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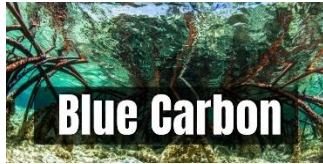
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Current Affairs - 22 August 2025

WHAT IS BLUE CARBON?



- Blue Carbon refers to **organic carbon captured and stored by the ocean in vegetated coastal ecosystems** such as mangrove forests, saltmarshes, or seagrass meadows.
 - “Blue” refers to the watery nature of this storage.
 - The **vast majority** of blue carbon is **carbon dioxide** that has **dissolved directly into the ocean**.
 - Much **smaller amounts** are stored in **underwater sediments, coastal vegetation, and soils; carbon-containing molecules**, such as DNA and proteins; and ocean life from whales to phytoplankton.
 - These ecosystems **store massive amounts of carbon**, making them an integral part of global efforts to combat climate change.
 - They cover just **2% of the total ocean surface** but account for **50% of the ocean’s carbon absorption**.
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WHAT IS HUNTINGTON'S DISEASE?



- It is a **genetic condition that affects the cells in your brain**.
 - It is an **inherited condition that causes brain cells to slowly lose function and die**.
 - **If one of your parents has HD, you have a 50% chance of also developing it**.
 - It **affects the cells in parts of your brain that regulate voluntary movement and memory**.
 - **What causes Huntington’s disease?**
 - A **genetic mutation of the HTT gene** causes Huntington’s disease.
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- The **HTT gene** makes a protein called **huntingtin**. This protein helps your nerve cells (**neurons**) function.
 - If you have HD, your DNA doesn't have all the information needed to make the huntingtin protein.
 - As a result, these proteins grow in an abnormal shape and destroy (instead of help) your neurons.
 - Your neurons die because of this genetic mutation.
 - The destruction of nerve cells happens in the basal ganglia, or the region of your brain that regulates your body's movements.
 - It also affects the brain cortex (surface of your brain) that regulates your thinking, decision-making, and memory.
 - **How common is HD?**
 - Huntington's disease affects an estimated **3 to 7 out of every 100,000 people**, most often people of European ancestry (biological family comes from European descent).
 - **Symptoms:**
 - **Common symptoms** include **uncontrollable dance-like movements** (chorea) and **abnormal body postures**, as well as **problems with behavior, emotion, thinking**, and personality.
 - Other symptoms may include **tremor** (unintentional back-and-forth movement in the person's muscles) and **unusual eye movements**. The eye movements can happen early in the disease. These symptoms get worse over time.
 - **People usually die** from the disease **within 15 to 20 years of developing symptoms**.
 - **Treatment:**
 - There is **no treatment** that can stop or reverse HD, but health care providers can offer medications to help with certain symptoms.
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INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH (ICSSR)



- It is the **apex body** of the Government of India for **research in the social and human sciences**.
- It was **established** in the year **1969** by the Government of India on the **recommendation of Prof. V. K. R. V. Rao Committee**.
- It is an **autonomous organisation** working under the aegis of the Department of Higher Education, **Ministry of Education**.
- ICSSR plays a pivotal role in **advancing knowledge and understanding of various social issues and challenges**, and providing research-based solutions to policymakers and stakeholders in the development of the nation through initiatives and schemes such as
 - **research projects**
 - doctoral, postdoctoral, senior fellowships, and national **fellowships**
 - **research internships; training and capacity building** of early career researchers
 - **publication grants**
 - national and international **seminars**, conferences, and workshops
 - publication of cutting-edge research
 - **national and international collaboration**
 - promotion of social science and humanities research through **research institutes, recognised institutes, and regional centres**.
- An **all-India network of 24 frontline research institutes** and six regional centres is maintained, and **five recognized institutes** are **programmatically supported by the ICSSR**.
- ICSSR has developed the **ICSSR Data Service** to serve as a national data service for **promoting a powerful research environment through sharing and reuse of data among the social science community** in India.



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CHARGE-COUPLED DEVICE



- It was a **pioneering technology** that **converted light into electrical signals** using an array of capacitors that transferred electric charges in a sequence.
- A CCD consists of an **integrated circuit** made up of an array of **small picture elements** called pixels.
- Each pixel acts like a small light sensor that collects photons (the particles of light) and converts them into electrical charges.
- These **charges are then transferred across the device**, one pixel at a time, to be read and processed **into a digital image**.

Working of Charge-Coupled Device

- It operates **using the photoelectric effect**, where light that falls on the device generates electron-hole pairs in the semiconductor material.
- Specifically, when photons enter a CCD, they strike the **semiconductor material** beneath each pixel.
- This energy **knocks electrons loose**, creating a small group of electrons proportional to the intensity of light in that pixel.
- Each pixel is **essentially a small capacitor** that holds these electrons. The amount of charge in each pixel varies depending on how much light the pixel has received.
- A voltage is applied to electrodes placed over the pixels in a sequence that moves the charges from one pixel to the next, like passing buckets of water along a line.
- This is why it's **called a “charge-coupled” device**, and this process continues until all the charge has reached a readout register.



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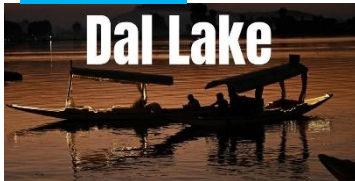
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Applications of Charge-Coupled Device

- **Household:** CCDs made possible the rise of digital cameras by replacing film with sensors that captured images electronically. They're also **used in CCTV cameras** to provide high-quality video feeds for security in places like banks, shopping malls, and hospitals.
 - **Medical diagnostics:** CCDs play a vital role in **medical diagnostics**, including in X-ray imaging, computed tomography (CT) scans, and endoscopy.
 - These CCDs are also used in microscopes, spectrometers, and particle detectors where they allow scientists to analyse images in detail.
 - **Astronomy:** Telescopes fit with CCDs can **capture faint and distant celestial objects** with more sensitivity and accuracy than traditional photographic plates.
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DAL LAKE



Dal Lake

- **Location:** It is a mid-altitude urban lake located in Srinagar, **Jammu and Kashmir**.
- It is surrounded by the Pir Panjal mountains.
- It is integral to tourism and recreation in Kashmir and is named the “**Jewel in the crown of Kashmir**” or “Srinagar’s Jewel”.
- It is one of the world’s largest natural lakes and also known as **the Lake of Flowers**.
- The shoreline of the lake is encompassed by a boulevard lined with **Mughal-era gardens**, parks, houseboats, and hotels.
- The wetland is divided by causeways into four basins; **Gagribal, Lokut Dal, Bod Dal, and Nagin** (although Nagin is also considered an independent lake).
- Lokut-dal and Bod-dal each have an island in the centre, known as **Rup Lank** (or Char Chinari) and **Sona Lank**,
- Dal Lake is also **popular for the floating market** where vendors have their own Shikaras/wooden boats and approach tourists.



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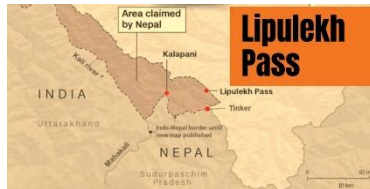
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Key Facts about Khelo India Water Sports Festival

- It is organised jointly by the **Sports Authority of India (SAI)** and the **J&K Sports Council** under the government's 'Khelo Bharat' policy.
 - It is aimed at boosting **grassroots sports**, **generating livelihoods**, and rejuvenating local infrastructure.
 - It is the first consolidated **Open-age category championships** where **all 14 kayaking** and canoeing events and the 10 rowing events are Olympic events.
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LIPULEKH PASS



- **Location:** It is a high-altitude mountain pass located in the **Kumaon region** of Uttarakhand, near the **trijunction of India, Nepal, and China**.

- It links the Indian state of **Uttarakhand** with the **Tibet region of China**.
- **Altitude:** It lies at an altitude of approximately 5,334 meters (17,500 feet).
- Its elevation and strategic location make it a gateway to the higher reaches of the Himalayas.
- It is the first Indian border post opened for trade with China in 1992.
- This was followed by the opening of Shipki La Pass, Himachal Pradesh in 1994 and Nathu La Pass, Sikkim in 2006.

Significance of Lipulekh Pass

- **Ancient Trade Route:** It has been utilized for centuries as a trade route, connecting the Indian subcontinent with the Tibetan plateau.
 - **Religious Significance:** It also has religious significance, being an integral part of the **Kailash Mansarovar Yatra**, a sacred pilgrimage for Hindus.
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EXERCISE SAMANVAY SHAKTI



- It is initiated by **Indian Army collaboration** with state officials of **Assam & Manipur** to foster efficient cooperation, cohesion and mutual understanding.
 - It is a **military-civil Integration exercise** aimed at **fostering synergy between security forces, government departments and civil institutions** to address the region's complex challenges through a unified and coordinated approach.
 - The inaugural session witnessed participation from the Indian Army, Indian Air Force, District Administration, Police, Intelligence Agencies, NDRF, SDRF, Medical Officials, BRO & GREF, Railways, educational institutions and security officials from OIL India, IOCL and Coal India alongwith representatives of the local media.
 - **Objectives of Exercise Samanvay Shakti**
 - To take concrete steps towards achieving **an improved state of readiness**, supported by unhindered channels of communication and refined standard operating procedures through practical rehearsals.
 - It seeks to further **strengthen the bond of trust between the people of upper Assam & Manipur** and the institutions that serve them, thereby contributing towards preparedness for security challenges, development towards nation building, and reinforcing national integration.
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HARYANA NOTIFIES OFFICIAL FOREST DEFINITION

- Recently, Haryana's Environment, Forest and Wildlife Department issued a notification officially defining forests under the "dictionary meaning."
- According to the notification:
 - A patch of land will qualify as a forest if it has:
 - A minimum area of five hectares in isolation, or



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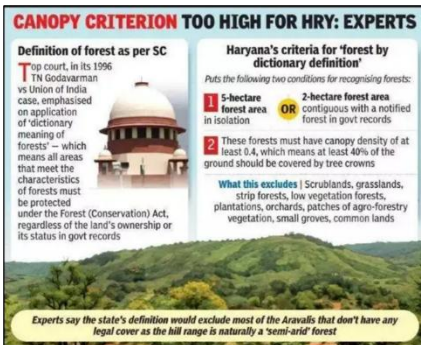
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○ A minimum area of two hectares if contiguous with government-notified forests.

○ It must also have a canopy density of at least 0.4 (40%).

- **Exclusions from Definition**

○ The notification **excludes** the following from being treated as forests:

- **Linear, compact, or agro-forestry plantations.**

- **Orchards** outside government-notified forests.

○ These exclusions cover tree plantations along **roads, canals, and railway tracks**, which, though ecologically beneficial, will not be classified as forests under this definition.

Supreme Court's Directives on Forest Definition

- In its March 2025 ruling, the Supreme Court directed all States and Union Territories to formally define what constitutes a forest and begin comprehensive surveys to identify forest areas within their jurisdictions.

- **Key Instructions from the Court**

- **Expert Committees:** Each State/UT was required to set up a committee within one month to identify: Forest-like areas; Unclassified Forest lands; Community Forest lands.

- **Survey and Mapping:** The committees must map forest lands and submit their reports to the Centre within six months.

- **Use of 2011 Guidelines:** The process must strictly follow the **2011 Lafarge Umiam Mining guidelines**, which mandate:

- GIS-based decision-support database.

- District-wise mapping of plots that may qualify as forests under the **Forest (Conservation) Act, 1980 (FCA)**.

- Inclusion of core, buffer, and eco-sensitive zones of protected areas.



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KEY FACTS ABOUT MITHI RIVER



- Mithi river is one of the four rivers flowing through the **Mumbai city, Maharashtra.**
 - The river **originates** from the **overflow of Vihar Lake** and also **receives the overflows from the Powai Lake** about 2 km downstream.
 - It flows for **18 km** before **discharging into the Arabian Sea** at Mahim Creek, flowing through residential and industrial complexes of Powai, Saki Naka, Kurla, Kalina, Vakola, Bandra Kurla Complex, Dharavi and Mahim.
 - The river has an average width of 5 metres in the upper reaches, has been widened to 25 m in the middle reaches and up to 70 m in the lower reaches after the 26 July 2005 deluge (944 mm in 24 h on 26 July 2005)
 - It is a **seasonal river, which feeds on the monsoons.**
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