



World's Most Powerful Hydrogen Train Engine | Haryana | 17 Jan 2025

Why in News?

Recently, **the Union Railway Minister** announced that India has achieved a significant milestone in [green energy](#) leadership by **developing the world's most powerful [hydrogen-powered train engine](#)**.

- The hydrogen-powered train engine will undergo its **first trial run on the Jind-Sonipat route in Haryana**.

Key Points

- **Key Features of India's Hydrogen Train Engine:**
 - **Power Output:** 1,200 horsepower, surpassing global counterparts.
 - **Technology:** Fully developed using indigenous expertise.
 - **Green Milestone:** Marks a significant step in India's transition to hydrogen-powered transportation.
- **Global Leadership:**
 - Only four countries—**Germany, France, Sweden, and China**—currently operate hydrogen-powered trains, **delivering a power output of 500-600 horsepower**.
 - India's indigenously developed hydrogen engine surpasses these with a power output of 1,200 horsepower, the highest in its category.
- **Indigenous Development:**
 - The **engine was developed entirely by indigenous expertise**, showcasing the country's innovation in [clean energy](#) solutions.
 - This achievement is a **step toward India leading major economies** in green energy-driven growth.

Green Energy

- Green energy is defined as energy derived from [renewable sources](#). It is also known as clean, sustainable, or renewable energy.
- Green energy generation emits no dangerous [greenhouse gases](#) into the atmosphere, resulting in **little or no environmental impact**.
- [Solar](#), [wind](#), [geothermal](#), [biogas](#), [low-impact hydroelectricity](#), and certain qualified biomass sources are all key green energy sources.

Falcated Duck | Haryana | 17 Jan 2025

Why in News?

Recently, a rare bird species, the **Falcated Duck** was spotted by bird watchers and nature enthusiasts at [Sultanpur National Park](#) in Gurugram.



Key Points

- **Falcated Duck:**
 - **The Falcated Teal (*Mareca falcata*)**, also known as the Falcated Duck, is a dabbling duck.
 - **Distribution:**
 - Found from **eastern Siberia and Mongolia to northern Japan.**
 - Wintering grounds include **Southeast Asia and eastern India.**
 - **Rare sightings** have also been recorded in **America, Poland, and Thailand.**
 - **Habitat:**
 - Prefers **freshwater lakes, ponds, rivers, and marshes** surrounded by forests.
 - **Breeding:**
 - The breeding season lasts from **May to early July.**
 - Nests are built on the ground near water, typically in tall grass or brush.
 - **Diet:**
 - Primarily **herbivorous, feeding on vegetable matter, seeds, rice, and aquatic plants.**
 - Occasionally consumes small invertebrates and soft-shelled mollusks.
 - **Threats:**
 - **Hunting** is a major threat, driven by demand for their meat and feathers.
 - **Conservation Status:**
 - Listed as "**Near Threatened**" by [the International Union for Conservation of Nature \(IUCN\)](#).

Sultanpur National Park

- **About:**
 - Sultanpur National Park is a bird paradise for bird watchers. It is famous for its **migratory as well as resident birds.**
 - Migratory birds start arriving in the park in September. Birds use the park as a resting place till the following March-April.
 - During **summer and monsoon months** the park is inhabited by many local bird species.
 - In April 1971, [the Sultanpur Jheel](#) inside the park (an area of 1.21 sq. Km.) was accorded **Sanctuary status** under section 8 of **the Punjab Wildlife Preservation Act**,

1959.

- The status of the park was upgraded to **National Park** under **the Wildlife (Protection) Act, 1972** in July 1991.

▪ **Location:**

- It is situated in **Gurgaon district of Haryana**. The distance of the park is around 50 Km from Delhi and 15km from Gurgaon.

▪ **Important Fauna at the Park:**

- Mammals: **Blackbuck, Nilgai**, Hog deer, Sambar, **Leopard** etc.
- Birds: **Siberian Cranes, Greater Flamingo, Demoiselle Crane** etc.

Maoists Encountered in Indravati National Park | Chhattisgarh | 17 Jan 2025

Why in News?

Security forces killed five **Maoists** during an encounter inside **Indravati National Park** in Chhattisgarh's Bijapur district.

Key Points

▪ **Operations in Indravati National Park:**

- Multiple security teams reached **the Bandepara-Koranjed area**, after receiving **intelligence about Maoist activity**.
- Security forces identified the Maoists as members of **the People's Liberation Guerrilla Army (PLGA)** based on their uniforms.

▪ **Weapons Recovered:**

- Recovered items included a **self-loading rifle, a barrel grenade launcher**, a 12-bore gun, a Bharmar gun, **explosives, and other weapons**.

Indravati National Park

▪ **About:**

- It is situated in the **Bijapur district of Chhattisgarh**.
- It was **established in 1981** and **declared a tiger reserve in 1983** under India's **Project Tiger**.
- It is **named after the Indravati River**, which flows from east to west and forms the reserve's northern boundary with Maharashtra.

▪ **Vegetation:**

- Comprises three major forest types:
 - Moist Mixed Deciduous Forest with Teak.
 - Moist Mixed Deciduous Forest without Teak.
 - Southern Dry Mixed Deciduous Forest.

▪ **Flora:**

- Common tree species include **teak, achar, karra, kullu, shisham, semal, haldu, arjun, bel, and jamun**.

▪ **Fauna:**

- Hosts one of the last populations of **rare wild buffalo**.
- Other species include **Nilgai, Black Buck, Sambar, Gaur, Tiger, Leopard, Chital, Sloth Bears, and more**.

Utricularia Found in Keoladeo National Park | Rajasthan | 17 Jan 2025

Why in News?

Recently, a rare and unique carnivorous plant, '**Utricularia**,' has been discovered in Rajasthan's [Keoladeo National Park](#).

- Commonly known as bladderworts, this plant is typically **found in regions like Meghalaya and Darjeeling**.



Key Points

- **Role in Biodiversity:**
 - Experts believe the **presence of bladderworts in the park enhances biodiversity** and positively contributes to the ecosystem of Keoladeo.
 - Utricularia **plays a vital role in maintaining environmental balance** by capturing small insects.
 - It was **last discovered in India in 2021 in the Mandal Valley of Chamoli, Uttarakhand**, after a 36-year gap.
- **Feeding Mechanism:**
 - The plant entraps creatures such as **protozoa, insects, larvae, mosquitoes, and tadpoles in its bladder-like traps**.
 - **Once trapped, the organism dies** inside the bladder.
 - Terrestrial species of Utricularia thrive in soil filled with water, where they capture small swimming creatures.
- **Ideal Growth Conditions:**
 - The **growth of Utricularia is due to the abundant water supply from the Panchana Dam**, which creates ideal conditions for the plant's growth.

Keoladeo National Park

- **About:**

- It is a [wetland](#) and bird sanctuary and a [UNESCO World Heritage Site](#) located in **Bharatpur, Rajasthan**.
 - [Chilika Lake \(Orissa\)](#) and Keoladeo National Park (Rajasthan) were recognized as the first [Ramsar Sites](#) of India in **1981**.
 - Currently, Keoladeo National Park and [Loktak Lake \(Manipur\)](#) are in the [Montreux Record](#).
- It is known for its **rich avian diversity** and abundance of **waterbirds** and is home to over **365 species of birds**, including several **rare and threatened species**, such as the [Siberian crane](#).
- **Fauna:**
 - Animals such as **jackals, sambar, nilgai, wild cats, hyenas, wild boar, porcupine and mongoose** can be found in the region.
- **Flora:**
 - The principal vegetation types are tropical dry deciduous forest dominated by **Acacia nilotica** intermixed with dry grassland.
- **River:**
 - Gambhir and [Banganga](#) are two rivers that flow through this National Park

Great Indian Bustards | Rajasthan | 17 Jan 2025

Why in News?

Researchers spotted 12 [Great Indian Bustards \(GIBs\)](#) at [Desert National Park \(DNP\)](#) in Rajasthan. This provides a **major boost to efforts to conserve** one of India's most critically endangered species.

Key Points

- **GIB Population Status:**
 - The GIB is **critically endangered**, with **only 173 birds remaining**.
 - Of these, 128 are found in the wild, and the remaining birds are bred in captivity.
 - Besides Rajasthan, the species is **also found in Gujarat, Maharashtra, Madhya Pradesh, Andhra Pradesh, and Karnataka**.
- **Conservation Efforts:**
 - The GIB was listed as "**critically endangered**" by the [IUCN Red List](#) in 2011 due to hunting, habitat loss, and fragmentation.
 - In response, **Rajasthan launched a Rs 12.90 crore project in 2013 to conserve the species**, focusing on protecting its habitat and improving breeding conditions.
 - The **project has led to the successful breeding of 45 chicks** in two locations, Sam and Ramdevra.
- **Habitat Protection and Breeding:**
 - The birds spotted were born in the wild, mostly females aged three to four years, with some males up to one year old.
 - Efforts to protect their habitat include **improving grasslands and fencing areas to shield the birds from predators** such as [desert foxes, cats, and mongooses](#).
- **Milestone in Conservation:**
 - In 2018, [the Wildlife Institute of India](#), along with the Rajasthan government and the Forest Department, established [the National Conservation Breeding Centre in Jaisalmer](#).
 - In **October 2024**, Rajasthan achieved a milestone when a GIB chick successfully hatched through artificial insemination.

Great Indian Bustard



▪ About:

- The **Great Indian Bustard (*Ardeotis nigriceps*)**, the **State bird of Rajasthan**, is considered India's most critically endangered bird.
- It is **considered the flagship grassland species**, representing the health of the grassland ecology.

▪ Protection Status:

- [IUCN Red List](#): Critically Endangered
- [Convention on International Trade in Endangered Species of Wild Fauna and Flora \(CITES\)](#): Appendix 1
- [Convention on Migratory Species \(CMS\)](#): Appendix I
- [Wildlife \(Protection\) Act, 1972](#): Schedule I

Desert National Park

- It is situated in **Jaisalmer & Barmer Districts of Rajasthan**.
- Great Indian Bustards, **Rajasthan State animal- [Chinkara](#)** and **State tree- [khejri](#)** and **State flower- [Rohida](#)** are found naturally at this park.
- It was declared a **[UNESCO World Heritage Site](#)** in **1980** and **[National Park](#)** in **1992**.