



# 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)**