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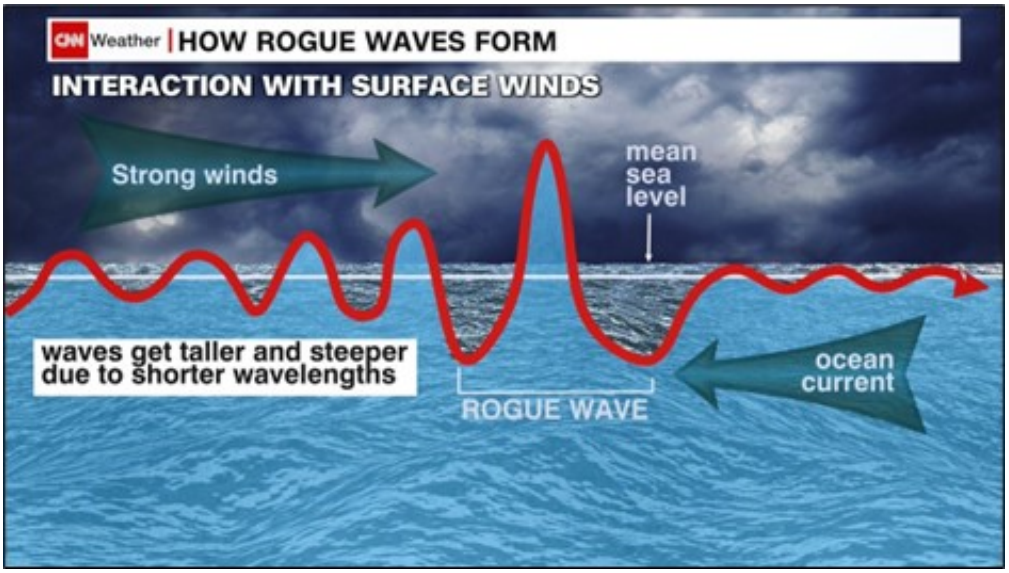
Rogue waves

Researchers have recently developed a new tool to predict rogue waves.

- A rogue wave is a large, unexpected, and dangerous ocean wave that can be more than twice the size of the surrounding waves.
- These waves are also called as ***freak, extreme storm waves, or killer*** waves.



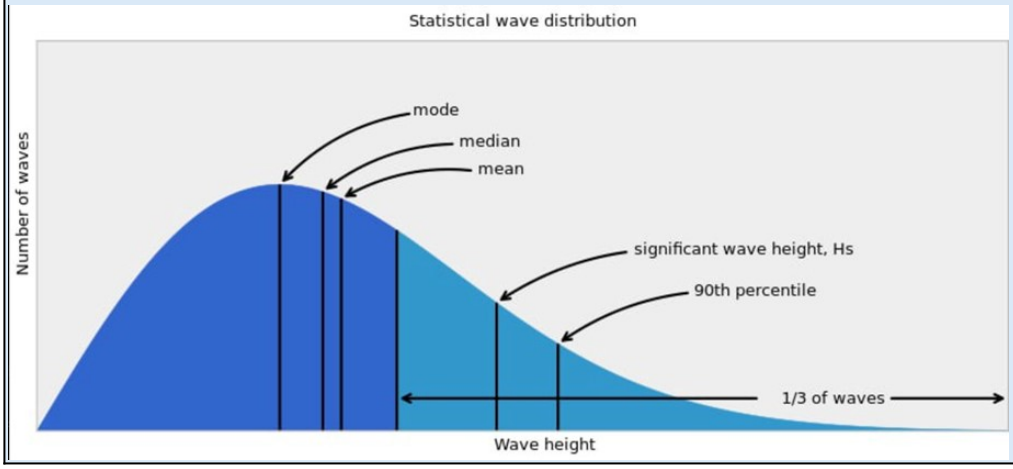
- **Causes -** Rogue waves can be caused by a ***combination of waves and currents***, or by multiple wind-driven wave crests stacking up at a single point.
- They can also be caused by constructive interference or gale-force winds.
- **Direction -** They may move in either the ***same direction, the opposite direction, or at oblique angles*** to the prevailing wind and wave motion.
- **Appearance -** Rogue waves are often steep-sided with deep troughs and can look like walls of water.
- **Size -** They can reach heights of up to ***30 meters*** and can come from unexpected directions, even opposite to the prevailing wind and waves.

The Draupner wave is the highest confirmed rogue wave known. However, the most extreme rogue wave occurred in the Pacific Ocean in 2020 was more than 3 times higher than the surrounding waves.

- **Threats -** Rogue waves can pose a threat to ships, coastal infrastructure, and human lives.
- **Promise of AI**- This program subsequently predicted about **75%** rogue waves 1 minute in advance.
- Roughly **73%** of rogue waves could be predicted 5 minutes in advance.

Quick facts

• **Significant Wave Height**- It is the average of the highest one-third of waves that occur over a given period.
• It is defined traditionally as the mean wave height (trough to crest) of the highest third of the waves.
• It should be noted that some individual waves might be much larger than this.



References

1. The Indian Express | Rogue waves
2. NOAA | Rogue wave
3. National Geographic | Rogue waves

Genetic Engineering Appraisal Committee (GEAC)

Recently, the Supreme Court has ruled against the commercial sale and release of genetically modified mustard in India for now.

- GEAC is the ***statutory committee*** constituted under
  - The Rules for the Manufacture, Use/Import/Export, and Storage of Hazardous Micro Organisms/Genetically Engineered Organisms or Cells (Rules, 1989) framed under the ***Environment (Protection) Act, 1986.***
- **Nodal Ministry-** Ministry of Environment, Forest and Climate Change (MoEF&CC).

- **Mandate-** It is responsible for the appraisal of activities involving large-scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- **Objective-** The committee is also responsible for appraisal of proposals relating to release of ***genetically engineered (GE) organisms*** and products into the enviornment including experimental field trials.
- **Composition-** The GEAC is chaired by the Special Secretary/Additional Secretary of MoEF&CC and co-chaired by a representative from the Department of Biotechnology (DBT).
- Presently, it has ***24 members*** and meets ***every month*** to review the applications in the areas indicated above.
- **Functions-** The functions of GEAC as prescribed in the Rules 1989 are as follows
- To appraise activities involving large-scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- To appraise proposals relating to the release of genetically engineered organisms and products into the environment including experimental field trials.
- The committee or any persons authorized by it has powers to take punitive action under the Environment Protection Act.

References

1. Down to Earth | GM mustard

2. GEAC India | About GEAC

New Pension Scheme 'VATSALYA'

The Union Budget 2024-25 has proposed a new pension scheme named 'Vatsalya' for minors.

- The scheme enables parents and guardians to start a National Pension Scheme (NPS) for minors until the ***child turns 18.***
- **Objective-** The scheme offers families a systematic approach to ensure the ***future financial security*** of their children and contribute towards their retirement savings.
- **Eligibility-** All parents and guardians, whether Indian citizens, NRIs, or OCIs, are eligible to open an NPS Vatsalya account for their minor

children.

- **Benefits-** The NPS Vatsalya Scheme will promote savings habits in children.
- The NPS Vatsalya account, opened when a child is a minor, allows significant accumulation for retirement, with ***60%*** available for withdrawal at retirement.
- The Scheme instills financial responsibility, converting to a standard ***NPS account at 18***, allowing independent contributions.
- It provides a structured way for families to secure their children's financial future and build a ***retirement corpus.***
- **Conversion to normal NPS account-** On attaining the age of majority, the plan can be converted seamlessly into a normal NPS (National Pension Scheme) account.

References

1. PIB | Vatsalya

2. India Today | Vatsalya scheme

Panchamasali Lingayats

Members in Panchamasali Lingayat community hold a rally demanding the inclusion of the community in the 2A reservation category, in Bengaluru.

Lingayats

- Lingayat term denotes a person who wears a personal linga, an iconic form of the god Shiva, on the body which is received during the initiation ceremony.
- Lingayats are the followers of 12^{th-}century philosopher-***saint Basavanna***, who started an anti-caste movement that rejects the orthodox ritualistic Hindu practices.
- They are strict ***monotheists*** who follow only one god, Lord Shiva.
- Lingayats had been classified as a Hindu subcaste called “Veerashaiva Lingayats”.
- **Sub-sects -** Prominent sub-sects include the Panchamasalis, Ganiga, Jangama, Banajiga, Reddi Lingayat, Sadars, Nonaba and Goud-Lingayats.
- All these sub-sects practise the same rituals at the time of births, weddings and deaths.
- For instance, the dead are buried in sitting positions among Lingayats.

- Members of the community carry their Ishta Linga suspended in a silver box around their necks.

Lingayats are believed to be the single largest caste group in Karnataka and account for nearly 17% of the state's population.

- **Category –** Currently Lingayats will fall into ***3 (B) category.***

Panchamasali Lingayats

- It is a sub-section within the Lingayat community, and they are often involved in agriculture and community service.
- **Recent Demands -** They are demanding a *2A category reservation under the OBC list*.
- In 2A category reservation these communities will get preferential reservations of 15% in government jobs and educational institutions.
- There is a demand that the community be identified only as "Lingayat", and not "Veerashaiva Lingayat" in caste certificates.
- In the Hindu Marriage Act, 1955 and Hindu Succession Act, 1956 Lingayats, Buddhists, Jains, and Sikhs are included among Hindus.
- State and Central governments identified Buddhists, Sikhs and Jains as minority religions in 1993, 1963, and 2014 respectively.
- But, Lingayats remain unrecognized under a separate religious status.

Reference

Indian Express | Demand for Quota for Panchamasali Lingayats

DIGIPIN

The Department of Post has released a beta version of DIGIPIN (Digital Postal Index Number), intended as a permanent digital infrastructure for national addressing.

- **DIGIPIN code-** It is designed as a ***permanent digital infrastructure*** that will not change with changes in the names of the state, city, or locality, or changes in the road network.
- **Developed by -** Postal department and IIT Hyderabad.
- DIGIPIN will use one of the ***16 alphanumeric symbols*** (2,3,4,5,6,7,8,9,G,J,K,L,M,P,W,X).

- The first character for the DIGIPIN will identify one of these ***16 regions.***
- The entire country will first be divided into 16 regions (4X4), including the maritime Exclusive Economic Zone (up to 200 nautical miles from the coastline).
- This code will then be used as the offline addressing reference for any specific location within the DIGIPIN system.
- It can be used to provide addresses for Indian assets in the sea such as oil rigs, future artificial islands, etc.
- It will act as a pillar of Geospatial Governance, leading to enhancements in public service delivery, faster emergency response, and logistics efficiency.
- It will serve as an addressing reference system, using a logical naming pattern to provide directional properties for accurately locating addresses.
- The DIGIPIN is proposed to be fully available in the public domain and can be easily accessed by everyone.
- DIGIPIN can also be used for emergency rescue operations and national disasters such as floods

References

Hindustan Times| Digital National Addressing Grid

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