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# Index

## Terrestrial Animals

Grey Wolf	1
Red Panda	1
Asiatic Lion	2
Cheetah	2
Indian Tiger ( <i>Panthera tigris</i> ) or Royal Bengal Tiger	3
Indian Elephant ( <i>Elephas maximus</i> )	4
Nilgiri Tahr	5
Hoolock Gibbon	5
Pangolin	6
Markhor	6
Indian Bison (Gaur)	7
Fishing Cat	7
Iberian Lynx	7

## Avian Species

Gyps Indicus (Indian Vulture)	8
Great Indian Bustard (GIB)	9
About Lesser Florican ( <i>Sypheotides indicus</i> )	9
Jerdon's Courser	10
Greater Adjutant Stork	10
Amur Falcon	10

## Aquatic Species

Eurasian Otter	11
Vaquita	11
Blue Whales	11
Gangetic River Dolphin	12

## Reptiles, Insects, Amphibians, etc

Neptis Philyra	12
Butterfly Cicada	13

Bumblebees	13
Gharial ( <i>Gavialis gangeticus</i> )	13
Sea Anemone	14
Batillipes chandrayaani	14
Sea cucumbers	14
Sperm Whales ( <i>Physeter macrocephalus</i> )	15
Olive Ridley Turtle	15
Indian Star Tortoise ( <i>Geochelone elegans</i> )	16

## Plant Species

Utricularia (Bladderworts)	16
Seaweed	17
Aquilaria Malaccensis (agarwood)	17
Syntrichia Caninervis	17
Semal Trees (Silk Cotton Tree)	18
Tmesipteris oblancoolata	18
Palm Tree	18
Neelakurinji	19
Water Spinach	19
Ashwagandha ( <i>withania somnia</i> )	19
Kashmir Chinars	20
Tropical Plant Subabul	20
Dicliptera polymorpha	20
Sea buckthorn	21
Water Hyacinth	21

## Animals at Vantara

Okapi	22
African Lion ( <i>Panthera leo</i> )	22
Rare Two-Headed Turtle (Bicephalic Chelonian)	22
Orangutan ( <i>Pongo spp.</i> )	23
Lemurs	23



**Note:** As per the amendments made under the 'Wild life (Protection) Amendment Act, 2022', all species that are covered under Appendices of **CITES** are now listed under **Schedule IV of the Act**.

## Terrestrial Animals

### Grey Wolf



Indian Wolf



WPA, 1972  
Schedule I

Himalayan wolf or  
Tibetan wolf



WPA, 1972  
Schedule I



#### Context

- 'Operation Bhediya' has been launched by the UP govt to capture man-eating wolf in U.P.



#### Characteristics

- Extremely **social living in a pack of 6-8 individuals**,
- Run at **very high speeds**,
- **Monogamous** and follow **male dominance hierarchy**,
- Communicate with **different vocalizations and scent-marking**.



#### Habitat

- **Indian Wolf** : In peninsular India including Rajasthan, Gujarat, etc.
- **Himalayan wolf or Tibetan wolf**: In Upper trans-Himalayan ranges.

### Red Panda



WPA, 1972  
Schedule I

Among 22 species covered under **Species Recovery Programme**



#### Context

- Red Panda Program of **Darjeeling's Padmaja Naidu Himalayan Zoo's** has been selected as finalist for 2024 **WAZA (World Association of Zoos and Aquariums) Conservation Award**.



#### Characteristics

- **Small arboreal mammals, indicator species** for ecological change.
- Skilled climbers; **nocturnal** and usually solitary, but come together in **pairs in breeding season**; most active during twilight hours of early morning and evening (**crepuscular**)
- **Sikkim's** state animal



#### Habitat

- Mixed deciduous and conifer forests with dense understories of bamboo.
- **Distribution**: India (Sikkim, West Bengal, Meghalaya and Arunachal Pradesh), Nepal, Bhutan, Myanmar, China.

## Asiatic Lion



WPA, 1972  
Schedule I

Among 22 species covered under **Species Recovery Programme**



### Context

- Six Asiatic lions have migrated from Gir Forest to the **Barda Wildlife Sanctuary (BWS)**.



### Characteristics

- They are **slightly smaller than African lions**.
- Males have only moderate **mane growth at the top of the head**.
- Lions have **no particular breeding season**.



### Habitat

- Only in Gir forest and other protected areas in Gujarat's Saurashtra region.



### Conservation Measures

- 'Project Lion' announced on **August 15, 2020**.

## Cheetah

### Asiatic Cheetah



WPA, 1972  
Schedule I

### African Cheetah



### Context

- Gandhi Sagar Wildlife Sanctuary was chosen as the second home for the translocation of Cheetahs.



### Characteristics

- Unlike other big cats (lions, tigers, leopards, and jaguars) cheetahs don't roar.
- **World's fastest Mammal** and the **only large carnivore to be extinct in India (1952)**.



### Habitat

- **African Cheetah:** Sub-Saharan Africa (Namibia holds the largest population)
- **Asiatic Cheetah:** Limited to Iran's arid landscapes



### Conservation Measures

- **Project Cheetah (World's first intercontinental large wild carnivore translocation project, part of Project Tiger)**
  - **Implementing agency:** National Tiger Conservation Authority (NTCA)

# Indian Tiger (*Panthera tigris*) or Royal Bengal Tiger



Appendix I



WPA, 1972  
Schedule I



## Habitat

- **Tiger Range Countries:** Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Russia Thailand, and Vietnam.
- **India:** Shivalik-Gangetic plains, Central India and Eastern Ghats, Western Ghats, Northeastern Hills & Brahmaputra Flood Plains and Sundarbans.
- **Distribution:**
  - **Maximum in Madhya Pradesh** followed by Karnataka and Uttarakhand.



## Characteristics

- **Flagship species of India**
- **Umbrella Species.**
- **Solitary, mostly nocturnal and territorial animal.**
- Territory of an adult male may encompass territories of 2-7 females
- Tiger stripes are **individually as unique as human fingerprints.**



## Threats

- Habitat loss and loss of prey species, hunting, poaching, and illegal trade, Conflict with humans etc.

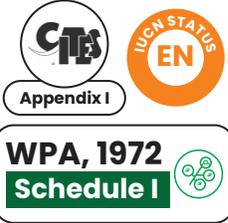


## Conservation Efforts

- **Project Tiger (1973):** Centrally Sponsored Scheme, in-situ conservation
- **NTCA:** Statutory body constituted **under WPA, 1972, amended in 2006 to administer Project Tiger.**
- **National Animal of India**
- **M-STripes:** Digital monitoring system.
- **Global Tiger Initiative (2008):** World Bank's initiative
- **Global Tiger Forum:** International intergovernmental body
- **Other:** Conservation Assured Tiger Standards (CAITS), World Wildlife Fund's Tigers Alive Initiative, etc.



# Indian Elephant (*Elephas maximus*)



## Habitat

- Found in the **central** and **southern Western Ghats, North East India, eastern India** and **northern India** and in some parts of southern peninsular India.
- India** is home to over **60% of the world's elephant population**
- Highest population in Karnataka**, followed by Assam and Kerala.
  - Kumki elephants:** Term used in India for captive Asian elephants that are trained to be used in operations to trap wild elephants.



## Characteristics

- Highly intelligent animals** with strong family bonds with sophisticated forms of **communication**.
- One of three **subspecies of Asian elephants**, the other two being the Sumatran and Sri Lankan elephants.
- Life span:** 60-70 years.
- Gestation period:** 20-22 months (longest gestation period of all mammals).
- Leader of an elephant group:** Female.



## Threats

- Habitat Fragmentation** and degradation, expansion of agriculture and industry, **human-elephant conflict, poaching**, etc.



## Conservation Measures

- Project Elephant:** Launched in **1992**
- 33 Elephant Reserves** in 14 major Elephant states.



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## Nilgiri Tahr



Among 22 species covered under **Species Recovery Programme**



### Context

- Tamil Nadu government is executing a synchronized survey to estimate the population of Nilgiri Tahr.



### Characteristics

- **Only mountain ungulate** (animal with hooves) in southern **India amongst the 12 species present** in India.
- Locally known as “**Varaiaadu**”
- **Two epics** –
  - **Silappathikaram and Sivakasindamani** – mention its descriptions



### Habitat

- **Endemic to western ghats**
- **Ernavikulam National Park in Anamalai Hills, Kerala**, home to the largest population.

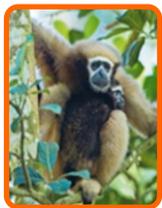


### Conservation Measures

- **State animal** of Tamil Nadu
- October 7 declared as Nilgiri Tahr day by Tamil Nadu.

## Hoolock Gibbon

### Western hoolock gibbon



### Eastern hoolock gibbon



### Context

- **The National Board for Wildlife** approved oil exploration in **Assam’s Hollongapar Gibbon Sanctuary**.



### Characteristics

- **Two types:** western hoolock gibbon (*Hoolock hoolock*) and the eastern hoolock gibbon (*Hoolock leuconedys*).
- Arboreal, diurnal, and highly territorial
- **Sexual dimorphism in fur color:**
  - **Eastern:** Males are black; females light brown or golden
  - **Western:** Males black with white brows; females orange-tan



### Habitat

- Endemic to **northeastern India**
- **Eastern Hoolock Gibbon:** Found in Arunachal Pradesh and parts of Assam
- **Western Hoolock Gibbon:** Found in Assam, Meghalaya, Tripura, and Mizoram

# Pangolin



Indian Pangolin

Chinese Pangolin



Appendix 1

Appendix 1



## Context

- Recently, instances of pangolin poaching is increasing in Telangana.



## Characteristics

- They are **only mammals wholly-covered in scales** and use those scales to protect themselves from predators in wild.
- They eat ants, termites and larvae and are often **known as the scaly anteater**.
- Solitary, primarily **nocturnal animals**; long, sticky tongues that are longer than their bodies, toothless.
- Two pangolin species found in India- **Indian and Chinese Pangolin**.



## Habitat

- India:** Found throughout country, south of Himalayas, excluding north-eastern region.
- Chinese:** Ranges through **Assam and eastern Himalayas**.

# Markhor



Appendix 1



## Context

- In Rare Appearance, **Markhor** Spotted In Kashmir.



## Characteristics

- It is World's largest wild goat.



## Habitat

- Pakistan, Afghanistan, Uzbekistan, Turkmenistan, Tajikistan.
- In India it is found only in **Union Territory of Jammu and Kashmir (J&K)**.



## Conservation Measures

- Global: UNGA proclaimed 24 May the International Day of the Markhor, starting in 2024
- India:** **Kashmir Markhor Recovery Project (Wildlife Trust of India)**, J&K notified Tattakuti **wildlife sanctuary** for the Markhor.

## Indian Bison (Gaur)



WPA, 1972  
Schedule-1



Appendix I



### Context

- Recently, Jharkhand Forest department initiated a study to revive the dwindling population of Bison at **Palamu Tiger Reserve**.



### Characteristics

- Massively built, very strong, and social animal.
- Grazing animal** and munches on leaves, fruits, stems, flowers and seeds.
- Diurnal by nature** and remain active during the daytime.
- Their pregnancy period is 9 months same as humans.



### Habitat

- Western Ghats.
- Prefer evergreen forests and moist deciduous forests.
- They generally **stick to the foothills**.

## Fishing Cat



WPA, 1972  
Schedule-1



### Context

- Wildlife Institute of India, Dehradun, is launching **India's first Fishing Cat Collaring Project** at Coringa Wildlife Sanctuary.



### Characteristics

- A powerful feline, about **twice the size of a house cat**.
- Nocturnal hunters** that prey on fish, frogs, crustaceans, snakes, birds, and scavenged carcasses.



### Habitat

- Inhabit **wetlands and mangroves**.
- In India, found mainly in Sundarbans, Himalayan foothills along Ganga & Brahmaputra valleys, and Western Ghats.

## Iberian Lynx



Appendix I



### Context

- According to IUCN, **conservation status** of Iberian lynx has **improved from Endangered to Vulnerable**, reflecting significant **increase in its population**.



### Characteristics

- Solitary hunter; nocturnal or crepuscular; may temporarily become diurnal during winter; live in small, isolated meta-populations.
- European Rabbit** accounts for **80-99%** of its diet.



### Habitat

- Endemic to **Iberian Peninsula**
- Found in **southwestern Spain, some populations in Portugal**.

## Avian Species

### Gyps Indicus (Indian Vulture)



WPA, 1972  
Schedule I



Among 22 species covered under **Species Recovery Programme**



#### Context

- **Moyar valley** located in **Mudumalai Tiger Reserve (Tamil Nadu)** is the only region with largest nesting colony of Gyps vultures in wild.



#### Characteristics

- Possess **whitish feathers on a dark head and neck**, and a pale collar.
- **Colonial nesters** and often **seen in flocks**.
- **Population is declining**.



#### Habitat

- **Habitat Specialization:** Open Grassland.
- Found in **Jharkhand, Madhya Pradesh, Rajasthan**.



#### Conservation Measures

- **Banning of Non-steroidal anti-inflammatory drugs** like diclofenac, Ketoprofen for veterinary use.
- **Vulture Action Plan 2020–25**.

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## Great Indian Bustard (GIB)



Among 22 species covered under **Species Recovery Programme?** ✓



### Context

- Ministry of Environment, Forest and Climate Change (MoEFCC) approved **funds for next phase (from 2024 to 2029) of Bustard Recovery Program.**



### Habitat

- Endemic to **Indian Subcontinent.**
- Mostly in **Rajasthan and Gujarat.**
- Small population in **Maharashtra, Karnataka and Andhra Pradesh.**



### Conservation Efforts

- Key habitats** as National Parks/sanctuaries E.g., **Desert National Park, (Rajasthan), Naliya Grassland (Lala Bustard Wildlife Sanctuary).**
- GIB conservation breeding centres in **Rajasthan.**
- Artificial insemination at **National Breeding Centre in Jaisalmer.**
- Training of personnels for **artificial breeding at National Avian Research Centre (NARC), Abu Dhabi.**



### Threats

- Predation
- Entanglement with power lines
- Organophosphate pesticide, etc.



### Characteristics

- Agro-grassland omnivorous** birds **lacking frontal vision.**
- Males have gular pouch** to fill air & exhale with great humming sound to attract females.
- Males play **no role** in the **incubation and care of the young.**

## About Lesser Florican (*Sypheotides indicus*)



### Characteristics

- Smallest bird of the bustard family (Otididae).



### Habitat

- Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Andhra Pradesh.



### Threats

- Pesticide usage** in breeding grounds; Mismanagement of agro-grasslands, etc.

## Jerdon's Courser



WPA, 1972  
Schedule I



Among 22 species covered under **Species Recovery Programme**



### Context

- Jerdon's Courser has not been **visually spotted in over a decade.**



### Characteristics

- **Nocturnal** ground-dwelling **bird** found only in the Eastern Ghats.
- **Small, cryptic plumage for camouflage** in its scrub habitat



### Habitat

- **Exclusively endemic** to **Andhra Pradesh**, specifically within the **Sri Lankamalleswara Wildlife Sanctuary** in Kadapa, Andhra Pradesh.
- Prefers dry, scrub forests and **grasslands**

## Greater Adjutant Stork



WPA, 1972  
Schedule I



### Context

- Purnima Devi Barman received the **2024 Whitley Gold Award** dubbed '**Green Oscar**' for conserving Greater Adjutant Stork (*Leptoptilos dubius*).



### Characteristics

- Also known as 'Hargila', they reside **only in Assam (80%) and Bihar of India and Cambodia.**
- **One of the largest flying birds** in the world.
- Primarily scavengers, feeding on carrion, but also consume fish, reptiles, and amphibians



### Habitat

- Inhabits wetlands, nesting in **tall trees with closed canopies and bamboo clumps** around nesting trees, etc.

## Amur Falcon



WPA, 1972  
Schedule I



### Context

- Manipur's Tamenglong district imposes a ban on hunting of Amur Falcon.



### Characteristics

- It is locally known as '**Kahuaipuina**' in Manipur.
- **Migratory raptor**: Make voyage from breeding grounds in Russia and China to southern Africa.
  - **22,000 km journey** (longest sea crossing of any raptor)
- Passes through **Manipur and Nagaland.**
- **Feeds on dragonflies** that follow a similar migration path over Arabian Sea.

# Aquatic Species

## Eurasian Otter



WPA, 1972  
Schedule I



### Context

- For the first time in India, Eurasian otter was **radio-tagged in Satpura tiger Reserve (Madhya Pradesh)**.



### Characteristics

- Brown Fur, adapted for aquatic lifestyle with webbed feet and ability to close small ears and nose under water.
- Other two otter species found in India – **Smooth-coated otter and Asian small-clawed otter**.



### Habitat

- Found in **Europe, Asia, and Africa**.
- In India, found in **northern, northeast, and southern regions**.

## Vaquita



### Context

- A recent survey revealed a devastating decline in **population of endangered marine mammal, the Vaquita**.



### Characteristics

- It is the **smallest and now most endangered species** of the **cetacean order**.
- It is a toothed whale, like dolphins and sperm whales, as opposed to whales with **baleen** (Baleen is a filter-feeding system inside the mouths), such as the blue whale.



### Habitat

- It is **endemic to the Gulf of California** where it lives in the shallow waters bordering the Colorado estuary.

## Blue Whales



WPA, 1972  
Schedule I



### Context

- Blue whales have made a comeback near the **Seychelles after 60 years**.



### Characteristics

- Largest & loudest animal** on the planet.
- Lifespan:** Estimated at around 80 to 90 years.
- Key Behaviour aspect:** Sometimes **swim in small groups** but are more often **found alone or in pairs**.
- Diet:** Feeds almost exclusively on **krill (marine crustaceans)**



### Habitat

- Found in **all oceans except the Arctic Ocean**.



## Gangetic River Dolphin

### Protection status



WPA, 1972  
Schedule I



Appendix I



### Context

- India conducts first-ever **Ganges River Dolphin Tagging in Assam.**



### Characteristics

- Essentially blind, rely on Echolocation** (determining the location of objects using reflected sound) for biological needs.
- Breathes through a **blowhole**, surfacing every 30-120 seconds.



### Habitat

- Restricted to freshwater** (Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh)
- Presently, India houses **about 90% of the global population** of the dolphins.



### Conservation Measures

- The **Vikramshila Gangetic Dolphin Sanctuary**, Bihar is the only wildlife sanctuary for its protection
- It is India's **National Aquatic Animal** and is **endemic to the Indian sub-continent.**
- Project Dolphin** announced on **15th August 2020.**

## Reptiles, Insects, Amphibians, etc

### Neptis Philyra



### Context

- Rare butterfly species Neptis philyra was recently **discovered for the first time in India.**



### Characteristics

- It has been discovered in **Tale Valley wildlife sanctuary** in lower Subansiri district of **Arunachal Pradesh.**
- It is commonly known as **long-streak sailor**
- It has **serrated wings with rich brownish-black on the upper side** and yellow brown on the underside
- It is **generally found in east Asia**, including eastern Siberia, Korea, Japan, central and southwest China.



### Habitat

- Evergreen forests, riverine vegetation, and rocky streams.

## Butterfly Cicada



### Context

- o A new species of **cicada** discovered in Meghalaya.



### Characteristics

- o It belongs to **genus Becquartina** and marks **the first ever record of this genus in the country.**
- o The species in this genus are often called **"Butterfly cicadas"** because of their colourful wings.
- o The present discovery extends the distributional range of the genus Becquartina from Southeast Asia into Northeast India.
- o It increases the total number of known **Becquartina species to seven.**

## Bumblebees



### Context

- o Recent research highlights that the Bumblebees **are resilient to pesticides.**



### Characteristics

- o Belongs to the **genus Bombus** and are important **pollinator for many wildflowers.**
- o They are **fuzzy insects with short, stubby wings.**
- o They are **larger than honeybees**, but they don't produce as much honey.
- o They are known for **buzz pollination.**
- o They **use dance as a means of communicating 'food alert'** signals to other members of their colony.

## Gharial (*Gavialis gangeticus*)



Appendix I



WPA, 1972  
Schedule I



### Habitat

- o **Inhabit freshwater rivers:** Chambal, Girwa, Ghagra, Son and Gandak.



### Characteristics

- o Named Gharial due to a **bulbous knob** at the end of their long narrow snout.
- o Primarily **eats fish.**

## Sea Anemone



### Context

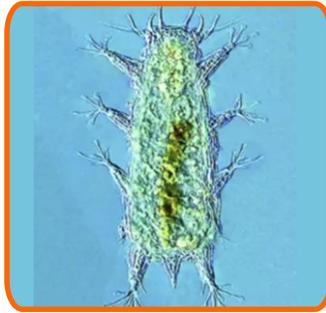
- Scientists have found mass sea anemone **bleaching off Agatti island, Lakshadweep.**



### Characteristics

- They are **ocean-dwelling members of the phylum Cnidaria.**
  - Sea anemones are **predatory animals** and most species are found in **coastal tropical waters.**
  - Like corals, sea anemones establish **symbiotic relationships with green algae.**
- **Sea surface temperature rise** disrupts this relationship, resulting in **bleaching.**
- They also have a **symbiotic relation** with **clownfish.**
  - Clownfish are protected by the **stinging tentacles** of **anemone** and anemone gets food from Clownfish's meals.
- They play key **biogeochemical roles in benthic ecosystems.**

## Batillipes chandrayaani



### Context

- A new species of marine tardigrade discovered from the southeast coast of Tamil Nadu is named **Batillipes chandrayaani** after **Chandrayaan-3 moon mission.**



### Characteristics

- **Third marine tardigrade species** to have been scientifically described from the Indian waters.
  - It has a **trapezoid-shaped head** and **four pairs of legs** with **sharp-tipped sensory spines.**
  - They can **survive extreme environmental conditions**
- Recently, a **study of the first tardigrade fossil has** enabled Scientist to classify them and **retrace their evolutionary history.**

## Sea cucumbers



**WPA, 1972**  
**Schedule I**



### Context

- As per a new research, repopulating Sea Cucumbers **can help in recovery of coral reefs.**



### Characteristics

- Belong to the animal group called **echinoderms**, which also contains starfish and sea urchins.
- Are known as **janitors of tropical seas** as they consume decomposing organic matter and convert it into recyclable nutrients and buffers the ocean's acidification.
- It exhibits **sexual and asexual reproduction.**

## Sperm Whales (*Physeter macrocephalus*)



### Context

- For the first time, Scientists have outlined that sperm whales **communicate using bursts of clicking noises**- called codas **sounding a bit like Morse code**.



### Characteristics

- Largest of the **toothed** whales and **only males** tend to be observed closer to poles.



### Habitat

- Found in **deep open waters**, or around **islands and coastal areas** with deep canyons or very narrow continental shelves.
- Found in India, Argentina, Bangladesh etc.

## Olive Ridley Turtle



### Context

- A high-level review meeting to be held by Tamil Nadu Chief Secretary amid **increase in deaths of Olive Ridley Turtles**.



### Characteristics

- Gets its name from **olive green color of its heart-shaped shell**.
- Carnivores, and feed mainly on jellyfish, shrimp, snails, crabs, molluscs and a variety of fish and their eggs.
- Best known for their **unique mass nesting called Arribada**, where thousands of females come together to lay eggs on the same beach.



### Habitat

- Among **smallest & most abundant sea turtles** and is found primarily in the **tropical regions of Pacific, Indian, and Atlantic oceans**.



### Conservation Measures

- Odisha's Rushikulya, Gahirmatha, and Devi river** rookeries are protected through **seasonal fishing bans and community involvement**
- Marine Turtle Action Plan (2021)**
- Operation Olivia** by Indian Coast Guards.

## Indian Star Tortoise (*Geochelone elegans*)



WPA, 1972  
Schedule I



Appendix 1



### Context

- The Indian star tortoise faces threats from **illegal wildlife trade and habitat loss**.



### Characteristics

- **Solitary animals, do not hibernate** but stay inactive when it is very dry/hot/cold.
- **Mainly Herbivores** and **exhibit distinctive obsidian shell with sun-yellow star patterns**.



### Habitat

- Endemic to arid regions of **northwest India, southern India, and Sri Lanka**.

## Plant Species

### Utricularia (Bladderworts)



### Context

- Recently, **Plant 'Utricularia'** has been found in Rajasthan's **Keoladeo National Park** in large numbers.



### About Utricularia

- **Rare and unique carnivorous plant**, named for its **tiny bladders or utricles**.
- **Tiny hairlike projections** at the opening of the **bladder** are sensitive to the motion of passing organisms sucking in prey.
- Preys on small organisms (such as protozoa, insects, larvae, mosquitoes, and even tadpoles).
- **Habitat:** Found in **lakes, streams, and waterlogged soils**.
- **Significance:** Boosts biodiversity and **maintains environmental balance** by controlling the population of small insects.

## Seaweed



### Context

- ICAR-Central Marine Fisheries Research Institute have been designated as a **center of excellence for seaweed cultivation**.



### Characteristics

- It is a common name for **various species of marine plants and algae** which grow in oceans as well as in rivers, lakes etc.
- Multicellular and macroscopic **autotrophs** broadly classified into **three groups** such as **green** (Chlorophyta), **brown** (Phaeophyta), and **red** (Rhodophyta) seaweeds.



### Applications

- Nutritional:** Also called sea vegetables, it provides:-
  - Minerals:** calcium, phosphorus, sodium, potassium
  - Vitamins:** A, B1, B12, C, D, E etc
- Health:** Anti-inflammatory, antimicrobial & used in cancer treatment.
- Manufacturing:** Binding agents in toothpaste, fruit jelly, organic cosmetics, skincare items.
- Agriculture:** Enhances crop productivity

## Aquilaria Malaccensis (agarwood)



### Context

- CITES eases export of agarwood from **India, move to benefit lakhs of farmers**.



### About Aquilaria Malaccensis

- An evergreen tree **native to Northeast India, Bangladesh, Bhutan, and parts of Southeast Asia**, and is considered a precious aromatic plant in the region.
- Aromatic plant's oil and chips** both are highly valued in the market.

## Syntrichia Caninervis



### Context

- Scientists have found a **desert moss** - Syntrichia Caninervis - which is able to withstand Mars-like environment conditions.



### About Syntrichia Caninervis

- It is **widespread in some of Earth's harshest locations** including Antarctica and the Mojave Desert.
- It could be the **first possible pioneer species for the colonization of Mars**.



## Semal Trees (Silk Cotton Tree)



### Context

- Disappearance of **Semal trees** from Southern Rajasthan is creating adverse effects on the forests and people.



### About Semal Trees

- Large **deciduous tree**, known for its Crimson red flowers.
- **Ayurvedic medicines** can be prepared from every part of the tree.
  - For instance, roots are used for treating ailments such as diabetes, etc.

- Worshipped by **many tribal communities** in Rajasthan and Madhya Pradesh.
- Its seed produces **edible oil, used in making soaps.**

## Tmesipteris oblancheolata



### Context

- News research shows that **Tmesipteris oblancheolata**, a species of fork fern, has **largest genome** of any organism on the earth.



### About Tmesipteris oblancheolata

- Contains **160 billion base pairs** (the units that make up a strand of DNA) outstripping the human genome by more than 50 times.
- It belongs to a **primordial group of plants** that evolved long before dinosaurs set foot on the earth.

- Found only in **New Caledonia and a few nearby islands in the Pacific Ocean** and thrives on the trunks and branches of trees in rainforests.

## Palm Tree



### Context

- Odisha will plant palm tree to **combat lightning deaths.**



### About Palm Tree

- Belongs to **Tropical Forest Ecosystem.**
- **Varieties of palm Trees:** Coconut, Oil Palm, Arecanut, Palmyrah etc.
  - Palmyrah is declared as **State Tree of Tamil Nadu.**

- **Characteristics of Palm trees:**
  - Act **as natural conductors during lightning strikes** and prevent loss of lives.
  - Male palm tree produces only flowers, while female tree produces fruits as well.
- **Benefits:**
  - Palm leaves used as construction materials for **fences, walls, and roofs.**
  - Provide **edible and non- edible products.**



## Neelakurinji



### Context

- It has been included on the **IUCN (International Union for Conservation of Nature) official Red List of threatened species** under the **Vulnerable category**.



### About Neelakurinji

- Shrub known for massive **blooming every 12 years**.  
**Semelparous, i.e.,** single reproductive episode before death.
- Location: Shola grasslands of Western Ghats – the Nilgiri hills,** Palani hills and the Eravikulam hills of Munnar, also Shevaroy hills in the Eastern Ghats.
  - The name **Nilgiris (blue mountains)** was derived from the colors of these flowers.
- Major Threats:** Tea and softwood plantations, **urbanization, invasion of exotic species like eucalyptus, black wattle, etc.**

## Water Spinach



### Context

- Water spinach** now reached the door of the farmers with the technology **developed by the Indian Institute of Vegetable Research (IIVR)**.



### About Water spinach

- Native to **tropics and subtropics**, this **semi-aquatic perennial plant** is believed to have been the **first domesticated in Southeast Asia**.
- Benefits**
  - Rich in **folic acid (vitamin B9)**; Contains medium levels of **beta carotene, calcium, vitamin E and C**.
  - Helps prevent **neural tube defects in unborn children**.
  - Being **rich in iron**, it's beneficial for people with **anemia**.
  - Has great **potential as a purifier of aquatic habitats**.

## Ashwagandha (withania somnifera)



### Context

- Ashwagandha is growing in popularity, **both in India and abroad**.



### About Ashwagandha

- It is an **evergreen shrub** found in parts of **India, Africa, and the Middle East**.
- Used as a medicinal plant, especially in traditional **Ayurvedic medicine**.
- Contains several **bioactive compounds**, including withanolides, which have anti-inflammatory and antioxidant effects.
- Its supplements are often **promoted for stress and anxiety, sleep, male infertility, athletic performance, etc.**

## Kashmir Chinars



### Context

- Recently, Kashmir Chinars got digital protection through **geo-tagging** with QR-code.



### About Kashmir Chinars

- **Native:** Originated in **Greece**, found throughout Kashmir, grows characteristically in **Eastern Himalayas**.
- **Char Chinar**, an Island on the Dal Lake, Srinagar is named after it.

### Key Features

- **Large and deciduous**, growing up to 30 meters tall, takes about 150 years to reach to full height.
- Known for its longevity and its **leaves changes colors**, i.e., deep green (summer), blood-red, amber and yellow (autumn).
- **Applications:** Used for **medicinal** purposes, **wood** for interior furniture, and making **dyes**, etc.

## Tropical Plant Subabul



### Context

- Recently, researchers at the **Institute of Advanced Study in Science and Technology (IASST), Guwahati** have identified the therapeutic potential of Subabul in **managing insulin resistance related to type II diabetes**.



### About Subabul

- It is a **fast-growing** traditional medicinal leguminous tree native to tropical and subtropical regions.
- It is traditionally used by ethnic communities for its **nutritional value**, with **leaves and seeds** consumed raw or cooked in **soups and salads** as a rich source of protein and fiber.

## Dicliptera polymorpha



### Context

- Scientists from Agharkar Research Institute (ARI), Pune discovered a new **species of Dicliptera** in the Western Ghats (one of India's four global biodiversity hotspots)



### About Dicliptera polymorpha

- **Habitat:** Thrives in **open grasslands with extreme conditions** like drought and frequent fires, utilizing **robust rootstocks** to endure environmental stress.
- **Unusual dual-blooming pattern:** Blooms twice a year, once **post-monsoon** (From early November to March or April) and again **after grassland fires** (in May and June).
- **Spicate inflorescence:** It is the **only known Indian species** with this spicate inflorescence structure, with its closest allied being found in Africa.

## Sea buckthorn



### Context

- Women in Ladakh play a key role **in sea buckthorn cultivation**



### About sea buckthorn

- It was given **GI Tag in 2023**
- In Ladakh, it is **grown completely organically** without any pesticides. The berries are **harvested in September-October every year**.
- **Every part of the plant**, including fruit, leaf, twig, root and thorn, **has been traditionally used** as medicine, nutritional supplement, etc
- Therefore, It is popularly known as '**Wonder Plant, Ladakh Gold, Golden Bush or Gold Mine of cold deserts**'.

## Water Hyacinth



### Context

- Women from **flood-prone Borchila in Assam** are transforming water hyacinth into eco-friendly products and creating jobs under SBM-Urban.



### About Water Hyacinth

- Water Hyacinth is **a non-native aquatic invasive plant** that has become **widespread in India**.
- **Positive Impact/Usage of Water Hyacinth**
  - It can **reduce water pollution** (Absorb heavy metals, toxins) and process animal feed, compost, and bioenergy.
  - It can **be harvested and processed into eco-friendly products** like crafts and furniture.
- **Negative Impacts of Water Hyacinth**
  - **Water Quality Degradation:** It depletes oxygen in water, harming aquatic life.
  - **Ecological Imbalance:** It can outcompete native plant species, leading to a decline in biodiversity in freshwater ecosystems.



**Context:** PM engaged with **number of wild animals** during inauguration of **Vantara**, the world's largest wildlife rescue and rehabilitation center, located in Jamnagar, Gujarat.

## Okapi



### Characteristics

- The okapi (*Okapia johnstoni*), often referred to as the "**forest giraffe**" or "**zebra giraffe**".
- Okapis are **solitary** animals, primarily **diurnal**, and have large home ranges that they mark with scent glands on their feet.



### Habitat

- Endemic to arid regions of **northwest India, southern India, and Sri Lanka**.

## African Lion (*Panthera leo*)



### Characteristics

- Males have thick manes; **females are the main hunters**.
- In compare to Asiatic lions, **African lions are larger, have darker, fuller manes, and roam in large prides**.



### Habitat

- Savannas, grasslands, and open **woodlands in sub-Saharan Africa**

## Rare Two-Headed Turtle (Bicephalic Chelonian)



### Characteristics

- A genetic **mutation** causes two heads on a single body (condition known as **polycephaly or bicephaly**).
- Both heads **may function independently**, leading to **coordination challenges**.
- **Not a separate species**, so no specific conservation status.
- **Often kept in captivity** due to survival challenges in the wild.



### Habitat

- Savannas, grasslands, and open woodlands in sub-Saharan Africa

## Orangutan (*Pongo* spp.)



Appendix I



### Characteristics

- Large, reddish-brown primates with long arms
- Highly intelligent, **tool users**, and strong memory
- **Solitary**, except for mothers with offspring



### Three Species

- Bornean, Sumatran, and Tapanuli.



### Habitat

- Tropical rainforests of Borneo and Sumatra



### Threats

- Deforestation due to **rubber plantation, illegal pet trade, and poaching**

## Lemurs



### Characteristics

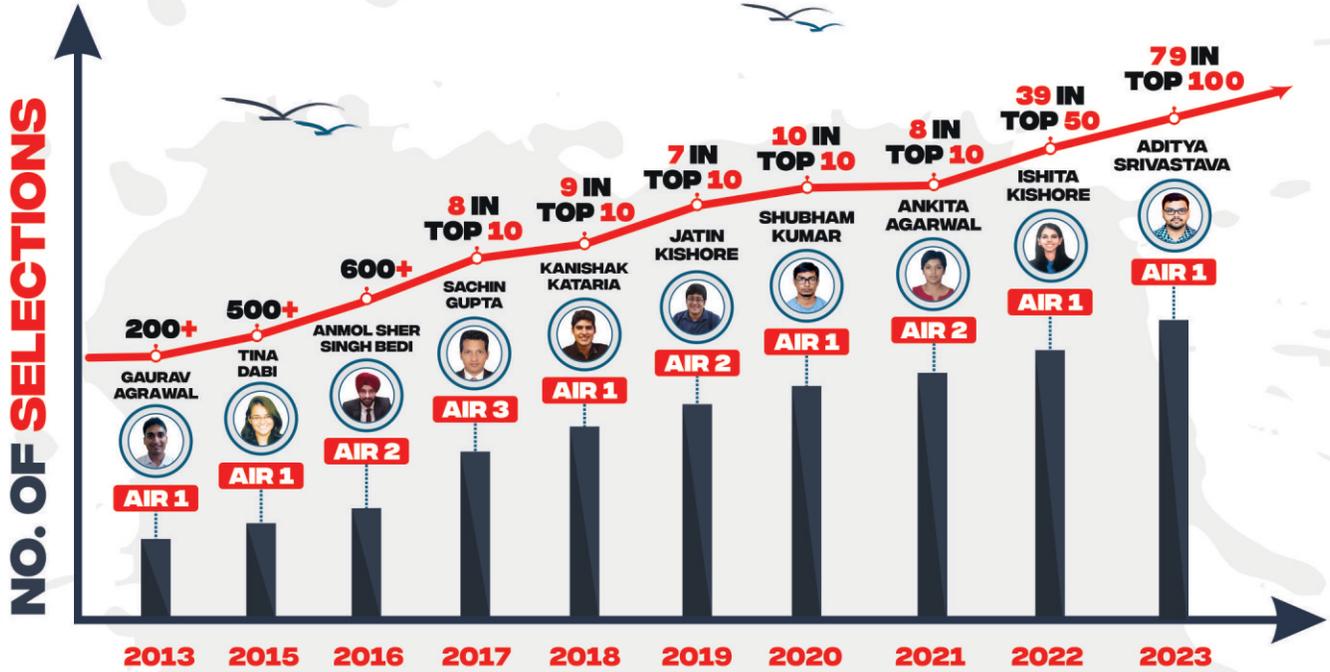
- Lemurs are primates belonging to the infraorder *Lemuriformes*.
- **With over 100 species**, they range from the tiny mouse lemur to the large indri.
- Many species are social, often **living in female-dominated groups**.
- **Many lemur species (not all)** are listed under Appendix I.



### Habitat

- Found exclusively in **Madagascar and the nearby Comoros Islands**.
- Lemurs are **arboreal**.
- They inhabit diverse ecosystems, including **rainforests, dry deciduous forests, mangroves, and spiny forests**.

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