



Charting a sustainable future for the Greater One-horned Rhinoceros: “The imperative of integrated monitoring”

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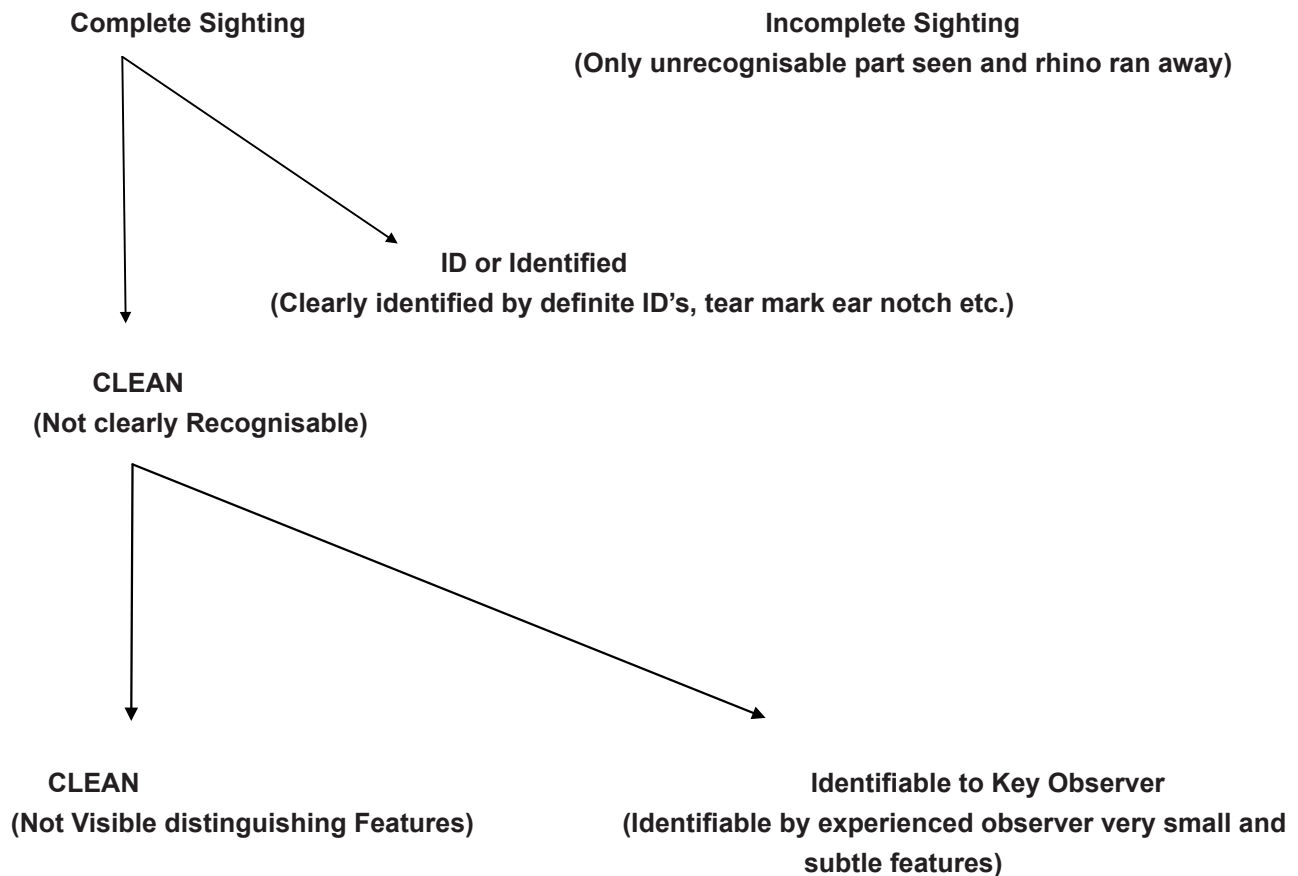
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The Greater One-Horned Rhinoceros (GOH), a majestic megaherbivore also known as the Indian Rhinoceros (*Rhinoceros unicornis Linnaeus, 1758*), stands at a critical juncture in its conservation journey. As of June 2022, the global wild population of GOH is 4023, with a significant 81.3% (3271) finding refuge in the national parks and wildlife sanctuaries

of India. Among these, Assam emerges as the custodian of the largest share, with Kaziranga National Park proudly harbouring the highest concentration of these magnificent creatures in the world. Despite the encouraging shift in status from Endangered to Vulnerable, the GOH’s future remains shrouded in uncertainty, primarily due to its concentrat-

ed presence in a handful of protected areas within India. Only four protected areas currently host over a hundred individuals, posing a potential vulnerability to the species. Traditional conservation efforts, relying on periodic census or direct count methods conducted at 3–5 years intervals, reveal a notable gap in understanding the comprehensive demogra-

Classification of Daily Rhino Sighting (Fig.1)



phy of this threatened species in the wild. In 2018, a significant stride towards a more holistic conservation approach was taken with the adoption of the National Conservation Strategy for the Indian One-Horned Rhinoceros (NCSIR). This strategic blueprint provides a clear roadmap for managing the entire wild GOH population in India. NCSIR emphasizes five key rhino conservation strategies: strengthening protection, expanding distribution, research and monitoring, transboundary engagement, and enhanced enforcement. The cornerstone of these strategies lies in the advancement of biological management practices to promote sustainability, with comprehensive monitoring of all wild populations at its core.

The newly established population in Manas National Park exemplifies the effectiveness of intensive monitoring during the initial reintroduction period, offering real-time evidence of population health. However, interruptions in this monitoring mechanism over time highlight the need for sustained efforts. Similarly, in West Bengal, their monitoring mechanism, rooted in individual rhino sightings, showcases the necessity for a unified and integrated approach to ensure the species' well-being. In parallel to African rhino range countries, which have made significant strides in establishing integrated monitoring mechanisms for their rhino populations, the IUCN Asian Rhino Specialist Group has advocated for a similar framework for the GOH. This collaborative effort involving conservation organizations and governmental bodies aims to gather essential information for the improved management of wild populations and their habitats.

The comprehensive data collected through the integrated monitoring programme provide estimates crucial for

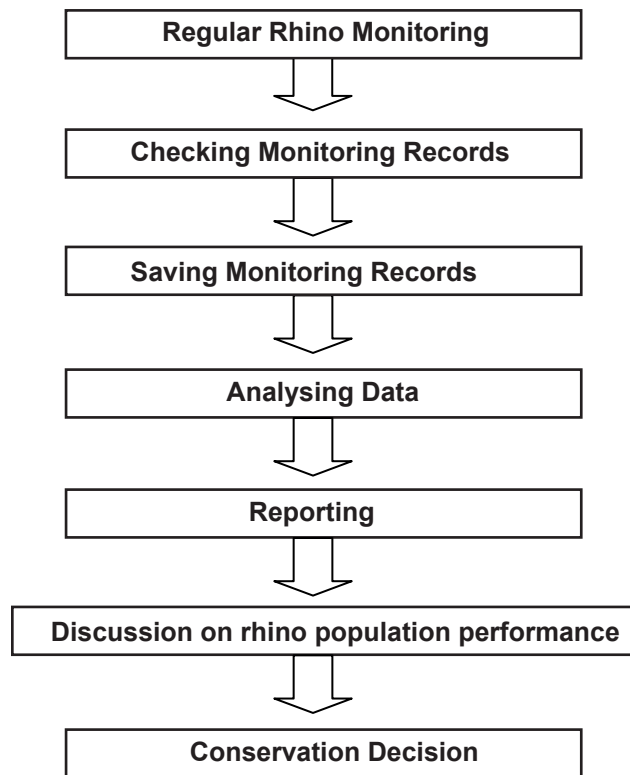
managing rhino populations, including population size, age and sex structures, calving rates, mortality rates and the distribution of home ranges. This programme seamlessly blends traditional monitoring processes, distinguishing between recognizable ('Clean') and unrecognizable rhinos, offering invaluable insights for effective management (Fig.1).

However, the success of such monitoring approaches hinges on maintaining a delicate balance between the required data quality and the available resources. Adequately skilled and motivated front-line staff, coupled with a robust system for controlling data quality at both the

observation and recording levels, are imperative for the success of the monitoring programme. This necessitates strong support from the overarching conservation management structure (Fig).

In conclusion, the imperativeness of an integrated monitoring mechanism for the Greater One-Horned Rhinoceros cannot be overstated. As we chart a sustainable future for these iconic creatures, it is high time to implement comprehensive and unified monitoring strategies that transcend boundaries, ensuring the long-term survival and well-being of the GOH meta-population.

Outcome of better Rhino Monitoring Methods (Fig.2)



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Our mission is to foster conservation of biodiversity in Northeast India through research, environmental education, capacity building and advocacy for legal and policy reform to usher a new era of ecological security.

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