




# Kaziranga National Park — Beauty and Richness of Species and Ecological Interactions

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Kaziranga National Park (Assam, India) is among the largest expanses of protected land in the sub-Himalayan belt and one of eastern India's most famous national parks. The Park boasts a stunning diversity of wildlife — Asian elephants, one-horned Indian rhinoceros, water buffalo, many species of deer, wild boar, monkeys, and hundreds of bird species. In this photographic essay, we briefly describe and illustrate the wildlife associated with selected typical landscapes and vegetation types, as seen on a visit to Kaziranga in winter 2023.

**Keywords:** biodiversity hotspot, avian diversity, endangered species, wildlife conservation, wetland ecosystems, human-wildlife conflict, evolution, ecological processes

## Introduction

Have you ever wondered how ecosystems would look if ecological processes and evolution developed their full potential, diversifying into Nature *per se*, free from inappropriate resource use, pollution, and other human stressors and influences? When dead trees are allowed to rest on the ground until they rot away, insects are allowed to pollinate orchids, and woodpeckers climb onto lianas and turn their attention to whatever a new morning in nature could offer?

Nature is a process. Hence, the diversity of life is more than a certain observable richness of genes, species, and ecosystems. The diversity of life is created continuously and dynamically by ongoing ecological interactions and evolution, processes that themselves are materially invisible and therefore often forgotten (Bøhn and Amundsen 2004). A taxonomically or species-oriented concept of biodiversity draws attention to genes and organisms rather than to the dynamic interactions between them. For the future, conservation of biodiversity needs to include larger ecosystems, where richness in species is matched with richness in natural ecological processes.

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## About Kaziranga National Park

Since 1985, Kaziranga has been designated as a UNESCO World Heritage Site, and covers an area of about 430 square km. It is situated close to the ninth-largest river in the world, the Brahmaputra, which flows through Tibet (China), northeastern India, and Bangladesh. The Park boasts several lake basins and is crisscrossed by small rivers and streams that drain into the Brahmaputra.

Like many other national parks, Kaziranga (Assam, India) has a controversial history in which the conservation of biodiversity, in particular the one-horned rhino and the tiger, has been at the expense of the people who live in the area (Barbora 2017; Smadja 2018).

Because anthropogenic effects are so pervasive in our overcrowded world, even Kaziranga is not entirely free from adverse human impacts. The area is somewhat affected by pollution due to run-off from tea gardens in the nearby hills and from a petroleum refinery in the vicinity, and sustained efforts are required to curb the rhino-poaching menace (Mathur, Sinha and Mishra 2005, 19–22). Nevertheless, the Park remains a critically important biodiversity hotspot.

Annual flooding in the monsoon season is critical for the creation and maintenance of the high diversity of landscapes and vegetation types in Kaziranga. No wonder the park is a unique retreat for a large range of different species of plants and animals.

Look out over the vast grassland plains, and you will see hundreds of animals – elephants, rhinoceros, water buffalo, deer, wild boar, and monkeys. Bee-eaters in shiny green and blue sit in the trees, and four species of kingfisher are patrolling the riverside. Herons, storks, ibises, waders, ducks, geese, and birds of prey abound. But the tiger hides in the tall grass and remains elusive to us.



**Photo 1:** Early morning – snakebird lands on its fishing ground.

Welcome to an early morning in Kaziranga National Park. Daylight has arrived, and the silvery fog from the cool night is just about to lift. With some fantasy, trees may turn into walking Ents (Lord of the Rings) using lianas as walking sticks.



**Photo 2:** Woodpecker on a liana attached to a human-like tree. Lianas are woody climbers that root on the ground and use trees to ascend to the top of the forest canopy, where they receive more sunlight.



Photo 3: The 'unicorn'. Rhino front.



Photo 4: Rhino rear.



Photo 5: A rhino crosses the road where small, open Suzuki jeeps transport pale tourists from the north (the authors) with expensive lenses.

Also rivers and waterbodies are essential for the greater one-horned rhinoceros or great Indian rhinoceros. With more than 2,000 individuals, the population in Kaziranga National Park is the largest in the world. The IUCN Red List of Threatened Species categorizes the rhino as vulnerable, indicating a high risk of extinction in the wild.



**Photos 6–7:** River courses and riverbanks are highly dynamic. Strong river currents and flooding in the monsoon season may be both detrimental and creative; on the one hand, large areas are eroded and intact terrestrial ecosystems are washed away. On the other hand, sedimentation processes create new habitats and waterbodies that are crucial for plant and animal life.



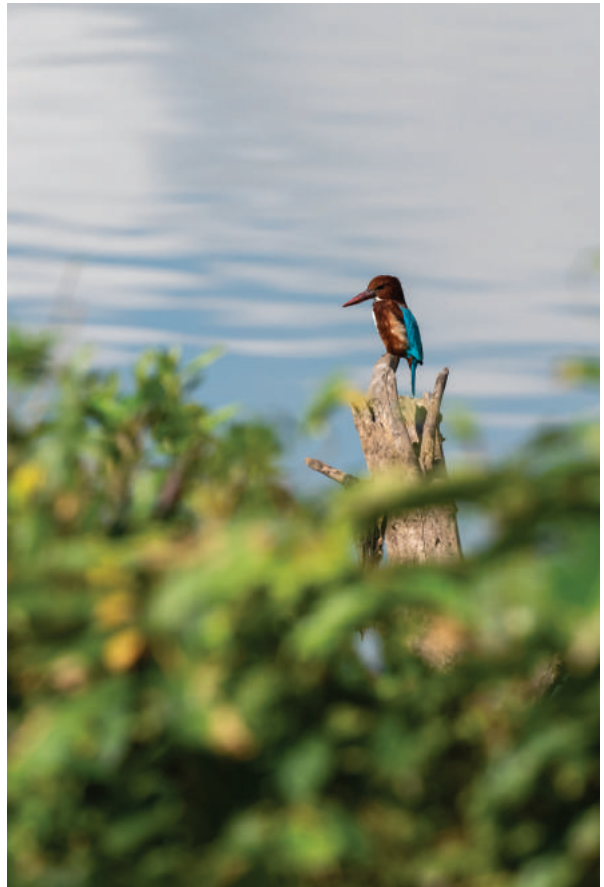
**Photo 8:** Asian water monitor resting on a stone next to one of the many waterbodies.



**Photo 9:** The stork-billed kingfisher is one of four species of kingfisher in Kaziranga. Here it is, looking out for its next small-fish prey in the river.



**Photo 10:** Pied kingfisher hunting.



**Photo 11:** White-breasted kingfisher on a dead tree.



**Photo 12:** Swamps are popular places for huge numbers of waterfowl and big mammals, such as the rhino. Not only for feeding but also for washing and cooling down on warm days.



**Photo 13:** Standing waterbodies like ponds may become completely overgrown by aquatic plants like water hyacinths, water lilies, and lotuses. Once overgrown, these swamps serve as excellent grazing areas for mammals (see images below).



Photo 14: Hog deer (IUCN category: endangered).



Photo 15: Indian wild boar.





Photo 16: Assamese macaque (IUCN category: near threatened).



Photo 17: Common water hyacinth in bloom.



Photo 18: Asian openbill stork.



Photo 19: Egret eating small fish.



Photo 20: Its long toes make the bronze-winged jacana perfectly adapted for walking on floating vegetation.



**Photo 21:** Example of a typical transition from open water to low- and tall-grass vegetation and forest.



**Photo 22:** Waterside grasslands can be characterized by low-grass vegetation kept short by herbivore grazing and flood events.



**Photo 23:** Three ‘friends’ lining up to graze in the tall grass. Left to right: wild water buffalo, Eastern swamp deer, and Asian elephant are all listed as endangered in the IUCN Red List of Threatened Species (very high risk of extinction).

Kaziranga National Park hosts over 480 species of birds, including resident and migratory species. Many of these depend on open vegetation, such as grasslands. Sparse trees and shrubs, and even single stems of tall grasses, have important functions, such as shelter for predators or lookout points.



Photo 24: Indian roller in flight.



Photo 25: Blue-bearded bee-eater.



**Photo 26:** Lesser adjutant stork (“IUCN category: near threatened” i.e., it is likely to become threatened in the near future).



**Photo 27:** Black drongo.



**Photo 28:** Eastern swamp deer and Indian rhinoceros (both IUCN category: vulnerable) in low-grass vegetation at a river shore.



**Photo 29:** Wild water buffalo (endangered) resting and ruminating in tall-grass vegetation. Around 57 per cent of this buffalo species' world population lives in Kaziranga National Park.



Photo 30: Tropical moist mixed deciduous forest.



Photo 31: The yellow-footed pigeon is well camouflaged among the leaves. How many can you see?



**Photo 32:** Great hornbill (IUCN category: vulnerable).



**Photo 33:** Crested serpent eagle.



**Photo 34:** The capped langur (IUCN category: vulnerable) is a vegetarian, eating leaves, twigs, buds, and fruits. This arboreal and gregarious species may be seen in tropical dry forests.



**Photo 35:** For epiphytes, such as orchids, growing on trees enables them to receive light and benefit from the forest's moisture-laden air.



## Conclusion

The biodiversity of life is shaped continuously by ecological processes and, over long periods of time, by evolution. Genes and species are often equated with biodiversity, but this ignores the *processes* by which biodiversity is created. Biodiversity is the conclusion drawn from all life forms *and* the variety of processes that shaped them (Bøhn and Amundsen 2004). And when these processes continue with relatively small disturbances, life diversifies.

This is what we could see with our own eyes in Kaziranga National Park. Kaziranga is one of the increasingly rare places where it is still possible to experience nature in a state of rich diversity, including not only the species but also the ecological processes that shape them. The difficulty of finding almost pristine ecosystems increases with their richness in resources. Kaziranga is basically a floodplain with plenty of water resources, wet alluvial grasslands, but also savannah and tropical rainforest. A few days in Kaziranga took us by surprise: the overwhelming richness of plants and animals, the colour and beauty of the birds. A single plain can contain hundreds of large animals, including elephants, rhinos, water buffalo, several deer species, and many types of birds. With minimal hunting or other harmful anthropogenic impacts, this is how rich nature can be. The full spectrum of ecological processes can operate, resulting in stunning beauty and biodiversity.

## Photo credits

Jutta Kapfer: 6–7, 10–14, 16–20, 22–23, 26, 29, 34–35.

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## References

- Barbora S. (2017), 'Riding the rhino: Conservation, conflicts, and militarisation of Kaziranga National Park in Assam' *Antipode* 49(5):1145–1163.
- Bøhn, T. & Amundsen, P.-A. (2004), 'Ecological interactions and evolution - forgotten parts of biodiversity?' *Viewpoint*, *Bioscience* 54(9): 804–805.
- Flora In Kaziranga National Park (<https://www.kaziranganationalpark-india.com/info/Flora-in-Kaziranga.html>).
- Grimett, R., Inskipp, C., Inskipp, T. (2012), *Birds of the Indian Subcontinent*. Helm Field guides, SD Books.
- Mathur, V.B., Sinha, P.R. and Mishra, M. (2005) *Kaziranga National Park World Heritage Site: Review of Protection Strategies and Suggestion to Enhance their Effectiveness; Development of a Comprehensive Capacity Building Plan for Frontline Staff*. Technical Report 4. Delhi: UNESCO. Available at: [https://web.archive.org/web/20080530040957/http://www.enhancingheritage.net/docs/UNESCOEoH\\_Project\\_South\\_Asia\\_Technical\\_Report\\_04\\_v1.pdf](https://web.archive.org/web/20080530040957/http://www.enhancingheritage.net/docs/UNESCOEoH_Project_South_Asia_Technical_Report_04_v1.pdf) (Accessed: 5 March 2024).
- Smadja J. (2018), 'A chronicle of law implementation in environmental conflicts: The case of Kaziranga National Park in Assam (North-East India)'. *South Asia Multidisciplinary Academic Journal* 17.
- The IUCN Red List of Threatened Species (<https://www.iucnredlist.org>).