

## SYNOPSIS OF THREATENED SPECIES OF INDIA By **SWASTIKA SINGH** (PART I)

### 1.0 **Brow-antlered deer (*Rucervus eldii*)**:-

**IUCN Category:** Endangered

**CITES:** Listed in Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

It is also known as **Sangai or dancing deer** and is State animal of Manipur. It is found in **Keibul Lamjao National Park** in Manipur. It is largely seen over the floating biomass, locally called "**phumdi**" in the South Eastern part of **Loktak Lake** inside the park. The park covers an area of 40 km<sup>2</sup> and the home range of the deer in the park is confined to 15–20 km<sup>2</sup>. Phumdi is the most important and unique part of Sangai's habitat. It is the floating mass of entangled vegetation formed by the accumulation of organic debris and biomass with soil. Its thickness varies from few centimeters to two meters. It floats with 4/5 part under water.



### 2.0 **Indian Gazelle or Black Buck or Chinkara (*Gazella bennetti*)**

**IUCN Category:** Least Concern

**Wildlife (Protection) Act, 1972:** Schedule I

It's height is around 65 cm and weight about 23 kg. Most males have very short horns, although some reach around 25 cm in length. It is a shy animal and avoids human habitation.

The chinkara can go without water for long periods and can even get sufficient fluids from plants and dew drops. Although mostly seen as solitary animals, they can sometimes be spotted in small groups numbering up to 3-4 individuals. It is classified as extremely vulnerable, with the main cause of its decline due to hunting.



### 3.0 **Common Leopard or Cheetah (*Acinonyx jubatus*)**

**IUCN Category:** Vulnerable

**CITES:** Listed in Schedule I

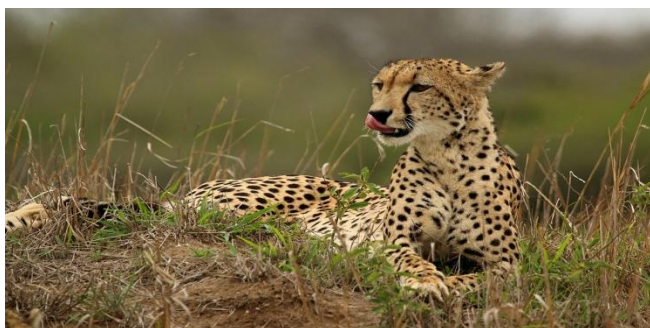
**Wildlife (Protection) Act, 1972:** Schedule I

The cheetah is the world's fastest land mammal, and the most unique and specialized member of the cat family. It can achieve a speed of 96 kph (60 mph) per hour in just 3 seconds. The cheetah is endangered throughout its range due to loss of habitat, reduced prey and direct persecution.

Cheetahs have disappeared from vast tracts of their historic range. In Africa they are now known to persist in only 10% of their historic range, while their distribution in Asia is limited to the central deserts of Iran. As per IUCN, it is considered to be regionally extinct in India.

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In 2010, Government of India had identified Kuno-Palpur and Nauradehi Wildlife Sanctuaries in Madhya Pradesh and Shahgarh Landscape in Jaisalmer in Rajasthan for reintroduction of Cheetah in India, wherein these will be obtained from Middle East, Iran, Namibia and South Africa, where North African Cheetah are bred.



### 4.0 Clouded Leopard (*Neophelis nebulosa*)

**IUCN Category:** Vulnerable

**CITES:** Listed in Schedule I

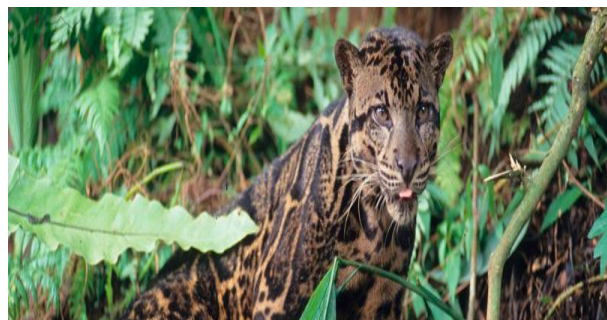
**Wildlife (Protection) Act, 1972:** Schedule I

It is a medium-sized cat, 60 to 110 cm long and weighing between 11 and 20kg. It does, however, have an exceptionally long tail for balancing, which can be as long as the body itself, thick with black ring markings. The clouded leopard is named after the distinctive 'clouds' on its coat.

Well adapted to forest life, the clouded leopard also has relatively short legs and broad paws which make it excellent at climbing trees and creeping through thick forest. It can climb while hanging upside-down under branches and descend tree trunks head-first.

The clouded leopard is found across Southeast Asia and the Himalayas in the following

countries: southern China, Bhutan, Nepal, northeast India, Burma, Thailand, Vietnam, Malaysia, Cambodia, Laos, and Bangladesh. It is believed to be extinct in Taiwan, China. Like many other big cat species the clouded leopard is often killed as retaliation for killing livestock.



### 5.0 Snow Leopard (*Panthera uncia*)

**IUCN Category:** Vulnerable

**CITES:** Listed in Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

These are medium-sized cats, with smoky-grey fur is patterned with dark-grey to black rosettes which helps to camouflage them against rocky slopes. They prefer steep, rugged terrains with rocky outcrops and ravines. This type of habitat provides good cover and clear view to help them sneak up on their prey. They are found at elevations of 3,000-5,000 metres or higher in the Himalayas.

Snow leopards live in the mountainous regions of central and southern Asia. In India, their geographical range encompasses a large part of the western Himalayas including the states of Jammu and Kashmir, Himachal Pradesh, Uttarakhand and Sikkim and Arunachal Pradesh in the eastern Himalayas.



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Poaching and illegal trade has been a traditional threat and continues for them.

Project Snow Leopard was launched in 2009 by Government of India in five Himalayan States viz. Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh with active support from Wildlife Institute of India, Dehradun and the Mysore based Nature Conservation Foundation. The project aimed to give it the same status of importance in the high altitude as that of Tiger in the terrestrial landscape.



### **6.0 Fishing Cat (*Prionailurus viverrinus*)**

**IUCN Category:** Vulnerable  
**Wildlife (Protection) Act, 1972:** Schedule I

It is twice the size of a typical house cat, an adept swimmer and enters water frequently to prey on fish. It is known to even dive to catch fish. It is nocturnal animal and apart from fish also preys on frogs, crustaceans, snakes, birds, and scavenges on carcasses of larger animals.

Wetlands are the favorite habitats of the fishing cat. In India, fishing cats are mainly found in the mangrove forests of the

Sundarbans, on the foothills of the Himalayas along the Ganga and Brahmaputra river valleys and in the Western Ghats.

The major threats includes destruction of wetlands, depletion of its main prey-fish due to unsustainable fishing practices, occasionally poached for its skin.



### **7.0 Caracal (*Caracal caracal*)**

**IUCN Category:** Least Concern  
**Wildlife (Protection) Act, 1972:** Schedule I

It is a fiercely territorial medium-sized cat, have nearly reached extinction in the thorn scrub jungles of western India. Its current distribution in India is restricted to the drier parts in the Kutch district of Gujarat, Narayan Sarovar in Gujarat, the Sariska Tiger Reserve, the Ranthambhore National Park and Bikaner district in Rajasthan, the Melghat Tiger Reserve in Maharashtra and Chambal region of Rajasthan and Madhya Pradesh. While the species is considered as Least Concerned in Arabian Peninsula, it is listed as Endangered in Jordan, Critically Endangered in Pakistan and Morocco . It is already vanished in Kuwait , parts of Turkmenistan and believed to be on the verge of extinction in many parts of North Africa.

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**8.0 Leopard or Panther (*Panthera pardus*)**

**IUCN Category:** Vulnerable

**Wildlife (Protection) Act, 1972:** Schedule I

The leopard is the smallest of the big cats, and known for its ability to adapt in a variety of habitats.

**Melanism** is a common occurrence in leopards, wherein the entire skin of the animal is black in colour, including its spots. A melanistic leopard is often called black panther or jaguar, and mistakenly thought to be a different species.

A nocturnal animal, the leopard hunts by night. It feeds on smaller species of herbivores found in its range, such as the chital, hog deer and wild boar. It is notorious for picking up feral dogs around forest areas.

It is found in all forest types, from tropical rainforests to temperate deciduous and alpine coniferous forests. It is also found in dry scrubs and grasslands, the only exception being desert and the mangroves of Sundarbans. It shares its territory with the tiger in 17 states.



**9.0 Tiger (*Panthera tigris*)**

**IUCN Category:** Endangered

**CITES:** Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

Tiger is solitary and territorial and the territory of an adult male may encompass territories of two to seven females. Large-scale habitat destruction and decimation of prey populations are the major long-term threats to the existence of the dwindling tiger population in the country. And along with habitat, tigers have also suffered a severe loss of natural prey populations – in particular ungulates such as deer and antelopes.

As tigers continue to lose their habitat and prey species, they are increasingly coming into conflict with humans as they attack domestic animals – and sometimes people.

Due to their large body size tigers are not good tree climbers like leopards. They can only climb along large leaning trees. But tigers are excellent swimmers and love water. Tigers are known to swim between islands in the Sunderbans.

The tiger as a top predator that is at the apex of the food chain keeps the population of wild ungulates in check. Thereby maintaining the balance between prey herbivores and the vegetation upon which they feed. Therefore, the presence of tigers in the forest is an

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indicator of the well being of the ecosystem. The extinction of this top predator is an indication that its ecosystem is not sufficiently protected, and neither would it exist for long thereafter. It stands out as an example of key stone species in its ecosystem.

**Eight sub-species of tiger existed in the past out of which three have been extinct for many years:**

- (i) Bali Tiger** (*Panthera tigris balica*) that was found in the Indonesian island of Bali, the
- (ii) Javan Tiger** (*Panthera tigris sondaica*) that was found in the Indonesian island of Java and
- (iii) Caspian Tiger** (*Panthera tigris virgata*) that was found in Iran, Iraq, Afghanistan, Turkey, Mongolia, Kazakhstan, Caucasus, Tajikistan, Turkmenistan and Uzbekistan.

**White tigers**

These are not a separate sub-species, but are white in color due to an expression of recessive genes. Interestingly, the white tigers are found only among the Indian tigers and can only be seen only in captivity now. The last white tiger reported in the wild was captured in the forests of Rewa in the state of Madhya Pradesh. The white tigers found in the zoos today are most likely descendants of this one tiger that was caught from the wild in Madhya Pradesh and later bred in captivity.

**The five surviving sub species of tiger are**

- (i) Indian Tiger or Royal Bengal Tiger** (*Panthera tigris tigris*) found in India, Nepal, Bhutan and Bangladesh;

**(ii) Indo-Chinese tiger** (*Panthera tigris corbetti*) mainly found in Thailand and Peninsular Malaysia but are also found in Myanmar, Southern China, Cambodia, Laos and Vietnam;

**(iii) Siberian or Amur Tiger** (*Panthera tigris altaica*) found in far east Russia;

**(iv) Sumatran Tiger** (*Panthera tigris sumatrae*) found in the Indonesian island of Sumatra;

**(v) South China Tiger** (*Panthera tigris amoyensis*) found in China.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) presently ratified by over 180 countries, makes international trade in tiger parts illegal. India has been a signatory of this convention since the year 1975.

India was the first country in the world to champion the cause of conservation of the tiger and its natural habitats. **Project Tiger was launched by the Government of India in the year 1973 to save the endangered species of tiger in the country.** Starting from nine (9) reserves in 1973-2016 the number is grown up to fifty (50). A total area of 71027.10 km<sup>2</sup> is covered by these project tiger areas.

Recently NTCA gave in-principle approval for creation of **new tiger reserves, and the sites were: Ratapani (Madhya Pradesh), Sunabeda (Odisha) and Guru Ghasidas (Chhattisgarh).**

**The Wildlife (Protection) Act, 1972 was amended in the year 2006.** Since then, the Government has taken several initiatives in the field of tiger conservation. Tiger conservation was given statutory backing. The newly-created NTCA was mandated to carry out



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estimation of population of tiger and its natural prey species and assess status of their habitat.

India conducts the **All India Tiger Estimation every four years**. Three cycles of the estimation have already been completed in 2006, 2010 and 2014. These estimates showed estimates of 1, 411, 1, 706 and 2, 226 tigers respectively. The methodology has remained the same in the three cycles in terms of concept, but latest scientific developments in the field of animal abundance estimation have been incorporated and the best available science to evaluate tiger status has been used.

Government launched 'Monitoring system for Tigers' Intensive Protection and Ecological Status **(M-STripes)**' for effective field patrolling and monitoring.

As a part of active management to rebuild **Sariska and Panna Tiger Reserves** where tigers have become locally extinct, reintroduction of tigers and tigresses have been done. The successful reintroduction of wild tigers in Sariska is a unique exercise and is the first of its kind in the world.



### **10.0 Asiatic Lion (*Panthera leo ssp. Persica*)**

**IUCN Category:** Endangered

**CITES:** Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

The Asiatic Lion exists as a single isolated population in Gir National Park and Wildlife Sanctuary in Gujarat, and is thus vulnerable to extinction from unpredictable events, such as an epidemic or large forest fire.

**Gir forest** is a compact tract of dry deciduous forest and open grassy scrublands in southwestern part of Saurashtra region of Gujarat. The lions face the usual threats of poaching and habitat fragmentation. Three major roads and a railway track pass through the Gir Protected Area (PA). Also, there are three big temples inside the PA that attract large number of pilgrims, particularly during certain times of the year.

Establishment of at least one other wild population is advisable for population safety, for maximizing genetic diversity, and in terms of ecology (re-establishing the lion as a component of the fauna in its former range).

However, there are problems in attempting this: a previous attempt to establish a second subpopulation in the **Chandraprabha Wildlife Sanctuary** in eastern Uttar Pradesh appeared to be succeeding, as the population grew from three to 11 animals, but then the lions disappeared, presumably shot or poisoned.

**Palpur-Kuno Wildlife Sanctuary** in northern Madhya Pradesh has now been selected as the best candidate area.

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**11.0 The Golden Langur (*Trachypithecus geei*)**

**IUCN Category:** Endangered

**CITES:** Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

It is an endangered species of primate endemic to Bhutan and areas of Assam immediately bordering Bhutan. With the langur populations in Assam severely affected by deforestation and loss of habitat, Bhutan is the last bastion for their survival as a species.

Hybridization between Capped and Golden Langurs could lead to the extinction of the Golden Langur as a distinct species. The traits of the black-coloured Capped Langurs are more dominant than those of the Golden Langur. Hybrids are viable and able to produce fertile offspring, which would mean that the dominant species would take over or form a hybrid swarm leading to the loss of the Golden Langur as a distinct species.



**12.0 Capped Langur (*Trachypithecus pileatus*)**

**IUCN Category:** Vulnerable

**CITES:** Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

It is the most common langur in north-eastern India. It breeds more rapidly, and can move across fragments easily. However, the species has probably declined by more than 30% in the last 20 years, making it very vulnerable in its extremely fragmented locations and it is predicted to decline at the same rate in the next 20 years. It occurs in north-eastern India (Arunachal Pradesh, Assam, Meghalaya, and Nagaland) and north-western Myanmar.



**13.0 Lion-tailed Macaque (*Macaca silenus*)**

**IUCN Category:** Endangered

**CITES:** Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

This species is endemic to the Western Ghats hill ranges in southwestern India from the Kalakkadu Hills (8°25'N) north to Anshi Ghat (14°55'N) in the states of Karnataka, Kerala and Tamil Nadu. Although the species has a relatively wide range, its area of occupancy is small and severely fragmented

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Mainly arboreal, this species prefers the upper canopy of primary tropical evergreen rainforest (Singh et al. 2002) but may also be found in monsoon forest in hilly country and in disturbed forest.

The major threat to this species today is habitat fragmentation, with many of these fragments being further decreased. In the past, habitat loss was due mainly to timber harvest and the creation of exotic plantations such as tea, eucalyptus and coffee.

In one location, Coorg, with a large area of remaining wet evergreen habitat, the species is highly threatened by non-subsistence and subsistence hunting for food. In some areas, primate meat is preferred as food, and so the animals face serious hunting threats.

The protected areas where these are found mainly include

**(i) Karnataka:-** Brahmagiri Sanctuary, Kudremukh National Park, Mookambika Sanctuary, Pushpagiri Sanctuary, Sharavathi Valley Sanctuary, Someshwara Sanctuary, and Talakaveri Sanctuary in Karnataka;

**(ii) Kerala:-** Aralam Sanctuary, Chimmomy Sanctuary, Neyyar Sanctuary, Peppara Sanctuary, Parambikulam Sanctuary, Periyar National Park, Periyar Sanctuary, Shendurney Sanctuary, and Silent Valley National Park,

**(iii) Tamil Nadu:-** Indira Gandhi Sanctuary, Kalakkad Sanctuary, Mundanthurai Sanctuary, and Grizzled Giant Squirrel

There is need for management of private lands, which hold perhaps a quarter of the remaining populations: this would ideally include

maintaining coffee and cardamom plantations where populations remain (the species cannot persist on tea plantations).

The second major need is to improve the remaining fragments that are not in conflict with agriculture. Because females often choose new males as mates, and the dispersal of new males is restricted due to habitat isolation, such mating opportunities should be offered through the translocation of males between groups.



### **14.0 Crab-eating Macaque (*Macaca irus Umbrosa*)**

**IUCN Category:** Vulnerable

**CITES:** Appendix II

**Wildlife (Protection) Act, 1972:** Schedule I

The islands of Katchall and Little Nicobar were submerged during the tsunami of 2004, and it is believed to have affected the habitat of this species. The population is currently believed to be stable, although the construction of roads on Katchall Island and Great Nicobar Island, as well as hunting, may be having an impact. It is also known as Long-Tailed Macaque.



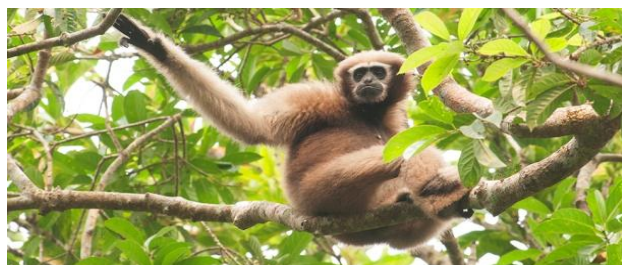
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**15.0 Western Hoolock Gibbon (*Hoolock hoolock*) and Eastern Hoolock Gibbon (*Hoolock leuconedys*)**

**IUCN Category:** Endangered (western hoolock) and Vulnerable (eastern hoolock)  
**Wildlife (Protection) Act, 1972:** Schedule I

These are the only apes species found in India: the western hoolock gibbon (*Hoolock hoolock*) and the eastern hoolock gibbon (*Hoolock leuconedys*). Often confused as one species, both the gibbons inhabit different ranges in India. Populations of both species have been declining due to habitat destruction of various forms and hunting for meat.

**Western hoolock gibbon** is found in eastern Bangladesh, northeastern India (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura), and northwestern Myanmar (west of the Chindwin River). It might possibly occur in China (extreme southeastern Tibet). The distribution in India is restricted to points south of the Brahmaputra and east of the Dibang Rivers. Animals those once were common in the plains of Arunachal Pradesh before that habitat was cultivated for agriculture and tea are not so anymore. **The eastern hoolock gibbon** inhabits specific pockets of Arunachal Pradesh and Assam in India, and southern China and north-east Myanmar.



**16.0 Grizzled Giant Squirrel (*Ratufa macroura*)**

**IUCN Category:** Near Threatened  
**CITES:** Schedule II  
**Wildlife (Protection) Act, 1972:** Schedule I

This species is endemic to southern India (Kerala and Tamil Nadu) and Sri Lanka. It is a diurnal and arboreal species. It occurs in tropical dry deciduous and montane forests, where it is confined to the riverine habitats.

It has a generation time of around 7-8 years. The Indian population has been estimated to be fewer than 500 mature individuals, and the population has been declining at a rate greater than 30% in the last 25 years and is also predicted to decline at the same rate in the next 25 years due to habitat loss and hunting. The population of this species is considerably higher in Sri Lanka.



**17.0 Hispid Hare (*Caprolagus hispidus*)**

**IUCN Category:** Endangered  
**CITES:** Schedule II  
**Wildlife (Protection) Act, 1972:** Schedule I

The historic range of the species extended along the foothill region of the southern Himalayas from Uttar Pradesh through

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southern Nepal, the northern region of West Bengal to Assam, and into Bangladesh as far south as Dhaka.

During the mid-1960s there was speculation that *C. hispidus* had gone extinct, however, the capture of a live specimen in 1971 in the **Barnadi Wildlife Sanctuary**, northwest Assam, confirmed that the species was persisting.

It primarily occupies tracts of early successional tall grasslands, locally termed elephant grass. During the dry season, most grassy areas are subject to burning, and the rabbits take refuge in marshy areas or grasses adjacent to river banks that are not susceptible to burning. A detailed assessment of the hispid hare in Manas region of Assam, indicates habitat loss due to overgrazing, unsustainable thatch harvesting, burning of grassland, weed invasion, encroachment and hunting. The hispid hare is known to exist only in a few isolated pockets across its grassland habitats in India and Nepal.



**18.0 Himalayan Tahr (*Hemitragus jemlahicus*)**

**IUCN Category:** Near Threatened  
**Wildlife (Protection) Act, 1972:** Schedule I

This species is found in the Himalayas including China (southern Tibet), north India (Jammu and Kashmir to Sikkim), and Nepal. It was subsequently introduced in New Zealand and Western Cape Province (South Africa).

In India, the Himalayan tahr occurs in timberline regions across the southern forested slopes of the Himalaya from Jammu and Kashmir to Sikkim. Tahr inhabits temperate to sub-alpine forests up to treeline, between 2500 and 5,200 m.

In India, Himalayan tahr is sometimes hunted for meat, and there is apparently significant competition with livestock for summer grazing in some areas. Nevertheless, many areas of prime tahr habitat are sufficiently isolated, rugged and seasonally snow-covered, that the degree of disturbance, livestock grazing and habitat alteration by humans is minimized.

**Protected areas with Himalayan Tahr include:** Kishtwar National Park (Jammu and Kashmir); Great Himalayan National Park and Daranghati (Himachal Pradesh); Nanda Devi and Valley of Flowers National Parks, Govind Pashu Vihar and Kedarnath Wildlife Sanctuaries (Uttarakhand) and Sikkim - Khangchendzonga National Park.



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**19.0 Nilgiri Tahr (*Hemitragus hylocrius*)**

**IUCN Category:** Endangered

**CITES:** Schedule II

**Wildlife (Protection) Act, 1972:** Schedule I

Nilgiri tahrs are stocky goats with short, coarse fur and a bristly mane. It inhabits the open montane grassland habitats at elevations from 1200 to 2600 m of the South Western Ghats. Nilgiri tahrs exist only in small, isolated populations due to extreme habitat fragmentation and illegal hunting.

The creation of **Eravikulam and Silent Valley National Parks**, Mukurti, Anamalai, and Parambikulam Wildlife Sanctuaries, and Srivilliputhur Grizzled Giant Squirrel Sanctuary and the Kalakadu-Mundanthurai Tiger Reserve, together offer an important degree of protection to the Nilgiri Tahr. **Eravikulam National Park** is home to the largest population.



**20. Kashmir Stag or Hangul (*Cervus hanglu*)**

**IUCN Category:** Critically Endangered

**Wildlife (Protection) Act, 1972:** Schedule I

It is one of the most critically endangered species found in the temperate grasslands of western Himalayas. **It is the only subspecies**

**of the Red deer (*Cervus elaphus*) to be found in India.** It was once widely distributed in the temperate grasslands of mountains of Kashmir Himalaya, the Chenab Valley in Jammu and parts of the Chamba district in Himachal Pradesh.

At present, however, the only viable population is in the Greater Dachigam **Dachigam National Park, which** is tucked in between the opposing faces of high mountainous ridges, on the right of Lidder and along the left of the Sindh on its eastern and western boundaries respectively. A sheep farm of the state animal husbandry department, spread over an area of a square kilometre, has posed one of the biggest disturbances as the sheep are suspected of spreading *Dictyocaulus viviparus* infections (respiratory infections) to the deer. As it is illegal to have a sheep breeding farm inside the national park, the state Cabinet approved the shifting of the farm in a meeting on April 18, 2005. Since then, the issue has been brought up at several official meetings, but the decision has not been implemented

The species is illegally hunted. The illegal hunting is one of the main reasons for the species' decline in the past and present.





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In 2013, alarmed by the dwindling population of the Hangul, the state government set up the Conservation Breeding Centre at Shikargah Tral in south Kashmir and shifted a fawn there with the aim of starting captive breeding. The programme was first announced in 2008 with a financial assistance of Rs 22 crore from the National Zoo Authority of India to build the centre. This was when the Hangul population stood at around 197. But the project did not take off.

### 21. Ganges River Dolphin (*Platanista gangetica*)

**IUCN Category:** Endangered

**CITES :** Listed in Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

This dolphin is among the four "obligate" freshwater dolphins - 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.

It is also known as **susu**, inhabits the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh.

This vast area has been altered by the construction of more than 50 dams and other irrigation-related projects, with dire consequences for the river dolphins.

**The presence of dolphin in a river system signals a healthy ecosystem.** Since the river dolphin is at the apex of the aquatic food chain, its presence in adequate numbers symbolizes greater biodiversity in the river system and helps keep the ecosystem in balance. Thus it

comes out as a **keystone species** and has been aptly accredited as '**National Aquatic Animal**' of India.

Dolphins have undergone roughly a 100 km decline in their range in the Ganges River since the late 1800s, and disappeared from the upper Ganges between Haridwar and Bijnor, and Narora and Kanpur.

Historically, they were found year-round in the Yamuna River approximately 400 km upstream to Delhi (Anderson 1879), but in recent years, dolphins have not been reported in this river above the Chambal River confluence during the dry season because upstream channels have become too shallow and polluted to support dolphins.



### 22.0 Dugong or Sea Cow (*Dugong dugon*)

**IUCN Category:** Vulnerable

**CITES:** Listed in Schedule I

**CMS:** Listed in Schedule II

**Wildlife (Protection) Act, 1972:** Schedule I

Dugongs are cousins of manatees and share a similar plump appearance, but have a dolphin

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fluke-like tail. And unlike manatees, which use freshwater areas, the dugong is strictly a marine mammal.

Commonly known as "sea cows," dugongs graze peacefully on sea grasses in shallow coastal waters of the Indian and western Pacific Oceans. Habitat requirements for Dugongs include coastal areas, shallow to medium deep, warm waters (15-17°C minimum) and beds supporting sub-tropical and tropical species of seagrass.

Dugong has been identified as one of the 16 selected species for initiating recovery programmes in their respective habitats under the Centrally Sponsored Schemes of 'Integrated Development of Wildlife Habitats'. Financial and technical assistance is provided to the Union Territory Government of Andaman & Nicobar Islands under the component 'Recovery of Critically Endangered Species'.



### 22.0 Gangetic Shark (*Glyphis gangeticus*)

**IUCN Category:** Critically Endangered

**CITES:** Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I  
Part II A

Sharks are the most important predators found in oceans across the world. But it is a poorly known fact that sharks are also found in freshwater habitats in some countries.

There are six species of river sharks found in the world, out of which the ***Ganges shark (Glyphis gangeticus) is endemic to India***. It inhabits the River Hooghly in West Bengal, as well as the rivers Ganges, Brahmaputra, Mahanadi in the states of Bihar, Assam and Orissa.

While some of the other river sharks are also known to inhabit saltwater, the Ganges shark is only found in rivers and possibly estuaries, with no confirmed records from oceans or seas.

Its population has been steadily decreasing due to over fishing, habitat degradation, increasing river utilization, and building of dams. Its fin and jaws are in high demand in the international trade, and is also fished by locals for its meat and oil.



### 23.0 Blue Whale (*Balaenoptera musculus*)

**IUCN Category:** Critically Endangered

**CITES:** Schedule I

**CMS :** Schedule I

**Wildlife (Protection) Act, 1972:** Schedule I

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*It* is a cosmopolitan species, found in all oceans except the Arctic, but absent from some regional seas such as the Mediterranean, Okhotsk and Bering seas.

Blue whales feed almost exclusively on euphausiids (krill). The migration patterns of blue whales are not well understood, but appear to be highly diverse.

Some populations appear to be resident year-round in habitats of year-round high productivity, while others undertake long migrations to high-latitude feeding grounds.

This species was the subject of major commercial hunting. The International Whaling Commission (IWC) had granted protection to blue whales by 1966. No blue whales have been recorded deliberately caught since 1978. The species is on Appendix I of both CITES and CMS.

**The International Whaling Commission (IWC)** is the global body charged with the conservation of whales and the management of whaling. It was set up under the International Commission for the Regulation of Whaling which was signed in Washington on **2nd December 1946**. The purpose of the Convention is to provide for conservation of whale stocks.

The IWC currently has 87 member governments from countries all over the world. All members are signatories to the International Convention for the Regulation of Whaling.

Uncertainty over whale numbers led to the introduction of a 'moratorium' on commercial whaling in 1986.

**India has been a member of the International Whaling Commission since 1981** and has played a pro-active and prominent role in bringing about a moratorium on commercial whaling and supporting the Commission in its efforts towards whale conservation.

**All the Cetacean species (whales, dolphins, etc.) have been included in Schedule I of the Wild Life (Protection) Act, 1972 thereby giving them the highest degree of protection.** Apart from this, India has always been supporting the conservation of whales through the establishment of the South Pacific Sanctuary.

### **24.0 White Rumped Vulture (*Gyps bengalensis*)**

**IUCN Category:** Critically Endangered  
**Wildlife (Protection) Act, 1972:** Schedule I

It occurs in Pakistan, India, Bangladesh, Nepal, Bhutan, Myanmar, Thailand, Laos, Cambodia and southern Vietnam, and may be extinct in southern China and Malaysia (BirdLife International 2001).

Since the mid-1990s, it has suffered a catastrophic decline (over 99%) across the Indian Subcontinent due to non-steroidal anti-inflammatory drug (NSAID), diclofenac. This drug, used to treat domestic livestock, is ingested by vultures feeding on their carcasses leading to renal failure and causing visceral gout.

The governments of India, Nepal and Pakistan banned veterinary diclofenac in 2006 and the Government of Bangladesh followed suit in 2010. Since then, the rate of decline appears to



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have slowed, and may even have reversed in India and Nepal



**25.0 Slender-billed Vulture (*Gyps tenuirostris*)**

**IUCN Category:** Critically Endangered  
**Wildlife (Protection) Act, 1972:** Schedule I

It is found in Gangetic plain, Himachal Pradesh and Haryana, south to southern West Bengal (and possibly northern Orissa), plains of Assam, and southern Nepal, and north and central Bangladesh (BirdLife International 2001).

It formerly occurred more widely in South-East Asia, but it is now thought to be extinct in Thailand and Malaysia. Extensive research has identified the non-steroidal anti-inflammatory drug (NSAID) diclofenac to be the cause behind this rapid population collapse.

This species feeds almost entirely on carrion, scavenging at carcass dumps and slaughterhouses, and at carcasses dumped in the fields and along rivers. It has only been recorded nesting in trees, usually large ones, usually at a height of 7-25 m, sometimes near villages but usually more remote.



**26.0 White bellied hereon (*Ardea insignis*)**

**IUCN Category:** Critically Endangered  
**Wildlife (Protection) Act, 1972:** Schedule I

It is known from the eastern Himalayan foothills in Bhutan and north-east India to the hills of Bangladesh, north Myanmar and, historically at least, across west and central Myanmar (BirdLife International 2001).

Although historical reports suggest it was previously common in Myanmar. In north-east India, a few individuals are regularly seen in **Namdapha National Park, Arunachal Pradesh.**



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**27.0 The Siberian White Crane (*Grus leucogeranus*)**

**IUCN Category:** Critically Endangered  
**Wildlife (Protection) Act, 1972:** Schedule I

It is a large, strikingly majestic migratory bird that breeds in wetlands. They are known to winter at Keoladeo National Park, Rajasthan. However the last documented sighting of the bird was in 2002.

The main threats were Pesticide pollution, wetland drainage, development of prime habitat into agricultural fields, and to some extent, hunting.

IUCN placed them as Critically Endangered owing to the likelihood that its global population will decline extremely rapidly over the next three generations following the development of the **Three Gorges Dam**, a large number of other dams on the Yangtze River and its tributaries, and now a proposed dam at the outlet to the Poyang lake in China which threatens the wintering grounds used by the vast majority of individuals.



**28.0 Gharial (*Gavialis gangeticus*)**

**IUCN Category:** Critically Endangered  
**Wildlife (Protection) Act, 1972:** Schedule I

Historically, gharial were found in the river system of India, Pakistan, Bangladesh and southern part of Bhutan and Nepal. Today they survive only in the waters of India and Nepal. The surviving population can be found within the tributaries of the Ganges river system: Girwa (Uttar Pradesh), Son (Madhya Pradesh), Ramganga (Uttarakhand), Gandak (Bihar), Chambal (Uttar Pradesh, Madhya Pradesh and Rajasthan) and Mahanadi (Orissa).

Gharials congregate for mating and nesting during the dry season in these highly seasonal rivers. When concentrated in these areas they are highly vulnerable to impacts from fishing and malicious killing mainly due to entanglement in fishing net. Sustained mining activity may destroy vital basking and nesting sites and may also result in direct mortality of eggs during the nesting season.

Ironically, the gharials, harmless to man with low commercial value for its hide were most endangered. Sand mining at river banks and dam construction had greatly reduced crocodiles' natural environment in free-flowing rivers. Additionally, rotting river waters and use of fishing nets resulted in the accidental ensnaring and drowning of many gharials. In 1970, it was estimated that a mere 100 gharials survived in the wild.

The government launched a crocodile breeding and conservation project, initially in Orissa in

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1975 and subsequently in other States. By the time the primary project ended in 1982, more than 1,000 gharials had been raised and released into sanctuaries, increasing the total population. But in recent years, human-crocodile conflict has once again drastically dented the population of crocodiles in the country. Today, everybody seems to have forgotten about the crocodiles and concentrate on tiger conservation.

Similar to tigers, being at the apex of the food chain in forests, crocodiles are the 'kings of the river food chain'. Contrary to popular myths, crocodiles help in increasing the population of fish.



**29.0 Salt Water Crocodile (*Crocodylus porosus*)**

**IUCN Category:** Least Concern  
**Wildlife (Protection) Act, 1972:** Schedule I

Saltwater crocodiles live in the mangroves of Bhitarkanika and Sunderbans, Mahanadi Delta, and in the swamplands in Odisha and West Bengal (including rivers).

It was considered formerly common along shores and rivers, by 1974 it had become extinct in the States of Kerala, Tamil Nadu and Andhra Pradesh.



**30.0 Mugger (*Crocodylus palustris*)**

**IUCN Category:** Vulnerable  
**Wildlife (Protection) Act, 1972:** Schedule I

This species is found in freshwater habitats including, rivers, lakes, reservoirs, hill streams, village ponds and man made tanks. It may also be found in coastal saltwater lagoons. This species is a hole-nesting species.

The Mugger is a hole-nesting species, with egg-laying taking place during the annual dry season. Nests are located in a wide variety of habitats, and females have even been known to nest at the opening of, or inside, their burrow

This species is found in India, Sri Lanka, Pakistan, Nepal and possibly from Bangladesh,



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its range extends westwards into eastern Iran. The species has become locally extinct over large parts of its range, and viable populations only occur in protected areas. Significant populations occur in the middle Ganges (Bihar and Jharkand), Chambal river (Rajasthan and Madhya Pradesh)

This species was threatened by habitat destruction due to agricultural and industrial expansion, entanglement and drowning in fishing equipment, egg predation by humans, illegal poaching for skin and meat and the use of body parts in medicine. Crocodiles were often treated as pests to inland fisheries and killed whenever possible. There are increasing incidents of human conflict with this species and this is due to encroachment by humans into the species' natural habitats.



### **31.0 Olive Ridley Turtle (*Lepidochelys olivacea*)**

**IUCN Category:** Vulnerable

**Wildlife (Protection) Act, 1972:** Schedule I

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. These turtles, along

with their cousin the Kemps ridley turtle, are best known for their unique mass nesting called Arribada, where thousands of females come together on the same beach to lay eggs. Though found in abundance, their numbers have been declining over the past few years.

They are carnivores, and feed mainly on jellyfish, shrimp, snails, crabs, molluscs and a variety of fish and their eggs. These turtles spend their entire lives in the ocean, and migrate thousands of kilometers between feeding and mating grounds in the course of a year.

Interestingly, females return to the very same beach from where they first hatched, to lay their eggs. During this phenomenal nesting, up to 600,000 and more females emerge from the waters, over a period of five to seven days, to lay eggs. They lay their eggs in conical nests about one and a half feet deep which they laboriously dig with their hind flippers.

**The coast of Orissa in India is the largest mass nesting site for the Olive-ridley, followed by the coasts of Mexico and Costa Rica.**

After about 45-65 days, the eggs begin to hatch, and these beaches are swamped with crawling Olive-ridley turtle babies, making their first trek towards the vast ocean. During this trek they are exposed to predators like jackals, birds, hyenas, fiddler crabs, and feral dogs lurking around, waiting to feed on them.

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Olive-ridleys face serious threats across their migratory route, habitat and nesting beaches, due to human activities such as turtle unfriendly fishing practices, development and exploitation of nesting beaches for ports, and tourist centres.

**Though international trade in these turtles and their products is banned under CITES Appendix I, they are still extensively poached for their meat, shell and leather, and their eggs,** though illegal to harvest, have a significantly large market around the coastal regions. However, the most severe threat they face is the accidental killing of adult turtles through entanglement in trawl nets and gill nets due to uncontrolled fishing during their mating season around nesting beaches.

To reduce accidental killing in India, the Orissa government has made it mandatory for trawls to use Turtle Excluder Devices (TEDs), a net specially designed with an exit cover which allows the turtles to escape while retaining the catch. However, this has been strongly opposed by the fishing communities as they believe TEDs result in loss of considerable amount of the catch along with the turtle.

