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RESEARCH ARTICLE

THE PRE-EXISTING AND CURRENT STATUS OF INDIAN RHINOCEROS IN ASSAM (INDIA): A MINI REVIEW

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ABSTRACT

The Indian Rhinoceros (*Rhinoceros unicornis*), is primarily bounded to the north-eastern parts of India. Formerly the animal dwelled along the Gangetic plains but now more than 70% of the Indian Rhino population is mainly confined to Assam. Kaziranga National Park, being the largest protected site and home for Indian Rhino in Assam, witnessed terrifying poaching cases in the early years, despite its top-notch security. A distressing sum of 239 Indian Rhinos were killed by poachers from the year 2001 to 2016 due to which the Indian Rhinoceros fell into the category of vulnerable species. Rhino horn is usually considered as an aphrodisiac in the neighbouring countries and could fetch a large sum of money from the international black markets. Beside the poaching cases, many Rhinos get drowned in the yearly floods occurring in Assam almost every year after the monsoons. Assam government took many rigid steps for safeguarding the Rhinos such as appointing more forest guards, setting up surveillance cameras, creating special task forces and joining hands with IRF and IRV 2020 for translocation of Rhinos to safer places. As a result of the rigorous conservation practices, the Rhino count saw an uplift of 2413 Rhinos in Kaziranga National Park in the year 2018. Now Assam counts for 2645 Rhinos, with Kaziranga National Park holding highest number of the animal followed by Manas National Park, Pobitora Wildlife Sanctuary and Orang National Park.

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INTRODUCTION

The Indian Rhinoceros or Greater One-horned Rhinoceros (*Rhinoceros unicornis*), belonging to the Rhinocerotidae family, is mainly confined to the north-eastern parts of India. Being the 4th largest terrestrial animal, the male weighs about 2260-3000 kgs. and the female animal weighs about 1600 kgs. It bears a single horn measuring 20-57 cm in length. The horn is present in both the female and the male, but it is absent in the new-born young. They can be 1.7-2 metres tall and can be about 4 metres long. They have a lifespan of over 40 years, the longest lifespan being recorded 47 years in captive breeding (Retrieved from http://www.kaziranga.co.in/indian_rhino.php). They are skillful swimmers and can run up to 55 km per hour speed for a short duration. *Rhinoceros unicornis* are mainly solitary animals occupying a same patch of land or water area. Breeding takes place throughout the whole year, and the gestation period is about 16 months. Formerly the animal dwelled along the Gangetic plains, but now its habitat is restricted to the Indo-Nepal, Assam and West Bengal (https://www.wvfindia.org/about_wvf/priority_species/greater_one_horned_rhino/about_one_horned_rhino/). Assam prides for being the largest habitat of Indian Rhinoceros, accounting the rhino population mainly in Kaziranga and Manas National Park.

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Besides Kaziranga and Manas, Rhinos are also found in other protected sites of Assam such as Pobitora Wildlife Sanctuary and Orang National Park. Banking along the mighty Brahmaputra river and covering an area of 430 sq. km, Kaziranga National Park in Assam hosts the largest Rhino population in the Indian subcontinent i.e. 70% (<https://www.kaziranganationalpark.com/rhinoceros.html>). As the largest habitation of Indian Rhinos, Assam faced many difficulties in conserving the species and overcame several hurdles which have been thoroughly discussed in this review.

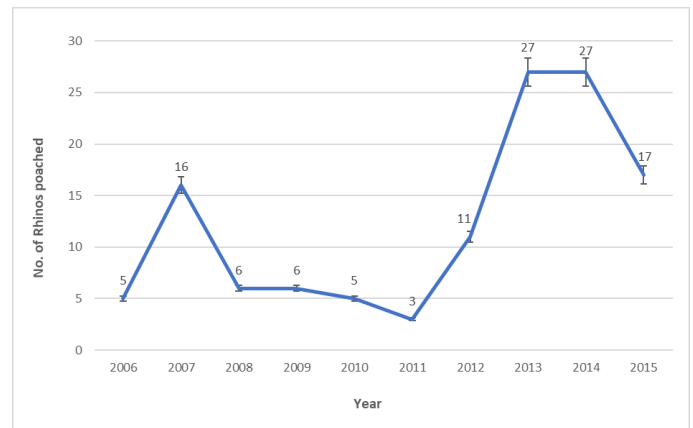
ON THE BRINK OF EXTINCTION: RHINO POACHING AND OTHER THREATS

Despite top-notch security in Kaziranga National Park, an appalling sum of 239 one horned rhinos has been shot to death by poachers from the year 2001 to 2016 (<https://www.hindustantimes.com/india-news/239-rhinos-killed-in-assam-since-2001-most-killed-in-kaziranga/story-Gd38sVwvSgttWaIIZsCYP.html>). As a result, the Indian Rhinoceros fell into the category of vulnerable species. Up to the year 2008, Assam accounted for approximately 2050 Rhinos. Five Rhinos per year were killed from year 2000-2006. A poignant scenario of Rhino poaching was observed in 2007, in which the poachers smuggled 20 rhinoceros in Kaziranga. In 2008 the statistic came down to 10 Rhinos getting killed. Orang NP suffered the most from poaching and the Rhino population from Manas nearly got eliminated by 2002-2003 (Martin, 2009). In 2012,

21 Rhinos were shot dead in Assam, the majority encountering in Kaziranga. At the onset of 2013, 12 Rhinos were killed, comprising one from Manas and ten deaths from Kaziranga (*Save Assam's Rhinos, 2013*). From 2013 to 2015, Kaziranga acknowledged a total of 68 Rhino poaching cases: 30 kills in 2013, 27 in 2014, and 12 in 2015. Whereas Manas NP reported four kills in 2013 and a single kill in 2014 with no poaching case seen in 2015. Orang and Pobitora acceded with five and four Rhinos hunt respectively in the same years (<https://www.kaziranga-national-park.com/blog/rhino-poaching-crisis-conservation-assam/>). Since 2015, 74 Rhinos were smuggled by the poachers in Assam. The year 2016 bulletined the death of 161 Rhinoceros in Kaziranga, 34 Rhinos in Orang National Park, 15 Rhinos in Pobitora Wildlife Sanctuary and nine Rhinos in Manas National Park. The leftover Rhinos got killed in different parts of Assam. A total of 342 Rhinos were smuggled between 2015 to 2018 with three Rhinos getting killed in the first three months of 2018 and five Rhinos in 2017 (*Kaziranga Rhino Population Shoots, 2018*). Besides the heinous act of poaching, floods in Assam add to the woes of the one horned Rhino population. Every year after monsoon Assam gets badly affected by floods, predominantly in the end of July. More than 20 districts in Assam faced horrifying effects of floods leading to a critical situation in Assam. In this risky state Kaziranga faced the worst consequences as the Rhinos either got submerged under the flood water or got washed away to distant places falling prey to the poachers. Henceforth, Kaziranga has witnessed over 90 Rhino deaths since 2013 (*from https://www.kaziranga-national-park.com/blog/rhino-poaching-crisis-conservation-assam*).

INITIATIVES TAKEN FOR RHINO PROTECTION AND CONSERVATION

For combating the horrific threats like poaching and to upraise the declining population of the Rhinos, the Assam government took several rigid steps for safeguarding the vulnerable animal. The government proposed several acts to build new habitats for the Rhinos within the boundaries of Assam to give an uplift to the growing population of the Rhinos. Efforts for building new mounds were being taken by Kaziranga National Park so that the Rhinos can seek for shelter during periods of intense floods (*from https://www.kaziranga-national-park.com/blog/rhino-poaching-crisis-conservation-assam*). To take the matter of Rhino poaching under control, 90 constables were recruited by the Assam government to form a part of Special Rhino Protection Force (SRPF). The force would serve exclusively for Kaziranga, Orang and Manas National Park to ensure better security to the Rhinos (<https://economictimes.indiatimes.com/news/politics-and-nation/assam-government-appointed-90-constables-which-will-form-part-of-special-rhino-protection-force/articleshow/64950151.cms>). More forest guards were being reinforced equipped with sophisticated weapons for checking the poachers at Kaziranga National Park (*Rhinos in Kaziranga, 2013*). A special task force for harnessing rhino-poaching cases was created by the Government of Assam in 2014, comprising of Police officials from Sonitpur, Nagaon, Golaghat, and Karbi Anglong districts, along with Forest personnel of Kaziranga National Park. This Special force led to the arrest of many poachers in a series of raids. Additional aid for combating poaching was provided by recruiting 535 troops from the Assam Forest Protection Force, equipped with 200 SLRs and 303 rifles.



(Source: www.kaziranga-national-park.com)

Fig. 1. Rhino poaching cases in Kaziranga National Park from 2006 to 2015

A backup service of 125 Home Guards was also allotted. For effective monitoring, an electronic surveillance camera, called the Electronic Eye, provided with thermal and visual imaging cameras was fitted on tall towers for tracking movement of the poachers within 10 km during the day and 3 km during night (*Protecting Assam's rhinos, 2018*).

Table 1. Rhino poaching incidents at different protected sites observed in Assam from 2013-2015

	2013	2014	2015	Total
Rhino poaching incidents	40	30	12	82
Kaziranga	30	27	11	68
Manas	4	1	0	5
Orang	4	0	1	5
Pobitora	2	2	0	4

(SOURCE: www.kaziranga-national-park.com)

“Saving the Rhinos” campaign for conservation of Rhinos from extinction was organized by FASS (Friends of Assam and Seven Sisters) on 10 August 2018. The main objective of the event was to assist Assam government to devise ways of bringing down the exponential rise in poaching cases and prevention of man-animal conflicts. Also, it has been stated in the event that effective measures for Rhino protection will not only curb the reckless Rhino killings but will also promote tourism in Assam (http://e-pao.net/epSubPageExtractor.asp?src=announcements.Ann_2018.Saving_the_Rhinos_Campaign_for_Conservation_of_Wildlife_20180730). For promoting awareness and to put light on the protection and conservation of the Rhinos at the global level, Assam Government solemnized September 22 as “Rhino Day” (*Sharma, 2013*).

INDIAN RHINO VISION 2020

Indian Rhino Vision 2020 (IRV) is an aspiring project commenced in 2005 with a motto to achieve a wild Rhino population of at least 3000 in Assam state of India by the year 2020. International Rhino Foundation (IRF) and IRV 2020 has teamed up along with other government agencies and NGOs to focus on the threats faced by the Indian Rhinos. Rhino translocations were done from overpopulated areas which may have reached their carrying capacity like Kaziranga and Pobitora Wildlife Sanctuary, to other protected sites so that they can successfully breed and create a more stable community. From the year 2005 to 2008, IRV and IRF partnered with local people and government officials to enhance the security of the Rhino population by construction of patrol roads, guard posts and bridges. Being the largest

home to Indian Rhinoceros, Kaziranga may have reached the saturation level and might not support any further addition of Rhinos. This could result in a decline in their population due to the occurrence of any natural disaster, outbreak of disease or any other severe threats. Therefore, Rhino translocations started in April 2008 for moving Rhinos to other protected areas where they can successfully breed. IRF and IRV 2020 was successful in shifting 18 Rhinos, over the period of 4 years, from Pobitora and Kaziranga to Manas National Park, which previously maintained a large Rhino population before the population crisis. The Centre for Wildlife Rehabilitation and Conservation additionally helped in moving eight Rhinos to Manas National Park. The animals got well adapted to their new environment and since the rehabilitation period, one of the females gave birth to eleven young ones which marked the success of the program. Sadly, this new population also fell under the bullets of poachers. In 2013, IRV 2020 suspended the translocation process to Manas after losing eight Rhinos and mainly focused on strengthening the security of the Rhinos. In 2014, only one Rhino was smuggled in Manas, but the rest of 31 translocated Rhinos with their young ones are still surviving safely in the park (<https://rhinos.org/where-we-work/indian-rhino-vision-2020/>).

AN UPSURGE SEEN IN THE RHINO POPULATION

As a result of the extensive ongoing conservation practices and strict actions taken for Rhino protection, the Rhino count in Assam witnessed a marginal improvement in the year 2018. In a two-day census operated at Kaziranga National Park in March 2018, the Rhino count was estimated to be 2413. In contrast to the last census carried out in 2015, which accounted for 2401 Rhinos in the park, there was an increase of 12 Rhinos in 2018. According to the current census, Kaziranga now encompasses 1641 adult Rhinos. The population includes, 793 females, 642 males, and 206 undetermined sexes. The sub-adult Rhino population (between 4-6 years) was found to be 387 comprising of 149 females, 116 males and 122 undetermined sexes. Calves were reported to be 385 in numbers (<http://www.newindianexpress.com/nation/2018/mar/31/rhino-population-is-marginally-up-in-assams-kaziranga-national-park-1794923.html>). However, the census conducted was attributed as incomplete by the Forest officials. For better visibility and renewal of vegetation, the tall grass patches have to be burned every year. But in 2018, the burning was not that efficient due to high moisture content which resulted in the missing count of several Rhinos. The plan was to burn around 60-70% of the grass, but approximately 20% of the patches could only be burned. Officials suspected that many Rhinos got hidden under the inaccessible vegetations and were missed out from the count. The counting of an animal more than once was also suspected by the officials (Dutt, 2018). Currently, 2645 Rhinos have been estimated to thrive in Assam. Kaziranga National Park holds the highest number of Rhinos in the state followed by Manas National Park and Pobitora Wildlife Sanctuary compassing around 100 rhinos each. Approximately 30 Rhinos have been reported in Assam's Orang National Park (<http://www.newindianexpress.com/nation/2018/mar/31/rhino-population-is-marginally-up-in-assams-kaziranga-national-park-1794923.html>).

CONCLUSION

Every year, regardless of numerous security measures and conservation practices, a large population of Rhinos get

smuggled by the poachers, specifically at Kaziranga National Park. Most of the Rhinos get submerged in the annual floods. The Rhino horn is often regarded as an aphrodisiac in the neighbouring countries and could easily fetch up to \$150,000 USD from the international black market. Rhino horn generally gets smuggled via Manipur and Nagaland to most of the South Asian countries (<http://www.newindianexpress.com/nation/2018/mar/31/rhino-population-is-marginally-up-in-assams-kaziranga-national-park-1794923.html>). Along with the strict measures set up by the government, crucial awareness among the local people is a must for battling with the poachers and bringing down the hideous crime to an end. Moreover, Assam government and Forest officials could team-up with more number of NGOs to intensify the security of Rhinos and to present the matter not only as a state or national level problem but also as a global issue.

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CONFLICT OF INTEREST

The author has no conflict of interest to declare.

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