Prelim Bits 26-11-2021 | UPSC Daily Current Affairs

Vulture Bees

- These are **tropical** stingless bee species that have evolved into **carrion-feeding** or **meat-eating bees**.
    - These bees are the only bees in the world that have evolved to use food sources not produced by plants.
- These bees have evolved an **extra tooth** for biting flesh and an **acidic gut** that more closely resembles that of vultures rather than other bees.
- Typically, bees don't eat meat. But the Vulture Bees has evolved the ability to do so, presumably due to **intense competition for nectar**.
    - Vulture bees and related species feed on meat for their **protein**.
- Unlike humans, whose guts change with every meal, the guts of most bee species are colonized by the same 5 core microbes over 80 million years of evolution.
- But, given their radical change in food choice, it is found that the vulture bees' gut bacteria differed dramatically from those of a vegetarian bee.
    - Gut bacteria, like Lactobacillus, harbor Carnobacterium, helps vulture bees fight pathogens on rotting meat. They help produce acid which helps the bees to fight toxins that form on rotting flesh.
- The carrion-feeding bees gathered the flesh in **little baskets on their hind legs**, where other bees collect pollen, or swallowed the meat to store in their stomachs.
- **Purpose** - The bees were preparing to carry the chicken back to their hives, where they would enclose the meat chunks in pods, leave them there for 2 weeks, then feed them to their babies.
- The adults don't need to eat protein. They survive on nectar.

Reference

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Dead Sea & Sinkholes

Thousands of sinkholes have formed around the Dead Sea, which has lost a third of its surface area since 1960.

Sinkholes

Sinkholes are very common in limestone/karst areas.

- A sinkhole is an opening more or less circular at the top and funnel-shaped towards the bottom.

- Its size varies in area from a few sq. m to a hectare and with depth from a less than 0.5 metre to 30 metres or more.
- Some of these form solely through solution action (solution sinks).
- Others might start as solution forms first and if the bottom of a sinkhole forms the roof of a void or cave underground, it might collapse leaving a large hole opening into a cave or a void below (collapse sinks or dolines).

  Solution sinks are more common than collapse sinks.

- Quite often, sinkholes are covered up with soil mantle and appear as shallow water pools. Anybody stepping over such pools would go down.
- When sink holes and dolines join together because of slumping of materials along their margins or due to roof collapse of caves, long, narrow to wide trenches called valley sinks or Uvalas form.

Dead Sea

- The Dead Sea or Salt Sea is the landlocked salt lake between Israel and Jordan located at the lowest point on earth.
- It is one of the four saltiest bodies of water in the world. It is the world's deepest hypersaline lake.
- Dead Sea is called the Dead Sea due to the harsh environment (extreme salinity of its water) in which plants and animals cannot flourish.
- The special conditions of the lake are an outcome of its extreme geomorphological structure alongside a harsh desert climate.
- But, it has been receding by about a metre every year.

Reference

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INS Vela

INS Vela, the fourth Scorpene class submarine of Project 75 of the Indian Navy, was commissioned at the Indian Navy's Western Command (Mumbai).

This will be the second addition to the Indian Navy's fleet of warships after INS Vishakapatnam's commissioning.

- **Features** - INS Vela is a diesel-electric powered attack submarine, designed to act as "sea denial" as well as "access denial" warfare to the adversary.
- Vela is named after a type of Indian fish belonging to the stingray family, and the crest depicts

the fish swimming across the blue seas.
- The submarine's mascot is the **Sub-ray** which is an amalgamation of the submarine and the stingray which symbolises the metamorphosis of the submarine's character with the qualities of a stingray.
- The new INS Vela carries forward the legacy of its namesake, the erstwhile Vela which served the Navy from 1973 to 2010.
    - The earlier Vela belonged to Foxtrot class submarine of Soviet origin.
- The new INS Vela is equipped with C303 anti-torpedo countermeasure system, and can carry up to 18 torpedoes or Exocet anti-ship missiles or 30 mines in place of torpedoes.
- With this, the Navy currently has 16 conventional and one nuclear submarines in service.
    - It includes 8 Russian Kilo class submarines, 4 German HDW submarines, 4 French Scorpene submarines and the indigenous nuclear ballistic missile submarine INS Arihant .

Project-75

- Six Scorpene submarines are being built under Project-75 by Mazagaon Dock Ltd. (MDL), Mumbai, under technology transfer from Naval Group of France under a $3.75-bn deal signed in 2005.

Name of the Submarine	Commission Year
INS Kalvari	2017
INS Khanderi	2019
INS Karanj	2021
INS Vela	2021
INS Vagir	2020 (Still undergoing sea trials)
INS Vagsheer	Still in advanced stage of outfitting

- This project envisages indigenous construction of Scorpene-class submarines equipped with the state-of-the-art Air Independent Propulsion system.
- In parallel, the Navy recently issued the Request For Proposal for procurement of six advanced submarines under Project-75I, which is a part of the Navy's 30-year submarine building programme.
    - Project-75I (approved in 2007) succeeded the Project-75.
- After the P-75I, the Navy intends to design and build conventional submarines indigenously.

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SDG Urban Index

NITI Aayog under the Indo-German Cooperation releases the inaugural SDG Urban Index and Dashboard 2021–22

- The SDG Urban Index and Dashboard ranks 56 urban areas on 77 SDG indicators across 46

targets of the SDG framework across 15 SDGs.
    - SDG 14 (life below water) has not been included as it is relevant for only coastal areas
    - SDG 17 (partnerships for the goals) has been excluded as the progress of its targets is monitored at the national level.
    - While progress under SDG 15 (life on land) has been measured using two indicators, they have not been used in estimating the scores, owing to lack of adequate coverage.
- The statistical methodology for the SDG Urban Index, used for the SDG India Index and North Eastern Region District SDG Index as well, is drawn from the globally accepted methodology developed by the Sustainable Development Solutions Network (SDSN).
- **Ranking** - For each SDG, the urban areas are ranked on a scale of 0-100, based on their position to achieve the SDG targets set for 2030.
- Overall or composite urban area scores are then generated from the Goal-wise scores to measure aggregate performance of the urban area.
- Urban areas have been classified as below based on their composite score:
    1. Aspirant: 0-49
    2. Performer: 50-64
    3. Front-Runner: 65-99
    4. Achiever: 100
- Shimla, Coimbatore and Chandigarh topped the Index, while Dhanbad, Meerut and Itanagar were at the bottom of the index.
- Related Links - SDG India Index

Reference

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Global State of Democracy Report, 2021

The Global State of Democracy Report, 2021 was released by the International Institute for Democracy and Electoral Assistance (International-IDEA).

- The reports refer to 3 main regime types - Democracies, Hybrid and Authoritarian Regimes.
    - Hybrid & authoritarian regimes are classified as non-democratic.
- The report aims to influence the global debate and analyses current trends and challenges to democracy, exacerbated by the Covid-19 pandemic.
- It offers specific policy recommendations to spark new and innovative thinking for policymakers, governments and civil society organizations supporting democracy.

Number of countries moving towards authoritarianism in 2020 was higher than that of countries moving towards democracy.

- **Findings** - The report said that the 20 countries moved in the direction of authoritarianism, but 7 countries moved towards democracy.

- The US and three members of the European Union (EU) [Hungary, Poland and Slovenia] have also seen concerning democratic declines.
- The pandemic has prolonged this existing negative trend into a 5-year stretch, the longest such period since the start of the 3rd wave of democratization in the 1970s.
- Democratically elected Governments, including established democracies, are increasingly adopting authoritarian tactics.
- **India** - Some of the most worrying examples of Democratic backsliding are found in some of the world's largest countries (Brazil, India).

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