

Towards a new rhino conservation landscape in Assam for the increasing population of the greater one-horned rhino (*Rhinoceros unicornis*)

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Introduction

The recent census or estimation of the greater one-horned rhino (GOH), (*Rhinoceros unicornis*) undertaken in Assam in 2022 has shown a continued upward trend (Table 1). There is also some increase in habitat in protected areas such as Kaziranga, Manas and Orang National Parks (NP) and Tiger Reserves (Table 2). Owing to improved vigilance the poaching has come down drastically. (Figs. 1, 2, 3).

There is growing awareness among villagers living in close proximity to the NPs of the earning potential from tourist-related activities: motels, safari vehicles, local guides, cafés and restaurants, and souvenir shops that cater to tourists and provide employment for villagers. An increase in tourism, especially in Kaziranga and Manas, has given rise to many new stakeholders. Long-distance travel by tourists has helped many

in Guwahati, the capital of Assam, and other towns such as Jorhat and Tezpur to earn extra income, partially meeting their livelihood needs. In the case of Pobitora Wildlife Sanctuary (WLS), numbers of tourists is virtually uncontrolled during winter, the closest city impacted is Guwahati city.

Detailed accounts on the distribution, natural history and other aspects of the rhinos is well documented, some notable being Gee (1964), Rookmaaker (1980), Choudhury (1985) and Rookmaaker et al. (2017).

Creation of first rhino conservation landscape: Kaziranga—Orang

Like several other threatened species one of the limiting factors of conservation for the greater one-horned rhinos is its fragmented habitat. Starting from Shuklaphanta NP, Nepal in the west to Kaziranga NP, Assam in the east, GOH habitat is fragmented into at least 11 disjunct areas. The concept of landscape

Table 1. Rhinoceros numbers in different protected areas in India

ASSAM	Year	1999	2006	2009	2012	2018	2022
Kaziranga National Park		1,552	1,855	2,048	2,290	2,413	2,613
Orang National Park		46	68	64	100	101	125
Pobitora Wildlife Sanctuary		74	81	84	93	102	107
Manas National Park		–	–	2	22	41	48 (estimate from 2021)
WEST BENGAL	Year	2008	2010	2013	2015	2019	2022
Jaldapara National Park		192	155	186	204	237	292
Gorumara National Park		31	35	43	49	52	No census

Sources: Environment and Forest Department, Assam; Forest Department, West Bengal



Figure 1. Effective conservation of GOH rhinos requires good quality population data in order to make effective management decisions. Elephant-back patrols are ideal for both anti-poaching and monitoring. The Monitoring manual prepared by the AsRSG recommends, that three people (a mahout, a game scout and an armed guard) are the standard protocol for this. (Source: https://www.academia.edu/26316629/The_Greater_One_Horned_Rhinoceros_Monitoring_Instructors_Training_Manual). (© Rituraj Konwar).



Figure 2. Greater one-horned rhino (© Anwaruddin Choudhury).

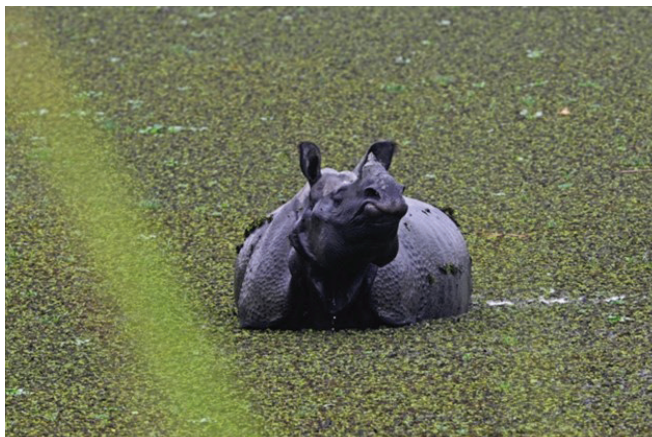


Figure 3. Kaziranga NP in north-central Assam, India is situated on the south bank of the Brahmaputra River. Sightings of the rare GoH rhino in the Brahmaputra River such as these is a growing tourist attraction (© Anwaruddin Choudhury).

Table 2. Some reserves with rhino populations in Assam where the area has been increased

Protected Area	Pre-2000 area in km ²	Current area in km ²
Kaziranga National Park	430	915
Manas National Park	500	850
Orang National Park	78.8	279*
Burhachapori Wildlife Sanctuary#	44	239*

*Process of local claims and objections, if any, in the “addition areas” is ongoing.

level conservation has not been applied to date. In Assam a landscape level conservation unit has recently been formed, which connects Orang NP with Laokhowa and Burhachapori WLSs and Kaziranga NP. This was made possible owing to the declaration of the expansion of the Brahmaputra riverine tract as the second addition to Orang NP in 2021 (notification issued on 3 January 2022, for an area of 200.13 km²). (The “name” in the notification of the second addition was inadvertently not mentioned, the author has written to the Environment and Forest Department for necessary corrections to include the name of the second addition). With all the additions, the total area of Kaziranga NP comes to 915 km², which includes the original park area of 430 km² and all the additions. The second addition to Orang NP will be finalized after determining and resolving any claims from the public through a final notification (the author was deputy secretary to the Government of Assam, Forest Department and had the opportunity to finalize the notification of Orang and issue it as a national park in 1999).

Laokhowa and Burhachapori WLS are adjacent and contiguous (author assisted in including these two sanctuaries in Kaziranga as a tiger reserve, while he was joint secretary in 2007). However, there was a gap in connectivity between the easternmost point of Burhachapori WLS and the westernmost area of the sixth addition to Kaziranga NP. An area of 195 km² was notified as the first addition to Burhachapori WLS in 2016. This addition has not only linked Burhachapori WLS with the sixth addition to Kaziranga NP but also connected it with Orang NP. Thus, a relatively larger conservation

landscape has been established with four protected areas, including two tiger reserves (forested and grassland areas) covering an area of around 1,600 km² of prime rhino habitat with very good connectivity that will remain as the most important and long-term viable rhino landscape. Of the several new areas, the tenth addition to Kaziranga NP will act as a natural highland providing a safe habitat for rhinos and other wildlife crossing the river and during the monsoon. This landscape is home to around 68 per cent of the world population of the greater one-horned rhinoceros (Fig. 4).

New poaching technique

A sub-adult male rhino was found injured having had its horn removed in Orang NP and found by a patrol party on elephant-back in May 2022. According to Forest Department sources, they initially thought that it had been injured during fighting with other males but later on after tranquilization it was confirmed that the horn had been cut by poachers probably after sedating the animal (the last time the author had enquired about it was on 14 June 2022 (P. Baruah, Divisional Forest Officer, pers. comm. 2022)). This precedent sets a new and dangerous record. Fortunately, the rhino survived after being provided with veterinary care. Earlier in around 2005 a tranquilizer gun was recovered from the fringe of Kaziranga NP but nothing more could be gathered on that (R. Sharma, Research Officer, pers. comm. 2005).

This new poaching technique has raised several questions and the anti-poaching strategy should be revised. It seems that people with technical knowledge are involved, showing skilled marksmanship, using the appropriate dosage of a tranquilizing drug and removing the horn without killing the rhino. The tranquilizing drugs are not normally available in India

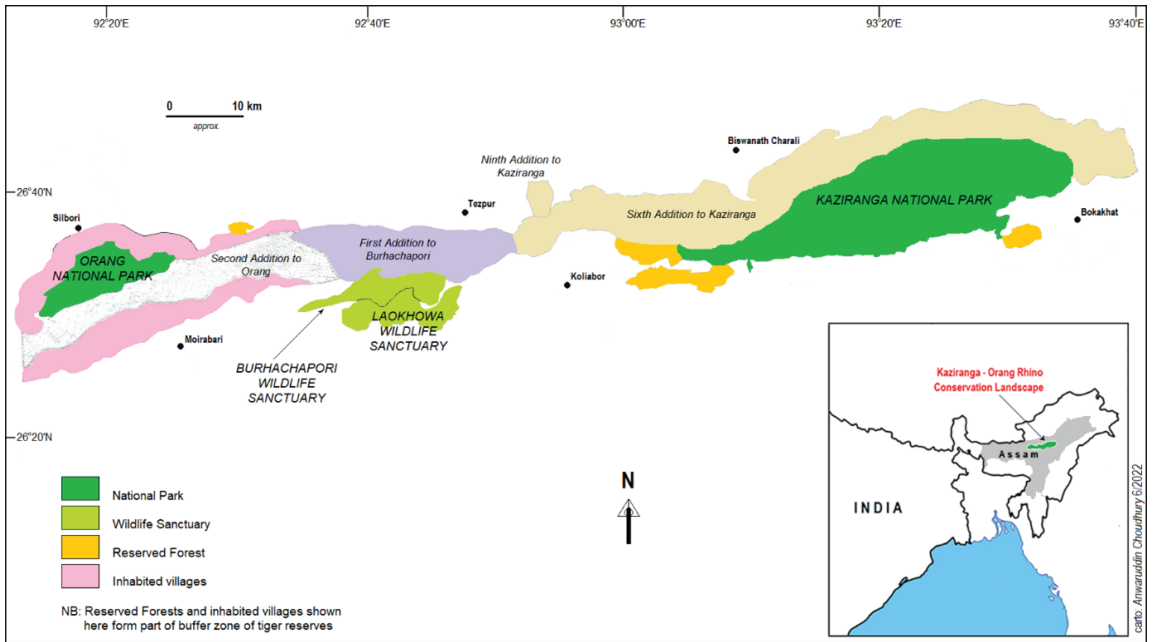


Figure 4. The Assam government has approved the tenth addition to Kaziranga NP and Tiger Reserves, creating a contiguous and connected landscape from Orang NP to Kaziranga NP to further improve the viability of the GOH rhino affected by annual flooding and poaching.

thus it is assumed that these were brought in from abroad by those involved or bought on the black market. To date a breakthrough in the case has not been made. It is strongly recommended that a global investigation on this new technique is needed and given the highest priority to avoid a South African style situation.

Anzeiger, Jena 205: 253–268.

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