



SPECIES IN NEWS FOR UPSC PRELIMS 2020

Living Root Bridge in Meghalaya

What are the Jing Kieng Jri or Living Root Bridges?

The living root bridges are aerial bridges built by weaving and manipulating the roots of the Indian Rubber Tree.

They are handmade by the Khasi and Jaintia tribes.

They serve as a bridge for crossing streams and rivers for generations in Meghalaya.

Riwai Root Bridge and Umshiang Double Decker Bridge are centres of tourism growth.

Why only Indian Rubber Trees?

Found in abundance in Meghalaya.

Roots of Indian Rubber Tree are:

Elastic

Can easily combine

Can grow in rough, rocky soils

‘Paddy Frog’ – Aishani

Why in news?

A team of scientists have discovered a new species of ‘paddy frog’ from Northeast India, specifically in Assam.

About the new frog species:

The frog belongs to the microhylid genus Micryletta, a group of narrow-mouthed frogs which is more commonly known as paddy frogs.



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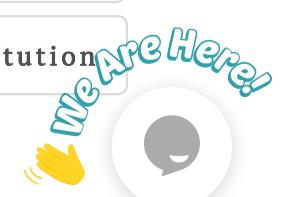
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The new species has been named ‘aishani’, derived from the Sanskrit word ‘aishani’ or aisani meaning Northeast.

The new species is likely to be more widely distributed in Northeast India, particularly the Indo-Burma biodiversity hotspot region that lies south of River Brahmaputra.

Characteristics:

This new species strikingly differs from other narrow- mouthed paddy frogs by characteristics.

Micryletta aishani is currently endemic to Northeast India but it could very well be present in neighbouring regions of Bangladesh and Myanmar.

The reddish-brown colouration on back, prominent dark streaks, absence of web on its feet etc.



How *Micryletta aishani* is different from other Frog species?

- Unlike most frogs that breed during the monsoon, *Micryletta aishani*, breeds before the onset of monsoon and then go into hiding for the rest of the year.
- *Micryletta aishani*, are generally found very close to human settlements.
- Aishani differs from other narrow-mouthed paddy frogs by characteristics such as reddish-brown coloration on back, prominent dark streaks and ash-grey mottling on the lateral sides, the shape of the snout, and absence of web on its feet.
- *Micryletta aishani* is the fifth species of the genus of paddy frogs.

Malabar Tree Toad

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A Bengaluru-based non-profit is working to train and equip residents of villages in the Western Ghats stretching from Maharashtra to Tamil Nadu for mapping the range of an extremely rare species of Malabar Tree toad.

Malabar tree toad

- The Malabar tree toad (*Pedostibes tuberculosus*), or warty Asian tree toad, is a species of toad found in forests along the Western Ghats of India south of Goa.
- It is a small species and is found in wet tree hollows or leaf bases containing water.
- It is an endangered species and spends most of its life on trees, coming to the ground only during the first monsoon showers to mate.

Spahaerotheca Magadha/Magadha Burrowing Frog

News – A new species of burrowing frog has been confirmed in Jharkhand's Chhota Nagpur Plateau.

- The frog was first discovered in 2015.
- The frog is the newest species of the genus *Spahaerotheca*.
- It has been named as **Spahaerotheca Magadha** and will be known by the common name of '**Magadha Burrowing Frog**'.
- The frog is endemic to agricultural areas in Nawadih and Joungi village of Jharkhand's Koderma district.

Brown Blotched Bengal Tree Frog

A new species of tree frog, discovered in West Bengal, has been named **Brown Blotched Bengal Tree Frog** (*Polypedates bengalensis*) due to a series of six to nine dark brown blotches present on its body.





- It is a mid-sized tree frog and is the 26th species under the genus *Polypedates*.
- *Polypedates* is a genus of tree frog found throughout South and Southeast Asia.

Consider the following statements with respect to *Brown Blotched Bengal Tree Frog*

1. It is commonly found in the deep jungles of the state of West Bengal.
2. It belonged to the genus Polypedates and its body colour is yellowish-brown to greenish-brown.

Which of the statement(s) given above is/are *incorrect*?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

- *Bengal's cities yield new species of tree frog.*
- These tree frogs were found **commonly** in **urban habitats** of West Bengal.
- Specimens were not discovered from deep jungles but from residential areas in two districts of West Bengal.
- It was established that the mid-sized tree frog as the 26th species under the genus *Polypedates*, found throughout south and southeast Asia.
- The new species has been named Brown Blotched Bengal Tree Frog (*Polypedates bengalensis*) from the series of six to nine dark brown blotches that extend laterally from behind the frog's eye to the vent.
- The frog's body colour is **yellowish-brown to greenish-brown**.

‘Maveli’ Frog

Researchers have found that the **Purple frog (Nasikabatrachus sahyadrensis)**, lives almost its entire life in underground tunnels, comes out to surface for a single day in a year to breed and lays its eggs, and returns to the earth’s deepest layers.



- The bloated frog is characterised by a protruding snout and powerful hind legs.
- **Mahabali, or Maveli**, was a mythological king who ruled over the region of Kerala. The frog is compared with the Maveli due to their similar characteristics that's why given the name "**Maveli**".
- It is listed as **endangered** on the red list of the **International Union for Conservation of Nature (IUCN)**.
- It could soon be designated as **Kerala's state amphibian**.

Significance

- It's a unique species and **endemic to this part of the southern Western Ghats** and cannot be found anywhere else.
- Discovered for the first time in 2003 in the jungles of Kerala, the species sparks feverish imagination among herpetologists worldwide for a number of reasons:
- They believe that the species should be rightly called a '**living fossil**' as its evolutionary roots suggest it could have **shared space with dinosaurs** going back almost 70 million years ago.
- It was able to survive such a long period in time, points to its tenacity and could help scientists understand how its population may have evolved and learned to overcome the challenges of shifting land masses.

Consider the following statements with respect to *Microhyla eos* sometimes seen in the news recently

1. It is a new species of frog found in Assam.
2. Microhyla are a group of narrow-mouthed frogs that is primarily and widely distributed in Western and Southern America.

Which of the statement(s) given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : d



- A team of scientists from the University of Delhi and Zoological Survey of India (ZSI) discovered a new species of frog in **Arunachal Pradesh** and named it ***Microhyla eos***, according to a statement.
- ***Microhyla*** are a group of narrow-mouthed frogs (subfamily ***Microhylinae***) that is primarily and widely distributed in Asia.
- Commonly known as ‘Rice Frogs’ or ‘Chorus Frogs’, the genus currently comprises of 49 recognised species.
- The new frog was discovered from riparian habitats in a primary evergreen forest in the **Namdapha Tiger Reserve** of the state, which is also the ***eastern-most protected area in the country***.

Assam Roofed Turtle

The Assam Roofed Turtle (**Pangshura sylhetensis**) is a **small freshwater turtle**.



- **Habitat:** Primarily in running waters in the hills of **northeastern India** and northeastern and southeastern **Bangladesh**.
- **Threatened by**
 - Logging of primary forests that causes siltation,
 - Capture for food and the pet trade, and
 - Incidental capture in fishing gear.
- **Protection Status**
- **IUCN:** Endangered
- **CITES:** Appendix II.
- **India’s Wildlife Protection Act, 1972 :** Protected under Schedule I

Higher Protection to Star Tortoise and Otters

India’s proposal to upgrade the protection status of Star Tortoise, the Smooth-coated Otter & Small-clawed Otter has been approved in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

- The species are now listed under Appendix I of the CITES & enjoy highest degree of protection.
- Henceforth, complete International ban will be enforced on their trade, as an effort to boost their numbers.
- The upgradation was approved at **Conference of Parties (COP18)** held at Geneva.
- According to Deputy Director, **Wildlife Crime Control Bureau**, “90% of the trade of **Star Tortoise** occurs as part of the International pet market.”

- If their exploitation had continued at a similar pace or had expanded, a decline of greater than 30% was predicted by 2025.

Manouria impressa: Arunachal Pradesh

A tortoise named ‘Manouria impressa’ has been discovered in Arunachal Pradesh. Manouria is a genus of tortoises.



- Manouria impressa is one of the only four species of forest-dwelling tortoise occurring in Southeast Asia.
- This is the smaller of two species of the genus Manouria (Manouria oyamai and Manouria punjabensis), the other being the larger Asian Giant Tortoise (Manouria emys).
- Previously, the tortoise was believed to be restricted to western Myanmar, along with pockets of habitat in Thailand, Laos, Vietnam, Cambodia, and southern China, and south through Peninsular Malaysia.
- The species was last found in Gwa in Myanmar.
- The species is **threatened by poaching** primarily for traditional medicine and pet trade.
- It is **listed on CITES Appendix II**, and has been classified as **Vulnerable by the IUCN Red List**.

Asian Forest Tortoise

- Asian forest tortoise (Manouria emys), also known as Asian brown tortoise, is a species of tortoise found in India (Assam), Bangladesh, Burma (or Myanmar), Thailand, Malaysia and Indonesia (Sumatra, Borneo).
- It is the largest tortoise in mainland Asia.
- This is a relatively rare turtle, listed on CITES Appendix II, and classified as Endangered by the IUCN Red List.

Olive Ridley Turtles

Olive Ridley turtles have not yet arrived for mass nesting at Odisha’s Rushikulya rookery and Devi river mouth.

- The reasons are not fully understood yet. Although it is held that climatic parameters, as well as beach conditions, decide mass nesting at a coast.
- However, Mass nesting has already occurred at the Gahirmatha coast (Bhitarkanika National Park) of the Odisha. Mass nesting of Olive Ridleys can occur up to any time till the end of April.

Rushikulya River

- Rushikulya rookery coast in Ganjam district of Odisha.
- The Rushikulya River is one of the major rivers in the state of Odisha and covers entire catchment area in the districts of Kandhamal and Ganjam district of Odisha

Devi River

- Devi river is one of the principal distributaries of Mahanadhi. It flows through Jagatsinghpur district and Puri district across Odisha state in India and joins the Bay of Bengal.

Olive Ridley

- The 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.
- They are best known for their unique mass nesting called **Arribada**, where thousands of females come together on the same beach to lay eggs.
- The species is listed as **Vulnerable** in the IUCN Red List, Appendix 1 in CITES, and **Schedule 1** in Wildlife Protection Act, 1972.
- Olive-ridleys face serious threats across their migratory route, habitat and nesting beaches, due to human activities such as **unfriendly turtle fishing practices, development, and exploitation of nesting beaches for ports, and tourist centers.**

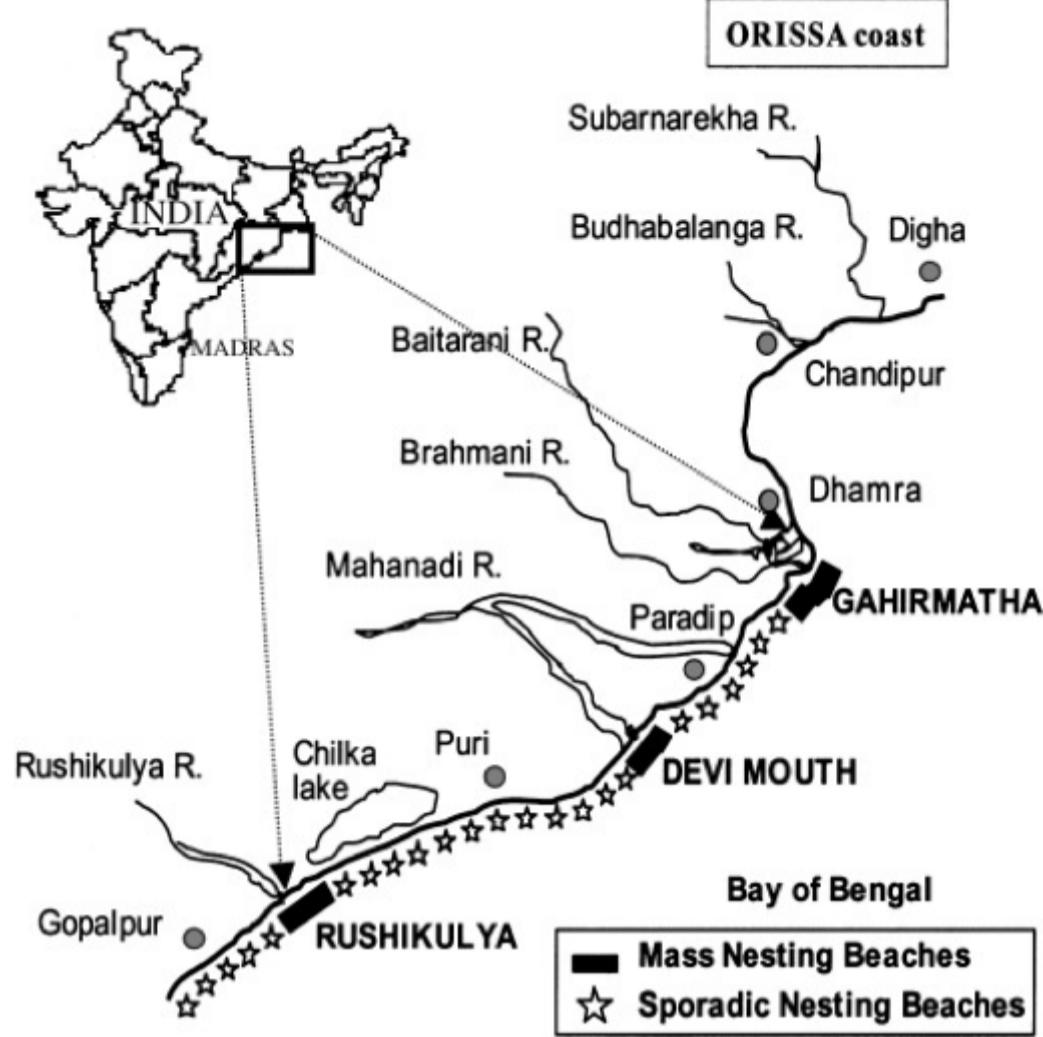
Bhitarkanika National Park

- Bhitarkanika National Park is one of Odisha's finest biodiversity hotspots and is famous for its **mangroves, migratory birds, turtles, estuarine crocodiles, and countless creeks.**
- The wetland is represented by 3 Protected Areas, **the Bhitarkanika National Park, the Bhitarkanika Wildlife Sanctuary and the Gahirmatha Marine Sanctuary.**
- Bhitarkanika is located in the estuary of **Brahmani, Baitarani, Dhamra, and Mahanadi river systems.**
- It is said to house 70% of the country's estuarine or saltwater crocodiles, conservation of which was started way back in 1975.

1. Nesting sites in India

- Hope Island of Coringa Wildlife Sanctuary (Andhra Pradesh)
- Gahirmatha beach (Odisha)
- Astaranga coast(Odisha)
- Beach of Rushikulya River
- Devi River mouth





Otters

Why in news?

India's proposal to upgrade the protection of the smooth-coated and small-clawed otters in CITES have been approved.

They are found in areas where freshwater is plentiful, preferring shallow and placid waters.

About Asian Short Clawed Otter:

They are the smallest of all the Otter species.

Its name is derived from the very small claws on its fingers.

They are found across wetlands of India and Southeast Asia.

They are amphibious and has two layers of dense fur and a layer of body fat to keep them warm in the water.

IUCN status: Vulnerable

About Smooth-Coated Otter:

They are the largest of Asia's otters.

They are characterized by a very smooth, sleek pelage (the fur, hair, or wool of a mammal).

Major threats to this otter are loss of wetland habitats due to the construction of large-scale hydroelectric projects, conversion of wetlands for settlements

Agriculture, poaching for pelt and other body parts that are believed to possess therapeutic properties.

IUCN status: Vulnerable

India's newest pit viper found in Arunachal Pradesh

1. A team of herpetologists have described a new species of reddish-brown pit viper which has been found in a forest in West Kameng district of Arunachal Pradesh. The discovery has been published in the March-April volume of the Russian Journal of Herpetology.
2. It has been named as *Trimeresurus arunachalensis*. It is the second serpent to have been discovered in Arunachal Pradesh after the non-venomous crying keelback in the Lepa-Rada district in 2018. The new species has made Arunachal Pradesh the only Indian state to have a pit viper named after it.
3. India had four brown pit vipers before the Arunachal Pradesh discovery. These are Malabar, horseshoe, hump-nosed and Himalayan pit vipers
4. Pit vipers are a subfamily of venomous vipers found in Eurasia and the Americas. They are distinguished by the presence of a heat-sensing pit organ located between the eye and the nostril on both sides of the head.

Trachischium Aptei Snake :

Why in News

Recently, a new species of **non-venomous burrowing snake**, named **Trachischium apteii** has been found in the forested area of the **Talley Valley Wildlife Sanctuary** near the town of **Ziro** in Arunachal Pradesh.

- It belongs to a group of fossorial (adapted to digging) snakes that live mostly underground, and surface mainly during or after a heavy monsoon shower.

Anandan's day gecko adds to biodiversity of the Western Ghats

The recently discovered *Cnemaspis anandani* (Anandan's day gecko), is the most recent day gecko found in the Nilgiris and is endemic to the Western Ghats.

About the newly discover Anandan's day gecko



- It was found in the areas surrounding a forest in **Kotagiri, Nilgiris**.
- What makes this discovery significant is that this species of day gecko was not found in inaccessible forests, but **near human habitations**.

Threat

- Researchers are concerned that the Anandan's day gecko, like many other species, some of which may still be undiscovered in the Western Ghats, faces the threat of extinction.
- While one threat may be from natural predators such as calotes (lizards), the more serious threat could be due to anthropogenic factors.

What are Day Gekos?

- Day geckos are a common name of a group of over 60 species of small lizards that vary in size, appearance, and behaviors.
- They belong to the genus *Phelsuma* and family *Gekkonidae*.

Scaly foot snail: 1st to be declared endangered by deep-sea mining

International Union for Conservation of Nature (IUCN) recently added ocean-floor-dwelling **Scaly- Foot Snail (*Chrysomallon squamiferum*)** as endangered species in its updated Red List (IUCN Red List or Red Data List). This makes Scaly- Foot Snail the ***first species to be officially declared threatened due to deep-sea mining***.

About Scaly- Foot Snail

- It is a species of deep-sea hydrothermal-vent snail, a marine gastropod mollusc in the family *Peltospiridae*.
- Its scientific name is *Chrysomallon squamiferum*. It is found 2,400-2,900 metres deep in ocean.
- **Habitat:** It is only found at three hydrothermal vents on deep-ocean ridges in Indian Ocean, east of Madagascar at depths of up to 2,900 metres.
- **Threat:** It is facing threat due to its habitat destruction by deepsea mining. Two of its habituated hydrothermal vents are currently under mining exploration licences.
- **Significance of IUCN conservation status:** It will help to protect them from the surging interest in seafloor mining in the oceans. It will dissuade investors from funding deep-sea mining projects that could harm the species.

Tamil Yeoman:

 Tamil Nadu has declared the Tamil Yeoman butterfly species (endemic to western ghats) as the **state butterfly**.

- Tamil Yeoman (*Cirrochroa thais*) is uniformly orange in colour with a dark brown outer ring.



- Also known as **tamil maravan** which means warrior.
- Tamil Yeoman butterfly species moves in groups in **large numbers**, but at few places and are found mainly in hilly areas.
- Butterflies are significant for environment as they play the main role in **pollination and food chain**.
- For many other species like birds and reptiles, butterflies become a prey.
- Tamil Nadu is the **fifth state** in the country to announce its state butterfly and **Maharashtra** was the first in the country to announce its state butterfly (**Blue Mormon**) followed by Uttarakhand (**Common Peacock**), Karnataka (**the Southern Birdwing**) and Kerala (**Malabar banded peacock or buddha butterfly**).

Rare Tarantula Sighted in Tamil Nadu

The spider belonging to the Genus *Poecilotheria*, commonly known as the **Peacock Parachute Spider** or **Gooty Tarantula** was spotted in the **Pakkamalai Reserve Forests** in Villupuram District, **Tamil Nadu**.

- **Peacock Parachute Spider (Gooty Tarantula)**





- The International Union for Conservation of Nature (IUCN) has categorised it as **Critically Endangered**.
- It is **endemic to India**.
- The **known habitat** of this species is in the **Eastern Ghats especially degraded forests near Nandyal in Andhra Pradesh**.
- Species of this genus can be **identified** based on the **banding patterns on the underside of the legs**.
- Tarantulas are **biological pest controllers** and there is a huge demand for them by collectors in the pet trade. There is an urgent need to protect them.

Declining Hangul (Kashmiri Stag) Population:

Subspecies of elk native to India (endemic to Jammu and Kashmir)

Habitat — dense riverine forests in the high valleys and mountains of the Kashmir Valley and northern Chamba district in Himachal Pradesh.

Protected in Dachigam National Park(stands for ‘ten villages’)

- **Zabarwan Range of the Western Himalayas**
- Most of this coniferous forest consists of broad leaf species. Interspersed between these are alpine pastures, meadows, waterfalls and scrub vegetation with deep gullies, locally known as Nars
- River — **Dagwan river** known for trout fish
- National Park occupies almost half of the catchment zone of the famous **Dal Lake** and still plays a crucial role in supplying clean drinking water to the inhabitants of Srinagar
- Wildlife — Leopard, Common Palm Civet, Jackal, Red Fox, Yellow-throated Marten and Himalayan Weasel.

Threats Faced:

- habitat destruction
- over-grazing by domestic livestock
- Poaching
- Turmoil in Kashmir

Conservation efforts

- Included in Schedule- I (provides absolute protection – offences under these are prescribed the highest penalties) of the Indian Wildlife (Protection) Act, 1972 and Jammu & Kashmir Wildlife (Protection) Act, 1978
- listed among the top fifteen species of high conservation priority by the Government of India
- Project Hangul

Grizzled Giant Squirrel

Why in news?

Researchers have sighted nests of the Grizzled Giant Squirrel at Pakkamalai Reserve Forests in the Eastern Ghats.

About Grizzled Giant Squirrel:

Grizzled Giant Squirrel is the smallest of the giant squirrels found in the Indian subcontinent.

They are named for the white flecks of hair that cover their bodies, giving them a grizzled look.

It has a good vision but its sense of hearing is relatively poor.

Conservation Status:

Listed under Schedule I of the Wildlife Protection Act, 1972.

IUCN status: Near-threatened

Key Facts:

The Grizzled Squirrel Wildlife Sanctuary, also known as Srivilliputhur Wildlife Sanctuary, is located in Tamil Nadu. It borders the Periyar Tiger Reserve which is located in Kerala.

It is also found in an area ranging from Chinnar Wildlife Sanctuary in Kerala to Anamalai Tiger Reserve and Palani hills in Tamil Nadu.

Consider the following statements with respect to *Grizzled Giant Squirrel*

1. It is usually found in the Eastern Himalayas especially in the state of Arunachal Pradesh.
2. Grizzled Squirrel Wildlife Sanctuary is located in the state of Tamilnadu.

Which of the statement(s) given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2

- d. Neither 1 nor 2

Answer : b

- It is an endangered species listed under **Schedule I** of the Wildlife Protection Act, 1972.
- It has been categorised as ***near threatened*** by the IUCN Red List and listed under ***Schedule II of CITES***.
- The species is usually known to nest in the **Western Ghats** in **Southern India** ranging from Chinnar Wildlife sanctuary in Kerala to Anamalai Tiger Reserve and Palani hills in Tamil Nadu.
- For the first time, researchers have sighted nests of the grizzled giant squirrel at Pakkamalai Reserve Forests near Gingee in the Eastern Ghats region of Tamil Nadu.
- ***Grizzled Squirrel Wildlife Sanctuary*** is located in Shenbagathoppu, Srivilliputtur, **Tamil Nadu**, India.

Color Morphs of Wild Cat

Indian scientists from the Zoological Society of London (ZSL), an international conservation charity, and University College London (UCL) have discovered **six color morphs** of the golden cat in Dibang Valley of Arunachal Pradesh.

- Six color morphs include **tightly-rosetted, cinnamon, melanistic, gray, golden, and ocelot types**.

Color morphs



- Colour morphs are basically occurrence of **two or more discrete colour forms** of the animal within a population. for example- Black panther is a color morph of the common leopard.
- Colour morphs are thought to arise from **random genetic mutations** and take hold in the population through **natural selection**.
- Dibang Valley hosts the **world's most diverse range** of colour morphs of a wild cat species ever reported in one site.

Significance

- Understanding the **evolutionary theory of color morphs** could help scientists to understand how quickly species can **adapt and evolve** to changing environments.



- This would help scientists to gain better insight into the **resilience capacity of the species to climate change or habitat degradation and destruction**, which is also the reason for decreasing population of these species.
- Color Morphs could help in **conservation of Asiatic Golden Cats**, as it provides **Ecological Benefits** to cats like:
- occupying **different habitats** at different elevations from wet tropical lowland forests to alpine scrubs .
- Providing **camouflage** while preying on pheasants and rabbits.

Asiatic Golden Cat

- Asiatic Golden Cat is a medium-sized wild cat native to **north-eastern Indian subcontinent**
- The **Asiatic golden cat** (*Catopuma temminckii*) is listed as **near threatened** on the International Union for Conservation of Nature's Red List of threatened species.
- Asiatic cats are mentioned in Wildlife protection Act's schedule 1.
- Wild cats are also included in Convention on International Trade in Endangered Species of Wild Fauna and Flora(CITES) appendix 1

Nilgiri Tahr

Recently, Nilgiri tahr's population has increased from 568 in 2018 to 612 in 2019 in the **Mukurthi National Park, Tamil Nadu**.

- The recent increase has favoured a healthy sex ratio i.e.slightly skewed in favour of female goats.
- There has been almost **27% increase in the population of the tahr in the Nilgiris over the last three years**.
- Factors responsible for maintaining an increase in the population of Nilgiri Tahr are:
- Keeping the national park closed to tourists and free from poaching
- Fighting the spread of invasive flora.

Nilgiri Tahr





- Nilgiri Tahr is also known as Nilgiri Ibex.
- It has been listed as “**Endangered**” by IUCN.
- It has been listed under **Schedule 1 of the Wildlife (Protection) Act, 1972** which provides absolute protection and offences under these are prescribed the highest penalties
- The **Adult males** of Nilgiri Tahr species develop a light grey area or “**saddle**” on their backs and are hence called “**Saddlebacks**”
- It is the **state animal** of Tamil Nadu.
- It is found in **open montane grassland** habitat of rain forests ecoregion.
- It is **endemic to the Nilgiri Hills and the southern portion of the Western Ghats** in
 - Tamil Nadu
 - Kerala
- Threats:
 - Habitat loss (mainly from domestic livestock and spread of invasive plants)
 - Poaching,
 - Populations of these animals are small and isolated, making them vulnerable to local extinction,
 - Climate Change

Mukurthi National Park

- It is a protected area located in the northwest corner of Tamil Nadu in the Western Ghats.
- The park was created to protect its **keystone species**, the Nilgiri Tahr.
- The park is characterised by montane grasslands and shrublands interspersed with sholas in a high altitude area of high rainfall, near-freezing temperatures and high winds.
- It is also home to an array of endangered wildlife, including royal Bengal tiger and Asian elephant, but its main mammal attraction is the Nilgiri tahr.
- The park was previously known as Nilgiri Tahr National Park.



- It is part of **Nilgiri Biosphere Reserve** along with Mudumalai Wildlife Sanctuary, Bandipur National Park, Nagarhole National Park, Wayanad Wildlife Sanctuary and Silent Valley.

Bengal tigers may not survive climate change

Key findings of the report:

Vulnerable: The cats are among 500,000 land species whose survival is in question because of threats to their natural habitats.

Main Causes: Climate change and rising sea levels.

Threats to Sundarbans: 70% of Sunderbans now is just a few feet above sea level, and grave changes are in store for the region.

Subsequent impact on tigers: Changes wrought by a warming planet will be “enough to decimate” the few hundred or so Bengal tigers remaining there. By 2070, there will be no suitable tiger habitats remaining in the Bangladesh Sundarbans.

Threats to tiger population: Since the early 1900s, **habitat loss, hunting and the illegal trade of animal parts** have decimated the global population of tigers from around 100,000 to fewer than 4,000.

In the Bangladesh Sundarbans, a spike in extreme weather events and changing vegetation will further reduce the population. And as the Sundarbans flood, confrontations may grow between humans and tigers as the animals stray outside their habitat in search of new land.

Background:

The Sundarbans, 10,000 square kilometres of marshy land in Bangladesh and India, hosts the world’s largest mangrove forest and a rich ecosystem supporting several hundred animal species, including the Bengal tiger.

Concerns:

The latest finding adds to existing studies that offered similarly grim predictions for wildlife in the Sundarbans.

In 2010, **the World Wide Fund for Nature** projected that a sea level rise of 11 inches could reduce the number of tigers in the Sundarbans by 96% within a few decades.

Beyond sea level rise account for 5.4% to 11.3% of the projected habitat loss in 2050 and 2070.

In October, a landmark report from the UN found that ***if greenhouse gas emissions continued at the current rate, the atmosphere would warm as much 1.5C above preindustrial levels by 2040.*** That increase would have

significant consequences for food chains, coral reefs and flood-prone areas. It may also disproportionately affect poorer, densely packed countries like Bangladesh, which is home to 160 million people.

In an analysis of decades of tidal records, scientists found that ***high tides were rising much faster than the global average in Bangladesh***, which sits in the Ganges Delta, a complex network of rivers and streams.

About Sundarbans:

- The Sundarbans comprises hundreds of islands and a network of rivers, tributaries and creeks in the delta of the Ganga and the Brahmaputra at the mouth of the Bay of Bengal in India and Bangladesh.
- Located on the southwestern part of the delta, the ***Indian Sundarban constitutes over 60% of the country's total mangrove forest area.***
- It is the ***27th Ramsar Site in India***, and with an area of 4,23,000 hectares is now the largest protected wetland in the country.
- The Indian Sundarban, also ***a UNESCO world heritage site***, is home to the Royal Bengal Tiger. It is also home to a large number of “rare and globally threatened species, such as the critically endangered northern river terrapin (Batagur baska), the endangered Irrawaddy dolphin (Orcaella brevirostris), and the vulnerable fishing cat (Prionailurus viverrinus).”
- Two of the world’s four horseshoe crab species, and eight of India’s 12 species of kingfisher are also found here. Recent studies claim that the Indian Sundarban is home to 2,626 faunal species and 90% of the country’s mangrove varieties.

White Tiger

- White tigers in India are nothing but a pigmentation variant of the Bengal tiger.
- In India, white tigers are predominantly found in **Rewa**, Madhya Pradesh.
- In 2016, world’s first **White Tiger Safari** was inaugurated at Mukundpur in **Satna district** of Madhya Pradesh.
- The first white tiger in Madhya Pradesh’s was spotted in Vindhya region in 1915. However, the rare breed of the big cat spotted for the first time died in 1920.
- In 1951, a white tiger cub named Mohan was captured by Rewa Maharaja Martand Singh.
- Later the tiger cub became the progenitor of all known white tigers in the world after the Maharaja arranged for its breeding.
- They have been reported in the wild from time to time in the Indian states of Assam, West Bengal, Bihar.
- These tigers have white fur because of the lack of the pigment pheomelanin, which is found in Bengal tigers with orange colour fur.

Snow leopard (ounce)

Vulnerable – IUCN



- State animal of Himachal Pradesh

- Native to the mountain ranges of Central and South Asia
- **Habitat**
- Inhabits alpine and subalpine zones at elevations from 3,000 to 4,500 m (9,800 to 14,800 ft), ranging from western Afghanistan to Mongolia and western China (Himalaya and Tibetan Plateau)
- India — Jammu and Kashmir, Uttarakhand, Himachal Pradesh, Sikkim, and Arunachal Pradesh
- **Threats**
- Habitat loss and degradation
- Decline of the cats' large mammal prey
- Poaching — body parts used for traditional Chinese medicine
- **Protected areas**
- Hemis National Park — Jammu and Kashmir
- Dibang Wildlife Sanctuary
- Nanda Devi National Park — Uttarakhand
- **Global Snow Leopard Forum, 2013**
- 12 countries encompassing the snow leopard's range (Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyz Republic, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan)
- ***Bishkek Declaration*** — To protect the species and its environment
- **Global Snow Leopard and Eco-system Protection Program**
- joint initiative of range country governments, international agencies, civil society, and the private sector
- Goal — secure the long-term survival of the snow leopard in its natural ecosystem.
- ***2015 — International Year of the Snow Leopard***

Other conservation efforts launched by India are:

- **Project Snow Leopard (PSL)** : It promotes an inclusive and participatory approach to conservation that fully involves local communities.
- **SECURE Himalaya: Global Environment Facility (GEF)-United Nations Development Programme (UNDP)** funded the project on conservation of high altitude biodiversity and reducing the dependency of local communities on the natural ecosystem. This project is now operational in four snow leopard range states, namely, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, and Sikkim.

Two New Species of Eels

Recently, two new species of Marine Eels have been discovered by Estuarine Biology Regional Centre (EBRC) of the Zoological Survey of India (ZSI).

- One of them, a short brown un-patterned Moray Eel, named **Gymnothorax andamanensis**, is found near the south Andaman coast.

- 10 species of short brown unpatterned moray eels have been discovered in the world, out of which **two were found in Indian waters**.
- Another is a new white-spotted Moray Eel, now named **Gymnothorax smithi**.

Moray Eels

- Moray Eels occur in **all tropical and subtropical seas**, they live in shallow water among reefs and rocks.
- They are known for **two types of jaws**: one is regular (oral) jaws with big teeth and the second jaw is called the pharyngeal jaw (which drags prey inside the eels stomach).
- Their IUCN red list status is **Least Concern**.

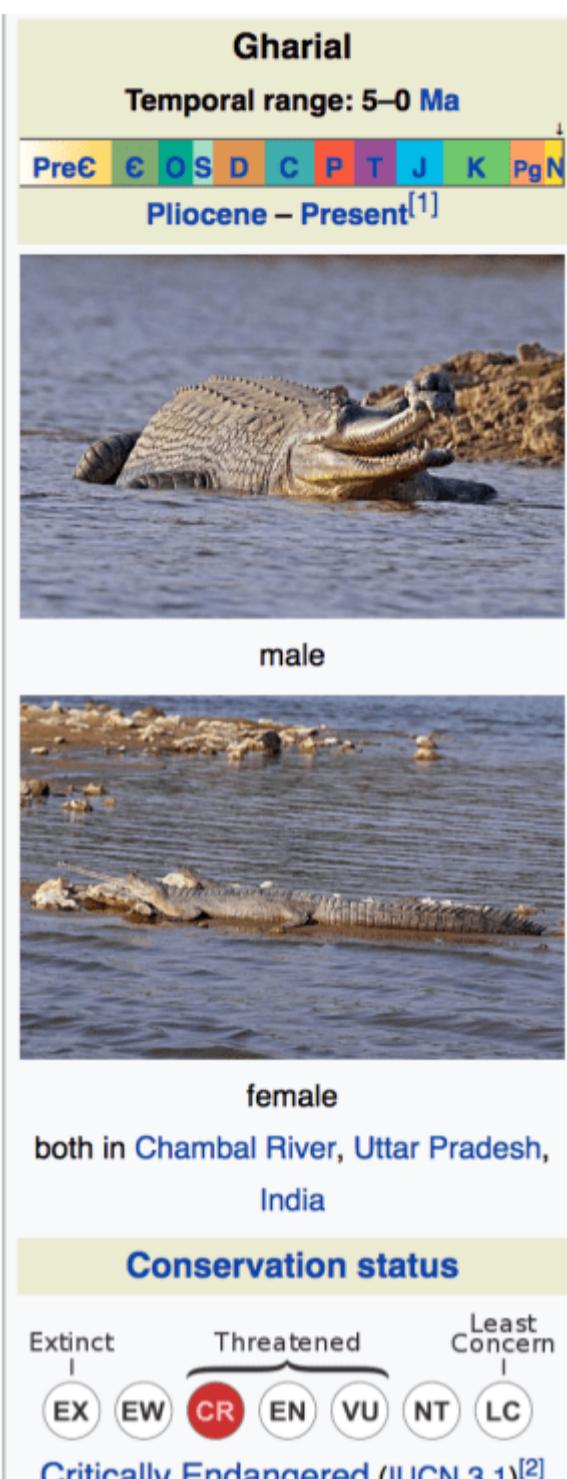
Zoological Survey of India

- The Zoological Survey of India (ZSI), a subordinate organization of the **Ministry of Environment and Forests** was established in **1916**.
- It is a national centre for **faunistic survey** and exploration of the resources leading to the **advancement of knowledge** on the **exceptionally rich faunal diversity of the country**.
- It has its headquarters at **Kolkata** and 16 regional stations located in different geographic locations of the country.

Gharial (Gavial or fish eating crocodile)

Critically Endangered— IUCN Red List.





The male gharial has a distinctive boss at the end of the snout, which resembles an earthenware pot known in Hindias *Hence the name.*

Habitat — foremost flowing rivers with high sand banks that they use for basking and building nests

Gharials once inhabited all the major river systems of the Indian Subcontinent, from the Irrawaddy River in the east to the Indus River in the west. Their distribution is now limited to only 2% of their former range

India: Girwa River, Chambal River, Ken River, Son River, Mahanadi River, Ramganga River

Nepal: Rapti-Narayani River

Threats

Hunting for skins, trophies and indigenous medicine, and their eggs collected for consumption

Decrease of riverine habitat as dams, barrages, irrigation canals and artificial embankments were built; siltation and sand-mining changed river courses

Riparian agriculture and grazing by livestock disrupts gharial behaviour and may even force local populations to desert the area

Depletion of fish resources

entanglement in fishing nets

Conservation

Schedule 1 species under Indian wildlife act, 1972

Project Crocodile began in 1975 (Government of India+ United Nations Development Fund + Food and Agriculture Organization) — intensive captive breeding and rearing program

Protected areas

National Chambal Sanctuary

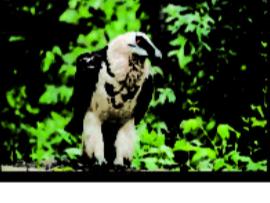
Katerniaghata Wildlife Sanctuary .

Vulture Culture

India is home to nine species of vultures, but most of them face the danger of extinction.

The nine species of vultures & their International Union for Conservation of Nature (IUCN) status are:



Sr. No.	Name of the Vulture Species	IUCN status	Pictorial Representation
1	White-backed Vulture	Critically Endangered	
2	Slender-billed Vulture	Critically Endangered	
3	Ruppell's Vulture	Critically Endangered	
4	Egyptian Vulture	Vulnerable	
5	Black-headed Vulture	Least Concern	
6	Black Vulture	Least Concern	
7	Indian Vulture	Extinct in the Wild	
8	Gyps fulvus	Least Concern	
9	Gyps bengalensis	Least Concern	
10	Gyps himalayensis	Least Concern	

Conservation Efforts

- To study the cause of deaths of vultures in India, a Vulture Care Centre (VCC) was set up at Pinjore, Haryana in 2001.
 - Later in 2004, the VCC was upgraded to being the first Vulture Conservation and Breeding Centres (VCBC) in India.
 - At present, there are nine Vulture Conservation and Breeding Centres (VCBC) in India, of which three are directly administered by the Bombay Natural History Society (BNHS).
 - The main objective of the VCBCs was to look after the vultures and breed them in captivity and also release them into the wild.
 - India's conservation efforts are focussed on the three species of vultures which are Critically Endangered according to the International Union for Conservation of Nature (IUCN) namely,
- *White-backed Vulture*,
 • *Slender-billed Vulture*, and

- *Long-billed Vulture.*

Reasons for Death of Vultures

- The major reason behind the vulture population getting nearly wiped out was the **drug Diclofenac**. It was found in the carcass of cattle on which the vultures feed.
- The drug was commonly administered to cattle **to treat inflammation**.
- Its veterinary use was **banned in 2008** by the Government of India.
- **Bioaccumulation** (the gradual accumulation of substances, such as pesticides, or other chemicals in an organism) of Diclofenac caused **kidney failure** in Vultures, leading to death.
- Diclofenac is dangerously fatal for Vultures. Even 1% of it in carcass would kill the Vulture in a short time after it feeds such carcass.
- The **poisoned carcasses** were dumped to kill some local stray animals. But when vultures fed on them, it became one of the vital reasons leading to their death.
- It is imperative to manage our carcass dumps and make sure that poisoned carcasses are not dumped for the vultures to feed on.
- The forest department **cremates the animal carcasses instead of burying** them, to keep the poachers away. But this practice is denying food to vultures leading to their death out of **starvation**.

VCBCs

- The VCBCs are set up by the Bombay Natural History Society (BNHS) in association with State Forest Departments.
- The Vulture Conservation Breeding Centre (VCBC) in Assam is at Rani, about 30 km west of Guwahati.
- It is one of the 4 Vulture Conservation Breeding Centres in India.
- The other three are in Pinjore (Haryana), Buxa (West Bengal), Bhopal (Madhya Pradesh).

Great Indian Bustard

Critically endangered — IUCN Red data list



aviest of the flying birds

These birds are often found associated in the same habitat as blackbuck.

4. Habitat

- Arid and semi-arid grasslands with scattered short scrub, bushes and low intensity cultivation in flat or gently undulating terrain. It avoids irrigated areas
- Found in India and the adjoining regions of Pakistan
- In India, the bird was historically found in Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha, Andhra Pradesh, Rajasthan, Gujarat, Maharashtra, Karnataka and Tamil Nadu. Today the bustard is restricted to isolated pockets in Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Madhya Pradesh and Rajasthan

5. Threats

- widespread hunting for sport and food
- Activities such as mining, stone quarrying, growth of industries, heavy pesticide use, grassland conversion and power projects along with the expansion of roads, electricity pylons, wind turbines, solar energy projects and other infrastructures have increased the severity of habitat degradation and disturbance

6. Protection

- CITES Appendix I.
- Schedule 1 (Wildlife (Protection) Amendment Act 2002)
- Project Great Indian Bustard — state of Rajasthan — identifying and fencing off bustard breeding grounds in existing protected areas as well as provide secure breeding enclosures in areas outside protected areas

7. Protected areas

- Desert National Park Sanctuary — Rajasthan
- Rollapadu Wildlife Sanctuary – Andhra Pradesh
- Karera Wildlife Sanctuary– Madhya Pradesh

Barn Owl Campaign in Lakshadweep

- The Union Territory of Lakshadweep has recruited three pairs of barn owls from Kerala to hunt down rats responsible for deteriorating its coconut yield.
- Coconut is an important money-spinner for the islands; pesky rodents account for 30 to 40% of the yield loss.
- The three pairs of barn owls will gradually be released into the coconut plantations under a closely monitored breeding and rodent management programme.
- In Lakshadweep islands, rats live on the treetops. In fact, the fronds overlap, allowing the rodents to move easily from one tree to another. This is the reason for not employing accomplished rat hunters like cats or rat snake for the purpose.



- Barn owl is a natural rat hunter, armed with a powerful auditory mechanism.
- The Union Territory of Lakshadweep has gone for this **biocontrol measure** as islands are a designated organic zone, where the use of chemicals for pest control is not allowed.
- **Biological control** is an environmentally sound and effective means of reducing or mitigating pests and pest effects through the use of natural enemies.
- Basically, it is an action of parasites, predators, or pathogens in maintaining another organism's population density at a lower average than would occur in their absence.

Barn Owl

- The common barn-owl (*Tyto alba*) belongs to the family of owls, Tytonidae.
- The species are **distributed** in Indian subcontinent, Australia, Africa, Europe, Southeast Asia, Middle-East, Europe, North America, South America and Caribbean Islands.
- It is listed as 'least concern' in the IUCN red list.
- It comes under Schedule IV of the Indian Wildlife Protection Act, 1972.

Bar-headed Goose Spotted in Kerala

A **Bar-headed Goose** has been spotted in the **wetlands of Karingali Puncha** in Pathanamthitta District of Kerala.

- In general, large flocks visit the **Koonthankulam bird sanctuary** at **Tirunelveli** in Tamil Nadu. It is very rare that the bird is **spotted in Kerala**.
- The **wetlands of Karingali Puncha** is a major birding spot in the district. It reported the **highest bird count in the Asian Waterbird Census of 2015**.

Bar-headed Goose



- **Scientific Name:** *Anser Indicus*
- **Habitat**
- Bar-headed geese are found in **central China and Mongolia** and they breed there.

- They start migration to the **Indian sub-continent** during the winter and stay till the end of the season.
- **Special Feature**
- They are one of the birds which can **fly even at very high altitude**. They come to India and return to their homes by **crossing the Himalayan ranges** – one of the most high-altitude migrations in the world.
- The capacity of bar-headed geese to **transport and consume oxygen** at high rates in **hypoxia** distinguishes this species from similar lowland waterfowl.
- **IUCN Status:** Least Concern

Note

Hypoxia: It is a condition of the body in which the tissues are starved of oxygen.

Asian Waterbird Census

- Every January, thousands of **volunteers** across Asia and Australasia visit wetlands in their country and count waterbirds. This citizen science programme is the Asian Waterbird Census (AWC).
- The AWC was **initiated in 1987** in the Indian subcontinent. The census covers the **entire East Asian – Australasian Flyway** and a **large part of the Central Asian Flyway**.
- The main **objective** is to obtain annual information of waterbird populations at wetlands in the region, the status of wetlands, and encourage interest in waterbirds and wetlands among the public and thereby promote conservation.
- The AWC is an **integral part** of the global waterbird monitoring programme, the **International Waterbird Census (IWC)**, coordinated by Wetlands International.

Koonthankulam Bird Sanctuary

- Situated in Tamil Nadu, it was **declared as a sanctuary in 1994**.
- It is an important protected area known for the **congregation of migratory and local water birds** – the grey pelican, the painted stork, the greater flamingo, the bar-headed goose, the open bill stork, the black ibis and other common species like egrets, cormorants and herons, among others.

Annual Flamingo Festival at Pulicat Lake

The annual Flamingo Festival is to be held in January at **Pulicat lake**.

- The Pulicat lake supports **rich biodiversity and high biomass of fishes and planktons** which is utilised as food resources by visiting birds. Thus about 75 aquatic and terrestrial bird species visit the sanctuary every year.
- The number of birds is much higher than usual due to abundant rains in 2019.



- It is the **second-largest brackish water ecosystem** in the country **after the Chilika Lake** (Odisha).
- It is located on the **border of Andhra Pradesh and Tamil Nadu**. It lies majorly in Andhra Pradesh.
- The large varieties of birds like grey pelicans, painted storks, visit the site annually.
- **Grey Pelican and Painted Stork** both are **near-threatened species** under IUCN Red List of Threatened Species.

In India there are two species of flamingos —

- **Greater Flamingo (Phoenicopterus rosues)**: They are widespread in India, and they migrate to South India during winter and spend their time in large reservoirs and mud flats. IUCN status: Least concern.
- **Lesser Flamingo (Phoeniconaias minor)**: They mainly breed at the Rann of Kutch/North-western India. IUCN status: Not threatened.

Gangetic Dolphin Annual Census

Recently, the **annual Ganges river Dolphin census** was undertaken by the **World Wide Fund for Nature- India** in collaboration with the **Uttar Pradesh Forest Department** along about 250 km. long riverine stretch of Upper Ganga river basin between **Hastinapur Wildlife Sanctuary** and **Narora Ramsar site**.

- This year the **tandem boat survey method** replaced the previous years' **direct counting method** in order to provide a more accurate count of the endangered species.
- In the 'tandem boat survey' method, the officials use two inflated boats which move in tandem to count the dolphins. After collating the data, statistical tools are employed to arrive at the final count.
- In 2015 census their count was 22, and since then the number has been stable in the last few years. This year, there is an expected rise in their number.

Ganga River Dolphin (Platanista Gangetica)

- The **Ganges river dolphin** is found in parts of the Ganges-Meghna-Brahmaputra and Karnaphuli-Sangu river systems in India, Nepal, and Bangladesh.
- The Gangetic river dolphin is India's **national aquatic animal** and is popularly known as '**Susu**'.
- It is among the **four freshwater dolphins** in the world- the other three are:
 - The '**Baiji**' now likely extinct from the **Yangtze River** in China,
 - The '**Bhulan**' of the **Indus** in Pakistan, and
 - The '**Boto**' of the **Amazon River** in Latin America.
- These four species live only in rivers and lakes.
- Its presence indicates the health of the riverine ecosystem.

Threats



- **Pollution:** It faces a number of threats such as dumping of single-use plastics in water bodies, industrial pollution, fishing.
- **Restrictive Flow of Water:** The increase in the number of barrages and dams is also affecting their growth as such structures impede the flow of water.
- **Poaching:** Dolphins are also poached for their flesh, fat, and oil, which is used as a prey to catch fish, as an ointment and as a supposed aphrodisiac.
- **Shipping & Dredging:** It is also called a **blind dolphin** because it doesn't have an eye lens and uses **echolocation** to navigate and hunt.
- Like bats, they produce high-frequency sounds which helps them to detect objects when the sound waves bounce off them.
- Due to their dependence on echolocation, the Gangetic dolphins also suffer from the noise pollution created by large ship propellers, and by dredging.

Protection Status

- IUCN Status: Endangered
- It is listed on **CITES Appendix-I**.
- It is classified under Schedule 1, **Wildlife (Protection) Act, 1972** providing absolute protection as offences under these are prescribed the highest penalties.
- **Vikramshila Gangetic Dolphin Sanctuary (VGDS) in Bihar's Bhagalpur district** is India's only sanctuary for its national aquatic animal.

Tibetan Gazelles:

- Also known as *the Goa (Procapra picticaudata)*.
- A species of *antelope that inhabits the Tibetan plateau*.
- IUCN Status- *Near Threatened*.
- Their *fur lacks an undercoat*, consisting of long guard hairs only, and is notably thicker in winter.
- They are almost restricted to the Chinese provinces of Gansu, Xinjiang, Tibet, Qinghai, and Sichuan, with *tiny populations in the Ladakh and Sikkim regions of India*.
- They are included in Schedule I of the Indian Wild Life (Protection) Act of 1972.

Native cattle breeds on the verge of extinction due to exports

About Sahiwal cow:

- Sahiwal is considered to be one of the best milch cattle breed of India.
- It a breed of Zebu cattle.
- It originated form Montgomery district of former Panjab province of Pakistan.
- These animals are also known as Lambi Bar, Lola, Montgomery, Multani and Teli.



- Due to their heat tolerance and high milk production, they have been exported to other Asian countries as well as Africa and the Caribbean.
- The British, who ruled both British India as well as Kenya, brought the Sahiwal breed to Kenya in the 1930s for increasing milk production to help their army.
- The Sahiwal was exported to Australia in the early 1950's which played a valuable role in the development of the Australian dairy.

Sumatran Rhino

The Sumatran rhinoceros has become extinct in Malaysia, after the death of the last rhino in the country.

Sumatran Rhino

- Its scientific name is **Dicerorhinus sumatrensis** and is the **smallest of all rhino species**.
- It is listed as **Critically Endangered** on the **IUCN Red List** of Threatened Species.
- The **World Wild Life (WWF)** estimates that there are **only about 80** of them and are left mainly in **Sumatra and Borneo** in Indonesia.
- **Black Rhino, White Rhino, Greater One-Horned Rhino, Javan Rhino and Sumatran Rhino** are the five different species of Rhino.
- The three species of Rhino in Asia — Greater one-horned, Javan and Sumatran. Javan and Sumatran Rhino are critically endangered and the Greater one-horned (or Indian) rhino is vulnerable in the IUCN Red List.
- They are spread across India, Nepal, Bhutan, Indonesia and Malaysia. These countries are also known as **Asian Rhino Range Countries**.
- Only the **Great one-horned rhino** is found in India.

Tasmanian Tiger

- The Tasmanian tiger, or thylacine (a dog headed pouched dog) was an exclusively **carnivorous marsupial** that is **considered to be extinct (also the IUCN status)**.
- **Marsupial** is a mammal of an order whose members are born incompletely developed and are typically carried and suckled in a pouch on the mother's belly. Marsupials are **found chiefly in Australia and New Guinea, and also in America**.
- Thylacine was widespread over continental Australia, extending North to New Guinea and south to Tasmania (an Island state of Australia).
- It was **confined to Tasmania in recent times** and disappeared from mainland Australia over 2000 years ago, mainly **because of over-hunting by humans, diseases and competition from the Dingo (Canis lupus)**, a wild dog native to Australia.
- The Thylacine was also persecuted because it was believed to be a threat to sheep and in its latter years it was hunted for the purposes of collection by museums and zoos.
- The last known thylacine died in captivity over 80 years ago, in Tasmania's Hobart Zoo in 1936.



- It is also known as the Tasmanian Wolf and bears some resemblance to a dog, with its distinguishing features being the dark stripes beginning at the rear of its body and extending into its stiff tail and abdominal pouch.

Arctic Kelps: Underwater forests in the Arctic

Arctic Kelp Forests

- Kelp is a type of large brown seaweed that grows in shallow, nutrient-rich saltwater, near coastal fronts around the world.
- They occur on rocky coasts throughout the Arctic. The longest kelp recorded in the Arctic in Canada was 15 metres, and the deepest was found at 60-metre depth (Disko Bay, Greenland).
- Kelps function underwater in the same way trees do on land. They create habitat and modify the physical environment by shading light and softening waves.
- The underwater forests that kelps create are used by many animals for shelter and food.
- More than 350 different species – up to 100,000 small invertebrates – can live on a single kelp plant, and many fish, birds and mammals depend on the whole forest.
- Kelp forests also help protect coastlines by decreasing the power of waves during storms and reducing coastal erosion.

What makes Kelps special?

- Many find it surprising that marine plants can grow so well in harsh Arctic environments. Kelps have adapted to the severe conditions.
- These cool water species have special strategies to survive freezing temperatures and long periods of darkness, and even grow under sea ice.
- In regions with cold, nutrient-rich water, they can attain some of the highest rates of primary production of any natural ecosystem on Earth.

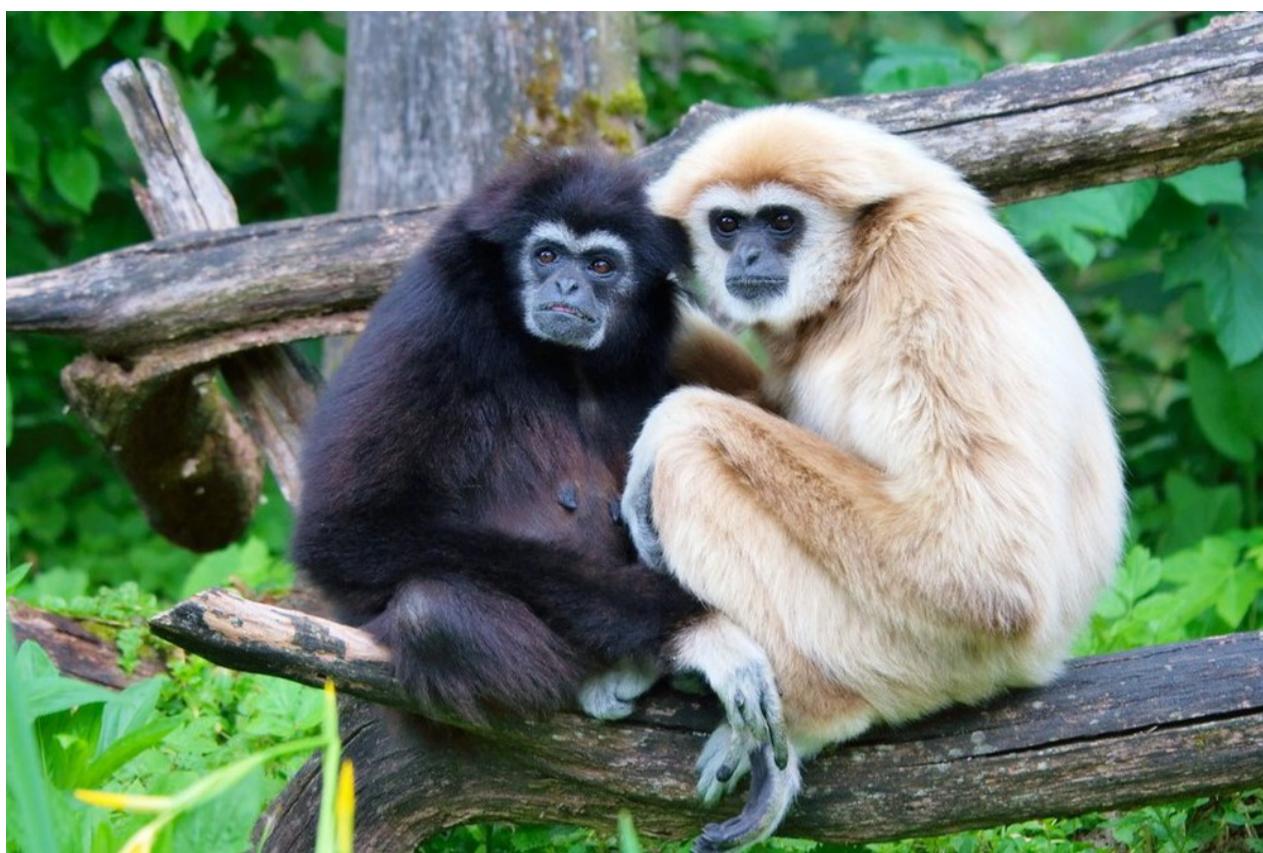
Importance of Kelps

- Kelp forests throughout the world play an important role in coastal economies, supporting a broad range of tourism, recreational and commercial activities.
- Kelp is making its way onto the plates of North Americans, and the kelp aquaculture industry is growing at a rate of seven per cent per year for the last 20 years globally.
- Kelp is a coveted food source in many countries which is full of potassium, iron, calcium, fibre and iodine.

Hoolock Gibbon

- The tailless Hoolock Gibbon is the **only ape found in India**.





- The primate is native to eastern Bangladesh, Northeast India and Southwest China.
- The Hoolock Gibbon is categorised into two **types**:
- **Western hoolock gibbon:**
- It inhabits in **all the states of the north-east, restricted between the south of the Brahmaputra river and east of the Dibang river**. And outside India, it is found in eastern Bangladesh and north-west Myanmar.
- It is listed as **Endangered** under the **International Union for Conservation of Nature (IUCN) Red List**.
- **Eastern hoolock gibbon:**
- It inhabits specific pockets of **Arunachal Pradesh and Assam** in India, and in southern China and north-east Myanmar outside India.
- It is listed as **Vulnerable** under the IUCN Redlist.
- In India, both the species are listed on **Schedule 1 of the Indian (Wildlife) Protection Act 1972**.

CRYODRAKON BOREAS

Paleontologists have identified a new species, named **Cryodrakon boreas**, and declared that it could be one of the largest flying animals.



out:

- Cryodrakon (“cold dragon”) is a genus of azhdarchid pterosaur that lived over 77 million years ago during the Late Cretaceous period in what is now Canada.
- It contains a single species, Cryodrakon boreas, recovered from the Dinosaur Park Formation (in Alberta, Canada).
- With a wingspan of over 10 metres, it is believed to have flown over the heads of dinosaurs.
- The study by researchers from the Queen Mary University of London has concluded that the remains belong to a new species, which is also the first pterosaur to be discovered in Canada.

Greater Adjutant Storks

- It is the world’s most endangered of the stork species.
- Earlier it was distributed throughout northern and eastern India and many countries of south and south-east Asia, it is currently only in Assam and Bihar and a few other locations in Cambodia.
- It is listed as “Endangered” in IUCN Red list of threatened species.
- It is locally called ‘Hargila’ in the Brahmaputra Valley in Assam, which harbours more than 80% of the global population of the species.
- It is considered family by women of Dadara and Pacharia villages in Assam’s Kamrup district.
- Families observed a unique ceremony of baby shower for the greater adjutant nesting in their neighbourhood.
- They build colonies on tall trees during their breeding season in winter.
- A campaign was launched in Assam to save the birds by Aaranyak, a wildlife conservation organisation in 2009.
- Assam’s renowned environmentalist Purnima Devi Barman has won the prestigious Whitley Awards, also known as the Green Oscars, for her efforts in conserving greater adjutant storks in association with Aaranyak.

Thank you!

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