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News: Curious collage shows rhino horns are shrinking

- The horns of rhinoceroses may have become smaller over time from the impact of hunting, according to a recent study which analyse artwork and photographs of the animal spanning more than five centuries.
- Rhinos have long been hunted for their horns. The five surviving rhino species are threatened by habitat loss and hunting.
- The study found that the rate of decline in horn length was highest in the critically endangered Sumatran rhino and lowest in the white rhino of Africa, the most commonly found species in the wild and in captivity.
- This observation follows patterns seen in other animals, such as tusk size in elephants and horn length in wild sheep, which have been driven down by directional selection due to trophy hunting.
- The Rhino Research Center (RRC)'s repository holds a collection of more than 4,000 rhino images, including artistic portrayals from 1481 and photographs, of which the earliest was taken in 1862.
- The scientists used this for two research approaches. They studied 3,158 images to assess the changes in representations of rhinos and human interactions with the animal over 500 years.

- They identified 80 images of all five rhino species, to analyse changes in horn length over time, extracting morphological data from photographs.

Greater One-Horned Rhinoceros

- Great One-Horned Rhinoceros is of the **5 sub-species of Rhino family**.
- It is also known as **Indian Rhinoceros**.
- IUCN Red List status: **Vulnerable**.
- The Indian Rhino is listed in CITES **Appendix I** and Schedule I of **Wildlife protection act, 1972**.
- The Indian Rhinoceros has a **single black horn which is present in both male and female species**.
- Considered to be the most amphibious of all the rhino species, the Indian rhino is an **excellent swimmer**.
- It can run at speeds of up to **55km/hr for short periods of time**.
- Rhino population is distributed in **southern Nepal, northern West Bengal, and the Brahmaputra valley**.
- In India, Great Indian Rhinos are protected in **Kaziranga National Park, Manas National Park, Pobitora Wildlife Sanctuary and Orang National Park in Assam, Gorumara National Park and Jaldapara National Park in West Bengal, Dudhwa**

National Park cum Tiger Reserve and Katarniaghat Wildlife Sanctuary in Uttar Pradesh.

- 3/4th of Indian rhino is present in Kaziranga National Park. The protected area with most density of Rhinos is Pobitora Wildlife Sanctuary.
- All rhinos have poor eyesight. Rhinos have blurred vision and tend to attack based on smell and hearing.
- Protected under Indian Rhino Vision 2020.
- It is the only sub - species of Rhino which is found in India.
- Major threats faced include Poaching for horn and skin and Habitat destruction.
- The Ministry of Environment, Forest and Climate Change (MoEFCC) has undertaken a project to create DNA profiles of all rhinos present in India. After completed, Indian Rhino will become India's first wild animal species to have all its members DNA-sequenced. It will be stored in Wildlife Institute of India, Dehradun.

Asian Rhino Range Countries

- Asian Rhino Range Countries include Bhutan, India, Indonesia, Malaysia, and Nepal. The New Delhi Declaration was adopted at the second meeting of the Asian rhino range countries. New Delhi Declaration underscored trans-

boundary collaboration among India, Nepal, and Bhutan for the conservation and protection of the greater one-horned rhino.

News: GM Mustard and its Controversy

GM Mustard

- The Genetically Engineered Mustard **DMH-11** has been developed by **University of Delhi**.

DMH – 11

- DMH–11 is a **hybrid variant of mustard** developed by researchers at The Centre for Genetic Manipulation of Crop Plants, at the **University of Delhi**.
- The University of Delhi authorities asserted that **DMH – 11 was developed without transgenic technology**.
- DMH – 11 is a result of a **cross between two varieties: Varuna and Early Heera–2**.
- Such a cross **wouldn't have happened naturally** and was **done after introducing genes from two soil bacterium called barnase and barstar**.

- Barnase in Varuna induces a temporary sterility because of which it can't naturally self pollinate. Barstar in Heera blocks the effect of barnase allowing seeds to be produced.
- The result is DMH 11 (where 11 refer to the number of generations after which desirable traits manifest) that not only has better yield but is also fertile.
- DMH-11 is a transgenic crop because it uses foreign genes from a different species.

Benefits of GM Mustard

- Indigenously developed seeds, the patent remains with government unlike with cotton it remains with corporates.
- India Plans for food fortification to achieve SDG, this will help to achieving its goal.
- Yields are expected to rise by up to 30 per cent.
- India imports 15 million tonnes (Mt) of edible oils worth almost \$11 billion annually, Mustard oil production from this variety of crop will save a lot on Foreign exchange exchequer.
- The GEAC initially cleared DMH - 11 for commercial cultivation, however, they retracted their approval upon deciding that more tests, and additional data concerning the effect of DMH - 11 on insect pollinators, in particular

honeybees, and on soil microbial diversity was needed prior to commercialisation.

Reason for the controversy behind GM Mustard

- There are two main reasons why transgenic mustards are a topic of debate.
- The use of genes that are foreign to the species is one and secondly, the preparation of mustard hybrids require the use of another gene, called the bar gene, that makes it tolerant to an herbicide called glufosinate–ammonium.
- Activist groups allege that the GM mustard hasn't been evaluated as an herbicide tolerant crop posing potential risks. Finally, they allege, GM mustard plants may dissuade bees from pollinating the plant and this could have knock-off environmental catastrophes.

News: Pahari ethnic community added to Scheduled Tribes list of Jammu and Kashmir.

- The National Commission for Scheduled Tribes (NCST) has now cleared the way for the inclusion of the 'Pahari ethnic group' on the Scheduled Tribes list of the Union Territory of Jammu and Kashmir.
- The proposal green lit by the commission also called for the inclusion of the "Paddari tribe", "Koli" and "Gadda Brahman" communities to be included on the ST list of J&K.

- The delimitation commission has reserved six of the nine Assembly segments in the Pir Panjal Valley for STs.
- The Pir Panjal valley is also home to Gujjars and Bakarwals, who are already categorised as STs, and have expressed resentment over the possibility of the inclusion of Paharis in the ST list.

National Commission for Scheduled Tribes (NCST)

- Article 338A of the constitution provides for the National Commission for Scheduled Tribes (after the 89th Constitutional Amendment in 2003).
- President appoints by a warrant under his hand and seals the members of NCST.
- NCST consists of 5 members including a Chairman and a Vice-Chairperson of which at least one is a woman.
- Members are appointed for 3 years who are ineligible for appointment for more than 2 terms.
- NCST works under the Ministry of Tribal Affairs, NCSC works under Ministry of Minority Affairs and NCBC works under the Ministry of Social Justice.

Powers

- To investigate and monitor all matters relating to the safeguards provided for the STs under the Constitution or under any other law for the time being in force or under any order of the Government.
- Chairperson is given the rank of Union Cabinet Minister.
- The Vice Chairperson has the rank of a Minister of State and other Members have the rank of a Secretary to the Government of India.
- There are over 700 notified tribes, of which 62 communities are found in Odisha, whereas No tribes are identified in Haryana, Punjab, Chandigarh, Delhi and Puducherry.
- To present to the President, annually and at such other times as the Commission may deem fit, reports upon the working of the safeguards given to the Scheduled Tribes.

Delimitation Commission

- The Delimitation Commission is appointed by the President of India and works in collaboration with the Election Commission of India.
- It includes Retired Supreme Court judge, Chief Election Commissioner and Respective State Election Commissioners.

- The commission examines population data, existing constituencies, the number of seats to be analysed, holds meetings with all the stakeholders and submits its recommendation to the government.
- The draft report of the Delimitation Commission is published in the Gazette of India, the official gazettes of the states concerned and at least two vernacular publications seeking feedback from the general public.
- The Delimitation Commission in India is a high power body whose orders have the force of law and cannot be called in question before any court.

Powers and functions

- To determine the number of boundaries of constitution to make population of all constituencies nearly equal.
- To identify seats reserved for SC and ST communities, wherever their population is relatively large.
- In case of difference of opinion among members, majority opinion prevails.

News: India wheat export doubles to \$1.48 billion in April–Sept.

- The country's wheat exports more than doubled to \$1.48 billion during April–September as compared with the year earlier period, the Commerce Ministry said.
- Though the government banned wheat exports in May, some shipments are allowed to meet food security needs of the countries that request for it.

Wheat

- Wheat is a Rabi crop requires a temperature 10 to 15° C in sowing time and 21 to 26° C in harvesting time.
- Well drained fertile loamy and clayey soil is favourable to cultivate wheat.
- 75-100 cm of rainfall is good.
- Area under Wheat cultivation is the second highest after Rice.
- Uttar Pradesh stands first in the cultivation of wheat followed by Punjab, Madhya Pradesh, Haryana and Rajasthan.
- India is the second largest producer of wheat (around 13.5% of world share) in the world after China.
- Russia is the world's largest exporter of wheat, accounting for more than 18% of international exports.

- In 2019, Russia and Ukraine together exported more than a quarter (25.4 %) of the world's wheat.
- The top five countries that exported the highest dollar-value worth of wheat include Russia > United States > Canada > France > Ukraine.
- India accounts for even less than 1% in world wheat export. However, its share has increased from 0.14% in 2016 to 0.54% in 2020.
- Egypt is the world's biggest importer of wheat.
- Turkey is also a big spender on Russian and Ukrainian wheat with 74% of its imports coming from those two countries in 2019.
- Wheat is the second most important cereal crop after rice and the main food crop in North and North West India.
- Temperate grasslands of the mid-latitudes produce the greatest quantity of wheat per capita amongst the world's wheat-growing nations.
- The temperate grasslands are ideal for extensive wheat cultivation.
- They are, naturally the greatest wheat exporters.
- Three-quarters of the world's wheat is winter wheat, i.e. wheat sown in winter or late autumn, and is then harvested in the summer.