

### CHARAKA AND SUSHRUTA



- Charaka, a court physician during the **Kushan period**, is considered the **Father of Medicine** in India.
- He revised the ancient **Agnivesha Samhita** into what became the **Charaka Samhita**, a foundational text of **Ayurveda**.
- **Charaka Samhita** covers topics such as **physiology, diagnosis, prevention, and internal medicine**.
- The text is part of the **Bṛhat-Trayi (Great Trilogy)** of Ayurveda, alongside the **Sushruta Samhita** and **Ashtanga Hridaya**.
- The **Charaka Samhita** was later expanded by **Dṛdhabala**, making it an **encyclopaedic treatise**.
- Charaka emphasised **ethics in medicine**, highlighting the importance of **physician conduct, diet, and preventive care**.
- It remained authoritative for over **two millennia**, and was **translated into Arabic, Latin, and other foreign languages**, showing its **global medical relevance**.

### About Sushruta

- **Sushruta**, dating back to the **7th century BCE**, is revered as the **Father of Surgery** and possibly the **world's first documented surgeon**.
- He authored the **Sushruta Samhita**, which elaborates on over **300 surgical procedures, 120 surgical instruments**, and various types of **fractures and dislocations**.
- Innovations include **rhinoplasty (nasal reconstruction), skin grafting, cataract surgery, and caesarean sections**.
- The **Sushruta Samhita** also integrates **anatomical knowledge, surgical training, patient care, hygiene, and scientific observation**.
- Sushruta's teachings display principles of **evidence-based medicine**, centuries before modern systems emerged.

### NATIONAL CENTRE FOR POLAR AND OCEAN RESEARCH (NCPOR)



- Established in 1998 as an autonomous R&D institute, under the Ministry of Earth Sciences (MoES).
- Formerly known as the National Centre for Antarctic and Ocean Research (NCAOR).

- **Location:** Vasco da Gama, Goa.

#### Mandate and Functions

- Nodal agency for Planning and executing polar expeditions in the Antarctic, Arctic, Southern Ocean, and Himalayas.
  - Coordinating scientific research and logistics in polar and oceanic domains.
  - Also works on strategically vital projects like: Mapping of Exclusive Economic Zone (EEZ), Continental shelf surveys, and the Deep Ocean Mission.
- Maintains a Research Advisory Committee (RAC) for scientific guidance.

#### About Polar Bhavan and Sagar Bhavan

- **Polar Bhavan**, the largest facility on the NCPOR campus, covers 11,378 sq. m and was built at a cost of ₹55 crore.
  - It includes state-of-the-art laboratories, 55 rooms for scientists, conference halls, a library, and the new Science on Sphere (SOS) 3D earth systems visualisation platform.
  - It will house India's first Polar and Ocean Museum for public scientific outreach.
- **Sagar Bhavan** spans 1,772 sq. m and costs ₹13 crore.
  - It includes two -30°C ice core laboratories, +4°C storage units for archiving sediment and biological samples, and a Class 1000 metal-free clean room for trace metal and isotope analysis.

#### India's Expanding Polar Footprint

## Current Affairs - 23 May 2025

- NCPOR maintains India's research presence in: **Antarctica** (Stations: **Maitri** and **Bharati**), **Arctic** (Station: **Himadri**), and **Himalayas** (Station: **Himansh**).
- India's **Arctic Policy (2022)** and **Indian Antarctic Act (2022)** were cited as key legislative frameworks for **science-led and environmentally responsible polar engagement**, aligned with **international obligations**.

### PM E-DRIVE SCHEME



- The **PM E-DRIVE (Electric Drive Revolution in Innovative Vehicle Enhancement)** scheme is a **flagship initiative** launched to **accelerate electric mobility** in India through **demand incentives** and **charging infrastructure support**.
- It aims to **reduce transport-related carbon emissions**, **improve air quality** and **enhance energy security** by decreasing fossil fuel dependency.
- The scheme has a **total financial outlay of ₹10,900 crore** and will be implemented from **2024 to 2026**.

### Key Objectives and Scope

- To **promote the adoption of EVs** by supporting the **purchase of electric vehicles** (e-2Ws, e-3Ws, e-buses, e-ambulances, and e-trucks).
- To **deploy a robust national EV charging grid** to reduce range anxiety and ensure seamless mobility across cities and highways.
- To provide **direct demand incentives** through **Aadhaar-authenticated e-vouchers** sent to the buyer's mobile number after EV purchase.

### BHEL as Nodal Agency

- **Bharat Heavy Electricals Limited (BHEL)** is being considered the **nodal agency** for:

## Current Affairs - 23 May 2025

- Demand aggregation for charging infrastructure.
- Development of a **Unified EV Super App** for users across India.
- The app will offer **real-time charger availability, slot booking, payment integration, and deployment progress tracking**, ensuring **digital ease-of-use** for all EV stakeholders.

### SELF RELIANT INDIA (SRI) FUND SCHEME



- The Self Reliant India (SRI) Fund has been set up to **infuse Rs. 50,000 crore as equity funding in those MSMEs** which have the potential and **viability to grow and become large units**.
- Under this fund of Rs. 50,000 crore, there is a provision of **Rs. 10,000 Crore from the Government of India** and **Rs. 40,000 Crore through Private Equity/Venture Capital funds**.
- SRI fund **operates through a mother-fund and daughter-fund structure** for equity or quasi-equity investments.
- The SRI Fund is being **implemented by NSIC Venture Capital Fund Limited (NVCFL)**, which is an **Alternative Investment Fund (AIF)** of Category II registered with SEBI.
- SRI fund is oriented to provide the **funding support through NVCFL to the Daughter Funds for onward provision to MSMEs** as growth capital, in the **form of equity or quasi-equity**, for the following:
  - Enhancing equity/equity-like financing to MSMEs and listing of MSMEs on stock exchanges.
  - Supporting faster growth of MSME businesses and thereby ignite the economy and create employment opportunities.
  - Supporting enterprises which have the potential to graduate beyond the MASME bracket and become National/International Champions.

# CROSS & CLIMB ROHTAK

## Institute of Research Based Learning & Competition

### Current Affairs - 23 May 2025

- Supporting MSSMEs, which help make India self-reliant by producing relevant technologies, goods, and services.
- The **Daughter Funds** shall invest at least **5 times the amount of capital contribution received from SRI Fund** (net of fees and expenses) in MSMEs, covered under the Micro, Small & Medium Enterprises Development Act, 2006.

#### TIANGONG SPACE STATION



- The Tiangong Space Station, translating to ‘Sky Palace’, is a **Chinese-owned and operated** permanently crewed space station in **Low Earth Orbit (LEO)**.
- It represents the third and final step of China’s Manned Space Program.
- The first module of the space station was launched in April 2021, following two precursor missions, Tiangong-1 and Tiangong-2.
- The station consists of a **core module** known as **Tianhe**, which **connects two science modules, Wentian and Mengtian**, as well as a **planned space telescope module, Xuntian**.
- Tiangong is much **smaller than the International Space Station (ISS)**, with only three modules compared with 16 modules on the ISS.
- Tiangong is also considerably **lighter than the ISS**, which weighs about 400 tons (450 metric tons); the Chinese station is about 20% as massive.
- It can **accommodate up to three astronauts at a time for six-month stays**. It can also support six astronauts at a time during crew handovers.
- The **aims** of the Tiangong Space Station are to:
  - Build a long-term, reliable space station in orbit.
  - Guarantee the long-term health and safety of stationed astronauts.
  - Provide conditions for scientific and technological experiments in space.



## Current Affairs - 23 May 2025

- The station serves as an **in-orbit laboratory** with 23 enclosed experiment racks, each covering a different proposed **experiment in the fields of**:
  - Space life sciences and biotechnology
  - Microgravity fluid physics and combustion
  - Material science in space
  - Fundamental physics in microgravity
- The space station also features **platforms for exposed and unpressurised external experiments**.

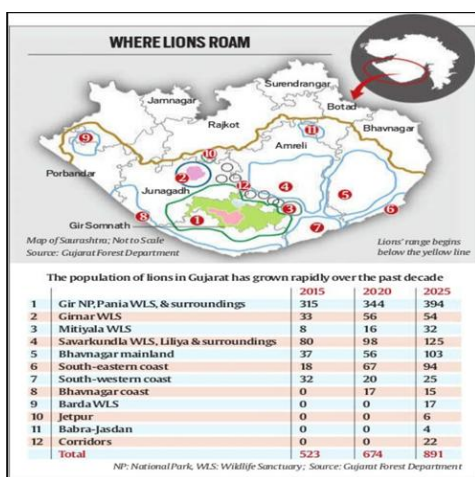
### KEY FACTS ABOUT CHENAB VALLEY



- The Chenab Valley, otherwise called the Chenab Region, is the river valley of the **Chenab River** moving through the Kishtwar, Doda, and Ramban locales of **Jammu Division in Jammu and Kashmir**.
- It is the eastern region of Jammu and Kashmir.
- To the **north lies** the majestic **Pir Panjal range** and to the **south, the Zaskar range**.
- **Deep gorges, lush meadows**, and cascading rivers form a beautiful landscape that defines the Chenab Valley.
- It covers an area of 11,885 sq.km.
- The **people** of Chenab Valley are **referred to as** “Chenabis” or simply “Chenabi”.
- The region is a **mosaic of ethnic groups**, with **multiple languages** spoken, including Kashmiri, Gojri, Bhaderwahi, Sarazi, Kishtwari, and Padari.
- It is home to several **tourist attractions**, such as **Bhaderwah, Jai Valley, Padri Pass, Sinthan Top, Lal Daman, and Jantroon Dhar**.
- Its hydroelectric potential is harnessed by significant dams like **Baglihar Dam, Dulhasti Dam, and Salal Dam**.
- The region is traversed by **National Highway 244**.

### COUNTING ASIATIC LIONS ISN'T ENOUGH TO ENSURE THEIR SURVIVAL IN GUJARAT

The latest lion population estimate in Gujarat shows **891 Asiatic lions**, marking a 32% increase since 2020. Their geographical range has expanded by 17%, now covering 35,000 sq km across 58 talukas in 11 districts.



However, experts stress that while the numbers are encouraging, sustaining this success will require continued and enhanced conservation measures beyond mere population counts.

#### The Recovery of the Asiatic Lion: A Journey in Phases

##### • From Near Extinction to Steady Growth

- In the 1960s, Asiatic lions were fewer than

200, confined to the Gir forest, which was given special protection.

- The population grew slowly and remained under 300 until 1995, when lions began moving beyond forest boundaries.

##### • Doubling the Range, Modest Gains (1990–2005)

- Between 1990 and 2005, the lion's habitat range expanded from 6,600 sq km to 13,000 sq km, yet population growth was limited — from 284 to 359 (a 26% rise).

##### • A Surge in Numbers (2005–2020)

- The next 15 years saw the range double again to 30,000 sq km, with already settled satellite populations contributing to a significant 88% rise in numbers — from 359 to 674.

##### • Recent Trends and Methodological Gaps

- The latest estimates confirm the growth pattern and mark only the second time (after 2015) that the population growth outpaced range expansion.

- However, concerns remain, as the absence of standard error margins in the data makes the estimates scientifically less robust.

### Living on the Edge: Challenges of Lions in Human-Dominated Landscapes

- **Non-Forest Habitats Pose Risks**
  - Lions increasingly inhabiting areas near human settlements face unsafe conditions.
  - While officially unreported, many lion deaths occur from electrocution, drowning in wells, or being shot in self-defence, indicating retaliatory killings.
- **Pride and Proximity**
  - Unlike leopards, lions are widely tolerated in Gujarat, considered symbols of pride.
  - Their frequent rescues and medical interventions make them accustomed to human presence — but this over-familiarity can turn dangerous.
  - Experts warn that many lions in human-dominated habitats show aggression.
  - Unprovoked attacks have been reported, making the situation ecologically unstable and socially fragile.
- **Limits of Social Carrying Capacity**
  - Co-existence is viable only when humans and lions share time or space—not both. Frequent encounters in shared areas raise tensions and risks.
- **Temporary Peace and Precarious Diet**
  - Current peace is maintained through awareness campaigns, media involvement, compensation for livestock loss, and availability of wild prey like boars.
  - However, many lions also feed on dumped livestock carcasses, which increases disease risk due to contamination and contact with village dogs.



### NAGARHOLE TIGER RESERVE



- It is situated in the districts of Mysore and Kodagu in **Karnataka**.
- It is located at the **tri-junction** area of the States of **Karnataka, Tamil Nadu and Kerala**.
- Geographically, it is an “**ecological confluence**” of the Western and Eastern Ghats.
- The reserve is named after a small river, ‘Nagarahole’ (literally a snake stream in Kannada), which meanders within the habitat before **joining the river Kabini**.
- It is **part of the larger Nilgiri Biosphere Reserve**, which is recognized as a **UNESCO World Heritage Site**.
- It is **flanked by the Bandipur Tiger Reserve** on its southeastern side and the **Wayanad Wildlife Sanctuary** of Kerala on the southwest.
- **Rivers:** It is surrounded by the River **Kabini** in its north and River **Moyar** in its south.
- **Vegetation:**
  - The dry eastern limits of the reserve has **dry deciduous forests**.
  - Towards the west, with the increase in rainfall, the vegetation changes to **tropical moist and semi-evergreen forests**.
  - The forests are interspersed with **swampy fallows called ‘hadlu’**, which are dominated by grasses and sedges, favoured by wild herbivores.
- **Flora:**
  - It includes **rosewood, Indian kino tree, sandalwood**, Indian laurel, clumping bamboo, giant clumping bamboo, etc.
- **Fauna:**
  - It is a shelter for the **largest population of wild Asian elephants in South Asia**.
  - It comprises other mammals such as **Bengal tiger, gaur, sloth bear**, golden jackal, dhole, four-horned antelope, etc.