# Prelim Bits 29-11-2022 | UPSC Daily Current Affairs

## Black Corals

*Scientists discovered new species of black corals living thousands of feet below the ocean surface near the Great Barrier Reef.*

- Five new species of black corals living as deep as 760 meters below the surface in the Great Barrier Reef and Coral Sea off the coast of Australia.
- There are only 300 known species of black corals in the world and now 5 new species are added to the list.
- Many of these black corals are branched and look like feathers, fans or bushes, while others are straight like a whip.

- **Habitat** - Black corals can be found growing both in shallow waters and down to depths of over 8,000 meters.
- **Food** - Black corals are filter feeders and eat tiny zooplankton that are abundant in deep waters.
- **Lifespan** -Some individual corals can live for over 4,000 years and expected to have survived at least four mass extinction events.
- **Threat** - Illegal harvesting for jewellery.
- **Significance** - Black corals act as important habitats where fish and invertebrates feed and hide from predators.
- Due to their long lifespan, they help scientist understand evolutionary history.

*The difference between colourful corals and black corals is that the former is an autotroph and the latter is a consumer.*

*Colourful corals live in shallow-water and rely on the sun and photosynthesis for energy.*

**References**

1. The Hindu - Five new species of black corals discovered
2. Hindustan Times - Scientists discover 5 new species of black corals

## Fujiwhara Effect

***The tropical storm Gardo moved towards typhoon Hinnamnor and became super-typhoon exhibiting Fujiwhara effect.***

- Fujiwhara effect is named after Sakuhei Fujiwhara, a Japanese meteorologist who discovered interaction between two cyclonic vortices when they were close to each other.
- It is any interaction between tropical storms formed around the same time in the same ocean region with their centres or eyes at a distance of less than 1,400 km, with intensity varying between a depression and a super typhoon.
- The interaction could lead to changes in the track and intensity of either or both storms systems.
- In rare cases, the two systems could merge, especially when they are of similar size and intensity, to form a bigger storm.
- There are five different ways in which Fujiwhara Effect can take place.

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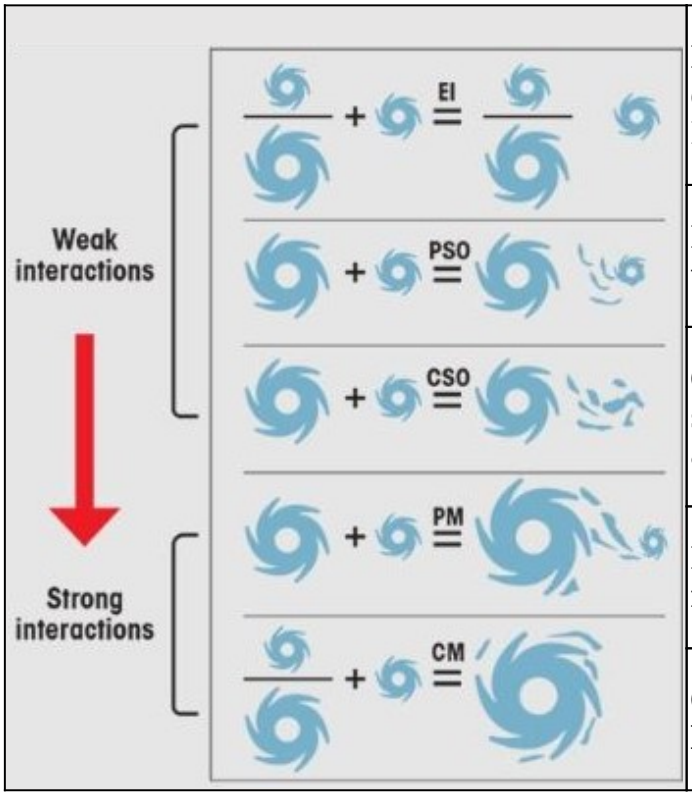
|  | **Elastic Interaction (EI)** - Only the direction of motion of the storms changes. It is the most common case. |
| | **Partial Straining Out (PSO)** - A part of the smaller storm is lost to the atmosphere. |
| | **Complete Straining Out (CSO)** – The smaller storm is completely lost to the atmosphere. |
| | **Partial Merger (PM)** - The smaller storm merges into the bigger one. |
| | **Complete Merger (CM)** - Takes places between two storms of similar strength. |

- If one of the storms is stronger than the other, the effect usually leads to the weaker one being devoured by the stronger one.
- If the storms are somehow similar in strength, they can sometimes merge or

occasionally slingshot around each other and continue on their separate ways.

*In 2020 hurricanes Marco and Laura had formed back to back in the small region of Gulf of Mexico and created a possibility of the Fujiwhara Effect.*

**References**


1. Down To Earth - What is the Fujiwhara Effect?
2. Indian Express - Super Typhoon 'Hinnamnor'


## Agnikul Launch Pad

*India's first-ever launch pad designed and operated by a private player set up at Sriharikota.*

- An agreement was signed between Agnikul Cosmos and ISRO in 2020 under the IN-SPACe initiative which gave access to Agnikul to build Agnibaan and its launch pads.
- Agnikul launch pad is the first exclusive launch pad for a private launch vehicle in India.
- It is set up at the Satish Dhawan Space Center (SDSC) in Sriharikota.
- The facility was designed by Agnikul and executed in support with ISRO and IN-SPACe.
- The facility has two sections which are 4 km away from each other.
    1. The Agnikul launch pad (ALP) and
    2. The Agnikul mission control centre (AMCC).
- All critical systems connecting these 2 sections are redundant to ensure 100% operationality during countdown.
- It also has the ability to share critical information with ISRO's Mission Control Centre.

*Vikram-S is India's first ever privately built rocket and the maiden launch was carried under Mission Prarambh.*

**Agnikul Cosmos**

- Agnikul became the first Indian company to sign an agreement with ISRO.
- Agnibaan is Agnikul's highly customizable, two-stage launch vehicle.
- It is capable of taking up to 100 kg payload to orbits around 700 km high (Low Earth Orbits) and enables plug-and-play configuration.
- Agnilet which was successfully test-fired in early 2021, is the world's first single-piece 3-D printed engine fully designed and manufactured in India by Agnikul.

**References**


1. The Hindu - India's first private space vehicle launch pad
2. Business Standard – Agnikul Cosmos built launch pad in India
3. ISRO - First private launch pad at SDSC

4. Agnikul Cosmos

## Jeypore Ground Gecko

*The Jeypore Ground Gecko has been included in Appendix II of CITES in 19th Conference of Parties (COP19) to CITES.*

- Jeypore Ground Gecko (*Cyrtodactylus jeyporensis*) are wild reptile (lizard) species.
- They are unique among other Indian Geckos as it has enlarged, hexagonal, plate like scales across the back.
- **Range** - Endemic to the Eastern Ghats, India.
- **Distribution** - Known only from two separated locations in high elevation moist forest of Patinghe hills near Jeypore (Orissa) and Galikonda hills (Andhra Pradesh).
- **Threats** - Habitat destruction due to deforestation for bauxite mining, fuel wood, land conversion to plantations and forest fires.
- **Conservation**
  - IUCN – Endangered
  - CITES – Appendix II
- Other species of Gecko found in India in recent past –
  1. Nellore dwarf gecko (*Cnemaspis avasabinaem*),
  2. Bent-toed gecko (*Cyrtodactylus urbanus*),
  3. Mahendragiri Gecko and
  4. Kanger valley rock gecko

### References


1. Down to Earth - Jeypore Ground Gecko listed in CITES Appendix 2
2. IUCN - Jeypore Ground Gecko
3. Reptiles of India - Cyrtodactylus jeyporensis


## Himalayan Yak

*The Himalayan yak is given the 'food animal' tag by the scientific panel of Food Safety and Standard Authority of India (FSSAI).*

*Food Animals are those that are raised and used for food production or consumption by humans.*

- *Himalayan Yak (Bos grunniens) is a multi-purpose bovine found in high-altitude areas of the Himalayas.*
- **Distribution** - The long-haired domesticated cattle is found throughout the Himalayan region of the Indian subcontinent
- India has around 58,000 yaks, found on the heights of Arunachal, Sikkim, Himachal and Ladakh.
- **Rearing** -Yaks play multi-dimensional socio-cultural-economic role for the pastoral nomads.
- Yaks are reared under transhumance system which is primitive, unorganized and full of hardship.
- Brokpa nomads in Arunachal Pradesh, Changpas and Dokpas in Ladakh, Sikkim and Himachal Pradesh are prominent nomadic communities engaged in yak rearing.

- **Yak Food products** - Yak milk is highly nutritious, rich in fat, contain essential minerals and have medicinal value.
- The products which are traditionally produced from yak milk are churkum, churpi, ghee and paneer.
- Yak meat is known to be lean and are mostly produced and consumed at local community level.
- **Food Animal Tag** -The National Research Centre on Yak (NRC-Yak) based in Arunachal Pradesh submitted a proposal to the FSSAI in 2021 for considering the yak as a food animal.
- The decision comes after the latest census (2019) showed a 25% drop from last livestock census (2012).
- Recognising Yak as a food animal will make yak a part of the conventional milk and meat industry.
- This move will help check the decline in its population and make yak rearing profitable

for yak farmers.

**References**


1. The Hindu - Himalayan yak accepted as food animal by FSSAI
2. Deccan Herald - Himalayan yak gets FSSAI's food animal tag