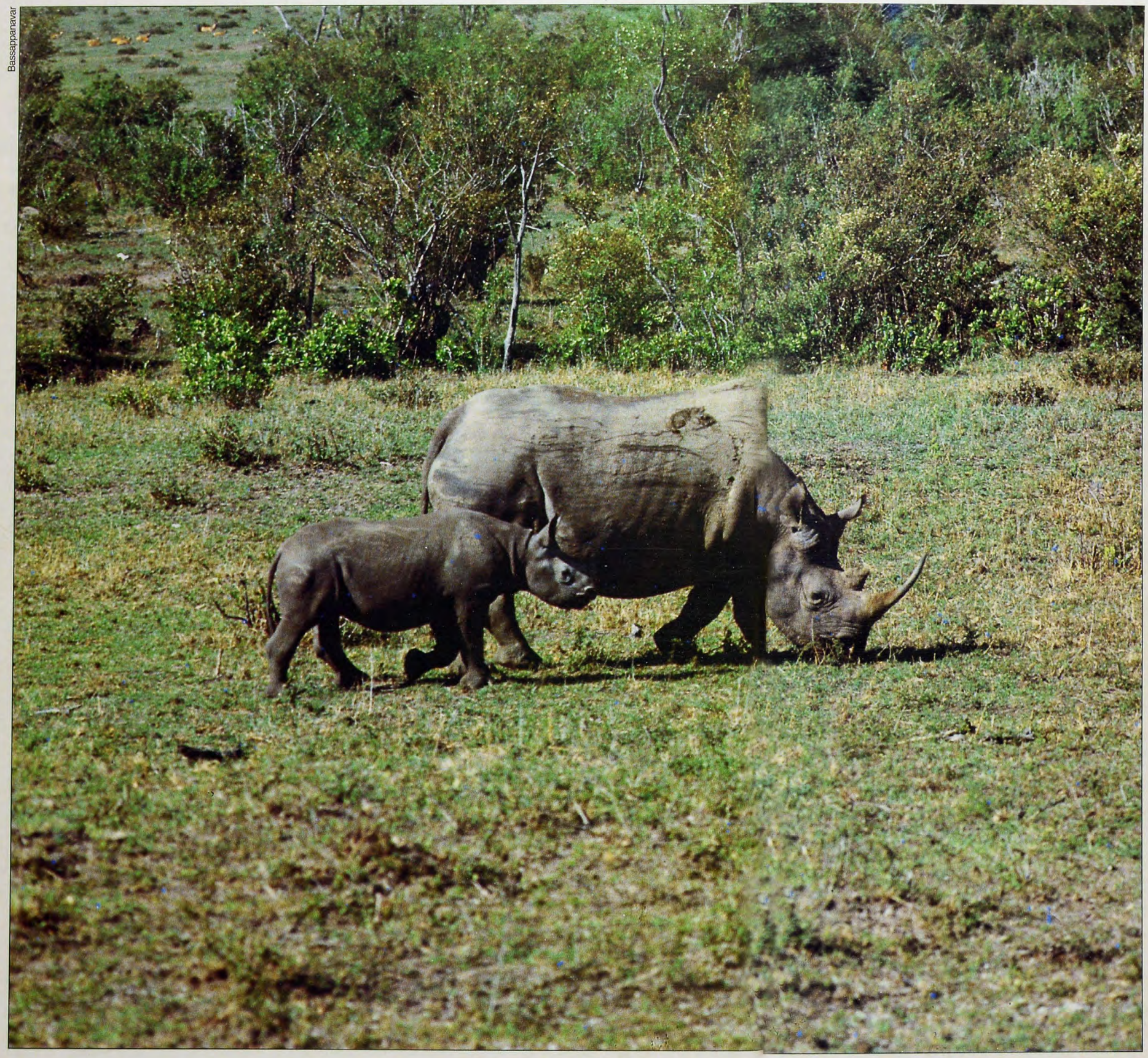
*A rhino(**right**) sniffs the air to to check for danger. Exquisitely adapted for surivival, this prehistoric mammal has managed to survive for 40 million years, but has virtually no defence against* Homo sapiens.



Bassappanavar

earning a local agent 50 times more than the annual per capita income of India, thus making poaching a very lucrative activity.

The traditional trade routes via Calcutta and Myanmar are being forsaken for new routes through Bhutan, Nepal and more recently through Bangladesh, and the reported involvement of high ranking nationals of some of these countries in the trade makes the issue even more complicated, and more threatening, for the rhinoceros conservationists. There is continued evidence of the horn reaching the Far Eastern markets of Taiwan, South Korea, Japan, etc. These are destined for the traditional Chinese medicine trade in these countries.

The demand for rhinoceros horn in the Asian traditional medicine market is perhaps the single largest factor affecting the decline in the animal's numbers. With a seemingly never-ending demand for the keratinous horn in the Orient, the greater one-horned rhinoceros is facing the biggest threat ever to its existence. This is despite notable efforts made by several East Asian countries to curtail the trade by imposing stiff penalties. This is a testament to the fact that rhinoceros horn, more than other animal-derived medicine, such as Tiger *Panthera tigris* bone, is considered a life-saving traditional Chinese medicine (Mills, *in litt.*, 1996).

Rhinoceros horn

A rhinoceros horn, which in the case of the greater one-horned rhinoceros measures an average of 20 cm. in height, and weighs an average of 720g. (in one instance a horn weighed as much as 2,500g.), is the main part of the rhinoceros' body sought by poachers in India today. Therefore, a more careful look at the biology, morphology and growth patterns of the horn is instructive when attempting to eradicate poaching. In many cases, where a rhinoceros is discovered to have been poached, official records show that the horn was not fully developed. In some cases, the rhinoceroses in question have been adults, which is puzzling. The greater one-horned rhinoceros horn, like that of all other rhinoceroses, is a cemented mass of hair growing

The African rhino is in deep trouble. According to information received from the Convention on International Trade in Endangered Species (CITES) *both black and white rhinos are faced with an uncertain future. According to the Environmental Investigation Agency U.K., countries such as Zimbabwe continue to lobby for legalisation of the trade in rhino horn with buying nations such as China, Taiwan and Hong Kong. The foreign exchange, they say, would be used to patrol rhino habitats (a questionable argument at best). Unfortunately, this would sign the death sentence on the Asiatic rhino whose habitats are already reeling under poachers' assaults.*

on top of the snout and separated from the skull. The horn rests on a bony boss and is replaced, if lost. The slightly loose fixing of the horn means that a poacher takes less time to hack the horn off, presumably, than if it were conjoined with the skull. In fact, accounts from poachers reveal that if the flesh is cut, the horn can even be knocked off the skull with a sharp blow of a stone or dagger handle and in many cases, there is no need to hack right through the bone. However, regular practice is seemingly necessary to hack the horn off the bony boss.

Greater one-horned rhinoceroses use their horns neither as organs of defence, nor offence, nor for digging (Ghosh, 1993). Apart from the fact that the horn of a male is of slightly wider basal circumference, it is virtually indistinguishable from that of a female of the species, in terms of size. Very unlike African rhinoceroses, greater one-horned rhinoceroses normally use their teeth as a major weapon of offence. In addition, they can also charge down and trample a person. However, very rarely, if ever, is a rhinoceros seen using the horn to attack or defend itself. As both sexes carry approximately the same sized horns, the use of the horn in sexual rituals (Ghosh, 1993), is also suspect. There are, however, some instances of horns having been split or broken off during fights between two male rhinoceroses, but it is believed that their breakage in such cases is only incidental (Ghosh, 1993).

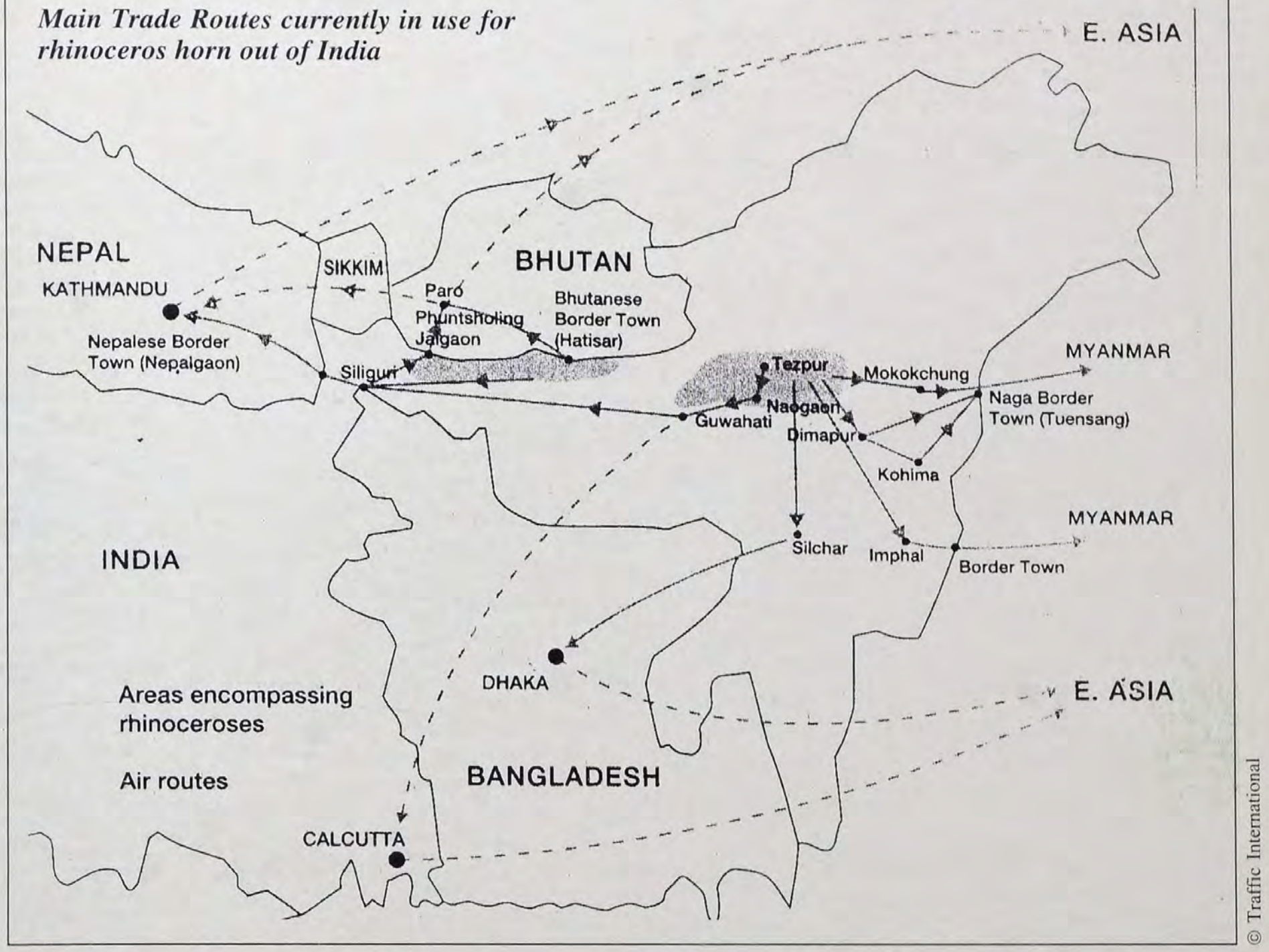
It is interesting to note that Ghosh (1993) reports that the horn of a male rhinoceros in Jaldapara Wildlife Sanctuary was broken in two during a fight, but that it regenerated within six months. It is therefore apparently possible for an adult rhinoceros to regenerate a complete, if slightly smaller, horn in the process of one year. If this is indeed true then the rate of regeneration is much faster than that observed among African rhinoceroses. Milliken *et al.*, (1993) record that black rhinoceroses in Namibia annually regrow nine centimetres' length of horn, which is a total for both horns on each animal (Berger, 1993), while white rhinoceroses in Hwange National Park show growth rates of 6.8-7cm., for anterior horns, and 2.5-3.4cm. for posterior horns, annually (Rachlow, 1993). In India, no detailed work has been done on horn regeneration, which could be a very important biological factor in determining the potential of options for dehorning as part of future conservation practices for greater one-horned rhinoceroses.

Methods

Traffic India initiated a study into the poaching of greater one-horned rhinoceroses, and the trade in their horns in 1992, on the results of which this report is based.

Data were collected systematically from 1993, up to August 1995, and some field updates continued to be obtained until April 1996. All the rhinoceros-bearing areas of India were visited by the author during the study, most of them more than three times. All the known trade centres were also visited and some of the trade routes traced. This report contains an analysis of the data collected during the period, although confidential information on the rhinoceros horn trade was passed on to relevant authorities during the course of the study, in the interests of efficient rhinoceros conservation.

The report is divided into sections treating rhinoceros-bearing areas; population trends and an assessment of current populations' viability; poaching techniques and occurrence; trade in and use of rhinoceros horn; prices of horn; anti-poaching strategies; conclusions; and recommendations. The level of detail included in the first chapter on rhinoceros-bearing areas in this



report may seem high, but is felt to be justified, since, in the case of the greater one-horned rhinoceros, numbers are so low that the available habitat remaining and its degree of protection are critical to its survival as a species. That chapter therefore aims to acquaint the reader with the protected areas in which remaining wild greater one-horned rhinoceros populations persist in India.

Several limitations to this study must be pointed out at the very outset. Lack of resources and time led to Nepal not being covered in this study and this report is thus limited to an assessment of poaching and horn trade with respect to the greater one-horned rhinoceros in India. Even within the country, Manas National Park could not be visited till May 1995, owing to the turbulent political situation there.

As the rhinoceros horn trade has been completely banned in India for a number of years, some information is from unofficial sources, but great care has been taken to make sure that all such information has been verified to the extent possible. All information on poaching cases is from Government files, or as mentioned, from reliable covert information. Current, unreferenced information for India within this report may be assumed to be from such sources.

Conclusion

The greater one-horned rhinoceros is possibly more endangered today than ever before. Despite being considerably better off than the other Asian rhinoceros species and also showing an increase in numbers according to official statistics, the species is facing a very real threat throughout its range. With the exception of Kaziranga in India and Chitwan in Nepal, all other reserves are particularly vulnerable to poaching or have already been affected severely by poaching. Kaziranga today acts as a single reserve for more than half the world population of the species and therefore will need to be paid particular attention with reference to anti-poaching strategies. Lessons from Laokhawa in 1983 and Manas 1987-1995 have shown that a single population can be particularly vulnerable to poaching at times of civil unrest and that numbers can quickly fall to levels where a population's long-term viability is doubtful. The comparative success of Kaziranga must therefore not be seen with a view of complacency by Government and non-government authorities.

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Measures aimed at curbing poaching, including intelligence-gathering and enforcement must be considered high priority. The State and central Government departments have aimed at increasing the number of guards and guard posts, but equally importantly the equipment given for anti-poaching operations, as well as equipment that would improve communications, must be provided. Orang can be taken as a case in point, as this was the only Sanctuary in recent times to show a zero poaching year, which most people know is largely owing to the exceptional and laudable achievements of one range officer posted at the park. This further underlines the strong role that the range officer has to play in any anti-poaching strategy developed for protected areas for rhinoceroses in India, as also the importance of boosting the morale of the forest guards and other staff working with him.

This study concludes that the poached rhinoceros horn is used to a small extent in the domestic market in India, for Tibetan medicinal and other uses, but that the main demand is medicinal use in the markets of East Asia and Southeast Asia, which are reached using new routes wherever established ones have been put under enforcement vigil. Further, despite measures to prevent sale of rhinoceros horn medicine in many East Asian countries, demand appears to remain sufficient to endow the horn of greater one-horned rhinoceroses with a value which is high enough to continue to induce poachers to take calculated risks to obtain it, even where areas are well protected.

Recommendations

The recommendations we made were limited to addressing the threats faced by the greater one-horned rhinoceros owing to poaching and trade in rhinoceros horn in India (as opposed to loss of habitat, disease, etc.). Many of them were for management strategies, while others relate to direct anti-poaching measures. These do not amount to a complete anti-poaching strategy, which if adopted would save the rhinoceros from extinction in the country, but only a framework which could be developed out of this report. ❍

Headed for extinction? With butchers having virtually wiped out rhinos from Manas and several other Assamese forests, Kaziranga remains the last real hope for the survival of the species. It is crucial, therefore, that field staff receive thė political support they have lacked all these years.

Add your voice to the demand to save the one-horned rhino from extinction, write to:

- ***The Chief Minister of Assam, Mantralaya, Guwahati, Assam.***
- ***The Prime Minister of India, South Block, New Delhi.***

Saving the rhino

1. To review and strengthen security measures at all rhinoceros-bearing areas to minimise access to poachers. Accordingly, detailed recommendations are the following.

1.1 To arrange for review of all rhinoceros habitat areas for their existing manpower, arms and equipment, and their anti-poaching strategy by an expert team consisting of at least a wildlife biologist, an arms and equipment expert, a combat expert (army, paramilitary or police) and a Forest Department representative.

1.2 To strengthen the radio communication network through establishment of adequate fixed and mobile units as well as to put in place adequate repair systems and monitoring of such equipment.

1.3 To lift the standard of the existing forest guards and foresters with respect to arms training, ambush and counter-ambush training, familiarity with various combat procedures, etc. Where needed, this should be provided by the army, paramilitary or the police at a convenient place, and then refresher courses held to ascertain if the needed standard is being kept up. No forest guard or forester should be posted to a rhinoceros-bearing area without undergoing such a training.

1.4 To provide adequate transport for anti-poaching work so that mobile squads are operable on both land and waterways. It must be seen that upon being alerted, the nearest mobile squad must be able to reach the area of incidence in less than 30 minutes which is often about the time required for the poacher to make a getaway. Such mobile squads must also be able to move outside the border of protected areas, if in pursuit, and must be given such powers by concerned district administrations. It is also to be seen that there should be adequate fuel available for the vehicles, and the park directors or Divisional Forest Officers responsible be authorised to ensure the same and keep the vehicles in a fit condition.

1.5 To provide an adequate number of surveillance towers to be manned by properly equipped and armed personnel at vantage points for prevention of entry of poachers into the park. This is to be used particularly in conjunction with night-viewing devices (most certainly infra-red binoculars) as much of rhinoceros habitat can be surveyed using such methods.

1.6 To provide the protection force with such arms as required by them to combat poachers effectively, and if need be, to review the prohibited bore status on certain weapons, such as the .303 and the 7.62 rifles, for use in anti-poaching work. Special Police Officer status could be granted to certain forest personnel under the Police Act, which would give them powers to carry such weapons. Also, arms provided should come with adequate ammunition, not only for the exigency of stopping a poaching event, but also for regular practice, so as to maintain a preparedness necessary for combat.

1.7 To review the division of parks into beats and the placement of camps, to ensure proper coverage and most effective positioning as regards anti-poaching activities.

2. To put into place an intelligence network to enable the physical security measures to function effectively. It is therefore advisable:

2.1 To set up an intelligence network at State and then field level that can ensure collection, sifting, analysis and evaluation of field data on poaching and trade.

2.2 To set up at the State level a cell that can interact with all concerned departments, especially with the police and Customs officials, and which has access to the Central Crime Data Bank of the police and such similar data banks of other enforcement agencies.

2.3 To ensure that a fund be provided at both the State and field level, which is used for payment of informers, that shall be kept confidential and used at the discretion of an officer-in-charge.

2.4 To set up both pre-induction and in-service training modules on intelligence-gathering for all levels of anti-poaching teams.

2.5 To establish a reward system that can be used as an incentive to staff responsible for seizures, arrests, prosecutions and the like. This reward should not be linked with the final judgement of the courts, as the judicial procedure in India normally takes a long time to conclude.

3. To maintain and increase the motivation of park staff, it is advisable:

3.1 To review existing pay and bonus structures for field personnel and to ensure that they are on a par with those of other enforcement agencies.

3.2 To build up infrastructure and social security benefits for park staff, relating to accommodation, education, recreation and family welfare.

3.3 To provide adequate financial compensation to staff in the form of ration allocation, field allowance, proper uniform and other essential items required for life in a camp.

3.4 To ensure a high degree of motivation among field personnel by combining a system of rewards with strict discipline, to keep them in battle-readiness.

3.5 To ensure that field staff are adequately protected against disease, especially those which are common in rhinoceros-bearing areas, such as malaria and cholera.

3.6 To ensure that wildlife postings are not considered "punishment postings" and that interested and physically fit personnel are recruited for anti-poaching activities.

General recommendations

4. To review existing management practices and introduce new ones to help in anti-poaching, and specifically:

4.1 To review food availability within rhinoceros-bearing areas and the linked tendency for rhinoceroses to stray out of the park. To reduce such straying by increasing fodder within parks, by having camps at strategic areas, etc.

4.2 To build escape routes for rhinoceroses to meet the contingencies of high flood by raising and widening the existing roads and by raising more artificial high-grounds for providing shelter to flood-affected rhinoceroses. This is to be done in conjunction with camp placements (temporary) during the floods.

4.3 To extent roads to the extent possible in the park so that patrolling during all seasons becomes easier.

4.4 To ensure that rhinoceros *dandis* are cleared of overhanging vegetation so as to aid anti-poaching and patrolling parties.

4.5 To manage buffer zones in a way that the local villagers tend to look at the park in a non-hostile way and help in anti-poaching efforts.

4.6 To set up, if necessary, village-level committees or protection forces of volunteers who can aid in patrolling and making sure that the village premises are not used by anti-social elements.

4.7 To use elephants already in the possession of the Forest Department in patrolling rhinoceros-bearing areas.

5 To survey previous rhinoceros-bearing areas for possible translocation sites and to form a translocation team that can effectively translocate doomed rhinoceroses. Specifically, this would require activities as follow.

5.1 To investigate and identify areas for establishing new rhinoceros population units as possible reintroduction sites. In doing this all previous rhinoceros-bearing areas, especially those that provide links with existing ones, such as Kochmara, Laokhawa, Patlakhawa, Buxa, etc., should be surveyed.

5.2 To set up a capturing and translocation unit consisting of a rhinoceros ecologist, a veterinarian trained in rhinoceros darting, assistant veterinarians and other technical assistants, with appropriate equipment and drugs.

6. To set up special courts to try wildlife cases and to impress upon the present judiciary the urgency of the need to protect rhinoceroses. Specifically it is recommended:

6.1 To enlighten the judiciary, especially at the district and magisterial levels, regarding the importance of curbing wildlife crimes.

6.2 To set up a system of special courts to try rhinoceros poaching offences, so that speedy redress of such matters may take place.

7. To strengthen enforcement measures against illegal traders and dealers in an attempt to prevent illegal smuggling of rhinoceros horn. In particular, it is advised:

7.1 To affect an immediate offensive on all known dealers, traders and agents in rhinoceros horn in India and their contacts in neighbouring countries (using enforcement agencies of neighbouring countries if necessary) and to break up known smuggling rings.

7.2 To identify all possible trade routes and centres and to maintain vigilance points at suitable locations for gathering intelligence.

7.3 To identify areas of quick getaway from rhinoceros-bearing areas, those linking up to the nearest trade centres and routes, and to establish a conjunction of checkpoint gates, patrol lines and emergency response teams (or flying squads) in such areas.

7.4 To maintain the strictest vigil (by all enforcement agencies concerned) at all possible exit points from India (land, water and air) for rhinoceros horns and to utilise the intelligence network to do so.

7.5 To establish a co-ordination cell if required between the Forest Department, police and Customs, to facilitate an inter-departmental team to react quickly to poachings or information of possible trade or smuggling.

7.6 To maintain a centralised database of wildlife traders and dossiers on them which is available to all enforcement agencies for ready reference. The Subramaniyan Committee constituted by the Government of India to look into wildlife crime recommended the setting up of a national wildlife crime database to be monitored jointly by the Ministry of Environment and Forests and the Indian Police.

7.7 To extend the training courses on wildlife trade and enforcement to all non-wildlife agencies involved in monitoring the trade and to instil in them the importance in doing so.

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