



Rhisotope Project

[Source: TH](#)

Why in News?

Recently, South African scientists injected [radioactive material](#) into live [rhinoceros](#) horns to make them easier to detect at **border posts** in a pioneering project aimed at [curbing poaching](#).

What is the Rhisotope Project?

▪ About:

- The Rhisotope Project commenced in 2021 and involves **administering measured quantities** of radioisotopes into the **horns of live rhinos**.
- Under the project "two tiny little radioactive chips" were inserted into the horn of a rhinoceros.
 - The radioisotopes make the horn **"useless" and "poisonous"** for human consumption."
 - The project's final phase includes **aftercare and follow-up blood samples** to ensure the animals are protected, with the radioactive material lasting five years on the horn, proving **more cost-effective** than dehorning every 18 months.
- This project aims to use nuclear science in a **novel way for conservation**.
- This **non-lethal** yet powerful solution aims to radically reduce the demand from end-users and save rhinos from the very real **threat of extinction**.

▪ Impact:

- The procedure, performed on sedated rhinoceroses, is safe for the animals, with a radiation dose low enough not to affect their health or the environment.
- Radioactively treated horns are more likely to be **detected at international borders**, making it more likely that [smuggling syndicates](#) are exposed, prosecuted and convicted under [anti-terrorism laws](#).

▪ Need:

- Rhinoceros horns are **highly valuable on black markets**, with prices comparable to gold and cocaine.
- Previous anti-poaching strategies like **dehorning and poisoning horns** have failed to deter poachers.
- Despite government efforts, **499 rhinoceroses were killed in 2023, an 11% increase from 2022**, primarily in state-run parks.

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WHITE RHINO

Ceratotherium simum



IUCN Estimated Population:

16,803

DECREASING

IUCN Status:

**NEAR
THREATENED**



**GREATER
ONE-HORNED
RHINO**

Rhinoceros unicornis



IUCN Estimated Population:

4,014

INCREASING

IUCN Status:

VULNERABLE



BLACK RHINO

Diceros bicornis



IUCN Estimated Population:

6,487

INCREASING

IUCN Status:

**CRITICALLY
ENDANGERED**



JAVAN RHINO

Rhinoceros sondaicus



IUCN Estimated Population:

76*

STABLE

IUCN Status:

**CRITICALLY
ENDANGERED**

*Indonesia's Ministry of Environment and Forestry has reported that 12 of these individuals may be missing.



SUMATRAN RHINO

Dicerorhinus sumatrensis



IUCN Estimated Population:

34-47

DECREASING

IUCN Status:

**CRITICALLY
ENDANGERED**

Legal Frameworks for Wildlife Conservation

▪ Global Wildlife Conservation Efforts to which India is a Party:

- [Convention on International Trade in Endangered Species of Wild Fauna and Flora \(CITES\)](#)
- [Convention on the Conservation of Migratory Species of Wild Animals \(CMS\)](#)
- [Convention on Biological Diversity \(CBD\)](#)
- [The Wildlife Trade Monitoring Network \(TRAFFIC\)](#)
- [United Nations Forum on Forests \(UNFF\)](#)
- [International Union for Conservation of Nature \(IUCN\)](#)
- [Global Tiger Forum \(GTF\)](#)

▪ Domestic Framework:

- [Wildlife \(Protection\) Act, 1972](#)
- [Environment Protection Act, 1986](#)
- [The Biological Diversity Act, 2002](#)

▪ Conservation Efforts Specifically for Rhinos:

- [New Delhi Declaration on Asian Rhinos](#)
- [DNA Profiles of all Rhinos](#)
- [National Rhino Conservation Strategy](#)
- [Indian Rhino Vision 2020](#)
- **Translocation:** Rhino translocations to [Manas National Park](#) set for the beginning of

2023 were rescheduled for 2024 while security measures were reinforced after a poached rhino was discovered in January.

- **Rhino Corridor:** In 2022, the Assam government finalized the addition of approximately 200 sq km to [Orang National Park](#) in north-central Assam, more than **doubling the size of this protected area and key rhino habitat.**



RHINOCEROS

World Rhino Day - 22nd September (declared by WWF in 2010)

5 Main Species of Rhino

Species	Found in	IUCN Red List Status	Habitat
African White	Africa	NT	Long/short grass Savannah
African Black	Africa	CE	Semi-Desert Savannah
Greater one-horned	Asia	Vu (CITES - Appendix I, WPA - Schedule I)	Tropical grassland
Javan	Asia	CE	Tropical, subtropical forests
Sumatran	Asia	CE	Same as Javan

Ujung Kulon National Park (a UNESCO WHS) is home to the last remaining wild Javan rhinos on Earth

Greater One-Horned Rhino

Only species found in India (aka Indian Rhino)



CHARACTERISTICS

- Largest of the 5 species
- Identified by a single black horn and a grey-brown hide with skin folds



Threats

- Poaching for horns
- Habitat loss
- Decreasing Genetic diversity



Protected Areas (India)

- **UP**
 - ◆ Dudhwa TR
- **West Bengal**
 - ◆ Jaldapara NP
 - ◆ Gorumara NP
- **Assam**
 - ◆ Pabitora WLS
 - ◆ Orang NP
 - ◆ Kaziranga NP (max no. of Rhinos: ~2400)
 - ◆ Manas NP



Conservation Efforts (India)

- National Rhino Conservation Strategy
- Indian Rhino Vision 2020 (launched in 2005)

New Delhi Declaration on Asian Rhinos 2019

Signed by 5 rhino range nations (India, Bhutan, Nepal, Indonesia and Malaysia)



Drishti IAS

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims:

Q. Consider the following statements in respect of Trade Related Analysis of Fauna and Flora in Commerce (TRAFFIC): (2017)

1. TRAFFIC is a bureau under United Nations Environment Programme (UNEP).
2. The mission of TRAFFIC is to ensure that trade in wild plants and animals is not a threat to the conservation of nature.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans: (b)

Q. Consider the following statements: (2019)

1. Asiatic lion is naturally found in India only.
2. Double-humped camel is naturally found in India only.
3. One-horned rhinoceros is naturally found in India only.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (a)