IUCN Conservation Outlook Assessment 2014 **(archived)**
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Kaziranga National Park

SITE INFORMATION

Country:
India
Inscribed in: 1985
Criteria:
(ix) (x)

Site description:

In the heart of Assam, this park is one of the last areas in eastern India undisturbed by a human presence. It is inhabited by the world's largest population of one-horned rhinoceroses, as well as many mammals, including tigers, elephants, panthers and bears, and thousands of birds.
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SUMMARY

2014 Conservation Outlook

Significant concern

The Kaziranga National Park is considered as one of the better managed Protected Areas in the country and elsewhere, owing both to its enabling framework and demonstrable success in conservation. There has been no significant deterioration in its values over the years and the natural attributes are likely to continue their healthy trend at least in the medium term. However, after decades of conservation success the recent spike in rhino poaching in the site is of particular concern. The changing dynamics of the surrounding landscape, particularly with regard to the anthropogenic elements, will be placing increasing pressure on the ecological integrity of the site. The current rhino poaching crisis has shown that the inevitable intensification of threats, current and potential, to the site will necessitate enterprising and adaptive management strategies to deal with the developing.

Current state and trend of VALUES

High Concern
Trend: Stable

The current state of the site’s values with regard to its ecological processes and significant natural habitat is good and stable. However, after decades of conservation success the recent spike in rhino poaching in the site is of very high concern.

Overall THREATS

High Threat

Major threats to Kaziranga primarily affect its significant natural habitat and its rare and endangered species. Rhino poaching, spread of invasive species (Mimosa), livestock grazing, highway traffic, unplanned tourism infrastructure and seasonal flooding are current threats which have direct bearing on the

wildlife and its habitat. Likewise, potential threats to the site which may pose challenge include the changing demographic and economic profile of the local population, illegal fishing and stone quarrying adjacent to the park, tourist pressure and river bank erosion. The predominantly anthropogenic drivers of these threats have long-term implications for the site from a conservation perspective. The location of various threats is both inside and outside the site.

Overall PROTECTION and MANAGEMENT

Mostly Effective

The property has the highest legal protection and strong legislative framework under Indian wildlife laws. The park has a long history of protection reflected in the dramatic recovery of the rhino population and celebration of 100 years of conservation in 2005. The park has also been declared as a Tiger Reserve (2007) and there have been six additions to the park area. The site benefits from government support at both national and regional levels as well as involvement of national and international conservation organisations. However, there remain some issues of concern particularly with regard to developing a more cooperative and economically beneficial relationship for the local population. The management also needs a long-term strategy for dealing with tourism related issues, research and monitoring for habitat and wildlife, human-wildlife conflicts and boundary issues relating to the addition areas to the national park. Staff training and development will require continued attention of the management. While adequate and sustained finance is a critical requirement, the constitution of the Kaziranga Tiger Conservation Foundation is a landmark measure in this regard.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **Ecological processes in development of terrestrial and freshwater ecosystems**
  Criterion:(ix)

  The Brahmaputra River’s fluctuations result in spectacular examples of riverine and fluvial processes (IUCN, 1985). River bank erosion and formation of new lands determined by the Brahmaputra river system; succession between grasslands and woodlands. Three-quarters or more of the area is submerged annually by the flood waters of the Brahmaputra. Soils are alluvial deposits of the Brahmaputra and its tributaries. (WHC website, retrieved 2014).

- **Significant natural habitat**
  Criterion:(x)

  The park represents one of the last unmodified natural areas of this region of India (IUCN, 1985). It is the single largest undivided and representative area of the Brahmaputra valley floodplain grasslands and forests with associated biodiversity. There are three main types of vegetation: alluvial inundated grasslands, tropical wet evergreen forests and tropical semi-evergreen forests. Grasslands predominate in the west, with tall 'elephant' grasses on the higher ground and short grasses on the lower ground surrounding the bheels. Tropical wet evergreen forests, near Kanchanjhuri, Panbari and Tamulipathar blocks, are dominated by trees. Tropical semi-evergreen forests occur near Baguri, Bimali and Haldibari. (WHC website, retrieved

2014).

► Rare and endemic mammals

Criterion:(x)

The park is internationally recognized for the single largest population of the Great Indian One-horned Rhinoceros Rhinoceros unicornis, some ¾th of its total world population. Current estimates indicate that apart from over 2000 rhino population, the park is also home to the single largest population of Asiatic wild buffalo, eastern swamp deer and sizeable population of Asian elephant. The property has recently recorded the highest ecological density of the Royal Bengal tiger in the country. The park contains about 15 species of India’s threatened (Schedule I) mammals. (draft retrospective SoOUV, 2011).

► Rare and endemic birds

Criterion:(x)

The park also plays an important role in avifaunal conservation due to its location at the junction of Australasia & Indo-Asian flyway. The birds’ check-list of the park includes more than 480 species. The wetlands of the park play a crucial role for conservation of globally threatened bird species by providing the necessary habitat during their annual migrations. (draft retrospective SoOUV, 2011).

Other important biodiversity values

► Other designations

The site lies within a Conservation International-designated Conservation Hotspot, a WWF Global 200 Eco-region, and is one of the world’s Endemic Bird Areas (WCMC Datasheet, 2011).

Assessment information

Threats

Current Threats

High Threat

Significant current threat to Kaziranga is rhino poaching, with implications beyond the park and the country. While poaching is not a new phenomenon, there are phases of high and low levels of poaching. The spurt in such incidents since 2012 is a cause of concern. Spread of alien invasive plant species, esp. Mimosa, are a clear threat to the characteristic grassland habitat of the park. Livestock grazing inside the park has affected the habitat and also hybridization of wild buffalo. The highway along the southern boundary of the property is witnessing heavy traffic load with consequent barrier to animal migration routes and wildlife casualty. Likewise, unplanned tourism infrastructure in the vicinity of the park has affected animal movement in wildlife corridor zones.

► Commercial hunting

High Threat
Inside site
Outside site

Poaching of rhinos is a significant threat to Kaziranga National Park. (MEE, 2007). Poaching within and adjacent to the property is a concern. (SOC, 2008). Poaching of rhinoceros for its horn by heavily armed hunters, sometimes in league with disaffected tribal people is profitable. (WCMC, 2011). There was a decreasing trend of rhino poaching from 2007 to 2011. (SP Report, 2012); however, recently the park has been experiencing a surge of poaching.

► Invasive Non-Native/ Alien Species

Low Threat
Inside site

Outside site

Spread of invasive species, particularly Mimosa, remains a concern, and the efficacy of the efforts undertaken, including manual uprooting and controlled burning, have yet to be assessed. (SOC, 2011). Infestation by the alien mimosa weed, Mimosa invisa and M. inermis, has blanketed the native vegetation over about 5% of the Park and requires constant clearing. (WCMC, 2011).

► Storms/Flooding

Low Threat
Inside site
Outside site

Severe losses to wildlife are sustained during heavy floods. The monsoon flooding of 2004 was said to be the worst for 50 years, with widespread loss of animals. (WCMC, 2011).

► Livestock Farming / Grazing

Low Threat
Inside site
Outside site

Problem of interbreeding of cattle with the wild buffalo population. (SOC, 2008). The illegal presence of grazing water buffalo contributes to the spread of rinderpest and has resulted in hybridization of the wild stock. (WCMC, 2011).

► Housing/ Urban Areas

Low Threat
Outside site

Tourism infrastructure has mushroomed along the park boundary and could hinder animal movement in wildlife corridor zones.

Potential Threats

Low Threat

Changing demographic and economic profile of the population around the site could have potential consequences for support to conservation. Illegal fishing

in the park fringes and stone quarrying in the adjacent hills disturbs the natural landscape. Increased tourist flow will put additional pressure on park visits as well as on tourism infrastructure around the park. Erosion of land along the northern boundary of the park by river flow could have adverse implications for park area in future.

► Mining/ Quarrying

Data Deficient
Outside site

Stone quarrying in the adjacent hills has confined and disturbed the elephants which also come under threat where their migration corridors cross the road. (WCMC, 2011).

► Fishing / Harvesting Aquatic Resources

Low Threat
Outside site

Illegal fishing in adjacent areas of the park. (MEE, 2007), (WCMC, 2011).

► Tourism/ visitors/ recreation

Low Threat
Inside site

Tourist facilities around the park are in high demand, due to the large number of tourists that visit the property every year. (SOC, 2011). Increased tourist inflow to the park during tourist season. (SP Report, 2011). Uncontrolled tourism is also a problem. (WCMC, 2011).

► Erosion and Siltation/ Deposition

High Threat
Inside site

River bank erosion is caused by the Brahmaputra river along the northern boundary of the property. This natural factor could have adverse implications on the property in the future. This is a real problem as nearly 30 sq.km. area of original 430 sq.km. has been eroded since inscription (SP Report, 2012).

► Identity/ Social Cohesion/ Changes in local population and community

Low Threat

Outside site

Growing population, land alienation, monetization of subsistence economy and progressive alienation of local people from tourism opportunities and benefits. (MEE, 2007). Change of land use in the southern fringe of the park. (SP Report, 2011).

Protection and management

Assessing Protection and Management

► Monitoring

Mostly Effective

The values of the site are periodically monitored as per Management Plan.

► Research

Some Concern

Numerous research projects are undertaken in the park mostly by academic or other research centres and NGOs. However, there is no overall research strategy or focus.

► Relationships with local people

Some Concern

The park is faced with increasing pressures as a result of rapid changes in the surrounding landscape, related to increasing population pressure and agricultural development. (SOC, 2008). Human-Wildlife conflict remains a conservation issue. (SP Report, 2011). Damage to crops, property and human lives by wild animals also lead to reprisals by the local people. Poor government compensation mechanism fuels resentment of the people against the park. (WCMC, 2011). Community eco-development projects have been aimed more at the protection of animals and providing infrastructure than in helping communities directly, and there has been a lack of consultation and of an open planning process. (WCMC, 2011). Resource dependency (fishing, grazing, thatch and fuelwood collection) and denial of traditional access to resources are leading to disturbance. (MEE, 2007).

There is progressive alienation of local people from tourism opportunities and benefits. (MEE, 2007). There is a feeling of land alienation owing to planned inclusion of ‘Addition Areas’ from the fringe areas as part of the Park.

► Legal framework and enforcement

Mostly Effective

Kaziranga was originally proposed as a reserved forest in 1905 and designated a reserved forest in 1908 with the object of preserving the rhinoceros and other large mammals. The killing of rhinoceros was made punishable by the Assam Rhinoceros Preservation Act of 1954, reinforced by the Biodiversity Conservation act of 2002. Twelve Acts have been passed to safeguard conservation of the Park’s lands and animals. No rights or privileges to exploit forest produce are exercised. Limited grazing was permitted until the area was finally declared a National Park. (WCMC, 2011). The property has highest legal protection and strong legislative framework under the provisions of Indian Wildlife (Protection) Act, 1972 and Indian Forest Act, 1927/Assam Forest Regulation 1891. The park has a long history of protection reflected in the dramatic recovery of the rhino population and celebration of 100 years of conservation in 2005.

► Integration into regional and national planning systems

Mostly Effective

It is well integrated into national planning system as a National Park and Tiger Reserve under the National Tiger Conservation Authority, Ministry of Environment and Forests, Government of India.

► Management system

Mostly Effective

The forest department of the Government of Assam is responsible for the management of the national park. There has been a series of ten-year management plans from 1981, supplemented by annual plans of operation (UNEP-WCMC, 2011).

► Management effectiveness

Mostly Effective

There has been a series of ten-year management plans from 1981. The present plan runs from 2003-
2 to 2012-3 and is supplemented by Annual Plans of Operation, but improved management, financial
and technical support, and community strategy, awareness, education and involvement in planning
were all still necessary (WCMC, 2011).

► Implementation of Committee decisions and recommendations

Mostly Effective

State Party has regularly responded to Committee decisions and recommendations (SOC, 2008, SP Reports, 2009, 2011, 2012).

► Boundaries

Some Concern

There have been continuing efforts at strategic extensions to the national park in order to address issues of integrity affecting the existing property. (32COM 7B.12, 2008). Since the inscription of the property, the national park was extended several times, increasing its size from the original 42,996 ha to 85,942 ha today, including the river and floodplain areas, as well as strategic wildlife corridors to the Karbi Anglong hills. These extensions have not yet been added to the inscribed World Heritage property, as there are still some court cases contesting some of the additions and these have to be concluded before any proposal for extension can be submitted. While important areas of the hills are protected as forest reserves, plans to create a wildlife sanctuary and even to include some of these critical areas in the national park have not yet been implemented. (SOC, 2008). An area of 70 sq. Kms adjacent to the Kaziranga National Park and World heritage Site in the District of Karbi Anglong has already been processed in order to give status of Wildlife Sanctuary, viz, North Karbi Anglong Wildlife Sanctuary. (SP Report, 2009). The process of issuing final notification is still going on. (SP Report, 2011). All the 6 Additions to Kaziranga National Park have been notified as buffer. The World Heritage Site also became core area of Kaziranga Tiger Reserve in 2007 with total area of 1030 sq. km. (SP Report, 2012).

▶ Sustainable finance

Some Concern

Park management pointed to the lack of staffing and budget, in particular the unavailability of funds sanctioned under the central funding schemes, with funds held up at the level of the State Government. (SOC, 2008). Funding for the management of the property is normally done by the Govt. of Assam under the schemes: (i) Development of National Park & Wildlife Sanctuaries and (ii) Development of other Wildlife areas. Funding has improved with the Central Assistance of Govt. of India under Project Elephant and the Project Tiger since 2008-09. (SP Report, 2009). With the declaration of the park as “Tiger Reserve” in 2007, it has started receiving additional financial support since 2008-09 under ‘Project Tiger’ scheme. (SP Report, 2011).

▶ Staff training and development

Some Concern

Park management pointed to the lack of staffing and budget (SOC, 2008).

▶ Sustainable use

Data Deficient

There is absence of information on any assessment of sustainable resource use in and around the site. However, livestock grazing (SOC, 2008), illegal fishing (MEE, 2007) and stone quarrying (WCMC, 2011) are present resource use threats for the site.

▶ Education and interpretation programs

Some Concern

There is a lack of specific education and awareness programmes highlighting the values of the site.

▶ Tourism and interpretation

Mostly Effective

The site is highly promoted in local and national tourism policies. Tourist routes are earmarked for visitors. Adequate visitor services are available. Tourist facilities around the park are in high demand, due to the large

number of tourists that visit the property every year. (SOC, 2011). Uncontrolled tourism is also a problem. (WCMC, 2011).

Overall assessment of protection and management

Mostly Effective

The property has the highest legal protection and strong legislative framework under Indian wildlife laws. The park has a long history of protection reflected in the dramatic recovery of the rhino population and celebration of 100 years of conservation in 2005. The park has also been declared as a Tiger Reserve (2007) and there have been six additions to the park area. The site benefits from government support at both national and regional levels as well as involvement of national and international conservation organisations. However, there remain some issues of concern particularly with regard to developing a more cooperative and economically beneficial relationship for the local population. The management also needs a long-term strategy for dealing with tourism related issues, research and monitoring for habitat and wildlife, human-wildlife conflicts and boundary issues relating to the addition areas to the national park. Staff training and development will require continued attention of the management. While adequate and sustained finance is a critical requirement, the constitution of the Kaziranga Tiger Conservation Foundation is a landmark measure in this regard.

▶ Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

The protection and management system is confronted with many of the threats which originate outside the site. The changing demographic and economic profile of the population around the fringe of the park is a particular challenge and the park’s attempts at eco-development for the communities are yet to yield the desired results. The management is also limited in its mandate to control stone quarrying and unplanned tourism infrastructure though the park is part of a larger government committee seeking to regulate such development. There is considerable success in checking illegal grazing of livestock. The park has instituted measures to slow down high speed traffic along the highway near the park; however, the volume of traffic is beyond the control of the park. In recent years, the

linkage of rhino poaching to wider national, regional and global markets is of very serious concern to the localized protection and management system.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Ecological processes in development of terrestrial and freshwater ecosystems**

Low Concern
Trend:Stable

River bank erosion is caused by the Brahmaputra river along the northern boundary of the property. This natural factor could have adverse implications on the property in the future. This is a real problem as nearly 30 sq.km. area of original 430 sq.km. has been eroded since inception (SP Report, 2012).

▶ **Significant natural habitat**

Good
Trend:Stable

The floodplain grasslands and forests of Kaziranga remain in healthy condition and are constantly evolving in the dynamic ecosystem.

▶ **Rare and endemic mammals**

High Concern
Trend:Deteriorating

Poaching of rhinos is a significant threat to Kaziranga National Park. There was a decreasing trend of rhino poaching from 2007 to 2011 (SP report, 2012). Subsequently, however, rising poaching cases since 2012 are of very high concern (numerous news articles, 2012-2013).

▶ **Rare and endemic birds**

Good
Trend:Stable

The site remains an avian paradise for globally threatened bird species, including both residential and migratory categories.

Other important biodiversity values

▶ **Other designations**

The site lies within a Conservation International-designated Conservation Hotspot, a WWF Global 200 Eco-region, and is one of the world's Endemic Bird Areas (WCMC Datasheet, 2011).

Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values**
High Concern
Trend: Stable

The current state of the site's values with regard to its ecological processes and significant natural habitat is good and stable. However, after decades of conservation success the recent spike in rhino poaching in the site is of very high concern.

Additional information

Key conservation issues

▶ **Rhino poaching**
Regional

Poaching of rhinos is a significant threat to Kaziranga National Park. Poaching incidents both within and adjacent to the property is a concern. There was decreasing trend of rhino poaching from 2007 to 2011. Subsequently, however, rising poaching cases since 2012 is causing serious problem for the Park and the government.

▶ Relationships with local people

Local

The park is faced with increasing pressures as a result of rapid changes in the surrounding landscape, related to increasing population pressure and agricultural development. Resource dependency, human-wildlife conflict, poor government compensation, lack of tourism benefits, absence of community development and land alienation of local people owing to park boundary expansion have created resentment against the park.

▶ Spread of Invasive species

Local

The grasslands of Kaziranga are threatened by a number of plant invasive species, prominent among them are: Mimosa invisia (thorny) and Mimosa invisia inermis (thornless). Mimosa out-competes existing plants, causing substantial loss of the prime short grassland habitats. Mimosa hampers free movement of the wild animals especially smaller herbivores like barking and hog deer.

▶ Resource use

Local

Livestock grazing, illegal fishing and stone quarrying are present resource use threats for the site.

▶ Tourism pressure

Local

High tourist flow puts pressure on traffic inside the park and also leading to unplanned tourism infrastructure around the vicinity of the park which may hinder animal movement in wildlife corridor areas.

▶ Highway road traffic along the southern boundary of the property

Local

Heavy traffic load on the highway along the southern boundary of the property cause disturbance to animal migration routes and also result in wildlife casualty while crossing the highway.

▶ Sustainable finance

National

Despite additional Central Government scheme for funding, limitations remain in sustained sources of funds as well as procedural bottlenecks during fund transfer through the State Government.

Benefits

Understanding Benefits

▶ Is the protected area valued for its nature conservation?

It is the single largest undivided and representative area of the Brahmaputra valley floodplain grasslands and forests with associated biodiversity. The property has highest legal protection and strong legislative framework under the provisions of Indian Wildlife (Protection) Act, 1972 and Indian Forest Act, 1927/Assam Forest Regulation 1891 through status of National Park (1974) and Tiger Reserve (2007). The park has a long history of protection reflected in the dramatic recovery of the rhino population and celebration of 100 years of conservation in 2005.

▶ Sacred natural sites or landscapes

It is regarded as one of the finest wildlife refuges in the world and a veritable storehouse of biodiversity. The park is internationally recognized for the single largest population of the Great Indian One-horned Rhinoceros Rhinoceros unicornis, some ¾th of its total world population. Current estimates indicate that apart from over 2000 rhino population, the park is also home to the single largest population of Asiatic wild buffalo, eastern swamp deer and sizeable population of Asian elephant. The property has recently recorded the highest ecological density of the Royal Bengal tiger in the country. The park contains about 15 species of India’s threatened (Schedule I) mammals.

▶ Outdoor recreation and tourism

The site is a hub of recreation and tourism attracting local, national and

global visitors.

- **Carbon sequestration**

  The natural values of the site provides ideal habitat for climate change mitigation

- **Flood prevention**

  The site is endowed with high wetland values and acts as a sink in the Brahmaputra valley floodplains.

Summary of benefits

The major benefits of Kaziranga are provided by its nature conservation and wilderness values which can be availed by the community outside the site as well as the wider global community. It is a significant representative of unique biodiversity characterized by floodplain grasslands and forests. Apart from being the home of the single largest population of the Greater One-Horned Rhinoceros in the world, it harbours substantial number of other mega fauna and threatened species. These attributes further make it one of the most important sites for recreation and tourism. However, benefits of the site’s flood prevention and climate change mitigation potential are not yet fully exploited and more scientific information is required on these issues.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Aaranyak, Guwahati, Assam		Tiger Research and Conservation Initiative; Rhino Research and Conservation Initiative; Education
2	National Tiger Conservation Authority of India, New Delhi and Wildlife Institute of India, Dehradun		Status of the Tigers, Co-predators, and Prey in India

№	Organization/ individuals	Project duration	Brief description of Active Projects
3	Rain Forest Research Institute, Jorhat, Assam		Ecology of Mimosa Invasion
4	Ashoka Trust for Research in Ecology and the Environment, Guwahati, Assam		UNESCO World Heritage Biodiversity Programme for India (capacity building, community development, research, outreach)
5	WWF India Program, Assam		Tiger monitoring; Wildlife corridor monitoring; Human-Wildlife Conflict
6	Wildlife Trust of India, Assam		Monitoring the Eastern Swamp Deer; Rescue and Rehabilitation

REFERENCES