Prelim Bits 24-11-2021 | UPSC Daily Current Affairs

Elephant Collaring

A wild elephant was radio-collared in Assam by the state's Forest Department, in collaboration with NGO World Wildlife Fund (WWF)-India.

This initiative is seen as a step to study & mitigate human-elephant conflict in the state. But experts say that the exercise is challenging, and even runs the risk of having a low success rate.

- **Radio-collars** are GPS-enabled collars that can be fitted around the elephant's neck. They relay information about an elephants' whereabouts.
- Collaring includes,
    1. Identifying a suitable candidate (generally an adult elephant),
    2. Darting the candidate with a sedative, and
    3. Fitting a collar around its neck, before the animal is revived.
- The objectives of this joint initiative are twofold.
    1. GPS information from the collar would help us track and study the movement patterns of the herd, across regions and habitats. This would help in understanding what is driving the conflict.
    2. The collars would serve as an early warning system. If people know in which direction an elephant is moving, they can be prepared.
- These collars are a tried-and-tested tool for wildlife monitoring and will give rangers a leg up on poachers, allowing them to identify and respond to threats in real-time through mobile devices.
- **Challenges -** As we don't have helicopters and other sophisticated equipment to approach elephants to tranquillise them, we go by foot. There is life risk.
- All components for radio collaring are not available in India. These have to be imported and are quite expensive.
- As the elephants grow in size, collars may become tight. So, we usually have to identify a senior elephant to avoid the chance of growth.
- Each geographical area has its own peculiar problems. Also, we have elephants that are long ranging, and have a diverse topography.
- Many times elephants are not able to keep the collar on. They will have it on for maximum 6 months, before it falls off. Also, there may be technical glitches with the device too.

Apart from Assam, collaring has been attempted in Chhattisgarh, Odisha and Tamil Nadu too.

Reference

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Rani Gaidinliu

Union Home Minister laid the foundation stone for the 'Rani Gaidinliu Tribal Freedom Fighters Museum' in Manipur.

- Born on January 26, 1915 at Luangkao village in Manipur, Rani Gaidinliu was a spiritual and political leader of the Rongmei Naga tribe.
    - She preserved the identity and culture of her community - Zeme, Liangmai, Rongmei and Inpui - a cognate of tribes referred to as Zeliangrong and are spread across Assam, Manipur & Nagaland.
- At age 13, she became associated with Haipou Jadonang, and became his lieutenant in his social, religious and political movement.
- Jadonang started the 'Heraka movement', based on ancestral Naga religion, and envisioned an independent Naga kingdom (or Naga-Raja).
- After the execution of Jadonang, she took up the leadership of the movement, which slowly turned political from religious.
- Rani started a serious revolt against the British and was eventually imprisoned for life. She was released in 1947.
- She passed away in 1993 at her native village Luangkao.

Acknowledging her role in the struggle against the British, Jawaharlal Nehru called her the 'Daughter of the Hills' and gave her the title 'Rani (Queen)'.

Indian Coast Guard commissioned a Fast Patrol Vessel 'ICGS Rani Gaidinliu' in 2016.

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Macro Outlook 2022

Goldman Sachs in its report 'Macro Outlook 2022' forecasted India's GDP would grow by 9.1% in 2022, accelerating from 2021's growth of 8% and 2020's contraction of 7% on the back of increased consumption.

- The reasons that the Goldman Sachs cited for the growth are,
    1. Faster-than-expected recovery,
    2. Rising consumer confidence, and
    3. Spike in the consumer spending.
- **Consumption** is expected to be an important contributor to growth in 2022, as the economy fully reopens, driven by a notable improvement in the virus situation and adequate progress on vaccination.
- **Government capital spending** is expected to continue as there are nascent signs of

    1. Private corporate capital expenditure recovery and
    2. Revival in housing investment.
- CPI inflation is forecasted to rise from 5.2% (2021) to 5.8% (2022), driven by a rise in core inflation as manufacturers pass on higher input costs.

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Change of Course of Glacier

A new study has found that nearly 20,000 years ago, a 5-km-long Himalayan glacier abruptly changed course and over time fused into an adjacent glacier in present-day Pittoragarh, Uttarakhand.

- This sudden turn in the glacier's course in the Himalayas may be caused due to,
    1. Climate Change and
    2. Change in Tectonic Movement (active fault).
- The glacier, which lies in an extremely inaccessible region, was large enough that it formed its own "valley".
- The accumulated debris that accompanies the glacier formation probably turned it from a north-eastern to a south-eastern course.
- As the Himalayan region is among the world's youngest mountain ranges, the inherent instability of the underlying tectonic plates frequently trigger earthquakes and landslides.
- **Significance** - The event had "similarities" to the February disaster (2021) in Rishiganga valley, in which a large mass of rock and debris detached from a glacier and hurtled down the Rishiganga River.
- So, it is clear that the Himalayan region is ecologically fragile and prone to events such as these are certain.

The fragility of the Himalayan region may be due to weathering, percolation of melt-water in joints, crevasses, freezing & thawing, snowfall, overloading, & gradually operating tectonic forces forcing rocks to disintegrate mechanically.

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Fastest Spinning White Dwarf

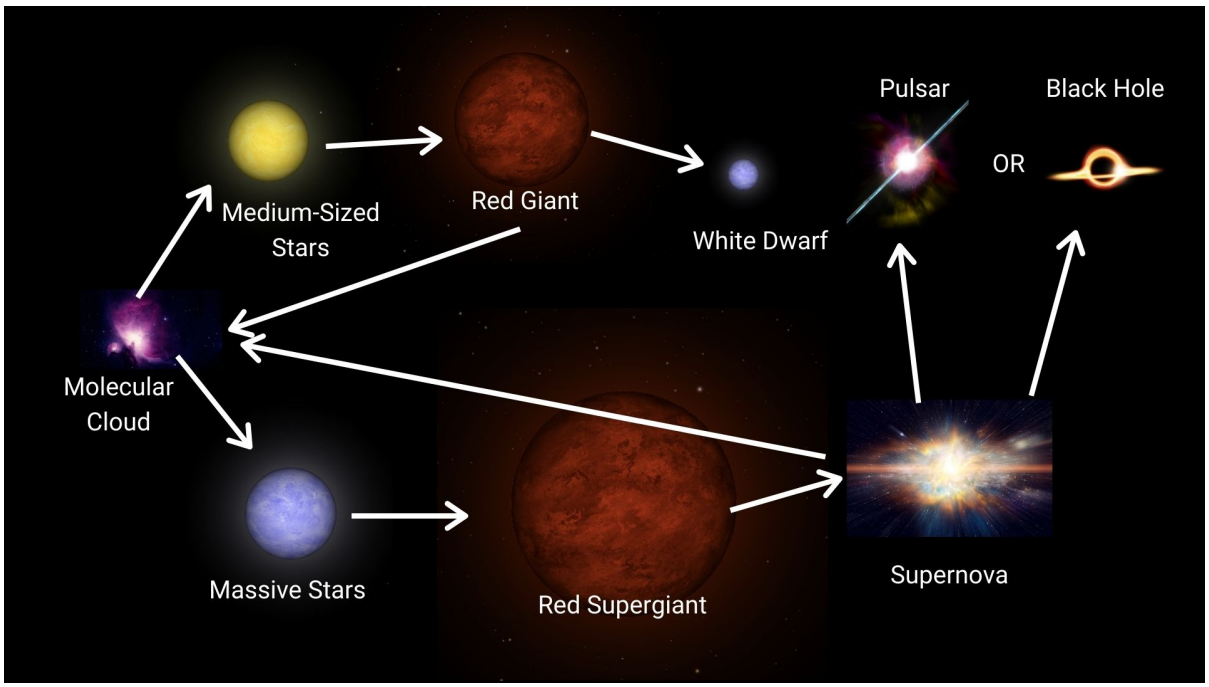
An astronomers' team has confirmed that a white dwarf star that completes a full rotation once every 25 seconds is the fastest spinning white dwarf.

A white dwarf is star that has burnt up all of its nuclear fuel, and is shedding its outer layers, now undergoing a process of shrinking and cooling.

- This star, named LAMOST J0240+1952, is part of a binary star system.
- It is the size of the Earth but at least 200,000 times more massive.
- **Magnetic Propeller System** - J0240+1952 is an extremely rare example of a magnetic propeller system, as it pulls gaseous plasma from the companion star and flings them into space at 3,000 km per second.
    - J0240+1952 is pulling material from its companion star due to its **strong gravitational effect.**
    - But as the material gets closer to the white dwarf the **magnetic field starts to dominate**.
    - This type of gas is highly conducting and picks up a lot of speed from this process, which propels it away from the star and out into space.

Evolution of White Dwarf

- A white dwarf is a very high density star that has burnt up all of its nuclear fuel (hydrogen).
- It shed its outer layers, now undergoing a process of shrinking and cooling over millions of years.
- **Mass** - White Dwarf is half the size of our Sun and has a surface gravity 100,000 times that of Earth.
- They can have a mass, which is limited to 4 times the mass of the Sun. This limit is known as the “Chandrasekhar Limit.”
- **Detection** - White dwarfs can be detected as they are sources of soft, or lower-energy, X-rays.
- **Black Dwarf** - A white dwarf cools until it becomes a black dwarf, which emits no energy.



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