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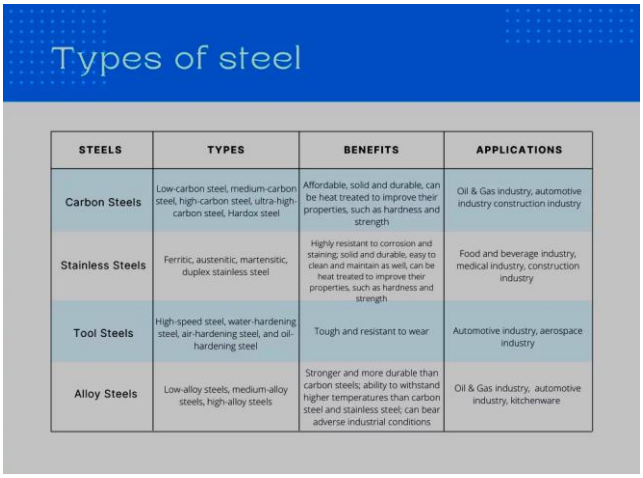
5 March, 2024

India's 1st Green Hydrogen Plant in Stainless Steel Sector

Context: *Union Minister for Steel and Civil Aviation, Sh. Jyotiraditya M. Scindia, virtually inaugurated India's inaugural Green Hydrogen Plant within the Stainless Steel Sector situated at Jindal Stainless Limited, Hisar.*

- **National Green Hydrogen Mission (NGHM):**
  - India's steel sector transitioned from a net importer to a net exporter, targeting to become the world's largest crude steel producer.
  - The NGHM, launched with ₹20,000 crore, aims to position India as a global hub for green hydrogen production, usage, and export.
  - Pilot projects in the steel sector receive support from the NGHM with a budget of ₹500 crore until FY 2029-30.
- **Industry Transformation:**
  - The Minister lauded Hygenco and Jindal Stainless for commissioning India's first off-grid green hydrogen plant, aligning with the government's sustainability vision.
  - The project creates employment opportunities while promoting responsible industrial practices.
  - Industry stakeholders are urged to embrace clean technologies, contributing to India's journey towards a greener economy.
- **Government Initiatives:**
  - Robust national green policies and 13 task forces focus on green steel production.
  - Implementation of the Steel Scrap Recycling Policy enhances domestically generated scrap availability.
  - Stakeholders are called upon to collaborate in building a globally competitive and sustainable steel industry.
- **Project Details:**
  - The project marks the world's first off-grid green hydrogen plant for the stainless steel industry, integrating rooftop and floating solar.
  - It targets a significant reduction in carbon emissions, aiming to cut around 2,700 metric tonnes annually and 54,000 tonnes of CO_2 emissions over two decades.
- **Stainless Steel**
  - Stainless steel is an alloy of iron and carbon, with a minimum of 10.5% chromium and less than 1.2% carbon, along with other alloying elements like nickel and molybdenum.
  - When exposed to oxygen, stainless steel forms a protective chromium oxide layer, which repairs itself, ensuring corrosion resistance.
  - It offers various surface finishes, from matte to bright, embossed, or tinted, making it popular in architecture and design.
  - Stainless steel boasts strong mechanical properties, combining ductility, elasticity, and hardness, suitable for various metal forming processes and withstanding wear.
  - It exhibits excellent fire resistance, maintaining structural integrity even at temperatures above 800°C.
  - Stainless steel's corrosion resistance is attributed to the passive layer of chromium oxide that forms naturally on its surface, regenerating if scratched.
  - Cleaning stainless steel is easy with common detergents, and it meets hygiene standards for items like cooking utensils.
  - Stainless steel is highly recyclable, with a near 100% recovery rate in construction, making it environmentally friendly and suitable for sustainable building applications.



Venice Biennale

Context: *The 60th Edition of Venice Biennale, often dubbed as the "Olympics of the art world," is scheduled to commence on April 20th.*

- The international art exhibition, known as the "Olympics of the art world," attracts global attention and prestige.
- Curated by Adriano Pedrosa, the 2024 edition features 333 artists exploring the theme "Stranieri Ovunque" or "Foreigners Everywhere."
- Indian artists and a public collective are among the participants, adding to the diverse showcase of contemporary artistry.
- **Background of the Venice Biennale:**
  - Established in 1895, the Venice Biennale began as a celebration of Italian royalty's silver anniversary.
  - Over the years, it has evolved into a major art event, drawing over six lakh visitors annually.
  - The term "biennale" denotes a large-scale international exhibition held every two years, offering a platform for exploring contemporary ideas.
- **Historical Origin:**
  - Originating from Venice's city government's proposal in 1893, the Biennale aimed to honor King Umberto I and Queen Margherita of Savoy.
  - The inaugural exhibition in 1895 attracted over two lakh visitors, showcasing works by foreign and Italian artists.

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- While early editions lacked specific curatorial themes, subsequent Biennales adopted thematic approaches to art exploration.

➢ **Format of the Biennale:**
- The Venice Biennale spans seven months and encompasses various components, including the central pavilion, national pavilions, and collateral events.
- The central pavilion, curated by the artistic director, serves as the main exhibition space, featuring selected artworks and artists.
- National pavilions, managed by individual countries, showcase their artistic contributions, often reflecting their cultural identity and artistic heritage.

➢ **India's Participation:**
- India's inaugural participation in the Venice Biennale dates back to 1954, marking the Embassy of India's first official exhibition.
- Subsequent editions featured Indian artists, such as Dayanita Singh, Riyas Komu, and Mrinalini Mukherjee, highlighting the nation's diverse artistic talent.
- Collateral events, including "iCon: India Contemporary" in 2005 and "My East is Your West" in 2015, facilitated cross-cultural dialogue and artistic exchange.

➢ **Noteworthy Exhibitions:**
- The 2011 exhibition organized by Lalit Kala Akademi showcased works by renowned Indian artists like Zarina Hashmi and Gigi Scaria.
- The 2019 Indian pavilion celebrated 150 years of Mahatma Gandhi through a curated selection of artworks representing his life and legacy.

➢ **India's Presence in 2024:**
- Indian artists, including Ram Kumar, SH Raza, and Jamini Roy, contribute to the central exhibition curated by Adriano Pedrosa.
- The Aravani Art Project, led by trans and cis women, represents contemporary Indian artistry, adding a unique perspective to the Biennale's diverse offerings.

Status of Leopards in India, 2022

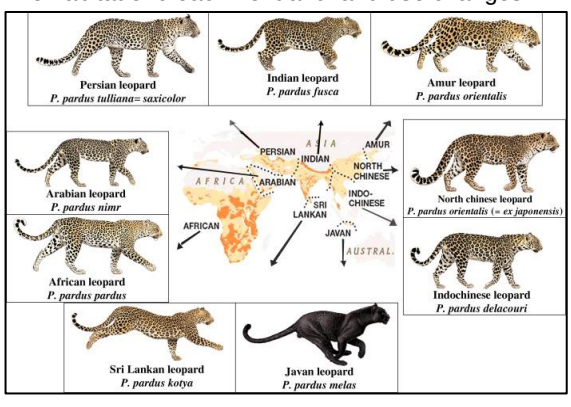
Context: *The Union Environment Ministry's 'Status of Leopards in India, 2022' report reveals a notable surge in the country's leopard population, reaching an estimated 13,874 compared to 12,852 in 2018.*

➢ **Overview of Leopard Population in India:**
- Indian leopards, apex predators in forested habitats across India, Nepal, Bhutan, and parts of Pakistan, contribute significantly to ecosystem balance.
- Central India and Eastern Ghats host the highest leopard population (8,820), followed by the Western Ghats (3,596), and the Shivalik Hills and Gangetic Plains (1,109).
- Madhya Pradesh leads in leopard numbers (3,907), followed by Maharashtra (1,985), Karnataka (1,879), and Tamil Nadu (1,070).
- Despite marginal overall population growth, maintaining the status quo is deemed satisfactory due to ongoing threats like poaching.

➢ **Decrease in Population in Certain Regions:**
- Shivalik Hills and Gangetic Plains experienced a 3.4% annual decline, dropping from 1,253 in 2018 to 1,109 in 2022.
- States like Odisha, Uttarakhand, Kerala, Telangana, Chhattisgarh, Bihar, and Goa also reported population decreases.
- Contributing factors include habitat loss, poaching, road accidents, and the rise in tiger populations, especially impacting areas like the Ramnagar Forest Division in Uttarakhand.

➢ **Benefits from Tiger Conservation Efforts:**
- Tiger conservation measures inadvertently support leopard population growth, notably in Central India and Eastern Ghats, with the largest leopard population.
- Protective measures implemented for tiger conservation contribute to higher leopard densities in Tiger Reserves compared to outside Protected Areas.
- Good prey base management in states like Madhya Pradesh aids in increasing leopard numbers.

➢ **Leopard-Human Conflict Concerns:**
- Leopards' adaptability to various habitats leads to increased conflict with humans, particularly in areas like the Shivalik region where 65% of the leopard population resides outside protected areas.
- Maharashtra and Karnataka have reported the highest number of fatal attacks and human-leopard encounters, mainly due to habitat loss from human activities.
- Kerala, Uttar Pradesh, and Tamil Nadu also face significant human-leopard conflicts, attributed to factors like habitat encroachment and land use changes.



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NEWS IN BETWEEN THE LINES

The National Youth Parliament Festival

Youth Affairs and Sports Ministry will organise the finals (3rd edition) of the National Youth Parliament Festival in the Central Hall of the Parliament in New Delhi today.

About the National Youth Parliament Festival:

- The National Youth Parliament Festival (NYPF) is a **government initiative that aims to encourage young people to engage with public issues.**
- The festival is based on the idea given by the Prime Minister in his **Mann Ki Baat** Address.
- The festival spans from **February 9th to March 6th**, with the valedictory function scheduled for March 6th.
- The festival's **theme** for 2024 is **'Young Voices: Engage and Empower for Nation's Transformation'.**
- The Youth Parliament is organized at **three levels, covering 785 districts** across the country.
- District Youth Parliament was held from **February 9th to 14th.**
- Winners of the District Youth Parliament participated in the State Youth Parliament from **February 19th to 24th**.
- Eighty-seven State-level winners will be assembling in New Delhi for the finals in the National Youth Parliament, out of which 29 will be speaking on given topics.

Geological Survey of India

Recently, the Southern Region of the Geological Survey of India (GSI) celebrated its 174th foundation day at its headquarter in Hyderabad.

About the Geological Survey of India:

- The Geological Survey of India (GSI) is a **scientific agency** that conducts geological surveys and studies of India.
- It was established in **1851** as a Government of India organization under the Ministry of Mines.
- It is **one of the oldest** such organizations in the world and the **second oldest survey** in India after the Survey of India in **1767**.
- Initially focused on coal exploration, GSI expanded its scope under the leadership of **Sir Thomas Oldham** to include mapping of **rock types**, **geological** structures and relative ages of different rock types.
- Throughout the **19th and early 20th centuries**, GSI made significant contributions to **seismology** through detailed reports on Indian earthquakes.
- In **2017**, GSI initiated the first-ever aerial survey of mineral stocks, mapping mineral stocks up to a depth of 20 km using specially-equipped aircraft.
- The Geological Survey of India (GSI) designates **geo-heritage sites**/national geological monuments for protection and maintenance.
- These sites **encompass geo-relics**, stratigraphic type sections, **geological structures**, geomorphic landforms and adjoining land.

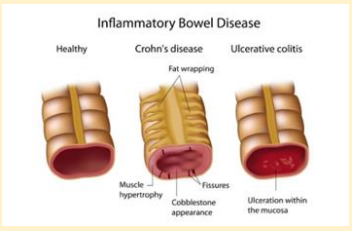
Carl-Gustaf M4 Weapons

Recently, Swedish defence major Saab started construction of its new manufacturing facility at MET City in Haryana for its iconic Carl-Gustaf M4 weapons with a formal ground-breaking ceremony.

Carl-Gustaf M4 Weapons:

- The Carl-Gustaf M4 is a shoulder-**launched weapon system** used by the Indian Army.
- It's a **multi-role**, **lightweight** and **high-impact weapon** that's effective in all environments.
- It's a recoilless rifle that's been in service since **1976**.
- It offers a diverse array of **ammunition types**, **encompassing anti-armor**, **anti-structure**, multi-role, anti-personnel and **support rounds like smoke** and **illumination.**
- The system is attached with **standard clip-on telescopic sight**, with additional options, including open sight, red dot sight and advanced fire control devices.

Inflammatory Bowel Disease



Recent research suggests that an infant's diet as young as one year old can influence their future risk of developing Inflammatory Bowel Disease.

About Inflammatory Bowel Disease:

- Inflammatory Bowel Disease (IBD) refers to **disorders characterized by inflammation** of the digestive tract lining.
- There are two main types of IBD: **ulcerative colitis affecting the large intestine and rectum and Crohn's disease primarily affecting the small intestine.**
- Factors contributing to the development or worsening of IBD include **diet, age, family history, cigarette smoking and certain medications.**
- Changing diet patterns have been linked to changing prevalence patterns of IBD, with **processed food consumption** associated with higher incidence.
- High intake of **vegetables and fish in infancy is associated with lower future risk**, while **consumption of sugar-sweetened beverages is linked to higher risk**.
- Suggestions for preventive0020measures include **adopting a diet rich in fruits**, **vegetables** and **fish**, while minimizing consumption of sugar-sweetened beverages.

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National Dolphin Research Centre

Recently, the National Dolphin Research Centre (NDRC) was inaugurated by Bihar Chief Minister Nitish Kumar.

About National Dolphin Research Centre:

- National Dolphin Research Centre is **India's first centre** for research on conserving the **endangered Gangetic river dolphin,** located close to Ganga river at Patna in Bihar.
- It is operational and **aims to assist scientists and researchers in conducting comprehensive studies on Gangetic dolphins.**
- Research at the NDRC covers various aspects such as changing **behavior, survival skills, food habits, causes of death** and more**.**
- The centre also **provides training to fishermen on dolphin conservation** during fishing activities, contributing to broader conservation efforts.
- The project **received approval in 2013** and faced delays before construction began after receiving clearance from the state urban development department.

The Gangetic River Dolphin:

- The Gangetic river dolphin is a **freshwater species** and one of the few river dolphins found globally.
- It inhabits the **Ganges-Brahmaputra-Meghna** and **Karnaphuli-Sangu river** systems in **Nepal**, **India** and **Bangladesh**.
- **One of four freshwater dolphin** species globally, alongside those found in the **Yangtze river** (now extinct), the **Indus river**, and the **Amazon river**.
- It is known by various names, including **Blind dolphin, Ganges dolphin, Ganges susu, Hihu, side-swimming dolphin** and **South Asian River Dolphin**.
- It is classified as a **Schedule I animal under the Wild Life (Protection) Act, 1972.**
- It has declared an **endangered species** by the International Union for Conservation of Nature.
- **Bihar** is home to approximately half of the **estimated 3,000 Gangetic dolphins** in India.

Dry Ice

Recently, five people were hospitalized after being mistakenly served 'dry ice' as mouth freshener, at Gurgaon in Haryana.

About Dry Ice:

- Dry ice is the **solid form of carbon dioxide (CO_2),** created by compressing and cooling gaseous carbon dioxide.
- It is a **lethal substance** that must never be touched or ingested, as it can cause severe damage to skin and internal organs.
- Contact with dry ice **can cause chemical burns** and frostbite due to its extremely low temperature of -78.5°C (-109.3°F).
- Ingestion or inhalation of dry ice can **lead to respiratory issues and potentially fatal carbon dioxide poisoning.**
- It is **commonly used as a cooling agent for preserving food items, such as ice cream and frozen desserts**, without the need for mechanical cooling.
- Regulatory bodies such as the **Food Safety and Standards Authority of India** (FSSAI) and the **United States Food and Drug Administration** (FDA) issue warnings and guidelines regarding the safe handling of dry ice in food service establishments.

POINTS TO PONDER

- Which state government recently announced the establishment of a State Water Information Centre (SWIC)? **– Odisha**
- In which state is the Sindri Fertiliser Plant, which has been in the news recently, located? **– Jharkhand**
- Which state recently achieved the milestone of issuing five crore Ayushman cards under AB-PMJAY, becoming the first to do so? **– Uttar Pradesh**
- Where is the Amrabad Tiger Reserve, which has been in the news recently, located? **– Telangana**
- Where was the 66th meeting of Network Planning Group (NPG) held? **– New Delhi**

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