

50 MOST IMPORTANT TOPICS PART - II

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TEST SERIES PRELIMS CRASH COURSES

USE CODE: MANMEET

Dr. Manmeet Kaur

(3 Times UPSC Interview)





50 IMPORTANT TOPICS FOR PRELIMS 2023

SCHEDULE

27-03-2023	Monday	Polity	06-04-2023	Thursday	Geography
28-03-2023	Tuesday	Science	07-04-2023	Friday	Economy
29-03-2023	Wednesday	Environment	08-04-2023	Saturday	History
30-03-2023	Thursday	Geography	09-04-2023	Sunday	HOLIDAY
31-03-2023	Friday	Economy	10-04-2023	Monday	Polity
01-04-2023	Saturday	History	11-04-2023	Tuesday	Science
02-04-2023	Sunday	HOLIDAY	12-04-2023	Wednesday	Environment
03-04-2023	Monday	Polity	13-04-2023	Thursday	IR
04-04-2023	Tuesday	Science	14-04-2023	Friday	Economy
05-04-2023	Wednesday	Environment	15-04-2023	Saturday	Schemes

Starting from **27th March** 2023 on YouTube Channel



SleepyClassesIAS

Sea Cow

- **Tamil Nadu State government** has announced plans to set up a 500-sq km **Dugong Conservation Reserve in Palk Bay.**
- This is **India's first dugong conservation reserve.**

Dugongs(Dugong dugon) aka Sea Cow

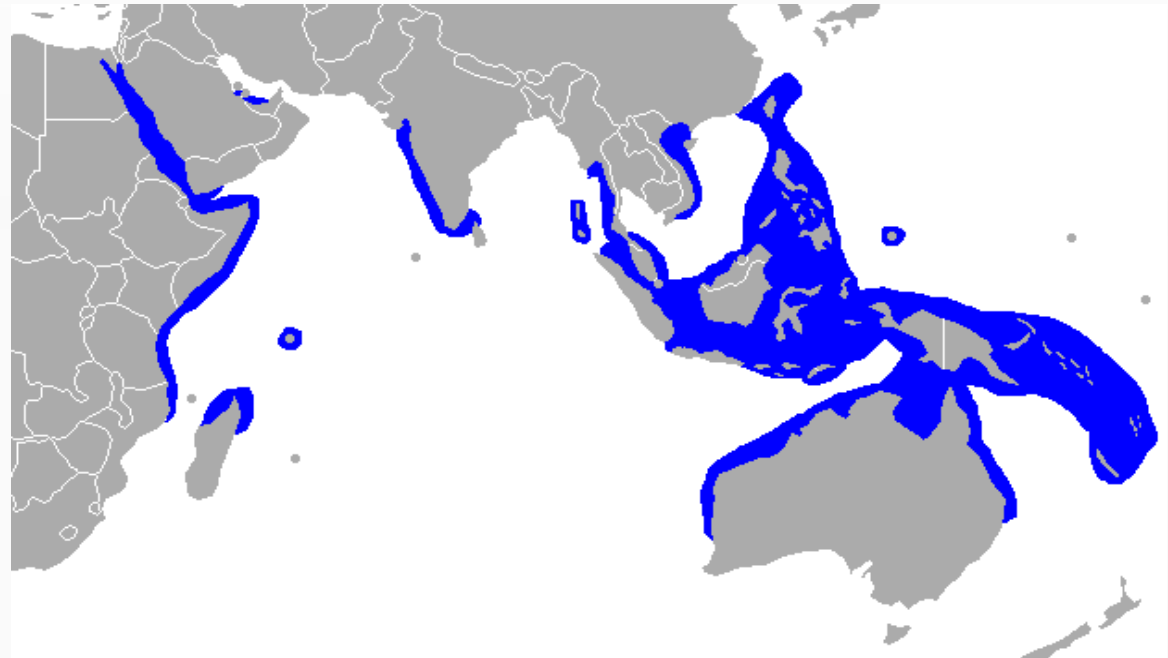
- It is a **herbivorous mammal.**
- They can grow up to three meters long, weigh about 300 kilograms and live for about **65 to 70 years grazing on seagrass and coming to the surface to breathe.**
- According to a 2013 survey report of the **Zoological Survey of India (ZSI)**, there were only about 200 dugongs in the **Gulf of Mannar in Tamil Nadu, the Andaman and Nicobar Islands and the Gulf of Kutch in Gujarat.**



Sea Cow

Status

- IUCN : Vulnerable
- CITES : Appendix I
- WLP Act : Schedule I



Sea lions

- Sea lions are related to **walruses and seals**.
- The sea lion is the **most common mammal in the Galápagos**.
- They are found primarily in the **Pacific waters**.



Sea horses

- Seahorses are **tiny fishes** that are named for the shape of their head, which looks like the head of a **tiny horse**.
- There are **at least 50 species** of seahorses.
- Seahorses are found in **shallow coastal waters in latitudes from about 52° N to 45° S**.
- Their habitats include **coral reefs, mangroves, sea grass beds, and estuaries**.
- IUCN status - **Vulnerable**
- CITES - **Appendix II**

Sea horses



Sea horses in India

- The coastal ecosystems of India house **nine out of 12 species found in the Indo-Pacific.**
- It is distributed across diverse ecosystems such as **seagrass, mangroves, macroalgal beds, and coral reefs.**
- These nine species are distributed along the coasts of eight States and five Union Territories from Gujarat to Odisha, apart from Lakshadweep and the Andaman and Nicobar Islands.
- **Great Seahorse** is one of the species of seahorses found in India.
- The report states that the Great sea horses are **migrating towards the Odisha coast.**
- Fishing is less intense in the Bay of Bengal off the Odisha coastline as compared to the Coromandel coast, hence the migration.

Sea horses in India

- The Great Seahorse is declared '**Vulnerable**' as its population is declining due to overexploitation.
- It is used in **Chinese medicine** as well as for ornamental purposes.
- **Destructive fishing methods** are also causing damage to the Great Seahorses.
- The species is **abundant off the Coromandel coast** (Andhra Pradesh and Tamil Nadu)
- The seahorse it is under extensive fishing pressure, with 13 million individuals caught per year.



Sea cucumbers

- CITES COP 19 has accepted a proposal to include **sea cucumbers in Appendix II** of the Convention.

Sea cucumbers

- Sea cucumbers are **marine invertebrates** that live on the **seafloor** found generally in **tropical regions**.
- They are an integral part of the coral ecosystem as one of the **main by-products of the sea cucumbers' digestion of sand is calcium carbonate** and this is essential for the survival of the coral reefs.



Sea cucumbers

- **Sea cucumbers** were the **most frequently trafficked marine species in India** between 2015 and 2021, a new analysis by the **Wildlife Conservation Society-India (WCS-India)** has shown.
- **Tamil Nadu** recorded the highest number of marine wildlife seizures during this period, the analysis added.
- The state was followed by **Maharashtra, Lakshadweep and Karnataka.**

Turtles and Tortoises

Similarities between turtles and tortoises:

- Are encased in a bony shell with scutes (thickened horny or bony plates) made of keratin.
- Have ribs and vertebrae that are fused to their shells.
- Have a pelvic girdle that sits inside their rib cage.
- Lay eggs on land into excavated nests of earth or sand.
- Are cold-blooded, relying on their environment to regulate their body processes.
- Have a hard beak rather than teeth.

Difference between turtle and tortoise

Basis	Turtle	Tortoise
Habitat	Turtles can be completely aquatic (aside from egg-laying), semi-aquatic, or mostly (but not completely) terrestrial Good swimmers	Tortoises aren't equipped for water and live completely on land Bad swimmers
Shell shape	turtles generally live or spend lots of time in water their shells are relatively flat, thin, and streamlined, to help them swim and dive. Exception to this rule are box turtles and some mud turtles which have dome-shaped shells.	Tortoises are land-dwelling and have heavier, rounded, dome-shaped shells to provide protection from predators
Scute shedding	Turtles shed their scutes. One of the reasons they bask in the sun is to dry their scutes and help them flake off	tortoises don't shed anything from their shells. Their keratin is constantly growing without shedding
Feet and leg shapes	Turtles either have webbed long claws or in the case of aquatic turtles, there are true flippers rather than feet.	Tortoises have feet that are padded and stumpy, with horned, scaly toes, looking a little like tiny elephant feet
Diet	Turtles are omnivores; very few are herbivores and carnivores.	Tortoises are primarily herbivores
Lifespan	average lifespan for a turtle is around 30 years, with larger sea turtles averaging around 65 years.	Tortoises have an average lifespan of 90 years, with their lifespan generally linked to their size. Giant tortoises are renowned for living well over 100 years - possibly even over 200 years





Turtles and Tortoises

- India has **at least 29 species of freshwater turtles (24) and tortoises(5) along with five species of marine turtles.**
- The highest diversity is found in **northeast India**, where 23 species have been reported.
- Along Indian rivers, the **maximum diversity of freshwater turtles is found in the Ganges, the Brahmaputra and their tributaries.**

Indian star tortoise

- Indian star tortoise is found across the Indian sub-continent, more specifically, in the **Central and Southern parts of India, in West Pakistan and in Sri Lanka.**
- A recent study on the Indian star tortoise (*Geochelone elegans*) distributed across South Asia has revealed that the **genetic diversity of the species as well as habitat has suffered major losses because of rampant illegal trade.**
- According to the Wildlife Crime Control Bureau, **90% of the trade of Star Tortoise occurs as part of the International pet market.**
- Wildlife Protection Act 1972: **Schedule IV**
- Convention on International Trade in Species (CITES): **Appendix I**
- IUCN Status: **Vulnerable**

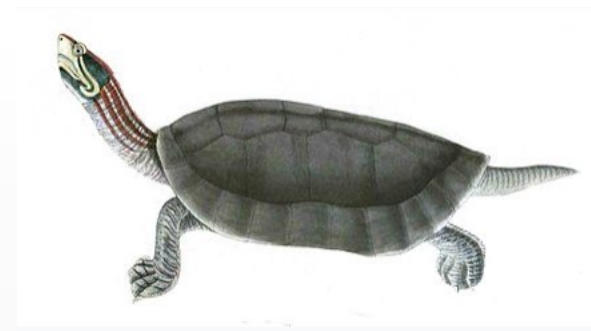


Northern River Terrapin

- Also known as **Batagur baska**, Common Batagur, Four-toed Terrapin, or River Terrapin.
- The **northern river terrapin** is a species of **riverine turtle native to Southeast Asia**.
- It is found in **India and Bangladesh (Sundarbans)**.
- IUCN Red List - **Critically Endangered**
- CITES - **Appendix I**
- Wildlife (Protection) Act, 1972 - **Schedule I**



Red-crowned Roofed Turtle



- The **red-crowned roofed turtle** or **Bengal roof turtle** is a species of **freshwater turtle endemic to South Asia**.
- It is native to **India, Bangladesh and Nepal**.
- Historically, the species was widespread in the **Ganga River, both in India and Bangladesh**.
- It also occurs in the **Brahmaputra basin**.
- Currently in India, the **National Chambal River Gharial Sanctuary** is the only area with a substantial population of the species.
- IUCN Red List - **Critically Endangered**
- CITES - **Appendix I**
- Wildlife (Protection) Act, 1972 - **Schedule I**

- India has **two of the world's 25 most threatened freshwater turtle species** – Northern River Terrapin and the Red-Crowned Roof Turtle (, found only within the riverine National Chambal Gharial Wildlife Sanctuary (NCGWS) spread across Rajasthan, Madhya Pradesh and Uttar Pradesh.

Black Softshell Turtle

- It is a species of **freshwater turtle** found in **India and Bangladesh**.
- Found in **temple ponds of Assam**.
- IUCN Red List - **Critically Endangered**
- CITES - **Appendix I**



Indian Peacock Soft-shelled Turtle

- Fresh water turtle - **rivers, streams, lakes and ponds with mud or sand bottoms**
- Found in **India, Bangladesh and Pakistan.**
- In India, it is widespread in the **northern and central parts of the Indian subcontinent.**
- IUCN Red List – **Vulnerable**
- CITES - **Appendix I**
- Wildlife (Protection) Act, 1972 - **Schedule I**



Olive Ridley Turtle



- Olive Ridley Turtles are the **smallest and most abundant of all sea turtles** found in the world, inhabiting warm waters of the **Pacific, Atlantic and Indian oceans**.
- These turtles, along with the Kemps ridley turtle, are best known for their **unique mass nesting called Arribada**, that is, mass-nesting event when thousands of turtles come ashore at the same time to lay eggs on the same).
- But they can also lay eggs by **sporadic nesting**.

Olive Ridley Turtle

- Mainly found at three river mouths in **Odisha - Dhamara, Devi and Rushikulya**.
- The **Odisha's Gahirmatha Marine Sanctuary** is known as the **world's largest rookery** of sea turtles.
- IUCN Red List – **Vulnerable**
- CITES - **Appendix I**
- Wildlife (Protection) Act, 1972 - **Schedule I**



Giant Leatherback Turtle



- **Galathea Bay** is an **iconic nesting site** in India of the **enigmatic Giant Leatherback**, the **world's largest marine turtle** — borne out by surveys done over three decades.
- The largest of the seven species of sea turtles on the planet and also the most long-ranging, Leatherbacks are **found in all oceans except the Arctic and the Antarctic**.
- Within the **Indian Ocean**, they nest only in **Indonesia, Sri Lanka and the Andaman and Nicobar Islands** and are also listed in **Schedule I** of India's Wildlife Protection Act, 1972, according it the highest legal protection.
- IUCN status - **Vulnerable**
- CITES - **Appendix I**

Hawksbill Turtle

- The Hawksbill turtle is listed as **Critically Endangered** and is protected in Indian Wildlife Protection Act of 1972, under **Schedule I**.



Green Turtle

- **Green turtles** are widely distributed in **tropical** and **subtropical waters**.
- The Green turtle is listed as **Endangered** and is protected in Indian Wildlife Protection Act of 1972, under **Schedule I**.
- CITES – **Appendix I**



Invasive species - Turtle

- The **red-eared slider turtle** popular as pet is threatening to invade the natural water bodies across **Northeast India**.
- Native to the **U.S. and northern Mexico**, this turtle is an **extremely popular pet** due to its small size, easy maintenance, and relatively low cost.



KURMA App

- On May 23, 2020, **World Turtle Day**, a number of conservation agencies launched a citizen science initiative, a mobile-based application called KURMA, aimed at turtle conservation.

Turtle Survival Alliance

- The Turtle Survival Alliance (TSA) was formed in 2001 as "an **IUCN partnership** for sustainable captive management of **freshwater turtles and tortoises**.
- The TSA arose in response to the rampant and unsustainable harvest of Asian turtle populations to supply Chinese markets, a situation known as the **Asian Turtle Crisis**.

Species Specific Enforcement Operations

- **Operation Save Kurma:** To focus on the poaching, transportation and illegal trade of live turtles and tortoises.
- **Operation Turtshield:** It was taken up to tackle the illegal trade of live turtles.
- **Operation Clean Art:** To drag attention of enforcement agencies towards illegal wildlife trade in Mongoose hair brushes.
- **Operation Softgold:** To tackle Shahtoosh Shawl (made from Chiru wool) illegal trade and to spread awareness among the weavers and traders engaged in this trade.
- **Operation Birbil:** To curb illegal trade in wild cat and wild bird species.
- **Operation Wildnet:** It was aimed to draw the attention of the enforcement agencies within the country to focus their attention on the ever increasing illegal wildlife trade over the internet using social media platforms.

Black Buck

- The **blackbuck**, also known as the **Indian antelope**, is an antelope native to India and Nepal.
- It inhabits grassy plains and lightly forested areas with perennial water sources.
- It is considered to be the fastest animal in the world next to Cheetah.
- It has been declared as the **State Animal of Punjab, Haryana, and Andhra Pradesh**.
- Wildlife Protection Act 1972: **Schedule I**
- IUCN Status: **Least Concern**



Protected Areas

- The **Tal Chhapar Sanctuary** is situated on the border of the Great Indian Thar Desert in Rajasthan.
- **Velavadar Blackbuck Sanctuary** - Gujarat
- **Point Calimere Wildlife Sanctuary** - Tamil Nadu
- In 2017, the Uttar Pradesh State Government approved the plan of setting up the **Blackbuck Conservation Reserve** in the trans-Yamuna belt near Prayagraj. It would be the first conservation reserve dedicated to the blackbuck.

Chinkara

- Also known as the **Indian gazelle**.
- It is native to Iran, Afghanistan, Pakistan and India.
- Around 60% of the global population of Indian gazelles is presently found in **western Rajasthan**.
- Chinkara live in arid plains and hills, deserts, dry scrub and light forests. They can go **without water for long periods** and can get sufficient fluids from plants and dew.
- Wildlife Protection Act 1972: **Schedule I**
- IUCN Status: **Least Concern**



Chiru

- Chiru (or chiru goat) is also referred to as **Tibetan antelope**.
- It is a sociable, tiny, graceful antelope-like animal that lives on the Tibetan Plateau's high alpine steppes.
- They are mainly seen in the **Ladakh region** in India.
- The underfur of the Tibetan antelope, or “**soft gold**” as it's called by poachers, is the warmest and softest wool in the animal kingdom.
- Predominantly, this underfur is woven into a traditional shawl known as a **shahtoosh**.
- ‘**Near Threatened**’ in IUCN Red List.
- It has been enlisted in **Schedule I** of Wildlife Protection Act, 1972.
- To enhance its protection, its prime habitats have been declared as Wildlife Sanctuaries viz. **Karakorma Wildlife Sanctuary and Changthang Cold Desert Wildlife Sanctuary**.



Swamp Deer

- Three subspecies are currently recognized –
 - Western swamp deer - Indogangetic plains.
 - Southern swamp deer - Kanha National Park.
- **Southern Swamp Deer** - The State animal of Madhya Pradesh - Hard Ground Barasingha is found exclusively in **Kanha Tiger Reserve**.
- It is the first tiger reserve in India to officially introduce a mascot, **"Bhoorsingh the Barasingha"**.
- It was reintroduced into **Satpura Tiger Reserve**.



Swamp Deer

- **Eastern swamp deer** - Kaziranga and Dudhwa National Parks).
- It is the state animal of the **Indian states of Madhya Pradesh and Uttar Pradesh.**
- **Vulnerable**
- **Schedule I** of the Wild Life (Protection) Act, 1972.
- **Appendix I** of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Himalayan / White-Bellied Musk Deer

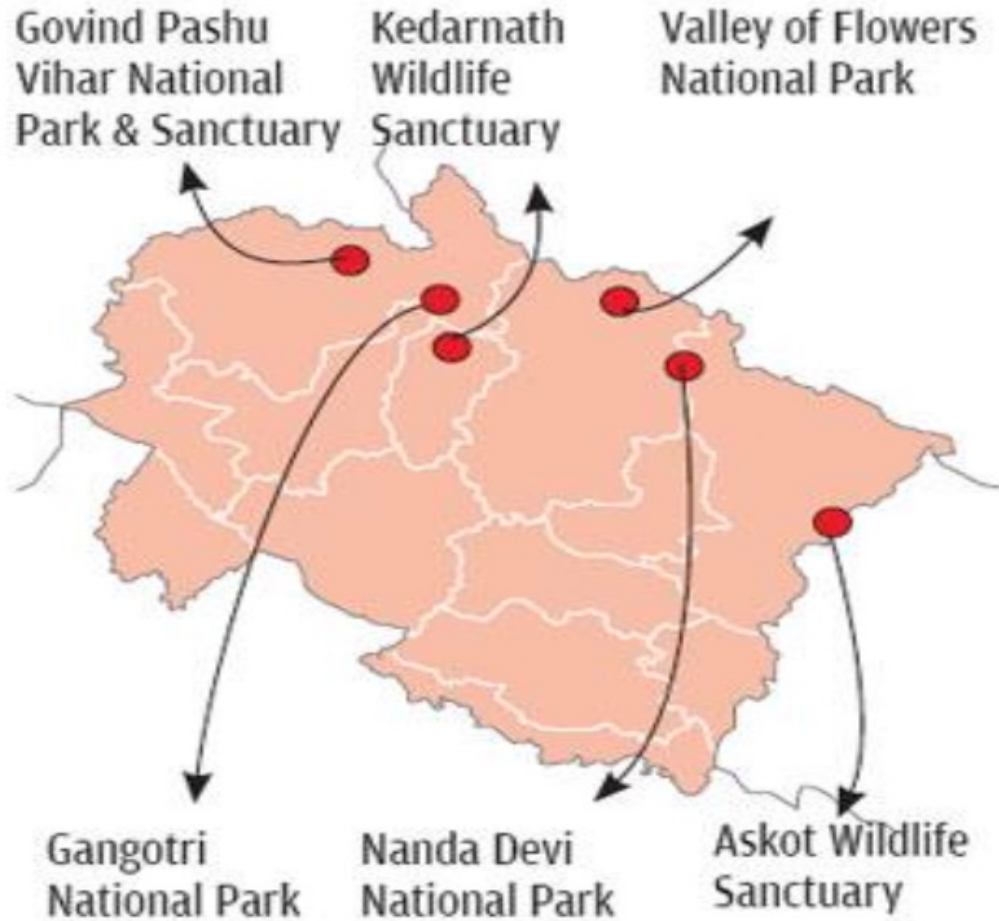
- Found in **Kashmir, Kumaon and Sikkim.**
- Only **males** produce the **musk.**
- **Threats include** poaching & illegal trade for its musk.
- State animal of **Uttarakhand.**
- **Endangered.**
- **Schedule I** of the Wild Life (Protection) Act, 1972.
- **Appendix I** of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).



Fall from grace

Over 1,000 musk deer used to roam the areas a few decades ago

● Protected areas where musk deer are found



Sangai

- Also known as **Sangai, Dancing Deer, Brow Antlered Deer, Eld's deer.**
- It is an **endemic** and endangered subspecies of Eld's deer found only in **Manipur** (Keibul Lamjao National Park)
- State animal of **Manipur.**
- It is also fondly called **Manipur's dancing deer** because of its delicate gait as it negotiates its way along the floating wetlands.



Sangai

- Sangai is listed as '**Endangered**' in the IUCN Red List of Threatened Species and **Schedule I** of the Indian Wild Life (Protection) Act, 1972.
- Sangai is also included in **Appendix 1** of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- Threats from **low genetic variability** (inbreeding depression - **reduced survival and fertility** of offspring of related individuals), disease susceptibility (immune system is compromised), etc.
- Relocation to Pumlun Pat??, a fresh-water lake second largest in the state after Loktak Lake



Chital

- The chital or cheetal also known as the spotted deer, chital deer and axis deer, is a **deer species native to the Indian subcontinent.**
- Wildlife Protection Act 1972: **Schedule III**
- IUCN Status: **Least Concern**



Stag



Doe

Both in [Kanha National Park](#) in [Madhya Pradesh](#)

Bear Species in India

- In India, we have 4 bear species which are, the **Himalayan black bear, Sloth bear, Sun bear and Himalayan brown bear.**

Sloth Bear

- **Nocturnal**
- Sloth bears are **omnivorous** and *survived on termites, ants and other social insects and fruits.*
- They cannot eat meat and by foraging on fruits are **the biggest seed dispersals.**
- Over the past few years there has been a **rise of incidents of human sloth bear conflict** in States like Gujarat, Rajasthan and Maharashtra among other states.
- **Wildlife SOS** has organisation **rescued and rehabilitated** over hundreds of performing dancing bears, thereby resolving a 400-year-old barbaric tradition (of dancing bears) while also providing **alternative livelihoods to the nomadic Kalander community members.**



On a walk: The sloth bear is endemic to the Indian subcontinent with small populations in Nepal and Sri Lanka. File photo



Sloth Bear

- Presently Sloth bears are only found in **the Indian subcontinent**, Nepal and a sub-species in Sri Lanka.
- About **90%** of the global Sloth Bear population is found in **India**.
- Sloth bears are found in all parts of the country **except Jammu and Kashmir and northeastern States**.
- IUCN Red List - **Vulnerable**.
- Wildlife protection Act (1972) - **Schedule I**.
- Convention on International Trade in Endangered Species (CITES) - **Appendix I**.

World Sloth Bear Day

- The **first World Sloth Bear Day** was observed on **October 12, 2022** to generate **awareness and strengthen conservation efforts** around the unique bear species endemic to the Indian subcontinent.
- It was proposed by **Wildlife SOS India**, an organisation involved in sloth bear conservation and protection for over two decades and the **IUCN-Species Survival Commission (SSC)** **sloth bear expert team** accepted and declared the day to be celebrated worldwide.

Himalayan Brown/Red Bear



- It is a **subspecies** of the **brown bear**.
- It is the **largest mammal** in the region.
- The bears are **omnivorous and hibernate** in dens during the winter.
- Its presence is in northern Afghanistan, Nepal, Tibet, north India, and north Pakistan.
- The animal, said to be 200 in number, is also found in **Himachal Pradesh and Uttarakhand** though it is fairly common in the **Kashmir and Kargil valleys**.

Himalayan Brown/Red Bear

- CITES - **Appendix I**
- Indian Wildlife (Protection) Act of 1972 - **Schedule I**
- While the brown bear as a species is classified as **Least Concern** by the IUCN, this subspecies is highly endangered and populations are dwindling.
- IUCN Status – **Critically Endangered**

Himalayan black bear

- The Himalayan black bear is a subspecies of the **Asian black bear** found in the Himalayas of **India, Bhutan, Nepal, China, and Pakistan.**
- The bears are **omnivorous and hibernate** in dens during the winter.
- Indian Wildlife (Protection) Act of 1972 - **Schedule II(Part 1)**
- IUCN Status – **Vulnerable**

Sun bear

- Also known as the honey bear for its love of honey, the Sun Bear is **the smallest, least well-known and one of the rarest** of all the bear species.
- **Southeast Asian tropical forests**, including tropical evergreen rainforest, montane forest and swamp habitat.
- Common in **eastern India**.
- **Smallest** of all bear species.
- Indian Wildlife (Protection) Act of 1972 - **Schedule I**
- IUCN Status – **Vulnerable**



Crocodiles in India

- Three species of crocodilians found in Indian subcontinent - **Mugger, Saltwater crocodiles and the Gharial.**

Gharial

- Gharials are **endemic to the Indian subcontinent**.
- Once found abundantly in all the major river systems of South Asia, the Gharial is **now extinct in Pakistan, Bangladesh, Burma and Bhutan**.
- Gharial is listed as '**Critically Endangered**' in the IUCN Red List of Endangered Species.



Gharial

- Population of Gharials are a **good indicator of clean river water**.
- In India small populations are present and increasing in the rivers of the **National Chambal Sanctuary**, Katarniaghat Wildlife Sanctuary in UP(Girwa river), Sone River Sanctuary in MP and the rainforest biome of Mahanadi in Satkosia Gorge Sanctuary, Orissa, where they apparently do not breed.
- NCS is located at tri-junction of **Rajasthan, Madhya Pradesh and Uttar Pradesh**.
- It is known for critically endangered gharials, the red-crowned roof turtle, and the endangered Ganges river dolphin.
- **Satkosia gorge of Mahanadi** which is the southernmost limit of gharials home range in India.
- Ghaghra, Gandak river, Ramganga river, etc.



Gharial

- In 1976, the population of **Gharial** had plummeted to less than **200 individuals**.
- Getting alarmed, the Government of India subsequently accorded the highest level of protection to Gharial by bringing it under **Schedule I of the Wild Life Protection Act, 1972**.
- In 1976, **Project Crocodile** was initiated with support from the United Nations Development Programme and Food and Agriculture Organization.
- The project included an **intensive captive rearing and breeding programme** intended to restock depleted Gharial habitats.
- The **gharial reintroduction** in the **Beas Conservation Reserve** is an ambitious programme of the Punjab government.
- The reptiles were commonly sighted in the Beas River till the 1960s but later became extinct.



Mugger

- It is found in **freshwater habitats** including, rivers, lakes, reservoirs, hill streams, village ponds and manmade tanks.
- It may also be found in **coastal saltwater lagoons**.
- This species is a **hole-nesting species**.
- Found throughout Indian subcontinent - India, Sri Lanka, Pakistan, Nepal and possibly from Bangladesh, its range extends westwards into eastern Iran.
- Also known as **Indian, Indus, Persian, Sindhu, marsh crocodile**.
- IUCN Status – **Vulnerable**
- It is already extinct in Bhutan and Myanmar.



Saltwater Crocodile

- It is the **largest of all living reptiles**.
- It is also known as the **estuarine crocodile, saltie, etc.**
- It is native to **saltwater habitats and brackish wetlands** from India's east coast across Southeast Asia and the Sundaic region to northern Australia and Micronesia.
- Found in **coastal areas of Odisha, WB and TN.**
- It is found in the **Sundarbans, Bhitarkanika National Park and the Andaman and Nicobar Islands.**
- It was **hunted for its skin** throughout its range up to the 1970s, and is threatened by illegal killing and habitat loss.
- It is regarded as **dangerous** for people who share the same environment.
- It listed as **least concern** by IUCN.



Crocodiles

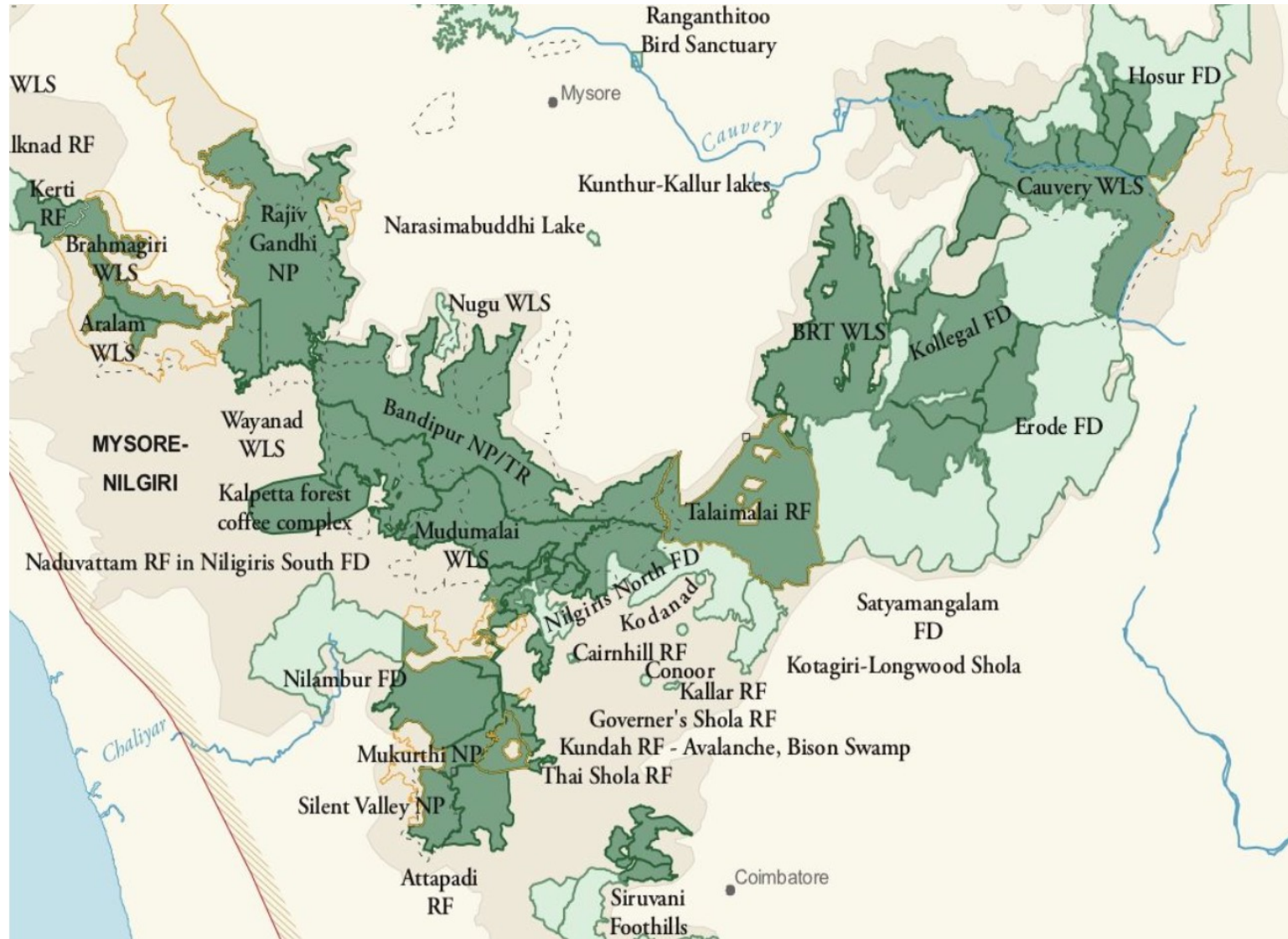
- All the three are listed on
 - **Appendix I** of CITES and
 - **Schedule I** of the WPA, 1972
 - Saltwater Crocodile populations of Australia, Indonesia and Papua New Guinea are included in **Appendix II of CITES**.
- All three crocodile species are found in **Odisha**.

Kuno National Park

- Kuno National Park is a national park and Wildlife Sanctuary in **Madhya Pradesh, India.**
- In 2018, it was given the status of a national park.
- It is part of the **Khathiar-Gir dry deciduous forests ecoregion.**
- Chital, sambar, nilgai, chousingha, chinkara, blackbuck and wild boar.

Mudumalai National Park

- Mudumalai National Park is a national park in the Nilgiri Mountains in **Tamil Nadu, south India**.
- The national park has been part of **Nilgiri Biosphere Reserve since 1986** and was declared a tiger reserve together with a buffer zone of 367.59 km² (141.93 sq mi) in 2007.
- It is drained by the **Moyar River** and several tributaries.
- **Vayals** - seasonally water logged grasslands of Mudumalai Tiger Reserve.
- **The Elephant whisperer's documentary** shot here.



Eravikulam National Park

- Eravikulam National Park is a 97 km² national park located along the **Western Ghats** in the Idukki and Ernakulam districts of **Kerala** in India.
- Eravikulam National Park (ENP), the natural habitat of **Nilgiri tahr in Munnar**, has a new attraction – a Fernarium set up inside the park.
- “**Neelakurinji**”, the flower that blooms once in twelve years grows here.
- The highest peak south of the Himalayas – the **Anamudi** is located here.
- A fernarium is a type of botanical garden or greenhouse that specializes in **cultivating and displaying various species of ferns**.





Neelakurinji

- The Ministry of Environment, Forest and Climate Change (MoEF) has listed Neelakurinji (*Strobilanthes kunthiana*) under **Schedule III of the Wildlife (Protection) Act, 1972**, including it on the list of protected plants.

Neelakurinji

- *Strobilanthes kunthiana* is a shrub that is found in the shola forests of the **Western Ghats in Kerala, Karnataka and Tamil Nadu.**
- The purplish-blue flower blossoms **only once in 12 years.**
- This also gave the **Nilgiri Mountains** range its name, from the Tamil language Kurinji (flower)
- This plant flowers from **September-October.**

Nilgiri Tahr/ Nilgiri Ibex

- Wild mountainous goat.
- Genetically more closely related to sheep.
- **State animal** of Tamil Nadu.
- **Endemic to Western Ghats** from the Nilgiris to Kanyakumari.
- Confined to a narrow belt of higher elevation of **Shola Forest**.
- They are listed as **endangered species** under IUCN list.
- **Schedule I** of the Wildlife Protection Act, 1972.



Nilgiri Tahr/ Nilgiri Ibex

- It is found in **Eravikulam National Park in Kerala (largest population)**, Adimali forest (Idukki), Silent Valley National Park, Mundanthurai Tiger Reserve.
- **Mukurthi National Park (MNP)** is a protected area located in the western corner of the Nilgiris Plateau west of Ootacamund hill station in the northwest corner of Tamil Nadu state in the Western Ghats mountain range of South India.
- The park was created to protect its **keystone species, the Nilgiri tahr.**
- It is a part of **Nilgiri Biosphere Reserve**, India's first International Biosphere Reserve.



Himalayan tahr

- The Himalayan tahr (*Hemitragus jemlahicus*) is a large even-toed ungulate native to the **Himalayas in southern Tibet, northern India, western Bhutan and Nepal.**
- It is listed as **Near Threatened** on the IUCN Red List.



Protected Areas of Assam

- **Assam protected areas** includes -
- **7 national parks** (2.51% of Assam's area) - Dibru Saikhowa, Orang, Nameri, **Kaziranga, Manas** + Dihing Patkai and Raimona
- **16 wildlife sanctuaries** (1.88% of Assam's area)
- It also includes -
- 2 biosphere reserves - **Dibru Saikhowa, Manas**
- 2 Natural world heritage sites - **Kaziranga, Manas**
- 1 Ramsar site - **Deepar Beel**
- 4 Tiger reserves - **Orang, Nameri, Kaziranga, Manas**
- **5 Elephant reserves**
- **46 Important bird areas**



Kaziranga

- It was declared as a **National Park** in 1974.
- It has been declared a **Tiger Reserve** since 2007.
- It has a total tiger reserve area of 1,030 sq km with a core area of 430 sq. km.
- It was declared a **UNESCO World Heritage Site** in 1985.
- It is recognized as an **Important Bird Area** by Bird Life International.



Kaziranga

- It is situated on the bank of **river Brahmaputra**.
- Kaziranga is a vast expanse of tall elephant grass, marshland, and dense tropical moist broadleaf forests, crisscrossed by **four major rivers, including the Brahmaputra, Diphlu, Mora Diphlu and Mora Dhansiri**, and the park includes numerous small bodies of water.
- It is popularly known as the home of the “**Big Five**”.
- One Horned Rhinoceroses, Tigers, Asiatic wild buffalos, Eastern Swamp Deer, and Elephant.
- It hosts **two-thirds of the world's Great One-horned rhinoceros** (68% of worldwide population).
- It has one of the highest densities of Tigers in the wild in the world and also houses almost entire population of the Eastern Swamp Deer.



Kaziranga



Manas

- **Manas is a**
- National park
- Natural World Heritage site
- Tiger reserve
- An elephant reserve
- Biosphere reserve (Not under MAB of UNESCO)



Manas

- Located in the Himalayan foothills, it is **contiguous with the Royal Manas National Park** in Bhutan.
- The name of the park is originated from the **Manas River**, which is named after the serpent goddess Mansa.
- The Manas river is a **major tributary of Brahmaputra River**, which passes through the heart of the national park.
- It splits into **two separate rivers**, the Beki and Bholkaduba as it reaches the plains.
- The **Manas river** also serves as **an international border** dividing **India and Bhutan**.



Manas

- The park is well known for species of **rare and endangered wildlife** that are not found anywhere else in the world like the **Assam roofed turtle, hispid hare, golden langur and pygmy hog.**



Orang



Orang

- It is located on the **north bank of the Brahmaputra River**.
- It is also known as the **mini Kaziranga National Park** since the two parks have a similar landscape made up of marshes, streams and grasslands.
- The park has a rich flora and fauna, including **great Indian one-horned rhinoceros, pygmy hog, elephants, wild buffalo and tigers**.
- It is the 49th TR in the country with the **smallest core** of 78.28 sq. km.
- Tiger reserves in Assam fall in the **Terai arc landscape** sustains grassland and a good prey base.








Nameri

- Nameri shares its **northern boundary** with the **Pakhui Wildlife Sanctuary of Arunachal Pradesh**.
- The river **Jia-Bhoro**li is the lifeline of Nameri, which flows along the southern boundary of the park from northwest to southeast.
- In the east, the river **Bor-Dikorai** is a tributary of river Jia-Bhoro



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