Prelim Bits 26-03-2023 & 27-03-2023 | UPSC Daily Current Affairs

Sea Slugs

Marine biologists and citizen scientists document unique species of sea slugs from Visakhapatnam coast.

- A unique species of nudibranch sea slugs were documented on the Visakhapatnam shore.
- These do not have shells and their gills are exposed.
- These sea slugs are found in places with abundant prey base which may vary from sponges, hydroids and algae.
- **Significance** - The nudibranchs are usually found in coral reefs.
- Their presence is a significant indicator of a strong coral ecosystem.
- **Shaggy Seahare** was recorded for the first time from the coast.
- They mainly feed on algae and is usually seen in large numbers when there is algal bloom.
- **Photosynthetic Animals** - 2 species of sap-eating sea slugs was also recorded that are the only photosynthetic animals in the world.
- These can store chloroplast from the algae in their skin and do photosynthesis in absence of food (Sap).
- Most of the nudibranchs are active through the day, but there are some species that are also nocturnal in nature.

References

1. The Hindu - Unique sea slugs from Visakhapatnam coast

Geomagnetic Storm

A really powerful solar storm hit our planet recently.

- The geomagnetic storm got a severity grade of G4 from the US National Ocean and Atmospheric Administration (NOAA).
- **G4 grade -** It is the second-highest grade possible as per NOAA.
- A G4 grade solar storm can potentially cause widespread voltage control problems for power grids and can mistakenly trip key electric assets of the grid.
- It can also create problems for spacecraft operations, causing surface charging and tracking problems.

The Earth's magnetosphere is created by our magnetic fields and it usually protects us from the particles emitted by the Sun.

- **Geomagnetic Storm -** A geomagnetic storm refers to the disruptions to the Earth's magnetic field caused by solar emissions.
- When a Coronal Mass Ejection (CME) or a high-speed solar stream reaches our planet, it slams into the magnetosphere and peels it open.
- **Impacts -** The peeling allows energetic solar wind particles to stream down and hit our atmosphere over the poles.
- A rapid drop in the Earth's magnetic field strength is seen at the earth's surface.
- This decrease lasts about 6 to 12 hours, after which the magnetic field gradually recovers over a period of several days.
- This solar event can supercharge auroras and makes them visible in places where they wouldn't be visible normally.
- **Related Topics -** Solar Storm, Coronal Magnetic Field, Solar Flare, Coronal Holes

References

1. IE - Earth hit by severe solar storm much stronger than expected
2. NASA - Geomagnetic Storm

Gorata Martyr Memorial

The Union Home Minister inaugurates Gorata Martyr Memorial and hoists the 103 feet high tricolor at Gorata Maidan in Bidar, Karnataka.

- The Union Home Minister hoisted a 103-feet-high Tricolour and inaugurated the Gorata Shaheed Smarak and memorial of Sardar Vallabhbhai Patel at Gorata ground.
- Sardar Vallabhbhai Patel played a key role in Hyderabad liberation.
- The Hyderabad state was liberated from Nizam's rule on September 17, 1948.
- **Gorata Massacre -** Gorata village in Bidar district of Karnataka was then a part of the Nizam-ruled Hyderabad State.
- The Hyderabad rulers opposed the erstwhile princely state's unification with India after India's independence.
- Razakar commander Shamshuddin had attacked Gorata village where the locals had hoisted a 2.5-ft tall National Flag.
- The villagers had retaliated and killed Shamshuddin.
- Following this, on May 9, 1948 at Gorata village more than 200 people have been massacred by the Razakars of Nizam.

References

1. PIB - Union Home Minister inaugurates Gorata Martyr Memorial

Aravalli Green Wall Project

Union Minister for Environment, Forest and Climate Change launched the Aravalli Green Wall Project, a major green initiative to revive Aravallis.

- The Aravalli Green Wall Project is a major initiative to green the area around the Aravalli Hill Range in 4 states.
- The project covers states of Haryana, Rajasthan, Gujarat and Delhi for roughly 1,400-km long and 5-km wide green belt buffer around the Aravalli mountain range.
- The Aravalli hills landscape span over 6 million hectares of land in these 4 states.
- The project will involve planting native species of trees and shrubs on degraded land.
- It also involves rejuvenating and restoring surface water bodies.
- The project will also focus on agroforestry and pasture development.

- **Benefits -** increase the green cover and biodiversity of the Aravalli and also improve the soil fertility, water availability and climate resilience of the region.
- Aravalli Green Wall will protect NCR of Delhi from sand and dust storms and pollution.
- Generate multiple environmental and socio-economic co-benefits.
- Restore degraded forest, crop and pasture lands.
- Sequester Carbon, Conserve Biodiversity.
- Build Resilience to Climate Change.
- Enhance Water Conservation, Agricultural Production and Farm Incomes in the Degraded most degraded land of India.

Aravalli Green Wall Project was conceptualised on the lines of Africa's 'Great Green Wall' concept to combat desertification and land degradation from Dakar (Senegal) to Djibouti.

- **Aravallis -** Aravallis stand as the only barrier stopping the expansion of desert land towards north-west India.
- Aravallis is under the threat of rampant mining, dumping of waste and encroachments.
- The government of India is trying to revive the Aravallis through various initiatives like single-use plastic ban, water conservation efforts and natural resources protection.

References

1. PIB - Shri Bhupender Yadav launches Aravalli Green Wall Project
2. TOI - Aravalli green wall to stand against expansion of Thar
3. Hindustan Times - Afforestation project Green Wall launched

Depleted Uranium Munitions

The U.K. would provide Ukraine with armour-piercing rounds containing depleted uranium.

- Depleted uranium (DU) is a by-product of uranium enrichment.
- Enriched uranium is highly radioactive and is used in nuclear reactors and nuclear weapons.
- In comparison to enriched uranium, depleted uranium is much less radioactive and is incapable of generating a nuclear reaction.
- Due to its high density (more dense than lead), depleted uranium is widely used in

weapons as it can easily penetrate armour plating.
- The US began manufacturing armour-piercing rounds with depleted uranium in the 1970s and has since added it to composite tank armour to strengthen it.

About 340 tons of depleted uranium were used in munitions during the 1991 Gulf War, and an estimated 11 tons in the Balkans in the late 1990s.

- **Weapons -** The US, Britain, Russia, China, France and Pakistan produce uranium weapons.
- Depleted uranium munitions are **not** classified as nuclear weapons, as per the *International Coalition to Ban Uranium Weapons*.
- Still they emit low levels of radiation, mainly α-particles and can cause severe diseases.
- **Risks -** Ingesting or inhaling them depresses renal function and raises the risk of developing a range of cancers.
- Depleted uranium munitions which miss their target can poison groundwater and soil.

References

1. IE - UK to provide weapons containing depleted uranium to Ukraine

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