South Asia

INDIA

Kaziranga National Park

II.1 Introduction

Year of Inscription 1985

Organisation Responsible for the Report

- Kaziranga National Park (KNP)
  Bolakhat,
  District Golaghat,
  Assam
  India

II.2 Statement of Significance

Inscription Criteria N ii, iv

Statement of Significance

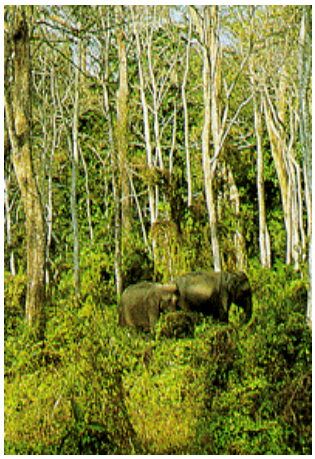
- Proposed as follows:
  KNP is "the largest undisturbed and representative area of Brahmaputra Valley floodplain grassland and forest with associated large herbivores, avifauna and wetland values (including turtles and dolphins)". It contains the world's largest population of one-horned Indian Rhinoceros (1552 in 1998).

Status of Site Boundaries

- Borders & buffer zone of the property are considered adequate.
- "However, six new additions adjoining the property along the north, west and south of the property boundaries are notified with separate national park status either to provide extended habitat for increasing population of wildlife or as a corridor for safe movement of animals to Karbi Anglong Hills."
- These additions amount to a total of 429.5 km2 approximately.

"The Rhino population has increased from 946 in 1984 to 1552 in 1999. Tiger numbers grew from 29 in 1972 to 86 in 2000."

II.3 Statement of Authenticity/ Integrity



© UNESCO

Status of Authenticity/ Integrity

- The WH value is considered to have been maintained.
- The Government's proposal to construct a railway along the southern boundary of the KNP has been cancelled.

II.4 Management

Administrative and Management Arrangements

- The legislative status for KNP represents the "maximum protection under Indian conditions" at national, provincial and municipal levels.
- A list of 12 acts and constitutional safeguards ranging from the Assam Forest Regulation of 1891 to the Biodiversity Conservation Act of 2002 are outlined.
- The management plan for KNP (2003-04 to 2012-13) has been prepared. The objectives, problems, zonations and strategies are clearly defined.

Present State of Conservation

- Six new buffers and ecological corridors have been proposed to allow animals to migrate during floods.
- The Rhino population has increased from 946 in 1984 to 1552 in 1999. Tiger numbers grew from 29 in 1972 to 86 in 2000.
- Other developments include the integration of KNP into one of four 'inter-state conservation areas' in the state of Assam; the recognition of a new tiger reserve; as well as the identification of an Important Bird Area (IBA) by Birdlife International.

Staffing and Training Needs

- Some 452 staff are employed including mahuts, boat men, grass cutters, and 242 forest guards.
- Staffing level is considered inadequate. The creation of 117 new posts is proposed in the management plan.

- Training needs are identified in handling arms; management of ranging patterns of wild animals; participatory rural appraisal; wildlife forensics; and intelligence gathering.

Financial Situation

- KNP receives funds from the Central Government (infrastructure, elephant scheme, eco-development), and State Government (rhino conservation, poaching control). No figures supplied.
- Funding is considered inadequate. Proposals to attract assistance from national and international NGOs (WWF, Wildlife Institute of India), as well as "ploughing back the revenue generated by tourism", are considered.
- * International Assistance from WHF as follows: (i) 1997, US$50,000 Technical Co-operation for Security Reinforcement; (ii) 1998, US$50,000 Technical Co-operation for Security Reinforcement.

Access to IT

- 1 PC with internet access. No GIS capacity.

Visitor Management

- Kaziranga sanctuary was opened to interested visitors in 1937, and has seen a continuous rise in tourists reaching 46,306 in 2001-02.
- At present, a "few watchtowers", 4 government and 3 private tourist lodges exist inside the park. From Nov to May, rangers accompany light vehicles inside KNP to view animals. "Foot safari" is banned.
- There is a need for an education centre; audio-visual materials and signage; new watch towers; and road maintenance.
- A management plan is being developed to limit tourist numbers (and length of stay) inside the park, register vehicles, and promote codes of conduct.

II.5 Factors Affecting the Property

Threats and Risks

- Poaching (in decline despite civil unrest),
- Heavy traffic on National Highway no.37,
- Uncontrolled tourism,
- Fluvial erosion by the Brahmaputra river,
- Annual/flash floods (leading to high animal mortality),
- Siltation and weeds in wetlands (increasing),
- Illegal fishing and livestock grazing.

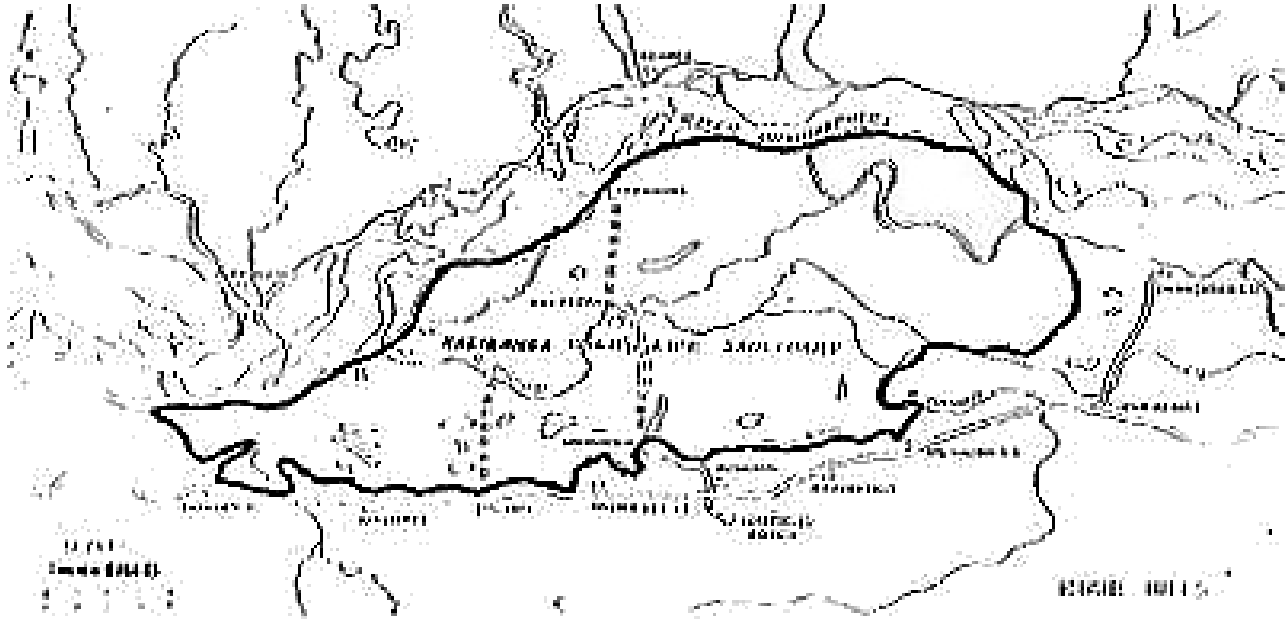
Counteractive Plans

- Emergency measures are incorporated into 'individual theme plans' for each of the factors affecting the site as part of the 2003-13 strategy.
- Every year, the KNP prepares an Annual Plan of Operation (APO) based on the 10-year draft management plan.

II.6 Monitoring

Monitoring Arrangements

- Periodic censuses of all major wild animals (rhino, tigers, elephants and wild buffalo) in the KNP has been carried out since 1966 by the Forest Dept. of Assam, research institutions and NGOs.
- A formal monitoring system for bank line changes in the Brahmaputra is being prepared. Training is also required for Data Base Management systems.



Map showing Kaziranga National Park protected area

Monitoring Indicators

- The following indicators have been defined: erosion / siltation levels; flood levels; grassland habitat change; animal population dynamics; tourist inflow; attitudinal changes of local people towards conservation.

II.7 Conclusions and Recommended Actions

Conclusions and Proposed Actions

- "Because its perimeter is adjacent to human settlements on three sides, protection of Kaziranga from illegal incursions of poachers and herdsmen has been a difficult task."
- Nonetheless, poaching threats have been largely replaced by management problems such as floods, siltation, weeds and tourism.
- Support from the WHF is requested for a GIS-based management information system.

** State of Conservation Reports*

Research material: Anecdotal references date back to 1908 when the first published reports were written in the Imperial gazetteer of the state. Several fauna and flora surveys and studies on flood dynamics have been completed. However, scientific projects involving systematic data collection have only been undertaken in recent years. Only one doctoral work (Muley, 2001) and two MSc. dissertations (Bannerjee, 2001 and Srivastava 2002) have been carried out.

1994 Committee CONF.003/6 The Committee took note of the expressed interest by WWF-India to prepare a state of conservation report and systematic monitoring system for Kaziranga WH site.

1997 Bureau WHC-CONF.204/2b A member of the WH Centre joined the Deputy Inspector General for Wildlife in India on a mission to the KNP in January 1997 following a monitoring mission to Manas Wildlife Sanctuary. A status report on KNP provided by the Assam Forest Dept. indicated that the population of one-horned rhinoceros within the Park had grown from some 366 in 1966 to about 1,200 in 1997. Statistics gathered since 1980 suggested that although an average of 26 rhinos were poached every year, twice that number died due to drowning in the annual floods of the Brahmaputra River. Park staff were stationed in 115 camps throughout the WH property. Nevertheless, encounters with poachers had risen continuously since the early 1990s due to escalating international market prices for rhino-horn. The management of KNP planned to add new areas to the Park, double the number of guard camps, build 'upland refuges', and launch educational campaigns among villagers. The Bureau commended the dedication of Kaziranga staff in controlling poaching, and urged the management authorities to pursue their plans to enlarge the Park.

1999 Bureau WHC-CONF.204/5 At its 1997 session in Naples, the WH Committee approved US$ 50,000 for the construction of 10 guard camps, 5 upland wildlife refuges, and for the purchase of audio-visual equipment for a KNP interpretation centre. Record rainfall in mid-1998 resulted, however, in exceptional flooding of the Brahmaputra River and parts of the Park were under 6 metres of water. More than a square kilometre area of the floodplain was washed away and the Park Director informed IUCN that an estimated 652 animals, including 42 rhinoceroses, were lost. During the natural catastrophe, WWF-India provided material assistance and the Indian army constructed ten islands on high ground for wildlife. IUCN also noted that 44 km2 of new land had been added to the KNP. The Bureau recognised the support provided by WWF-India and the Indian Army, and invited the State Party to provide a detailed report on subsequent wildlife censuses, as well as on measures to mitigate future flood damage.

The Bureau requested the State Party to clarify whether it intended to propose the inclusion of the recent extension of the Park within the WH property.

1999 Committee WHC-CONF.209/14 The WH Centre informed the Bureau that no information had been provided by the State Party concerning the inclusion of the recent extension of KNP within the WH area. The Committee reiterated its invitation to the State Party to provide a report on wildlife censuses and measures to control flooding.

2000 Bureau WHC-CONF.202/5 IUCN informed the WH Centre that the State Party had developed a 5- year Action Plan, including a calendar for its implementation, focusing on anti-poaching activities and habitat management. In a report to the Chief Conservator of Forests, dated February 2000, the Director of the Park noted that the formal proposal for the extension of the WH site was awaiting approval by the State legislature of Assam. The report also suggested that UNESCO might be contacted for funds to study the erosion damage caused by the 1998 floods. The WH Centre also noted that it had been offered a sum of DM 10,000 by a German Tour Operator (Windrose) for use in KNP protection.

2001 Bureau WHC-CONF.205/5 IUCN informed the WH Centre of a severe fund shortage impeding the management of the KNP. It was estimated that more than 200 rhinos had been poached (and 60 poachers killed) in the KNP during the 1990s. Problems persisted for designated funding provided to the Regional Government in actually reaching the Park. Consequently, few of the patrol vehicles and boats were in adequate running condition. It was reported that some of the local people who entered the park during the winter for fishing purposes, also stole rifles from forest guards and damaged boats. The State Party subsequently issued an order to ban fishing from the wetlands inside the National Park. IUCN also received reports of elephants killing at

least 300 people in 3 years, leading to concerns that the wildlife/people conflict would result in resentment towards the National Park.

The Bureau requested the State Party to submit a report on the financing of anti-poaching operations, and measures to minimise conflicts between elephant herds and human habitations.

2001 Committee WHC- CONF.208/10 The Committee reiterated its request that the State Party submit an up-to-date state of conservation report on the major management issues of the Park, and welcomed the possibility of a WH Centre/IUCN mission visiting KNP in 2002.

2002 Committee WHC-CONF.20217 An IUCN/Government of India mission to Assam, supported by the WH Centre and UNESCO-New Delhi was fielded in February 2002, including a 2-day visit to Kaziranga. The mission noted the following: (a) Complete control of all illegal killing of rhinoceros appeared impossible as poachers entered the Park from many locations along the Brahmaputra River and were frequently assisted by farmers. (b) Extreme poverty and high population densities around the Park made the community-based economic alternatives a challenging task. (c) A draft management plan was nearing completion, but was hindered by a lack of data and adequate consultative mechanisms. (d) The operating budget, infrastructure, staff training and equipment were inadequate. (e) Unpredictable financial & technical resources limited the ability of the Park authorities to run orderly programmes. (f) Community “eco-development” implementation were not effectively linked to enhancing support for nature conservation. (g) A wide range of anti-poaching measures had been implemented. (h) Compensation was allocated to villagers for elephant damage on crops & property, but not for human lives. (i) All of the facilities funded by the US$50,000 emergency assistance grant had been completed to an acceptable standard.

The Committee invited the National & State Governments to accelerate the finalization of the management plan, ensure the steady flow of technical & financial support, and introduce consultative & transparent management planning processes. The Committee also urged the concerned authorities to explore a community outreach and conservation education strategy; a focused research agenda; tourism-related activities; as well as means to increase direct support from the WHF, and donors such as the UN Foundation.

INDIA

Manas Wildlife Sanctuary

© UNESCO

II.1 Introduction

Year of Inscription 1985

Organisation Responsible for the Report

- Forest Department & Manas Tiger Project
  Barpeta Road 781 315
  State of Assam
  India

II.2 Statement of Significance

Inscription Criteria N ii, iii, iv

Statement of Significance

- Proposed as follows:
  "Manas is an outstanding example of a rare combination of Sub-Himalayan Bhabar Terai formation with riverine succession leading up to Sub-Himalayan mountain forest. Biodiversity is expressed through as many as 21 species which are present in the park are listed in the IUCN Red Data Book and habitat mosaic."

Status of Site Boundaries

- Borders and buffer zone of the property are considered adequate.

II.3 Statement of Authenticity/Integrity

Status of Authenticity/Integrity

- The WH value is considered to have been maintained.
- The hydro-electric dam over the river Manas at the Indo-Bhutan border has been cancelled by the Royal Government of Bhutan.
- In 1992, a IUCN mission noted with concern the encroachment by Bodo militants in MNP, leading to its inscription on the WH in Danger List. The authorities now stress that the "ethnic upsurge was neutralised in 1993 with the formation of the Bodoland Autonomous Council", and that all encroachment was removed in September 2002.

II.4 Management

Administrative and Management Arrangements

- Manas was first declared a protected area in 1917. In 1973 it became the Core Zone of Manas Tiger Project; a WH site in 1985; and a Biosphere Reserve in 1989.
- The present status of the area as a WH site provides the highest degree of protection under the Wildlife Protection Act of 1972. 11 further laws are listed.
- The management plan for Manas WH site for the period 2003-13 has been submitted for State government approval.

Present State of Conservation

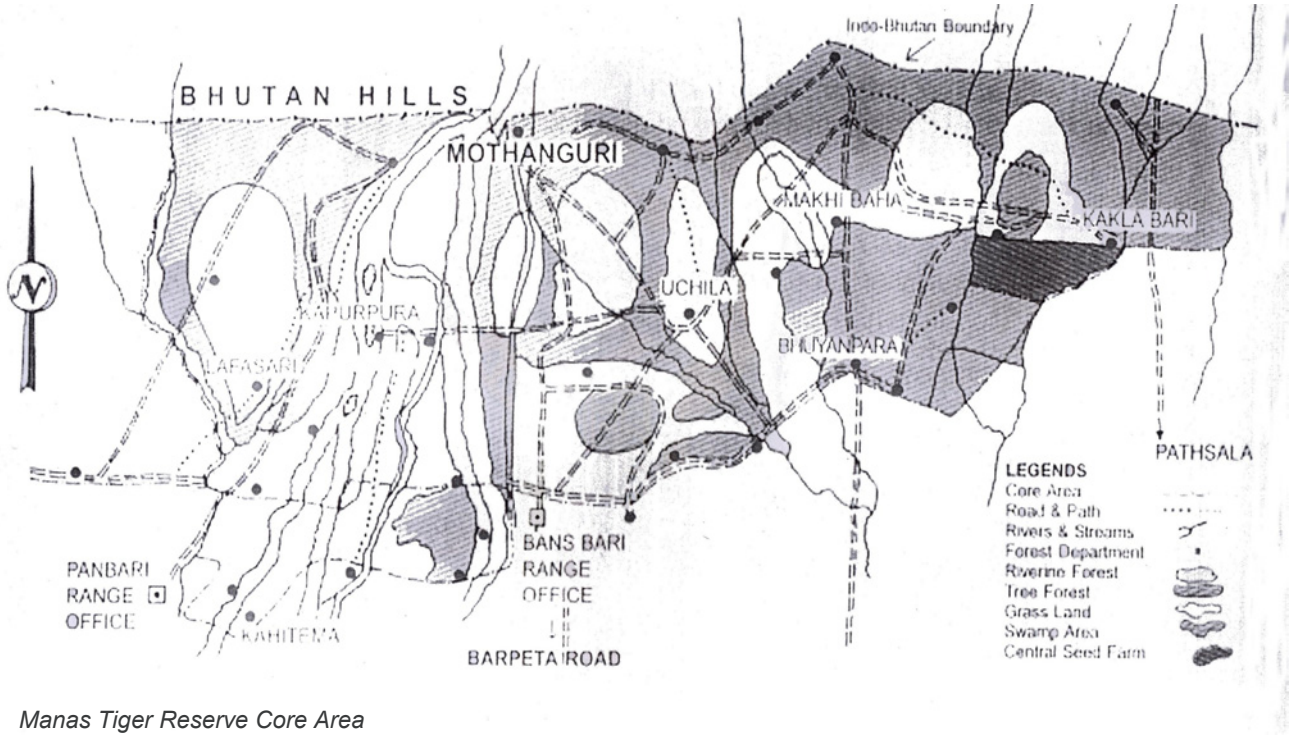
- In 1990, the addition of the neighbouring Reserve Forests of Kahitama, Panbari and Koklabari increased the area of the WH site from 391 to 500 sq. km.
- In 2001, Manas National Park was declared as the core zone of the 'Buxa-Manas Elephant Reserve' covering a total area of 2,837 km2.
- Captive breeding of Pygmy Hog has been initiated.
- A report on the state of conservation was submitted to the National Government in 2001.

Staffing and Training Needs

- 469 staff are employed. 294 are forest guards and foresters (grades I&II).
- Staffing level is considered adequate.
- Training needs were identified in areas such as micro-planning, first aid, and population viability analysis.

Financial Situation

- The MNP receives funds from the Central Government (tiger project, biosphere reserve, eco-development scheme), and State Government (rhino conservation). No figures supplied.
- Funding is considered inadequate. Proposals to attract assistance from NGOs (WCS, SI) and tourism operators are being developed. It is also suggested that the "site manager must be given some financial autonomy in the context of better management".
- UNESCO has provided equipment in the form of three vehicles, motor boats and monetary aid. The Wildlife Trust of India has supplied 300 field kits.



Manas Tiger Reserve Core Area

- * International Assistance from WHF as follows: (i) 1997, US$90,000 Emergency Assistance; (ii) 1998, US$90,000 Emergency Assistance.

Access to IT

- 2 PCs with internet access. No GIS capacity.

Visitor Management

- Visitor statistics show 3,219 domestic tourists and a complete absence of foreign tourists in 2002.
- There is a jeep Safari trail, foot paths, boating facilities, as well as camping sites for tents.
- There is an identified need for solar-operated bathing cubicles, "tiger-proof" netted areas, interpretation zones, and more elephants for tourist rides.
- A future visitor plan will address the need to restrict the number and type of vehicles inside MNP, advance book elephant rides, and involve local people in tourism.

II.5 Factors Affecting the Property

Threats and Risks

- Growing "land hunger" amongst fringe villages,
- Organized smuggling of wildlife articles,
- Illegal felling, grazing and fishing.

Counteractive Plans

- "As such there is no emergency plan. Nevertheless the management plan prepared takes care of the anticipated risks and emergencies that may arise in future."
- Levels of poaching have been declining, but there remains an urgent need to involve local people in eco-development activities.
- There is also a need to promote transfrontier protected area management with the government of Bhutan.

II.6 Monitoring

"The proposed monitoring system sets out to estimate loss of timber and natural resources in cubic meters, of species per hectare, complemented by an Environmental Impact Assessment (E I A). ."

Monitoring Arrangements

- The proposed monitoring system sets out to estimate loss of timber and natural resources in cubic meters, or species per hectare, complemented by an Environmental Impact Assessment (EIA).
- Monitoring partner institutions include the University of Guwahati, Assam Remote Sensing Application Centre, NGOs, and the Wildlife Institute (Dehradun).

Monitoring Indicators

- The following key indicators have been proposed: (i) animal population dynamics; (ii) ecosystem dynamics; (iii) tourist inflow.

II.7 Conclusions and Recommended Actions

Conclusions and Proposed Actions

- Priority must be given to "tricky trans-border international affairs" involving anti-State insurgents in the neighbouring Kingdom of Bhutan.
- Training is proposed for data collection techniques.
- Support from WHF is required for all-round training to combat poaching (including improved arms), environmental education, and "trans-frontier co-operation from field to national level".

* State of Conservation Reports

1986 Committee CONF.003/INF.4 At its 9th Session, the Committee asked to be kept informed of the possible construction of a dam on the Manas River. The proposal was rejected and the threat to the reserve averted.

1989 Committee CONF.004.5 IUCN presented a verbal report to the Bureau that the WH property had been invaded in February 1989 by several hundreds of local Bodo tribe people who had caused great damage to the park and loss of life. The Indian authorities responded by sending police to halt further destruction, but the problem of illegal encroachment had not been resolved. IUCN reported that at least six Indian rhinoceros, four tigers, as well as some elephants, had been killed; a large number of trees felled; and the habitat of the golden langur, hispid hare and pygmy hog put at risk. IUCN conveyed a resolution of the Species Survival Commission urging restoration of the Sanctuary to the Prime Minister of India and the Chief Minister of Assam.

The Bureau requested the Secretariat to contact the Indian authorities to express its concern over the situation.

1990 Committee WHC-CONF.004.4 The Secretariat transmitted the concerns of the Bureau regarding the integrity of the WH property to the Indian authorities in August 1990.

1992 Bureau CONF.003.3 The Bureau recalled that the Indian authorities had not responded to the Committee's recommendation that the property be nominated for inclusion on the List of World Heritage in Danger. The Secretariat and IUCN invited Mr. Deb Roy, Additional Inspector General of Forests (Wildlife), to present a paper on the status of conservation of Manas Wildlife Sanctuary during the IVth World Park's Congress held in Venezuela in February 1992. Mr. Roy pointed out that the Indian Government had regained control of most parts of Manas; had started an investment programme to reconstruct infrastructure damaged by militants; and was of the view that the ecological integrity of the site had not been seriously threatened. WWF-India had also launched a programme for the development of local people living in the vicinity of the Sanctuary.

1992 Committee CONF.002/5 The Secretariat informed the Bureau that the damage caused by the invasion of the Sanctuary by the Bodo tribe was estimated to be about 50 million Indian rupees (about US$ I.6 million). Concerned by information reported by IUCN that the area was still not free from encroachments by militants, and that illegal cultivation was spreading within the Sanctuary, the Committee decided to include the Manas Wildlife Sanctuary on the List of WH in Danger in accordance with Article 11, paragraph 41, of the Convention.

1993 Bureau CONF.001/3 During a meeting in May 1993 with the Ministry of Environment & Forests in New Delhi, a member of the WH Centre was informed that the Ministry was doing all within its powers to obtain a report on the state of conservation of Manas Wildlife Sanctuary from the State authorities in Assam. The representative of the Additional Director for Wildlife reported a considerable improvement in the relationship between the State authorities and representatives of the Bodo tribe, and increasing success in the negotiations to find a peaceful solution to the conflict in Assam.

1993 Committee CONF.002/5 The Committee reiterated its request to the Indian authorities for a full assessment of the damage to the Manas WH property and remedial measures currently being undertaken.

1994 Bureau CONF.001/3b Since the last Committee meeting, three news features and a report from the Assam Forest Dept. confirmed that the situation in Assam had continued to deteriorate. Almost one third (22) of the park's remaining rhinos had been poached in 1993; the Bodo rebellion was still hampering management efforts; and only one part of the area was considered safe. As a result, the Assam Forest Dept. was training a group of elite commandos with modern weaponry. WWF-India and the Forest Department were also planning various activities with the local communities around the park.

1994 Committee CONF.003/6 The Centre notified the Committee that it was aware of actions undertaken by two NGOs, WWF-India & the Swaminathan Foundation, which had commissioned a report on the Manas Wildlife Sanctuary.

The Committee endorsed the possibility of international assistance to the park if it was officially requested by the Government of India.

1995 Bureau CONF.201/4 The Bureau noted that co-operation between the Governments of India and Bhutan on the management of Manas had been taking place on a bi-lateral basis. To enhance co-operation between India and Bhutan in the conservation of the Manas ecosystem, the Government of Bhutan was invited to ratify the Convention as soon as possible.

1995 Committee CONF.203/5 The Committee took note of a letter received from the Indian Government concerning a forthcoming mission to Manas. The letter indicated that the Indian authorities planned to involve local level NGOs in monitoring the state of conservation of the site, and noted that co-operation between the management authorities of the Manas Wildlife Sanctuary of India and Manas National Park in Bhutan would be encouraged.

1996 Bureau CONF.202/2 IUCN informed the Bureau that a full report by a member of the Rhino Specialist Group would be made available to the Committee. The Bureau recommended to retain the property on the List of WH in Danger.

1996 Committee CONF.201/7A The Committee was informed that alternative arrangements were planned by the Government of India in the context of the Natural Heritage Training Strategy to review the state of conservation for Manas and other WH sites in India.

The Committee encouraged the State Party to consider hosting and providing support for a regional WH site managers training workshop in 1997.

1997 Bureau CONF.204/2A The Bureau was informed that the Director of Manas had presented a state of conservation report on the property during the World Natural Heritage Site Managers' Meeting for South Asia hosted by the Indian Ministry for Environment and Forests (MOEF) in January 1997. The report observed that (a) the work of the Bodo Autonomous Council to demarcate an area within the State of Assam had gathered momentum since 1993; (b) militant activity had diminished; and (c) an estimated 8,000 tourists had visited Manas in 1996. Ranger and guard units remain damaged, however, and the MOEF, together with the State Forest Dept. of Assam and the Directorate of the Manas Wildlife Sanctuary, was elaborating a 2-year rehabilitation plan for Manas.

1997 Committee CONF.208/8A The Committee was informed that MOEF and the State Government of Assam had elaborated a 2-3 year rehabilitation plan, at a total cost of US$ 2,135,000, of which US$ 235,000 was requested as emergency assistance from the WH Fund. The Bureau approved an initial grant of US$ 75,000 for the purchase of 3 vehicles, 2 boats and 55 wireless communication sets, and recommended that the Committee consider approving additional amounts subject to satisfactory use of the funds and written documentation on counterpart Indian funds disbursed.

The Committee was satisfied with the use of the first instalment approved by the Bureau and approved a second instalment of US$ 90,000 as emergency assistance to cover the costs of 2 wooden fibre boats, 400 patrolling gear sets, and the construction of buildings to serve as ranger stations.

1998 Committee CONF.203/7 The Committee was informed that the construction of ranger posts and staff housing had been delayed due to heavy rains, but park authorities had taken precautions to locate the buildings in areas which would not be vulnerable to raids by militants. The Indian authorities further suggested that the Committee revive its invitation to Bhutan to ratify the Convention in order to facilitate the nomination of Bhutan's Royal Manas National Park as a trans-border WH site to strengthen surveillance operations for the Manas ecosystem.

The Committee noted that during 1997-98 the MOEF had provided US$ 400,000 to strengthen the conservation of Manas, with an additional US$ 100,000 planned for 1998.

1999 Bureau CONF.204/4 The Bureau was informed that UNESCO-New Delhi had undertaken a site visit to Manas in March 1999. The visit confirmed that all equipment delivered was in use, and the site management was eager to support activities to benefit local villages. Following the site visit, MOEF submitted to the Centre a revised budget for the use of the US$ 70,000, comprising of 16 activities intended to cater to the needs of local villagers such as veterinary and health camps, and the repair of existing irrigation facilities. WWF-Bhutan also informed the Centre in April 1999 of its willingness to assist the Royal Government of Bhutan on its potential ratification of the WH Convention. The Centre transmitted all relevant information to WWF-Bhutan and extended its co-operation with other international conservation organizations also resident in Bhutan.

1999 Committee CONF.209/13 IUCN informed the Committee of its review of the state of conservation report on Manas provided by the State Party in June 1999. IUCN noted several positive developments including an Assam Forest Protection Force to act as a rapid reaction force for surveillance operations. The Committee invited the State Party to co-operate with the Centre and IUCN to prepare a progress report on the implementation of the rehabilitation plan since mid-1997 for submission to the Committee in 2000.

2000 Bureau CONF.202/4 The Bureau was informed that the implementation of the second phase of the rehabilitation plan would be completed in 2001. IUCN notified the Bureau of an IUCN/SSC Asian Rhino Specialist Group meeting held in February 1999. At the meeting, the Director of Project Tiger in Manas had estimated that the number of rhinos inside the site may be no more than 10.

2000 Committee CONF.204/9 The Deputy Inspector General for Wildlife of India agreed to present a case study on Manas at the Centre/IUCN workshop held in Amman, Jordan, in October 2000 on the "Role of World Heritage in Danger Listing in Promoting International Co-operation for the Conservation of World Natural Heritage".

2001 Bureau CONF.205/4 IUCN received reports indicating continued insurgency and in-fighting within the United Liberation Front of Assam, and an alleged movement of insurgents into the Sanctuary from the Bhutan side of the transborder ecosystem in December 2000. The construction of a road through the Bhutan side of the Manas ecosystem had also significantly increased traffic and access to the core areas of the WH property in India. IUCN noted, however, that efforts by the Forest Dept. and village communities had established 25 groups of young volunteers or "Manas Bandhu" ("Friends of Manas") to conduct awareness campaigns around the Sanctuary.

The Bureau further requested the Director-General of UNESCO to invite His Majesty the King of Bhutan to ratify the WH Convention.

2001 Committee CONF.208/9 Due to continued security risks, the UNESCO/IUCN/UNF-UNFIP project "Enhancing our heritage: monitoring and managing for success in World Natural Heritage Sites" decided to substitute Manas with Keoladeo National Park as one of the 3 pilot sites for the project in South Asia.

2002 Committee CONF.202/18 A field visit to Manas Wildlife Sanctuary was organized during an IUCN mission to Assam in February 2002. The principal findings were that: (a) there continued to be considerable levels of organized poaching, illegal logging and encroachment; (b) of the 3 protection Ranges established, only the Bansbari Range (the central area) was reasonably functional, as insurgency precluded the resumption of protection activities in the Eastern and Western Ranges; (c) lack of reliable data made management difficult, but a draft Management Plan was nearing completion; (d) the operating budget, infrastructure, equipment, staff experience and training in routine aspects of protected area management were insufficient; (e) limited infrastructure and basic public services in the surrounding villages reduced sustainable economic development options; and (f) poverty and population pressures placed alternative community-based projects beyond the capacity and resources of the present staff. Researchers and the Director of the property suggested that the number of Asian One-horned rhinoceros could be as low as ten individuals.

The mission also held informal discussions with the Royal Manas National Park (Bhutan) who indicated that the climate was unfavourable for a transboundary WH proposal. The scale of poaching and insurgency on both sides of the international border was of serious concern and the Royal Forest Dept. of Bhutan had closed a local school, relocated families from the Park base, and was planning to replace the Park staff with an army unit. The mission further reported that all of the US$165,000 allocated by the Committee as emergency assistance had been used on approved projects and equipment procurement. A trust account had however been established by the Assam Forest Dept. with the potential to cover ongoing management costs at both Manas (and Kaziranga) WH sites.

The Committee invited the Centre and IUCN to review with the State Party a list of potential projects prepared by the site Director, and examine the trust fund established by the State Government of Assam as a possible mechanism for attracting resources from international and national donors.

INDIA
Keoladeo
National Park


© UNESCO

II.1 Introduction

Year of Inscription 1985

Organisation Responsible for the Report

- Department of Forests & Wildlife
  Bharatpur 321 001
  State of Rajasthan
  India

II.2 Statement of Significance

Inscription Criteria N iv

Statement of Significance

- Proposed as follows:
  "Ornithologically, the park assumes significance in two respects – One, because of its strategic location it is a staging ground for Palaearctic migratory waterfowl… In addition, the wetland is a wintering area for massive congregations of a large diversity of waterfowl (about 120 species)... [including] the rare and endangered Siberian crane."

Status of Site Boundaries

- Borders and buffer zone of the property are considered adequate.

II.3 Statement of Authenticity/Integrity

Status of Authenticity/Integrity

- The WH value is considered to have been maintained. No changes are foreseen.
- The KNP "is dependent on the hand of man and demonstrates what can be achieved for conservation… Keoladeo is one of the most important bird habitats in the Indo Malayan realm."

II.4 Management

Administrative and Management Arrangements

- The protection accorded by the State to the habitat is of the highest order available for a natural area under the existing legal framework.
- Furthermore, Art 51-A(g) of the Indian Constitution states that it is the duty of every citizen to demonstrate compassion for living creatures.
- In the current management plan (2002-2006), "emphasis has been laid on research and monitoring so that continuity of information is maintained and management interventions are better targeted."

Present State of Conservation

- Water is the essence of the wetland value of Keolodeo in the arid state of Rajasthan. Government orders have been issued to ensure a guaranteed supply of water to the park on a priority basis.
- Water hyacinth, an invasive weed, choked up the water body in 1999-2000, and must be manually removed on a regular basis.
- Emergent vegetation, mainly *Paspalum distichum*, spread following the ban on entry of water buffaloes in 1982. Grass permits have now been granted for Rs15 to villagers for four months to control vegetation and collect grasses for thatch (a fire hazard).

Staffing and Training Needs

- 126 staff are employed divided between wildlife and tourism responsibilities.
- Staffing level is considered adequate.
- Training needs are identified in 19 areas including eco-restoration works, census operations, wildlife health techniques, and computer applications.

Financial Situation

- The main sources of funding come from the Central and State Government. No figures supplied.
- Funding is considered inadequate.
- Entrance tickets generated 7.68 million rupees (US$ 161,235) in 2001-02, and have a 'surcharge' to foster eco-development works in the surrounding villages (yet to be implemented).
- Funding from Swarovski & Co for US$ 450,000 for a period of 3 years to provide an interpretation centre.
- * International Assistance from WHF as follows: (i) 1996, US$30,000 Training on humid zones habitat.

Access to IT

- 1 PC with internet access. No GIS capacity.

Visitor Management

- Detailed annual visitor statistics are supplied since 1988 itemising Indian, foreign and 'student' visitors. The total varied between 82,126 and 126,559.
- Nature guides and rickshaw pullers have been trained in wildlife interpretation. The dept. also owns electric vans (currently out of order). Benches, toilets and boating facilities are also available.
- Tourists are given educational materials (leaflets) and showed a film entitled 'Birds of the Indian Monsoon' in the Dr Salim Ali Interpretation Centre.
- There is an identified need for a better upkeep of roads and a "full fledged interpretation officer".
- The management plan incorporates bird watching fairs, school trips, and adventure camps.

II.5 Factors Affecting the Property

Threats and Risks

- Water quality: the catchment area brings in a lot of fertilizers and insecticides from agricultural land.
- Water quantity: the 'Ajan Bandh' temporary reservoir stores surplus monsoon water 500m southwest of the park. Irrigation for farmland increases the pressure.
- Tourism pressure: littering, overcrowding on holidays, and excessive disturbance.

Counteractive Plans

- The dangers that "threaten or may threaten the property" are discussed in the management plan.
- In 1991, a meeting was held to ensure that adequate water is released to the Ajan Bandh reservoir in time for the bird breeding season.
- In 2001, the Principal Secretary of the State further negotiated the diversion of excess water from the Pachna dam to the park.

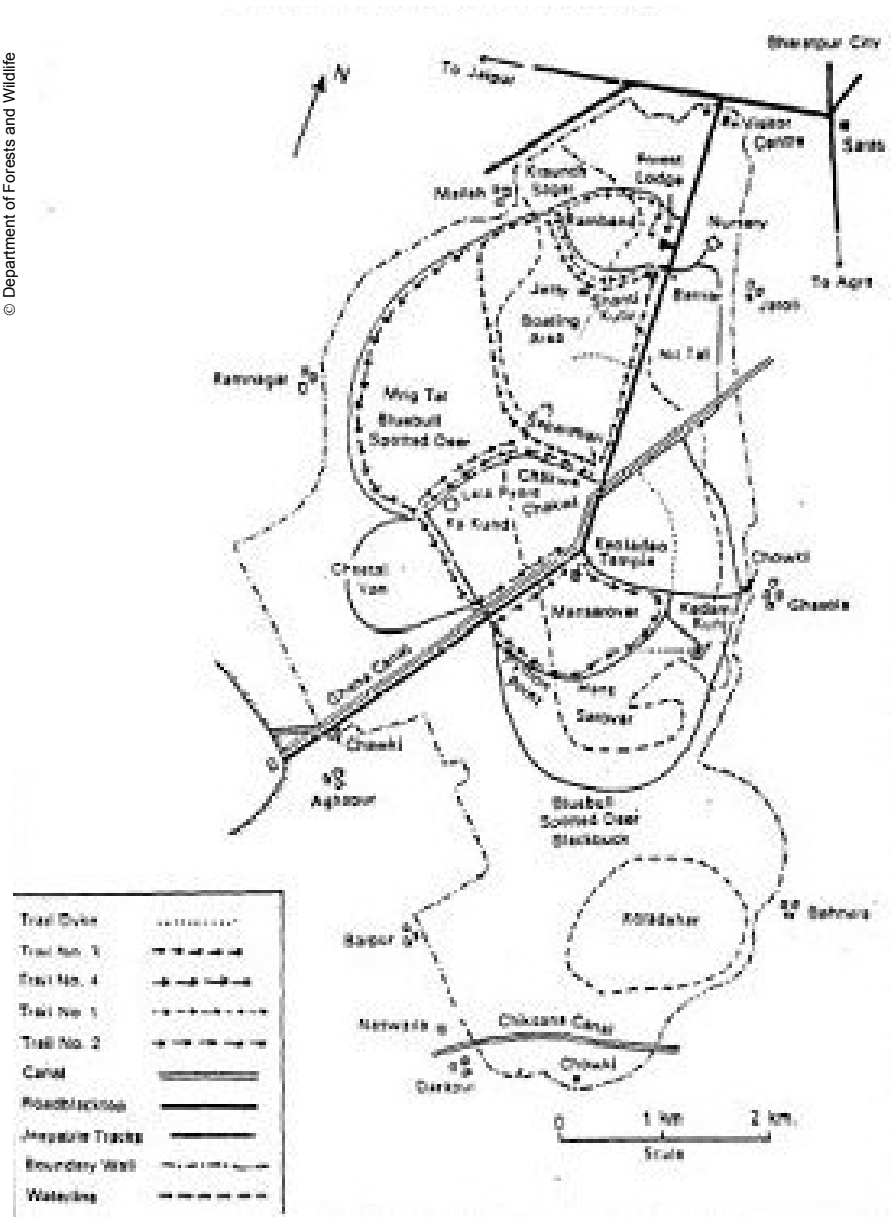
II.6 Monitoring

Monitoring Arrangements

- A formal monitoring system exists for the heronry count, waterfowl count, monitoring of python holes, meteorological data, chemical changes in water quality, and animal surveys. Partners include the Bombay Natural History Society and WWF-India.
- The Mathura Oil company assesses the levels of SO2 in the air which have been negligible.
- All other polluting industries have been shifted far from the park, as the park also falls within the trapezium zone demarcated to protect the Taj Mahal.

Monitoring Indicators

- Ecosystem health indicators are: (i) amount of water; (ii) census counts; (iii) vegetation surveys; and (iv) overall health of wild animals.



Keoladeo National Park Boundaries and Tracks

II.7 Conclusions and Recommended Actions

Conclusions and Proposed Actions

- Alternative sources of water to augment the water available to the park are being considered.
- "Another issue of concern is the protection awarded to the birds on their flight here. As the migratory birds do not breed here it is very essential to protect the breeding sites and the birds' flyway." For this, the authorities advise the creation of an international "flyway protected area network".
- An integrated pest management programme based on methods of bio control and compost farming needs to be envisaged and put in place.
- Support of WHF may be required for research and information systems based on GIS .
- Research material: The park administration is collecting copies of research available on the park. One of the pioneering studies in the field of wetland ecology was conducted by the Bombay Natural History Society for 10 years with financial assistance from US Fish & Wildlife service through the Indian Ministry of Environment & Forests. Data was generated on the structure and basic functioning of water budgeting, water quality, macrophytic primary productivity, seasonal and annual fluctuation of plankton, invertebrates, fish, birds and mammals. Decomposition of some of the major weeds and the resultant chemical changes in the quality of water were also studied. Various management techniques were experimented upon for controlling wetland vegetation.

* State of Conservation Reports

1997 Bureau CONF.204/2B The bureau recalled that the WH property of Keoladeo was a wintering ground for several important species of migratory birds, including Siberian cranes, and had been recognized as a wetland of international importance under the RAMSAR Convention. Records maintained by Park management indicated that the wintering population of Siberian cranes, estimated at about 38 in 1985-86, had dropped to 5 in 1992-93; and to none in 1993-95. In the late 1980s, IUCN expressed concerns regarding the decrease in Siberian cranes in Keoladeo, and the over-growth of grasses with an adverse effect on their breeding habitat. In January 1997, however, participants at the meeting of the South Asian World Natural Heritage Sites undertook a field visit to Keoladeo and observed 3 Siberian cranes.

Recognizing that the decrease in Siberian cranes was attributable to the intensity of hunting and other factors along the migratory route, the Indian authorities signed a Memorandum of Understanding (MOU) established among 9 countries (Afghanistan, Azerbaijan, India, Islamic Republic of Iran, Kazakstan, Pakistan, Russian Federation, Turkmenistan and Uzbekistan) whose territories constitute the range of the central and western Asian populations of the Siberian crane. Established under the auspices of the Convention of Migratory Species of Wild Animals (CMS) hosted by UNEP, and signed by the International Crane Foundation (ICF) and the Wild Birds Society of Japan, the MoU action plan sets out to: (i) release captive-bred Siberian cranes to augment wild populations; and (ii) capture Siberian cranes for the deployment of satellite transmitters to track Crane migratory routes. At the site level, the management introduced a controlled burning & cutting regime for grasses, and closed the Park for grazing by cattle. A scientific compilation on all the RAMSAR sites of India, including the Keoladeo WH Area, was also published by WWF-India.

The Bureau urged the Centre to maintain communications with the Secretariat of the CMS in order to follow progress in the implementation of the action plan.

INDIA

Sundarbans National Park

© UNESCO

II.1 Introduction

Year of Inscription 1987

Organisation Responsible for the Report

- Sundarban Tiger Reserve
  P O Canning,
  District 24 Parganas (South)
  743 329, State of West Bengal
  India

II.2 Statement of Significance

Inscription Criteria N ii, iv

Statement of Significance

- Proposed as follows:
  "The 'Sunderbans' represents the only Mangrove Tiger land in the world… Sunderban tigers are capable of leading an almost amphibious life… [and] have perhaps lost their territoriality owing to the obliteration of urination marks by tidal waves. Apart from the long stretch swimming it has adapted to changed food habits which include fish, crabs and water monitor lizards."
- A total of 84 species of mangrove have been recorded, along with the gangetic dolphin, 'fishing cat', and numerous species of endangered turtles.
- The physical presence of mangroves also serves as a 'windshield' to protect Calcutta from powerful cyclones originating in the Bay of Bengal.

Status of Site Boundaries

- Borders and buffer zone of the property are considered adequate.

II.3 Statement of Authenticity/Integrity

Status of Authenticity/Integrity

- The WH value is considered to have been maintained.
- The area is the largest single mangrove in the world (9,630 km2), and contains the single largest remaining population of Bengal tigers.
- The eastward shift of fresh water from Sundarbans can be traced to tectonic shifts in the 16th Century.

II.4 Management

Administrative and Management Arrangements

- The core national park (also the WH Site comprising an area of 1,330 km2) is surrounded by 3 wildlife sanctuaries which act as the buffer zones from human pressure. The entire Sundarbans administrative set up was restructured as a UNESCO Biosphere Reserve in November 2001.
- Legislation unique to the area includes the West Bengal Amendment of the Indian Forest Act (1988); the Fisheries Act of the West Bengal Government; and the Coastal and Regulatory Zone Rules.
- Follow-up to the IUCN recommendation to include Sundarban-Bangladesh on the WH List was achieved in 1997 with the financial support of UNDP.
- The original management plan of 1973 for the 'Sundarban Tiger Reserve' has been updated for the period 2001-2010. The property is divided between two ranges with an Officer who reports to the Field Director.
- No rights, concessions, unauthorised entry, or tourism is allowed within the WH Site. It remains under the ownership of the West Bengal Forest Dept.

Present State of Conservation

- "Today, there may not be a significant external pressure on the WHS but it is very high in the buffer zone, and with the rapid increase in population, poverty and unemployment, it is possible that the biotic pressure may ultimately affect the WHS also."
- The original tiger population rose from 181 in 1976 to 264 at the time of the 1984 census.

Staffing and Training Needs

- Staffing level is considered inadequate. At least another 100 forest guards are required so that all field camps can be effectively maintained.
- Training needs are identified in computers and GIS, participatory management, 'pump action guns', and comparative exchanges with other WH Site managers.

Financial Situation

- The main source of funding is the Government of West Bengal and the Ministry of Environment & Forests. No figures supplied.

- Funding is considered inadequate, in particular for vigilance patrols, eco-development activities, and ecotourism.
- UNDP has assisted the authorities in proposing projects for bilateral co-operation.
- * International Assistance from WHF as follows: (i) 2001, US$20,000 Preparatory Assistance for promotion between India and Bangladesh.

Access to IT

- 10 PCs with internet access.
- GIS software systems including Arc Info/Arc View/Arc Pad, and ERDAS/Easi Pace/TNT Maps, are used since 1999 to monitor habitat & species composition, and the restocking programmes of crocodiles and turtles.

Visitor Management

- Visitor statistics are supplied for 1990-2002 which show a moderate increase in the number of visitors/ tourists in the buffer zone from 22,049 to 34,011.
- There exists a 'Mangrove Interpretation Centre', 5 watch towers, one tourist lodge, and a number of private boat launches.
- A need is identified to involve local people in eco-tourism activities, and construct a WH "monument".
- The management plan spells out "do's and don'ts" for tourists, and guidelines for tour operators.

II.5 Factors Affecting the Property

Threats and Risks

- Unauthorised fishing, felling & poaching of wildlife (including by intruders from Bangladesh),
- Sea pirates & smuggling by armed miscreants,
- Increasing population and poverty,
- Tiger straying,
- Large scale tiger prawn seed collection (promoted by international companies in the buffer zone),
- Increasing levels of mangrove salinity.

Counteractive Plans

- Floating camps on board of "accommodation boats" and special patrolling by mobile squads.
- A network of watch towers and undercover informers.
- A participatory approach to help 23 Forest Protection Committees "extract a sustainable surplus" from the Biosphere Reserve through pisciculture and crab culture, and organise medical camps.
- Rapid reaction measures to immobilise and re-release strayed tigers with speedboats and tranquilliser guns.

II.6 Monitoring

Monitoring Arrangements

- Partners include the Zoological Survey of India, the Botanical Survey of India, and various universities.
- A proposal has been submitted to the Government to initiate tiger studies with GPS-based radio collars.
- In 1996-97, the negative impact of heavily intensified prawn culture on the aquatic ecosystem was studied.

Monitoring Indicators

- At the apex of the food chain, tiger biannual statistics are used as an indicator of ecosystem health.
- Crime data records are used to track human threats.
- Remote sensing satellite imagery and GIS is used to monitor siltation/erosion levels.

II.7 Conclusions and Recommended Actions

Conclusions and Proposed Actions

- Urgently "draw up a joint programme with Bangladesh for conservation of the WHS of the two countries, treating it as a single ecosystem."
- Co-ordinate with Bangladeshi law enforcement agencies for the UNDP collaborative management proposal.
- Support of WHF may be required for publicity, and projects on 'Alternate Livelihood development' and ecotourism for the millions of people living in the fringes of the Sundarbans.

"GIS software systems including ArcInfo / Arc View / ArcPad, and ERDAS / Easi Pace / TNT Maps, are used since 1999 to monitor habitat and species composition, and the restocking programmes of crocodiles and turtles."

*State of Conservation Reports

1997 Bureau CONF.204/2B The Bureau was informed that the Director of the Sundarbans Biosphere Reserve had presented a report to the meeting of the South Asian World Natural Heritage Site Managers held in January 1997. The site manager pointed out that the Sundarbans National Park and WH Area, comprising 1,330 sq.km., was the core area of the larger Sundarbans Project Tiger Reserve (2,585 sq.km) and the even larger Biosphere Reserve which extends over more than 9,000 sq.km of the inter-tidal area of the Sundarbans delta. Although India had not yet formally nominated the Biosphere Reserve for inclusion in UNESCO's international network of biosphere reserves, the case illustrated a joint application of the World Heritage and the Biosphere Reserve concepts within the same ecosystem. Eco-development activities undertaken in the larger Biosphere Reserve such as fishing, honey collection and timber harvest, had helped establish a working relationship with the local people for the protection of the WH core area.

The Bureau noted with interest the harmonious application of UNESCO's World Heritage and Biosphere Reserve concepts in Sundarbans, and urged the Centre and IUCN to identify similar cases to bring to the attention of States Parties to the Convention.

1999 Committee CONF.204/5 The Committee recalled that when it inscribed 'The Sundarbans of Bangladesh' on the WH List in 1997, it had encouraged the authorities of Bangladesh and India to discuss the possibility for creating a trans-frontier site. The Committee was informed that the Ministry of Environment and Forests of Bangladesh was undertaking a multi-million dollar project entitled the 'Sundarbans Biodiversity Conservation Project' to develop a management plan for the area with support from the Asian Development Bank and IUCN Bangladesh. A meeting held in Bangladesh in February 1999 informally discussed the possibility of having the Sundarbans WH site of Bangladesh and the Sundarbans National Park WH site of India combined into a single WH property. In a separate initiative, WWF-International launched a study financed by a SFR 50,000 grant to investigate trans-border ecological and conservation aspects of the tigers inhabiting the Sundarbans ecosystem. The project intended to promote co-operation between Bangladeshi and Indian staff and scientists and could contribute to the joint inscription of the two sites.

2001 Committee CONF.208/10 The Committee was informed that US$ 20,000 had been approved as a contribution to the UNF-financed project (US$ 105,000) to prepare a proposal for promoting trans-border co-operation for conservation within the Sundarbans ecosystem. IUCN informed the Committee that the 'Project Tiger Status Report' prepared by the Ministry of Environment and Forests (MOEF) for 2001 mentioned a system of National Waterways proposed for the Sundarbans Tiger Reserve. The report observed that the proposed project would adversely affect the ecosystem through "large-scale human activities, dredging of streams, and oil spills of numerous water crafts and vessels carrying cargo".

The Committee requested the State Party to submit a detailed report on the proposed project and its potential impacts on the Sundarbans WH site before 1 February 2002.

2002 Committee CONF.202/17 The Committee was informed that the Tiger Project had undertaken its bi-annual tiger census of the Sundarbans Tiger Reserve in December 2001 involving the registration of hind-leg pugmarks through plaster casts and tracings, followed by laboratory and computer analysis. An advisor to the Chair of the Cat Specialist Group of IUCN's Species Survival Commission (SSC) noted, however, that this methodology overestimated tiger numbers. In comparison, preliminary results from a 'mark/recapture' study by an Indian scientist using photo-traps had indicated that the tiger population might be fewer than 100. IUCN suggested that the techniques used for tiger census required a thorough review, and rigorous surveys of tigers' core prey species were also needed.

A media release by the Wildlife Protection Society of India (WPSI) reported in January 2002 that the High Court of Calcutta had issued a notice to the Government of India instructing the authorities to reply to a Public Interest Petition (PIL) filed by WPSI on the damage caused to the mangrove ecosystem of the Sundarbans Tiger Reserve by illegal prawn fishing with dragnets and other encroachments. The PIL sought to: (a) demolish all prawn farms within a radius of 10 Km from the Reserve; (b) prosecute those found guilty of trespass; and (c) appoint a committee to report on the ecological effects of prawn seed collection. IUCN noted that intensive tiger prawn seed harvesting had started in the late 1980's, posed a serious threat to the ecosystem of the Sundarbans as a whole, and had implications for the sustainability of the fisheries in the region. The use of dragnets had not only depleted the tiger prawn population, but had also diminished the number of fingerlings and seeds of other prawn and fish species, caused erosion, and prevented the establishment of mangrove seedlings on the mudflats with a step-by-step impact on the food chain.

In addition, 18 persons had been killed by tigers in the Sundarbans (including fishermen, honey collectors and wood-cutters), and 4 persons injured during 2000 - 2001. To control tiger straying, the Reserve had therefore trained staff in tranquillization of tigers to enable capture and release with speedboats. Use of nylon fencing had been found to be very effective and was planned for all sensitive areas. Meetings with villagers and local government were also held regularly through 10 Forest Protection Committees and 14 Eco-Development Committees in the fringe areas of the Reserve. 40,000 tourists were estimated to visit the buffer area of the Sundarbans reserve every year.

The Committee invited the State Party to provide up-to-date information on the current status on the impacts of tiger prawn seed harvesting, and recommended a review of methodologies used to estimate tiger numbers and available prey. The Committee noted the offer of support to the State Party from IUCN and the IUCN/SSC Cat Specialist Group.

INDIA

Nanda Devi National Park

© UNESCO

II.1 Introduction

Year of Inscription 1988

Organisation Responsible for the Report

- Forest Department (DFO), Uttaranchal
  P O Joshimath, Chamoli 246 401
  State of Uttaranchal
  India

II.2 Statement of Significance

Inscription Criteria N iii, iv

Statement of Significance

- Proposed as follows:
  "The area is reputed as one of the most spectacular wilderness in the Himalaya and is dominated by Nanda Devi Peak which is a natural monument and India's second highest peak. Unlike many other Himalayan areas, it is free from human settlement and has remained largely unspoilt due to its inaccessibility. It will provide the future control site for the study of rare flora and fauna in the Himalayan region."
- 7 out of 18 large mammal species found in the park are endangered: snow leopard, black bear, brown bear, Himalayan Thar, Bharal, musk deer, and Serow. It is also home to many threatened birds and butterfly.

Status of Site Boundaries

- The current WH property boundary does not need any revision. However, a proposal has been submitted to UNESCO-MAB to include 524.5 km2 outside the buffer zone as a 'transition zone'.
- A further proposal has been submitted to extend the WH Site with the inclusion of the Valley of Flowers in a serial cluster nomination.

II.3 Statement of Authenticity/Integrity

Status of Authenticity/Integrity

- The WH biodiversity value is considered to have undergone "phenomenal improvement" following 20 years of strict protection.

II.4 Management

Administrative and Management Arrangements

- The Nanda Devi National Park (the WH area) is managed as the core zone of the Nanda Devi Biosphere Reserve. In a natural "bowl", this 'Inner Sanctuary' is only open to scientific expeditions.
- Based on the management plan in operation since 1988-89, an Annual Plan of Operation (APO) is prepared every year in April by the district level officers for submission to the National Government for the release of MAB funds.
- A World Bank eco-development "revolving fund" is also being carried out in 14 villages in the buffer zone. Eco-development committees are being created in 33 villages in the BR to create 5-year 'micro-plans'.
- The existing management plan is being revised as a 'Landscape Plan' for a period of 10 years.

Present State of Conservation

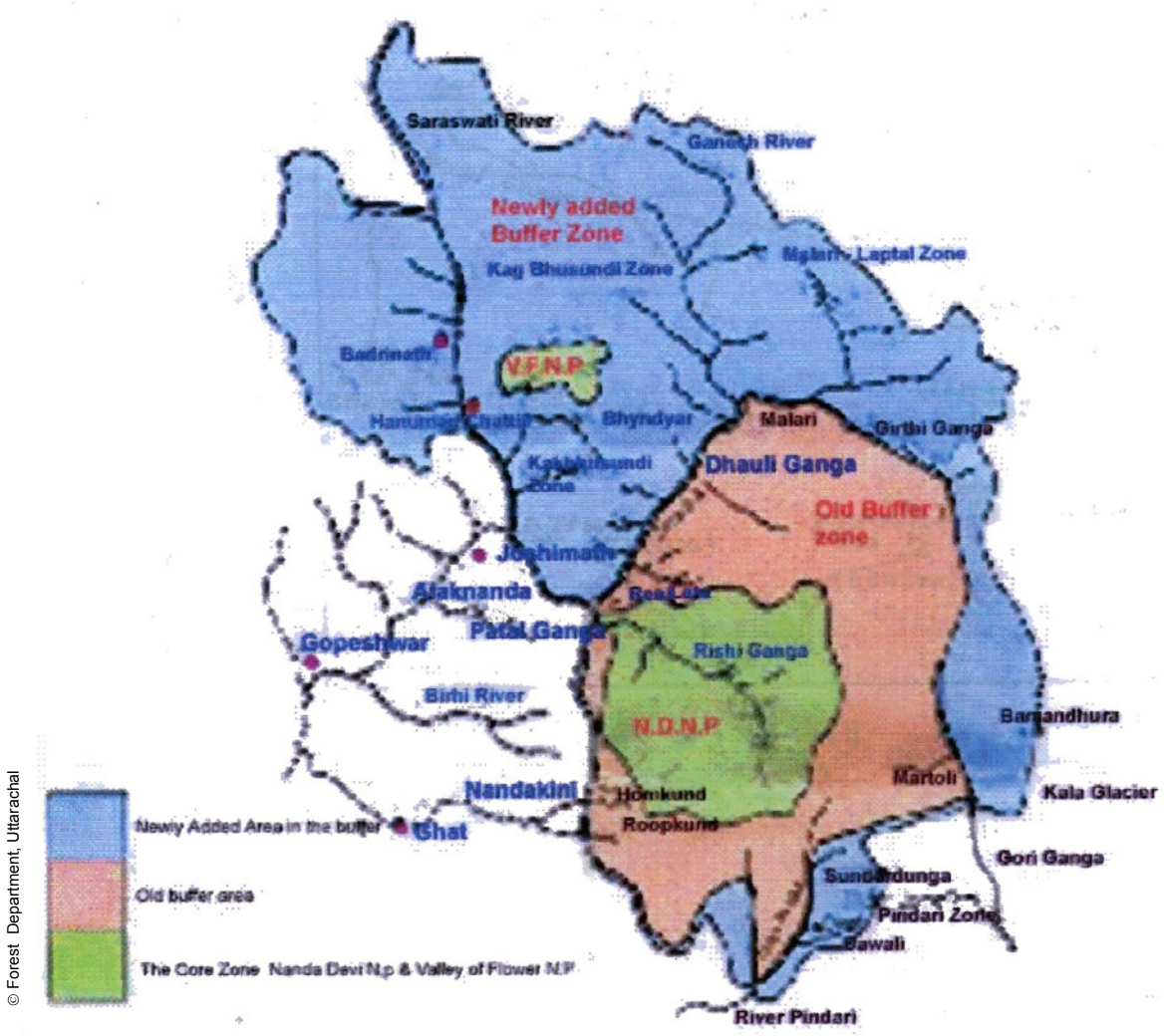
- The core zone is a strict conservation area with minimum disturbance except for scientific monitoring purposes (barely 100 people, porters included, have entered the Inner Sanctuary post-WH listing).

Staffing and Training Needs

- Altogether, the property is managed by 56 officers and staff including the DFO and the field level.
- Staffing level is considered inadequate. The site needs an additional 15 forest guards and 2 range officers.
- Training needs are identified in conflict resolution; state-of-the-art census techniques for elusive animals; in the use of surveillance equipment and intelligence gathering (including night-viewing devices and digital cameras); and in the propagation of medicinal plants.

Financial Situation

- Annual funds are provided by the Government of India under (i) Development of National Parks and Sanctuaries scheme; (ii) MAB project; (iii) Fire Protection Scheme. No figures supplied.
- "Considering the future planning, the present funding support will be inadequate."



Nanda devi National Park (NDNP, in green) within the Nanda Devi Biosphere Reserve, showing old Buffer zone (red) and newly added Buffer zone (blue).

- Funds are mostly needed for habitat management, infrastructure, high altitude and communication gear, plus for compensation to villagers for damage caused by wild animals.
- * International Assistance from WHF: none.

Access to IT

- 1 PC (shortly with internet). At least 3 more PCs are required. No GIS capacity.

Visitor Management

- "There is no future plan of opening tourism or mountaineering in the Inner Sanctuary… Allowing very strictly regulated trekkers up to Dharasi can be thought of if good results of eco-tourism is found in the buffer zone".
- Special marked trekking routes have been identified in the BZ. Mountaineers with special permission from the International Mountain Federation are only allowed to climb "peripheral peaks" (one 3-room hut is available for these purposes).

II.5 Factors Affecting the Property

Threats and Risks

- Risk of resurgent poaching and illegal harvesting in the core zone
- Crop raiding by black bears and wild boars
- Leopard predation on domestic cattle
- Potential overgrazing/harvesting of medicinal plants in the buffer zone.

Counteractive Plans

- Risk preparedness is included in the 10-year management plan considered by the State Government.
- Surveillance in the park is divided between short range (3 day) and long range (10 day) patrols.
- "Immediate payment of compensation" for crop raiding and cattle predation for farmers in the buffer zone. Encourage local people to keep cattle in sheds at night.

II.6 Monitoring

Monitoring Arrangements

- Scientific monitoring (accompanied by park staff) is undertaken roughly every ten years by a joint team of scientists from different institutions such as the Wildlife Institute of India and GB Pant Institute.
- In 1981-84, a baseline survey was conducted by the Botanical & Zoological Survey of India to prepare checklists of plant and animal species.
- In 1993, a second survey team consolidated future benchmarks by laying study plots, marking study trails, and selecting monitoring ridges.
- With the expertise of the Wildlife Institute of India, "how often to monitor" will be re-examined in 2003.

Monitoring Indicators

- Monitoring at present consists of recording the presence/absence of flagship and indicator species for fauna, and the maximum number of species of flora.
- In 2003, the same group of scientists as in 1993 will study the following indicators species at five identified sites: (i) snow Apollo butterfly, (ii) endangered plants like Aconite and Mecanopsis (per unit area), and (iii) snow leopards (per unit effort for scrapes and tracks) and population of its major prey (blue sheep and musk deer).

II.7 Conclusions and Recommended Actions

Conclusions and Proposed Actions

- It would be desirable to have a professional ecologist deputed from the Wildlife Institute of India to permanently supervise monitoring activities in Nanda Devi.
- WHF support may be required for implementation of the proposed 2003 'Landscape Plan' which will fully integrate a BR 'transition zone' for grazing rights and eco-development committees.

* State of Conservation Reports

1997 Bureau CONF.204/2B The Bureau was informed that the Director of Nanda Devi National Park had presented a state of conservation report on the WH property at the meeting of the South Asian World Natural Heritage Site Managers held in January 1997. He reported that no major threats existed to the Park (although the illegal collection of medicinal plants had been recorded) and that no visitors or mountaineering groups were allowed inside the core zone. The Bureau took note of the high level of protection afforded to Nanda Devi and requested that the State Party consider undertaking a feasibility study for specialized (mountaineering) tourism development in the Park.

1998 Ext Bureau CONF.202/4 The Bureau was informed that the Deputy Director of the Park had presented a paper on the property at a sub-regional meeting on Himalayan Heritage in Nepal in August-September 1998. The Bureau invited the State Party to extend co-operation between conservation and tourism authorities in order to define a policy on visitor entry and use of the site.

1998 Committee CONF.203/8rev The Committee recalled that the management of the site was based on enforcing a policy of strict protection, and was informed that an Indian Supreme Court ruling of 1996 had suspended, until further review by concerned authorities, the rights of local people to collect forest produce in the Nanda Devi Biosphere Reserve, including the WH area. The enactment of the ruling had led to a rise in conflicts between the management and local people. Co-ordination between the Ministry of Tourism and site management also needed to be improved as site-staff had apprehended tourists with permits issued by tourism authorities without consultation with the Park management. In addition, the Deputy Director of the Park was of the view that the boundaries of the WH site could be extended to include the Valley of Flowers National Park and the Khedarnath Wildlife Sanctuary.

The Committee invited the State Party to review the site management policy to minimise conflicts with local people, and suggested that the authorities study the feasibility to enlarge the WH area.

NEPAL

Sagarmantha National Park

© UNESCO

II.1 Introduction

Year of Inscription 1979

Organisation Responsible for the Report

- Sagarmatha National Park Headquarters
  Dept. National Parks & Wildlife Conservation, (DNPWC)
  Babar Mahal
  GPO Box 860,
  Kathmandu
  Nepal

II.2 Statement of Significance

Inscription Criteria N iii

Statement of Significance

- Proposed as follows:
  "The park has superlative natural phenomena of exceptional natural beauty with the highest mountain peak, Sagarmatha (8,848m). It also satisfies the criteria where natural and cultural elements are found in exceptional combination."

Status of Site Boundaries

- A buffer zone of 275 sq km was added to the property with a gazette notification in January 2002.
- There is currently a proposal to include Makalu Barun National Park (1,500 km2) and its buffer zone (830 sq km) as an extension to Sagarmatha WH Site.

II.3 Statement of Authenticity/Integrity

Status of Authenticity/Integrity

- The WH value is considered to have been maintained.
- It is reported that the newly formed 'Buffer Zone Management Committee' protested in 2002 against the expansion of the Syangboche airstrip.

II.4 Management

Administrative and Management Arrangements

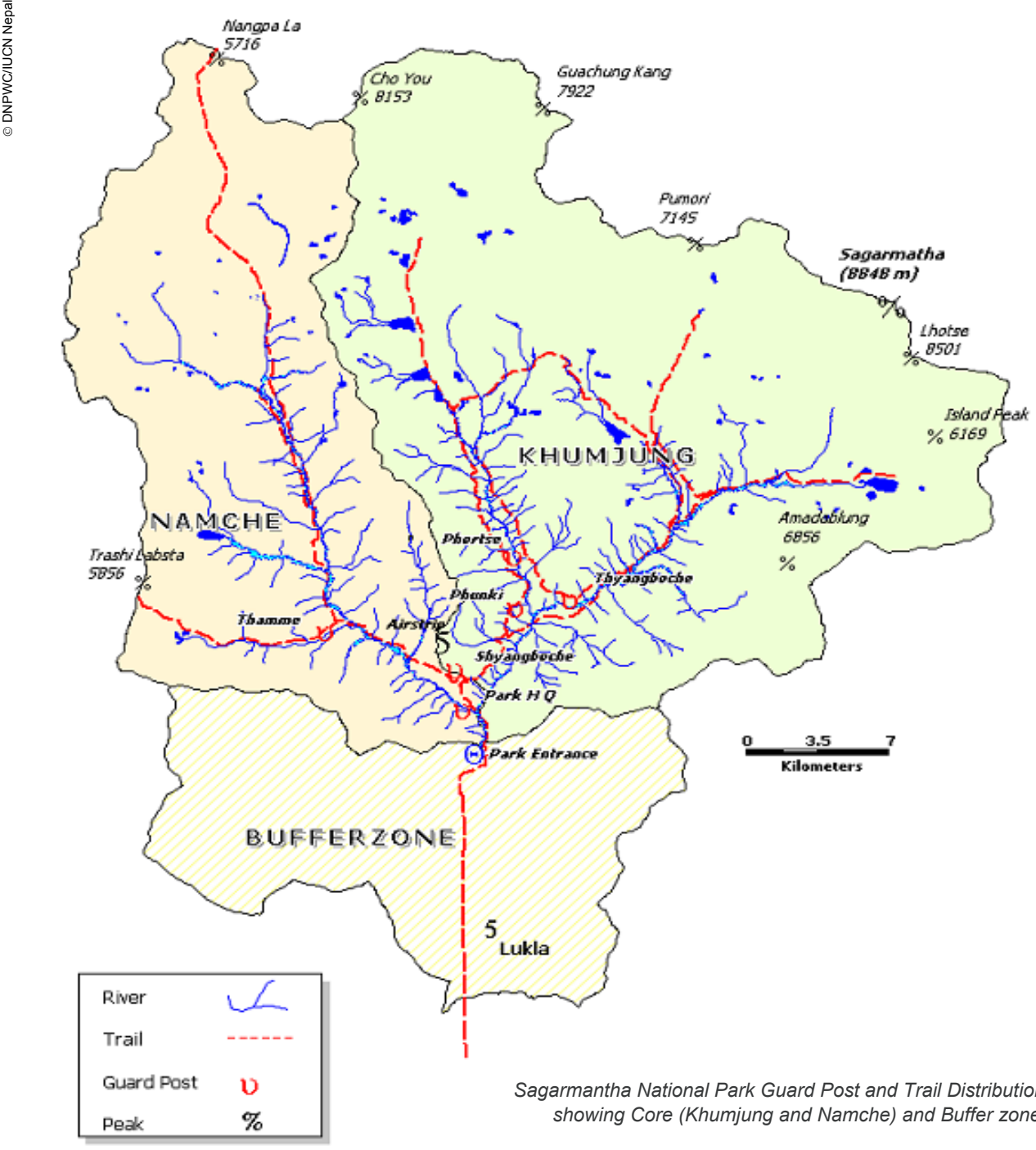
- A draft management plan for SNP was prepared in 1981 with help from the government of New Zealand.
- The park administration has a network of 9 guard posts shared with the Royal Nepal Army (approx. 250 soldiers) who have been in operation in the park since 1976.
- Relevant legislation includes the National Parks & Wildlife Conservation Act (1973); the Constitution of Nepal (1990) Art.26(4); the Himalayan National Park Regulations (1979); and the Buffer Zone Management Guidelines (1996, 1999).
- In 2002, DNPWC "envisioned a modality of landscape-level biological diversity conservation" involving 7 ecological corridors linking Makalu Barun NP and Kanchenjunga Conservation Area in the east; Rolwaling in the west; and Qomolungma Nature Preserve to the north.
- HMG prepared the 'Nepal Biodiversity Strategy' in 2002 with the co-operation of UNDP-GEF.
- It is proposed to uphold the customary conservation system of Sherpa forest watchers (*Shingo Ngawa*).

Present State of Conservation

- A local NGO, the 'Sagarmatha Pollution Control Committee' (SPCC) removed some 759,000kg of garbage from the park between 1994-98.
- Bottled drinks were banned in SNP in August 1998.
- Populations of indicator species such as Himalayan tahr and musk deer are reported to have increased since the early 1990s.

Staffing and Training Needs

- The SNP office currently has 38 staff with 3 rangers and 24 game scouts.
- Staffing level is considered inadequate. With the recent addition of a buffer zone, there is an urgent need to strengthen the park office.
- Training needs are identified in forest surveys and mapping, information technology, hydropower development, and farming medicinal plants.



Sagarmantha National Park Guard Post and Trail Distribution, showing Core (Khumjung and Namche) and Buffer zones

Financial Situation

- Regular government funding for SNP in 1999-2000 was approximately US$ 228,051 (83% from the army, the rest from DNPWC).
- Funding is considered inadequate for effective biodiversity monitoring, communication facilities, and library development.
- Major foreign donors include the governments of New Zealand, the UK, Holland, ADB, WWF, IUCN, 'Eco Himal' and the 'Himalayan Trust' founded in 1960 by Sir Edmund Hillary.
- The Buffer Zone Management Committee formed in 1999 receives 30-50% of the park revenue for the implementation of 5-year conservation/development programmes in the buffer zone.
- * International Assistance from WHF as follows: (i) 1981, US$52,331 Technical Co-operation for micro hydroelectric project; (ii) 1982, US$61,995 Technical Co-operation for reforestation consultation; (iii) 1983, Technical Co-operation; (iv) 1998, US$20,000 Technical Co-operation for sub-regional meeting on "conserving Himalayan Heritage"; US$15,000 Technical Co-operation for upgrading of visitor facilities at SNP; (v) 1999, US$7,000 Technical Co-

operation for Donor Meeting; US$8,8,202 Training for Donor meeting.

Access to IT

- 1 PC without internet access or printer.
- ARCView GIS software is available at DNPWC HQ in Kathmandu.

Visitor Management

- Visitor statistics are supplied as from 1971. After a peak of 25,925 in 2000-01, numbers subsequently fell to an estimated 14,000 in 2002 following the escalation in the Maoist insurgency in Nepal.

"In 2002, there were some 380 lodges in SNP (up from 240 in 1996), and a private Sherpa cultural museum in Namche. In fact, almost all the local Sherpa houses are converted into lodges / houses for visitors."

- In 2002, there were some 380 lodges in SNP (up from 240 in 1996), and a private Sherpa cultural museum in Namche. In fact, "almost all the local Sherpa houses are converted into lodges/houses for visitors".
- There is a need to further improve telephone facilities, signage, and maintain trails and bridges.
- Peak royalty fees range from US$ 1,500-10,000 per person. According to the tourism policy, "up to 40%" of this sum is destined for environmental conservation. No figures supplied.
- HMG has recently signed a UNDP-financed project entitled 'Tourism for Rural Poverty Alleviation' for US$ I.24 million over 5 years (2002-2007). The project will prepare a comprehensive tourism plan.

II.5 Factors Affecting the Property

Threats and Risks

- Extension plans for the Syangboche airstrip,
- Increasing lodge construction,
- Garbage,
- Glacier Lakes Outburst Floods (GLOF, possibly increasing due to climate change),
- Fire hazards (especially between March and May),
- Tourism pressure,
- Population pressure (mainly migrant porters).

Counteractive Plans

- No emergency plan has been developed, but park staff, the army, and local people cooperate to control fire hazards.
- 'Architecture Codes of conduct' for the construction of new buildings (especially for hotel/lodges).
- Rehabilitation and compensation payments will be offered for the cancellation of the Syangboche airstrip.

II.6 Monitoring

Monitoring Arrangements

- Guard posts submit 'daily log records' to their respective rangers who feed information to the Chief Warden responsible for annual reports.
- In 1991, the Royal Nepal Academy of Sciences & Technology (RONAST) established a high altitude research station at Lobuche. DNPWC and RONAST signed an MoU in December 2001.
- A list of scientific studies is attached. Although the Government does not fund research, external researchers often incorporate the findings of park staff into their publications.

Monitoring Indicators

- The recent monitoring format of the MSFC/DNPWC contains the following indicators: (i) habitat (water holes, grassland, fire); (ii) endangered species; (iii) conservation education; (iv) BZ management; (v) tourist arrivals; (vi) peak royalties.

II.7 Conclusions and Recommended Actions

Conclusions and Proposed Actions

- SNP park staff are unfortunately not consulted for the provision of climbing permits issued by the Ministry of Culture, Tourism & Civil Aviation and the Nepal Mountaineering Association. DNPWC will develop a "peaks utilisation mechanism"
- WHF support is requested for an improved 'Information Management System' with the relevant equipment and training for field staff to gather data and fill in monitoring reports.

* State of Conservation Reports

1997 Bureau CONF.204/2B The Bureau was informed that the Director of Nanda Devi National Park had presented a state of conservation report on the WH property at the meeting of the South Asian World Natural Heritage Site Managers held in January 1997. He reported that no major threats existed to the Park (although the illegal collection of medicinal plants had been recorded) and that no visitors or mountaineering groups were allowed inside the core zone. The Bureau took note of the high level of protection afforded to Nanda Devi and requested that the State Party consider undertaking a feasibility study for specialized (mountaineering) tourism development in the Park.

(continued on page 211)

* State of Conservation Reports (continued)

1997 Bureau CONF.204/2B The Director of Sagarmatha National Park (SNP) presented a state of conservation report for this WH property at the meeting of the South Asian World Natural Heritage Site Managers held in January 1997. The Director noted tourism was placing an ever-increasing energy demand on the sparse vegetation cover and had introduced considerable problems of waste disposal. He proposed that the Park staff, Nepalese Army personnel, and the 3,500 Sherpa community inside SNP shift to using kerosene. However, the Director had been unable to raise the necessary capital, estimated at US$ 50,000, for making the change. The Director was critical that the results of the scientific studies carried out inside the Park were rarely made available to the management, and called for greater involvement of scientific expertise in resolving practical problems such as energy demands and waste disposal. The Bureau requested IUCN to utilize expertise available in its Kathmandu Office to undertake a field visit to SNP to discuss ways to provide regular management advice.

1998 Committee CONF.203/8rev The Committee noted that site staff and Sherpa families resident in lower elevations had started to shift to the use of kerosene and micro-power plants to meet their energy needs, whilst tourist installations in the higher alpine zones continued to exploit juniper bushes. Restrictions in the number of visitors to the Park is likely to be resisted by the Sherpa community who derive about 75% of their income from tourism. Based on a request submitted by the State Party, the Chairperson had approved a sum of US$ 15,000 to update information displays at the Park entrance and in Namche Bazaar concerning the growing energy demands of the tourist industry. The site management intended to revise the management plan of the site in connection with the park's 25th anniversary in 2001, detailing the growth in energy demands of visitors and the local population. IUCN further informed the Committee about a seminar held in August 1998 on the Impacts of Tourism Development in SNP, and on a research project under consideration by protected landscape and development agencies in the UK to revise the management plan and tourism development strategy for the property.

1998 Ext Bureau CONF.202/4 The Bureau encouraged the State Party to seek a long-term, strategic approach for managing the increase in the number of visitors and the parallel rise in energy demands. The Bureau requested the Centre and IUCN to co-operate with the State Party to ensure that visitor rates, tourism infrastructure development and energy demand planning become an integral part of the process to revise the site's management plan in connection with the commemoration of Sagarmatha's 25th anniversary in 2001.

1999 Committee CONF.209/14 In accordance with the recommendation made by the Bureau in 1998, the Centre and IUCN facilitated a meeting in March 1999 in London between the International Centre for Protected Landscapes (ICPL); the UK Dept. for International Development (DFID); and relevant authorities from HMG of Nepal Ministries of Soils and Forests, and of Tourism and Civil Aviation; and the Chief Warden of SNP (who underwent a 2-week training course in ICPL in August 1999). Continuing negotiations later took place between DFID-Nepal concerning an ICPL/HMGN project entitled "Ecotourism, Conservation and Sustainable Development in the Sagarmatha (Mt. Everest) National Park and the Solu-Khumbu District of Nepal" expected to commence in November 1999. The Centre and IUCN informed the Bureau that the DFID Office in Kathmandu had approved a sum of UK£ 157,000 for the 18-month project which aimed to provide a model for how tourism at WH sites could be managed to improve conservation and community development.

The Dept. of National Parks and Wildlife Conservation (DNPWC) of Nepal organised further consultations among stakeholders in and around SNP under a GEF-Funded project seeking to produce: (i) a revised national park management plan; (ii) an integrated ecotourism strategy for the SNP, its buffer zone and the wider Solu-Khumbu District; (iii) a training and resources programme for the SNP administration; (iv) a community-based training & awareness programme; and (v) improved tourism infrastructure for the region. In addition to strengthening rural livelihoods throughout the Solu-Khumbu District, the programme set out to improve the planning and management of conservation and tourism at both the local and national levels.

NEPAL

Royal Chitwan National Park

© UNESCO

II.1 Introduction

Year of Inscription 1984

Organisation Responsible for the Report

- Royal Chitwan National Park HQ (RCNP)
  Dept. National Parks & Wildlife Conservation (DNPWC)
  Babar Mahal
  GPO Box 860,
  Kathmandu
  Nepal

II.2 Statement of Significance

Inscription Criteria N ii, iii, iv

Statement of Significance

- Proposed as follows:
  The park is considered to be "the last surviving example of the natural ecosystems of the Terai region… and provides critical and viable habitat for significant populations of several rare and endangered species, especially the one-horned Asian rhinoceros and the Gharial crocodile."

"The World Heritage biodiversity value is considered to have imprived with an increase in the population of rhinos and tigers (up from 46 in 1977 to 110 in 1995)."

Status of Site Boundaries

- A buffer zone of 766.1 sq km was added to the park with a gazette notification in March 1997.
- The combined area of RCNP totals 2,181 km2, including its buffer zone and the adjoining Parsa Wildlife Reserve (499 km2, established in 1984). It is considered adequate for current wildlife populations.

II.3 Statement of Authenticity/Integrity

Status of Authenticity/Integrity

- The WH biodiversity value is considered to have improved with an increase in the population of rhinos and tigers (up from 46 in 1977 to 110 in 1995). No changes are foreseen.

II.4 Management

Administrative and Management Arrangements

- RCNP became the first park in Nepal to adopt IUCN Cat. II protection in the NPWC Act (1973, 1993).
- The park authority has a network of 4 sectors with 46 guard posts supervised by both the DNPWC (35) and the Royal Nepal Army - RNA (11).
- There have been about 792 RNA soldiers stationed in the vicinity of the park since 1973.
- The first management plan for the park was prepared in 1975-79 under the aegis of a Nepal Government/UNDP/FAO project. An updated plan with three 'management zones' covers the period 2001-05.
- Under two Buffer Zone regulations (1996, 1999), the Management Committee and some 21 'user committees' receive 30-50% of park revenue for conservation and local community development activities.
- "The traditional rights of way of the people in the Madi Valley have been considered."

Present State of Conservation

- In total, there are 9 major mills and distilleries, (Bhrikuti Paper & Pulp Mill, San Miguel Beer etc) discharging effluent into the Narayani river.
- The relocation of the village of Padampur (11,208 people in 1,704 households) to Saguntole north of the park is "under completion".
- DNPWC has voiced its opposition to the construction of the 'Kasara bridge'.
- The 'Terai Arc Landscape Project' linking 11 protected areas between Nepal and India has translocated 72 rhinos to Bardia NP and 4 to the Royal Shuklaphanta Wildlife Reserve.

Staffing and Training Needs

- 278 staff, including 79 game scouts and 128 elephant keepers are employed by the RCNP office.
- Staffing level is considered inadequate. There is a plan to recruit 21 additional rangers to be attached to the 21 BZ user committees.
- Training is required in habitat management, anti-poaching intelligence, and 'digital monitoring'.

Financial Situation

- Government funding for RCNP in 2001-02 was about US$ 180,000. Administration accounts for 60-84%.
- Funding is considered inadequate.
- Major donors include UNDP-GEF, ADB, WWF, UNF, 'Save the Tiger' Fund, the Smithsonian Institute, and the US National Fish & Wildlife Foundation.
- On top of taxes on lodge concessions, a 'conservation fee' donated by the 7 concessionaries has formed an endowment for emergency conservation activities.
- * International Assistance from WHF as follows: (i) 1988, US$30,000 Technical Co-operation; (ii) 1990, US$50,000 Technical Co-operation for the development of an Educational Centre and promotional programme.

Access to IT

- 3 PCs without internet access. GIS ARCView 3.1 has been installed, but is not operational.

Visitor Management

- The number of foreign visitors has increased from below 1,000 in 1974-75 to 117,000 in 1999-2000 (plus a further 30,000 domestic guests/students).
- The Nepal Tourism Board grants operating licences to 7 concessionary lodges with 68 elephants (the contract is due to expire in 2008) within the park.
- There are a further 71 hotels in villages outside the park with an "oversupply" of 1800 beds.
- There is a need to improve telephone facilities, park watchtowers, signage, and road maintenance. A Tourism Plan was drafted in March 2001

II.5 Factors Affecting the Property

Threats and Risks

- Intensive fishing in the bordering rivers,
- Encroachment of water hyacinth and other weeds,
- Effluent discharge by local factories,
- Construction of the Kasara bridge over the Rapti river,
- 42% of 223,260 buffer zone population is below the age of 15,
- 150,000 head of livestock in the area,
- Flooding of the Rapti river (especially between June and Sept),
- Increased poaching during the *Dasain* festival period,
- 3 annual pilgrimages to the area.

Counteractive Plans

- No emergency plan has been developed.
- The Master Plan for the Forestry Sector (1988) has identified meeting local peoples' basic needs as a long term objective to reduce park-people conflicts.
- Minimisation of the obstacles created by the Gandak barrage between India and Nepal for dolphin and (captive bred) gharial crocodile migration.
- Re-routing of proposed electricity transmission lines outside the park.
- With UNDP/GEF co-operation, HMG of Nepal has prepared the 'Nepal Biodiversity Strategy' in 2002.

II.6 Monitoring

Monitoring Arrangements

- The King Mahendra Trust for Nature Conservation (KMTNC) has established a park research station, the 'Biodiversity Conservation Centre', in Sauraha.
- In November 2001, the Wildlife Institute of India facilitated a monitoring workshop in Chitwan.
- 'Tiger Tops Jungle Lodge', a private concessionary, also conducts a tiger monitoring programme.
- Since the 1970s, over 50 major independent research works have been completed on individual species and socio-economic studies (publications list attached).

Monitoring Indicators

- KMTNC assesses the following indicators in RCNP: (i) "camera trapping" for tigers; (ii) crop damage by wildlife; (iii) sloth bear count; (iv) bird count; (v) grassland ecology; (vi) ecotourism studies.
- DNPWC and WWF have developed key 'success indicators' for all the protected areas of Nepal.

II.7 Conclusions and Recommended Actions

Conclusions and Proposed Actions

- "RCNP is the last remnant of Nepal's glorious game sanctuary where 120 tigers, 38 rhinoceros and a hoard of bears, boars and deer were amassed in a single hunting event just over 60 years ago."
- A review of regulations relating to water pollution (Aquatic Animal Protection Act 1961, Water Resources Act 1992) for the Narayani, Rapti and Reu rivers is urgently required.
- Conflicts regarding the proposed Kasara bridge and tensions between concessionaries and other local tourism operators will need to be solved.
- Support of WHF may be required for conservation, education, monitoring & evaluation.

*State of Conservation Reports

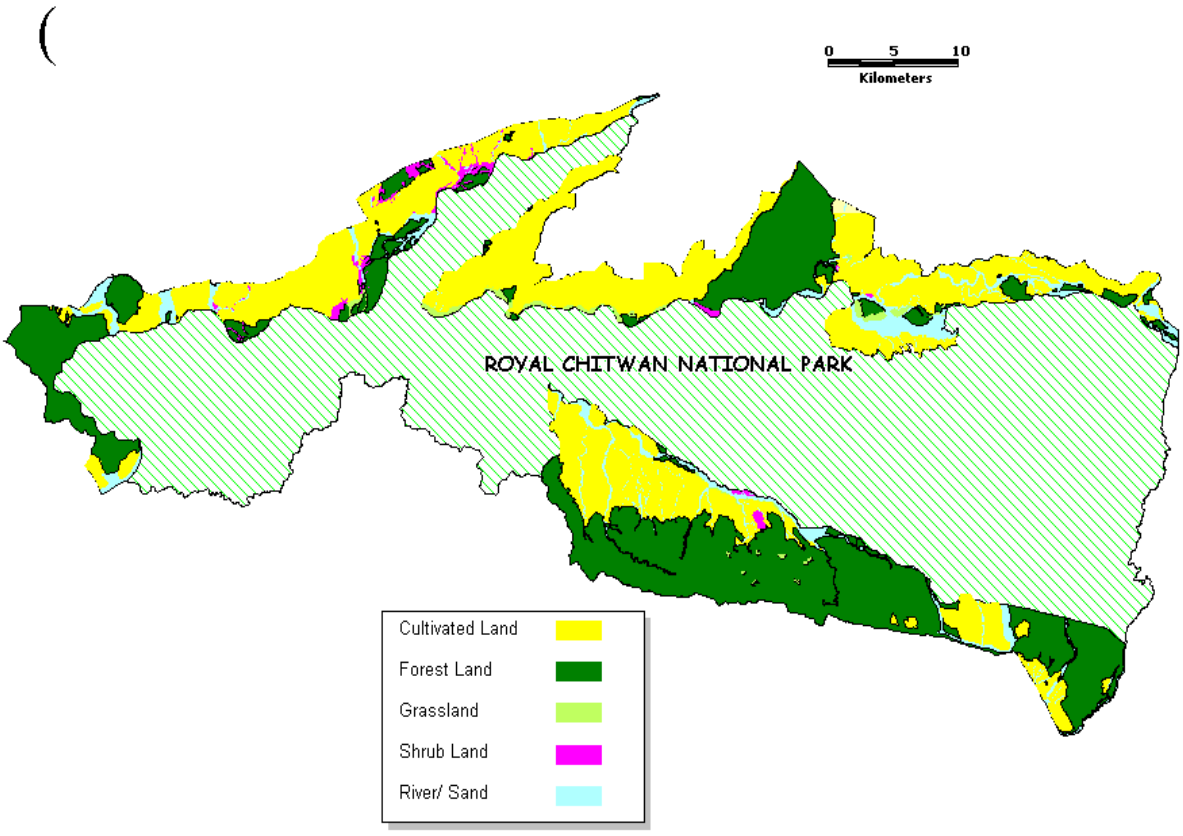
1990 Committee CONF.004/4 The Secretariat transmitted the Bureau's concerns to relevant authorities in Nepal and in the Asian Development Bank (ADB) regarding the impact of a proposed irrigation project to divert the Rapti river along the northern boundary of Royal Chitwan National Park (RCNP). The ADB responded in August 1990 that it was "equally concerned with the possible adverse effects" of the East Rapti Irrigation Project on the wildlife of RCNP. The Bank noted that it had requested consultants to carry out a detailed environmental impact assessment study by late 1990, and that the HMG of Nepal had commissioned other studies, including a survey of existing farmer-managed irrigation schemes in the area. The ADB indicated that it would keep the Centre informed of the future status and possible alternatives to the project.

1997 Bureau CONF.204/2B The Director of the RCNP submitted a state of conservation report of this property at the meeting of the South Asian World Natural Heritage Site Managers held in January 1997. The Director reported that the Park had a population of more than 400 greater one-horned rhinoceros, a success story attributable to the assistance of the Nepalese Army in anti-poaching activities. Discussions during the meeting revealed that 80% of the total population of about 2,000 greater one-horned rhinoceros, were found in the WH sites of Kaziranga in India (1,200) and RCNP in Nepal (400). Intensive poaching could, however, lead to sharp declines in Rhino populations as in the case of Manas WH area (India); and increased cooperation between the 3 WH sites was called for regarding intelligence information on trading routes for rhino horns, and the activities of commercially motivated poaching gangs.

The management of RCNP further reported measures to reduce conflicts with local villagers, arising largely from crop damage caused by wild animals. Villagers had been allowed to collect grass for roof-thatching and for use as fodder for livestock. In addition, villages around the Park received 50% of the revenues generated through tourism to the Park for use in rural development initiatives. In December 1996, the RCNP signed a cooperative agreement with Dartmoor National Park in the UK under a EU-funded Partnership and Exchange Programme which enabled staff exchanges and training programmes.

The Bureau encouraged the Centre to co-operate with the States Party and the CITES Convention for sustaining the successes achieved to-date.

1998 Ext Bureau CONF.202/4 The Bureau noted the success of RCNP in conserving the one-horned rhinoceros. However, at a sub-regional meeting on Himalayan Heritage, held in Kathmandu in August 1998, the Director General of DNPWC pointed out that the Park was facing problems of pollution of the Narayani River due to industrial sewage discharged into the river by



Map of Royal Chitwan National Park showing Core zone (stripped) and land use of Buffer zone

private enterprises located outside the park. An increase in the mortality rate of the rhinoceros in 1998 remained unexplained and was perhaps attributable to the fact that the population may have consisted of a considerable number of older individuals. The Bureau was informed of the interest of the DNPWC to use the large volume of scientific data available on ecological and managerial aspects of RCNP to set up a systematic monitoring regime for the Park. The National Parks & Wildlife Conservation Act had been recently amended to ensure that 30-50% of the tourism revenue from the Park was used for development projects benefiting local communities.

1998 Committee CONF.203/ 8rev The Committee recommended that the Centre and IUCN co-operate with the State Party to design and implement international assistance projects for mitigating the impacts of the pollution of the Narayani River. The Committee urged the Centre and IUCN-Nepal to co-operate with the DNPWC to establish a systematic monitoring scheme for tracking long-term changes in the ecology, and the management regime of RCNP.

2001 Bureau CONF.205/5 The Bureau noted that a sum of US$ 80,000 had been provided in the past for management planning, equipment purchase, and training activities. IUCN alerted the Bureau to a planned road construction through the centre of RCNP, as well as a bridge under construction over the Rapti River at Kasara high enough to provide access across the river during the monsoon season. The road was being constructed to provide access to the Madi village area south of the Park. Given the large scale of the bridge, it was possible that the road would cut RCNP in half, and eventually link with India leading to a high level of traffic and disruption to the property. A proposal was also reported to put a power-line along the road. IUCN was informed that an EIA had been prepared for the electricity line, but not for the road or bridge.

The Bureau requested the State Party to provide a report to the Centre, before September 2001, on the status of the road and power-line construction projects, including information on all environmental impact assessments undertaken, to enable the next session of the Bureau to undertake a review of the potential threats to the integrity of the property.

2001 Committee CONF.208/10 In response to the request of the Bureau in June 2001, the State Party submitted a report entitled “Environmental Impact Statement (EIA) for the Jagatpur Madi 33 kV Subtransmission Line Project”, dated June 2000. The report stated that the transmission line would pass through approximately 6km of the Park and WH site (and through 500 metres and 1,000 metres of buffer zone forest) between Dhrubaghat and Bankatta. The project anticipated the erection of 11-metre-high concrete poles and the stringing of lines aligned along the existing Hulaki road requiring the clearance of a corridor 2 metres in width. The EIA had not yet been approved by the Government of Nepal.

According to the EIA report the following negative impacts of the transmission line were foreseen: (i) loss or alteration of habitat; (ii) disturbances to wild fauna; (iii) likely hunting & poaching by project workers; (iv) decline in water quality associated with erosion and silting; (v) pollution from temporary workers camps; and (vi) bird deaths from collision with the transmission line. Proposed mitigation measures included: (i) reforestation of 2 hectares of community land near the Park with the guidance of the Park authorities; (ii) a Community Forest Support programme in 3 locations to be implemented with the Park authorities; (iii) an environmental awareness programme to be implemented by NGOs; and (iv) a habitat management programme to be implemented by the DNPWC.

The road and Kasara Bridge under construction were expected to require a number of years to complete due to budget uncertainties and restrictions. No EIA was conducted for either project. It was noted that whilst the road passing through the WH site would follow the current designated public right of way to Madi Village, the alignment of the Kasara Bridge had not been decided. IUCN noted that one option would be to follow the Park/WH site periphery along the Rapti River for 3-4 km. IUCN recognised, however, that the provision of electricity would help reduce the need for kerosene for lighting, as well as firewood for cooking and fuel for the local population, lodges and hotels. IUCN was nonetheless concerned that the impacts associated with proposed construction of a road and transmission line had prompted Danger Listing in similar cases.

Noting that the State Party had not yet approved the construction of the line, the Committee urged the State Party to seek out alternatives that would minimise impacts on the integrity of the property. The Committee noted that the Kasara Bridge and the associated road along the northern periphery of the Park might be a less intrusive option to improve transport in the region.

2002 Bureau CONF.201/11rev In January 2002, the DNPWC informed the Centre that the Bureau’s concerns had been brought to the attention of the Ministry of Population and Environment responsible for approval of the EIA of the project. The DNPWC informed the Centre that a public hearing on the EIA was held in January 2002 where Park staff had presented the Bureau’s concerns to the public and proposed underground wiring for the distance of 6 km through the Park. The representative of the Nepal Electricity Authority (NEA) had responded that it would be very expensive, and suggested insulated wiring for the same 6 km. IUCN informed the Centre that the EIA under question was awaiting approval, and noted that there was considerable public pressure in favour of the project going ahead.

DNPWC further reported that the alignment of the transmission line would pass along the Dhruba-Bankatta public right of way, and that erection of transmission poles had already begun in Madi and other parts outside of the northern sector, although no poles had been erected inside the Park. IUCN noted that the public right of way served the communities of Madi valley (involving 4 Village Development Committees consisting of approximately 50-60,000 people), and that the trees to be felled along the chosen route were neither listed in the national regulations, nor in the appendices of the CITES Convention. IUCN recalled that the foundation for the Kasara Bridge were laid by a former Prime Minister in response to requests from the local government and people, and that alternative sites had not been considered as cost effective. IUCN was informed that the bridge would be ready in a couple of months, allowing vehicles access to at least 4 to 5 kilometres within the Park, inevitably causing tremendous pressure on the WH property. As a compromise solution, IUCN was informed that the Park authorities were seeking the insulation of the wire by the NEA along its entire length within RCNP and its buffer zone.

The Bureau expressed its support for measures that would reduce the impact of the transmission line, and noted that the installation of an underground line, while more expensive, would have the least potential impact. The Bureau urged the NEA to contribute to conservation activities in addition to the insulation of the wire, and invited the State Party to undertake an EIA of the Kasara Bridge and associated road in order to identify possible alternatives and/or mitigation measures. Pending the completion of the EIA, the Bureau recommended that the State Party consider imposing a moratorium on the construction and use of the bridge and road. The Bureau further requested the State Party to consider inviting a monitoring mission to fully assess the impacts of the proposals, and consider alternatives that would not compromise the WH value of the property.

SRI LANKA

Sinharaja Forest Reserve

© UNESCO

II.1 Introduction

Year of Inscription 1988

Organisation Responsible for the Report

- Forest Department
  Rajamalwatta Road
  Battaramulla
  Sri Lanka

II.2 Statement of Significance

Inscription Criteria N ii, iv

Statement of Significance

- Proposed as follows:
  "Sinharaja Forest Reserve is a tropical humid evergreen rain forest 11,187 ha in extent, has high biodiversity, and is the last remaining relatively undisturbed forest in Sri Lanka. According to recent research, out of 177 woody trees and lianas found in Sinharaja, 125 (70%) were endemic."

Status of Site Boundaries

- In 1992, an adjoining forest extension of 2,259 ha was included within the WH Site.
- A buffer zone will be established in 2002-03 as part of a UNDP/GEF 'Boundary Demarcation' Project.

II.3 Statement of Authenticity/Integrity

Status of Authenticity/Integrity

- The WH value is considered to have been maintained. No changes are foreseen.

II.4 Management

Administrative and Management Arrangements

- The WH area is managed directly by the Divisional Forest Officer from the Forest Dept.
- The most relevant laws include the 'Forest Ordinance' of 1917 which is currently "under amendment"; the 'Fauna & Flora Protection Ordinance' (1937); and the 'National Heritage Wilderness Areas Act' (1998) with special powers for World Heritage protection.
- A national steering committee co-ordinates institutions for Sinharaja as a National Wilderness Area, Biosphere Reserve (1988), and WH site.
- There are two management plans, prepared in 1985/86 and 1992/94, which emphasise conservation, scientific research, buffer zone management, benefit-sharing, and community participation.
- An updated management plan is currently under preparation.

Present State of Conservation

- Conservation interventions include: (i) biodiversity surveys; (ii) enrichment of degraded areas; (iii) reforestation of adjoining land; and (iv) acquisition of private land in Sinharaja by the Forest Dept.
- An 'Accelerated Conservation review' (1992) and 'National Conservation review' (1996) re-assessed the biodiversity & hydrological value of the forests.

Staffing and Training Needs

- Staffing level is considered adequate.
- There are 6 range officers; 11 beat forest officers, 8 field assistants, and 20 field guides at three visitor centres at Kudawa, Pitadeniya, and Morningside
- Training needs are identified in social forestry, participatory management, eco-tourism and recreation.

Financial Situation

- Annual government funding is roughly US$ 10,500 received directly from the Forestry Sector Development Programme.
- Funding is considered inadequate.
- In 1991, the Ministry of Forestry & Environment proposed a 'Trust Fund' specially for the management of Sinharaja, which was not accepted by the government.
- In addition, US$ 1 million has been allocated under the UNDP-GEF 2000-2004 'South West Rain Forest Conservation Project' to develop and upgrade the park infrastructure and logistic facilities.
- Bilateral assistance include NORAD funds (1992-97).
- * International Assistance from WHF as follows: (i) 1986, US$20,000 Training Workshop.

Access to IT

- 1 PC with no internet access.
- No GIS capacity.

Visitor Management

- In 2000, at least 12,099 school children, 9,327 domestic visitors, and 2,260 foreigners visited the site. However, due to incomplete records, the "actual figure" is likely to be significantly higher.
- There are 6 dormitories & lodges with 102 beds, 1 information centre, and 1 'Research Education and Extension Centre' (REEC).
- There is an identified need for 2 new information centres, 2 dormitories and 4 lodges.
- No visitor management plan is acknowledged.

II.5 Factors Affecting the Property

Threats and Risks

- Encroachment of tea cultivation into the buffer zone area of the reserve,
- Private sector interest in redeveloping state lands,
- Increasing numbers of visitors.

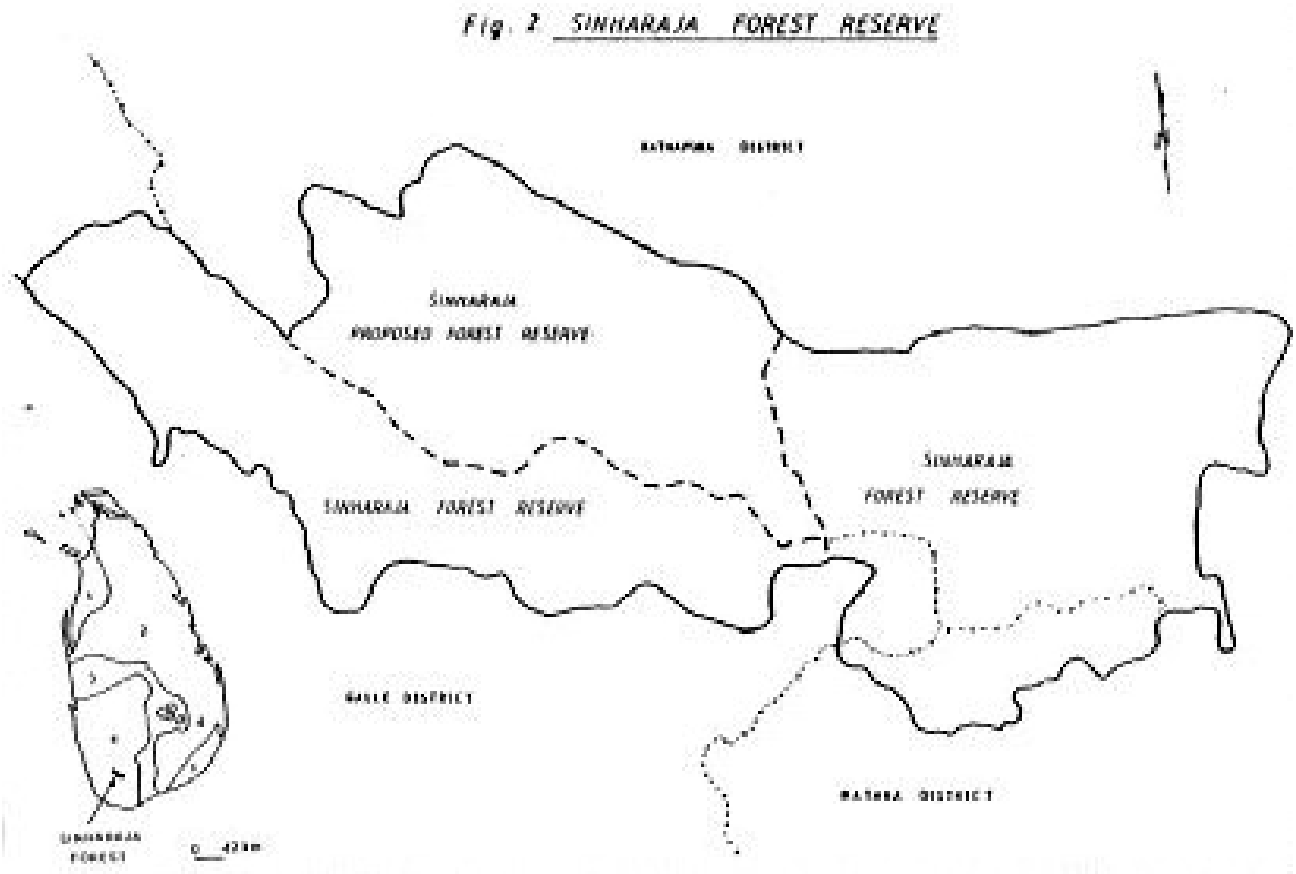
Counteractive Plans

- No emergency plan has been developed.
- The neighbouring Kanneliya Forest Reserve has been identified to provide visitor facilities and take the pressure off Sinharaja.
- The National Forest Policy of 1995 provides added emphasis on conservation of Sinharaja.
- 'Vigilence Committees' have been formed on a village basis in the buffer zone of Sinharaja.

II.6 Monitoring

Monitoring Arrangements

- Monthly progress reports are compiled by the Divisional Forest Officer for review at the annual progress review meeting for the park.
- The Deputy Conservator at the Forest Dept. HQ has been assigned specific responsibilities for the World Heritage Site.
- Other partners include the National Science Foundation of Sri Lanka.



Sinharaja Forest Reserve showing proposed extension (North)

Monitoring Indicators

- Indicators include: (i) visitor numbers; (ii) income generation activities; and (iii) buffer zone projects.
- A future monitoring system will also incorporate the number of encroachments and other illegal activities; research programmes; as well as visitor complaints and suggestions.

II.7 Conclusions and Recommended Actions

Conclusions and Proposed Actions

- "World Heritage values are becoming more and more important with the denudation of natural resources in the other areas of the region. More scientific research needs to be carried out covering all other disciplines such as social forestry and ethno botany."
- Key proposed actions cover the redemarcation of boundaries, and the strengthening of Community-Based Organisations ('Friends of Sinharaja') for participatory management.
- Support from the WHF may be required for staff capacity development, infrastructure development, and upgrading the visitor facilities.

* State of Conservation Reports

1997 Bureau CONF.204/2B A state of conservation report on Sinharaja was prepared in connection with the meeting of the South Asian World Natural Heritage Site Managers held in January 1997. The total area of Sinharaja recognized as WH is about 8,860 ha. The Sri Lankan authorities have however extended the area of the Sinharaja National Heritage Wilderness Area to 11,187 ha to incorporate some fragments of 'pristine' habitats in the vicinity of the WH Area. Sinharaja continues to receive assistance from NORAD for the implementation of the Sinharaja Conservation Project with technical support from IUCN. Under the first two phases of the implementation of the management plan for Sinharaja, a range of activities, such as redefinition of the boundary, strengthening protection, increasing awareness, improving visitor facilities, buffer zone management projects, research studies and supporting community-based organizations have been undertaken. The Bureau requested IUCN and the Centre to contact Sri Lankan authorities to determine whether or not the State Party should be invited to consider increasing the total area of the WH property.

2000 Bureau CONF.202/5 The Centre and IUCN received reports in early 2000 from the Environmental Law Foundation of Sri Lanka that raised concerns over possible threats to the integrity of the property due to proposals for organic tea cultivation in a 62 hectare plot of land within the eastern border of the site. The reports were transmitted to the Permanent Delegate of Sri Lanka to UNESCO for verification and comment.

IUCN informed the Centre that the ownership of the area was not formally vested with the Forestry Dept (FD) by a gazette notification, which should have been published by the Land Reform Commission (LRC). The Provincial Council of Sabaragamuwa strongly opposed the proposal and the LRC informed the FD that the leasing out of a block of land from the buffer zone of Sinharaja for the above project had been stopped. Action in the meantime requested the LRC to formally vest the area under the FD by a gazette notification. IUCN further reported that the boundary re-survey of Sinharaja had been completed and visible permanent boundary posts were being fixed by the FD. IUCN-Sri Lanka noted that it would also be working with the FD to implement a proposed GEF-financed project to conserve Sinharaja, particularly through a programme of buffer zone development activities along the southern boundary.

(continued on page 220)

* State of Conservation Reports (continued)

The Secretariat requested the State Party to provide a detailed report on the steps taken to stop the release of land for tea farming and to prevent the recurrence of similar claims in the future. The State Party was invited to provide a full description of the buffer zone development project along the southern border for which it was applying for a GEF grant.

2000 Committee CONF.204/10 IUCN reported to the Committee that when fixing visible posts to demarcate the boundary of the property during the implementation of the conservation management plan (1988-93), it was revealed that a number of unauthorised settlements existed along the southern boundary of the forest. The FD therefore initiated action to re-demarcate the boundary, excluding the settlements. In the process, more than 1,000ha of natural forest situated along the eastern border of the site, which was not originally included in the WH site, was identified and set apart to be included as part of the Reserve. It was hoped that the State Party would nominate this area as an extension to the WH site in due course.

IUCN reviewed a letter submitted by the FD of Sri Lanka which confirmed that the process to release land to Sinharaja Plantations Organic Ltd. for a tea plantation had been stopped, and that the FD was taking steps to obtain legal ownership of the land. In addition, in a letter from the Sinharaja Plantations Organic Ltd., the company claimed that it had followed official legal processes to possess the land. The company also contested that the plantation would have any impact on the Forest Reserve as it lies 4.8 km from the boundaries of the WH site.

IUCN-Sri Lanka noted that it would be working with the FD to implement a proposed GEF-funded project to conserve the south-western rainforests of Sri Lanka, which would benefit the WH site, particularly buffer zone villages through the creation of opportunities for cottage industries based on non-timber forest products. The project would also support boundary-marking, conservation awareness among rural communities, and nature-based tourism. The Bureau noted that the FD was making efforts to reclaim the land released for organic tea farming and might encounter a legal challenge from the private enterprise concerned. The Bureau requested the Centre and IUCN to monitor further developments, and invited the State Party to report on steps taken to incorporate 1,000 ha of natural forest to the National Reserve and its eventual inclusion in the WH site.

2001 Committee CONF.208/ 10 The Committee was informed that the Director of the Centre had received an undated letter in October 2001 from Sinharaja Plantations Organic, raising preliminary objections against the reacquisition of land released earlier for Government-approved organic tea farming. The company provided a detailed explanation on why it considered the efforts of the Conservator of Forests of Sri Lanka to be unfair, and informed the Centre that it had placed the action of the Conservator before the judiciary of Sri Lanka to claim compensation. Hence, the company requested the Committee to refrain from taking any decisions concerning the parcel of land that it claimed had been legally handed over by the authorities.