

1. Tiger Conservation in India

1.1. Tigers

- Tigers (*Panthera tigris*) are mammals of the Felidae family and one of four "big cats" in the *Panthera Genus*.
- The largest of all the Asian big cats, tigers rely primarily on sight and sound rather than smell for hunting.
- Among the big cats, only the Tiger and Jaguar are strong swimmers.
- Tigers hunt alone and eat primarily medium to large sized herbivores such as deer, wild pigs, gaur and water buffalo.
- Across the world, the tigers are considered to be **endangered** animals.
- The Royal Bengal Tiger is the most common subspecies of tiger and is the National Animal of India.

1.1.1. Habitat

- Tigers live in a diverse array of habitats such as tropical rainforests, mangrove swamps, evergreen forests, grasslands, savannahs, and rocky areas.
- In the wild, Royal Bengal Tigers **live in tropical jungles, marshland and tall grasslands** in fragmented areas of Bangladesh, Nepal, India, Bhutan and Burma and some parts of China.

1.1.2. Conservation Issues

- Across their range, tigers face unrelenting pressures from poaching, retaliatory killings, and habitat loss.
- They are forced to compete for space with dense and often growing human populations.

1.2. Project Tiger

1.2.1. Initiation of Project Tiger

- Project Tiger is a wildlife conservation project initiated in India **on April 1, 1973**.
- The project was **launched at Jim Corbett National Park** in Uttarakhand.

1.2.2. Objective of Project Tiger

- The objective of the Project Tiger was **saving Royal Bengal Tigers (*Panthera tigris*) from getting extinct.**
- The project aimed at tiger conservation in specially constituted tiger reserves and **maintaining a viable tiger population** in their natural environment.

1.2.3. Background of Project Tiger

- Prior to the Project Tiger, the then Prime Minister Mrs. Indira Gandhi appointed The **Tiger Task Force** under the **chairmanship of Dr Karan Singh in 1970.**
- This task force submitted its report in 1972. The report revealed the existence of only 1827 tigers in India.
- Given the biotic pressure, the report predicted the tiger would be extinct by the turn of the 20th century if immediate conservation measures were not taken.
- In the 1970s, **nine tiger reserves were set up** in different ecological systems.
- The 9 tiger reserves established in the beginning of Project Tiger were:
 - Manas (Assam), Palamau (Bihar), Simlipal (Orissa), Corbett (Uttar Pradesh), Kanha (Madhya Pradesh), Melghat (Maharashtra), Bandipur (Karnataka), Ranthambhore (Rajasthan) and Sunderbans (West Bengal).

1.2.4. Strategy of Project Tiger

- The first Task Force, in an attempt to restrict human activity within the reserves, **devised the Core – Buffer Strategy.**
- The **core areas** were designated as a national park and all **human activity were banned**; and the **buffer areas** were subjected to '**conservation oriented land use**'.
- The idea was to relocate people from the core areas, but they could coexist with the tigers in the buffer areas.
- Management plans were drawn up for each tiger reserve, based on conservation principles.

1.2.5. Administration of Project Tiger

- Project Tiger is **administered by the National Tiger Conservation Authority.**
- The overall administration of the project is monitored by a steering committee, which is headed by a director.

1.2.6. Achievements of Project Tiger

- Project Tiger has saved the endangered tiger from extinction, and has put the species on an assured path to recovery by improving the protection and status of its habitat.
- From nine tiger reserves in 1973, it **expanded to 54 tiger reserves in 2023.**

- While conserving the flagship species, the Project has **saved several other species** of plants and animals from extinction.
- States have been provided funding support for enhancing protection through deployment of local workforce, ex-army personnel.
- The local communities are benefiting from ecotourism apart from eco developmental inputs in fringe areas.
- The Project has served as a role model for wildlife management planning, habitat restoration, protection and eco development.

List of Tiger Reserves in India

S. No.	Name of Tiger Reserve	State	Year of Inclusion under Project Tiger	Total area (In Sq.Km.)
1.	Nagarjunsagar Srisaillam Tiger Reserve	Andhra Pradesh	1982-1983	3,296.31
2.	Kamlang Tiger Reserve	Arunachal Pradesh	2016-2017	783.00
3.	Namdapha Tiger Reserve	Arunachal Pradesh	1982- 1983	2,052.82
4.	Pakke Tiger Reserve	Arunachal Pradesh	1999-2000	1,198.45
5.	Kaziranga Tiger Reserve	Assam	2008-2009	1,173.58
6.	Manas Tiger Reserve	Assam	1973-1974	2,837.10
7.	Nameri Tiger Reserve	Assam	1999-2000	464.00
8.	Orang Tiger Reserve	Assam	2016	492.46
9.	Valmiki Tiger Reserve	Bihar	1989-1990	899.38
10.	Achanakmar Tiger Reserve	Chhattisgarh	2008-2009	914.01
11.	Indravati Tiger Reserve	Chhattisgarh	1982-1983	2,799.07
12.	Udanti-Sitanadi Tiger Reserve	Chhattisgarh	2008-2009	1,842.54
13.	Palamau Tiger Reserve	Jharkhand	1973-1974	1,129.93

14.	Bandipur Tiger Reserve	Karnataka	1973-1974	1,456.30
15.	Bhadra Tiger Reserve	Karnataka	1994-1995	1,064.29
16.	Billigiri Ranganatha Temple Tiger Reserve	Karnataka	2010-2011	574.82
17.	Dandeli-Anshi (Kali) Tiger Reserve	Karnataka	2008-2009	1,097.51
18.	Nagarahole Tiger Reserve	Karnataka	2008-2009	1,205.76
19.	Parambikulam Tiger Reserve	Kerala	2008-2009	643.66
20.	Periyar Tiger Reserve	Kerala	1978-1979	925.00
21.	Bandhavgarh Tiger Reserve	Madhya Pradesh	1993-1994	1,536.93
22.	Kanha Tiger Reserve	Madhya Pradesh	1973-1974	2,051.79
23.	Panna Tiger Reserve	Madhya Pradesh	1993-1994	1,598.10
24.	Pench Tiger Reserve	Madhya Pradesh	1992-1993	1,179.63
25.	Sanjay-Dubri Tiger Reserve	Madhya Pradesh	2008-2009	1,674.50
26.	Satpura Tiger Reserve	Madhya Pradesh	1999-2000	2,133.30
27.	Bor Tiger Reserve	Maharashtra	2014	816.27
28.	Melghat Tiger Reserve	Maharashtra	1973-1974	2,768.52
29.	Navegaon-Nagzira Tiger Reserve	Maharashtra	2013-2014	1,894.94
30.	Pench Tiger Reserve	Maharashtra	1998-1999	741.22
31.	Sahyadri Tiger Reserve	Maharashtra	2009-2010	1,165.57
32.	Tadoba-Andhari Tiger Reserve	Maharashtra	1993-1994	1,727.59

33.	Dampa Tiger Reserve	Mizoram	1994-1995	988.00
34.	Satkosia Tiger Reserve	Odisha	2008-2009	963.87
35.	Similipal Tiger Reserve	Odisha	1973-1974	2750.00
36.	Mukundra Hills Tiger Reserve	Rajasthan	2013-2014	759.99
37.	Ramgarh Vishdhari Tiger Reserve	Rajasthan	2022	1,501.89
38.	Ranthambore Tiger Reserve	Rajasthan	1973-1974	1,411.29
39.	Sariska Tiger Reserve	Rajasthan	1978-1979	1,213.34
40.	Anamalai Tiger Reserve	Tamil Nadu	2008-2009	1,479.87
41.	Kalakad-Mundanthurai Tiger Reserve	Tamil Nadu	1988-1989	1,601.54
42.	Mudumalai Tiger Reserve	Tamil Nadu	2008-2009	688.59
43.	Sathyamangalam Tiger Reserve	Tamil Nadu	2013-2014	1,408.40
44.	Srivilliputhur Megamalai Tiger Reserve	Tamil Nadu	2020-2021	1,016.57
45.	Amrabad Tiger Reserve	Telangana	2014-2015	2,611.39
46.	Kawal Tiger Reserve	Telangana	2012-2013	2,015.44
47.	Dudhwa Tiger Reserve	Uttar Pradesh	1987-1988	2,201.77
48.	Pilibhit Tiger Reserve	Uttar Pradesh	2014	730.25
49.	Ranipur Tiger Reserve	Uttar Pradesh	2022-2023	529.36
	Amanagarh buffer*	Uttar Pradesh	2012-2013	80.60
50.	Corbett Tiger Reserve	Uttarakhand	1973-1974	1288.31
51.	Rajaji Tiger Reserve	Uttarakhand	2015	1075.17

52.	Buxa Tiger Reserve	West Bengal	1982-1983	7,57.90
53.	Sunderbans Tiger Reserve	West Bengal	1973-1974	2,584.89

* Amangarh Tiger Reserve, Uttar Pradesh is a buffer zone of Jim Corbett National Park, Uttarakhand and may not be regarded as a separate tiger reserve. It has a buffer zone of 80.6 sq. km (31.1 sq m.) but no core area of critical tiger habitat.

National Tiger Conservation Authority (NTCA)

- The NTCA has been **constituted under the Wild Life (Protection) Amendment Act, 2006**, as recommended by the Tiger Task Force of 2005.
- It was set up with **headquarters in New Delhi** under the Chairmanship of the Minister of Environment & Forests.
- An objective of NTCA is to **provide statutory authority to Project Tiger** so that compliance of its directives becomes legal.
- The Authority lays down standards and guidelines for tiger conservation in the Tiger Reserves, apart from National Parks and Sanctuaries.
- It provides information on protection measures including future conservation plan, tiger estimation, disease surveillance, mortality survey, patrolling, report on untoward happenings and such other management aspects as it may deem fit.

1.3. Tiger census

- It is conducted **once every four years**.
- The Nation-wide tiger census was earlier held in 2006, 2010, 2014 and 2018.
- NTCA conducts tiger census in partnership with state forest departments, conservation NGOs, and the Wildlife Institute of India (WII).

1.3.1. Tiger Census 2022

- The **fifth cycle** of the **All India Tiger Estimation (2022)** was released on April 09, 2023.

Key highlights of Tiger Census 2022

Population growth

- The tiger population in India **grew by 200 from 2018 to 2022**.
- The population increased to **3,167 in 2022** from 2,967, recorded in 2018.

- The growth, however, slowed to **6.7 percent** in these four years from around 33 per cent during 2014-2018.
- The tiger population has **grown the most in the Shivalik hills and Gangetic flood plains**, followed by central India, the north eastern hills, the Brahmaputra flood plains, and the Sundarbans.

Decline in tiger occupancy

- There was a **decline in the Western Ghats** numbers, though “major populations” were said to be stable.
- Decline in tiger occupancy was also observed outside the protected areas of Anamalai-Parambikulam complex.
- Although the tiger populations in the Periyar landscape remained stable, the tiger occupancy has declined outside Periyar.
- Tiger occupancy in Jharkhand, Odisha, Chhattisgarh and Telangana showed a decline.

Conservation priority in landscape

- The genetically unique and small population of **tigers in Simlipal is of high conservation priority** in the landscape.
- The **northeastern hill tiger populations are genetically unique** and should be the top priority of conservation action in the country due to their low population size and genetically unique lineage.
- With tigers increasing outside Tiger Reserves in the landscape (Shivalik hills and Gangetic plains), Uttarakhand and Uttar Pradesh need to invest in mitigating conflict with tigers and mega herbivores.

Threats in wildlife habitat

- The wildlife habitats (Protected Areas and corridors) within Central Indian highlands and Eastern Ghats face a range of threats, including habitat encroachment, illegal hunting of both tigers and their prey.
- Conflicts between humans and wildlife, unregulated and illicit cattle grazing, excessive harvesting of non-timber forest produce, human induced forest fires, mining, and ever-expanding linear infrastructure are also common.
- This region also has several mines of important minerals, hence mitigation measures like lower mining impact techniques and rehabilitation of mining sites should be done on priority.

1.4. Other Conservation Efforts

1.4.1. International Big Cat Alliance (IBCA)

- India launched the International Big Cat Alliance (IBCA) on April 9, 2023.
- It will focus on the **protection and conservation of seven major big cat species** in the world.
- These species are the tiger, lion, leopard, snow leopard, puma, jaguar, and cheetah.
- The alliance seeks to bring together countries, conservationists, and experts from around the world to collaborate on conservation efforts for these seven big cat species.
- Through IBCA, India hopes to share knowledge, expertise, and best practices in conserving these species with other countries that have significant big cat populations, such as Indonesia, Brazil, and South Africa.
- The alliance also aims to facilitate collaborations between governments, NGOs, and the private sector to create sustainable solutions for conservation.

1.4.2. Critical Tiger Habitats (CTHs)

- Critical 'Tiger' Habitats (CTHs), also known as **core areas of tiger reserves**—are **identified under the Wildlife Protection Act, 1972**.
- It is based on scientific evidence that "such areas are required to be kept as inviolate for the purpose of tiger conservation, without affecting the rights of the Scheduled Tribes or such other forest dwellers".
- The notification of CTH is **done by the state government** in consultation with the expert committee constituted for the purpose.
- **Nagarjunsagar-Srisaïlam Tiger Reserve** in Andhra Pradesh is the largest tiger reserve in India, having the **largest area under CTH**.

Sariska Tiger Crisis

- India first realised its tiger conservation programme was failing when Sariska lost all its tigers in 2004.
- By March 2005, the Wildlife Institute of India (WII) confirmed in its interim report that there were indeed **no tigers left in Sariska**.
- After that, the then Prime Minister of India asked the Central Bureau of Investigation (CBI) to inquire into the disappearance.
- CBI reported that since July 2002, poachers had been killing tigers in the reserve and that the last six tigers were killed in the summer-monsoon of 2004.

- The Prime Minister also asked for the **Tiger Task Force** (TTF) to be set up, with a mandate to review tiger conservation. The TTF submitted a report titled **Joining the Dots in August 2005**.
- The report recognises a management breakdown in the tiger reserve and pointed out to the role of 'commercial' poaching in the area.
- The report also pointed out that human habitations within the core area of the park are leading to degradation and disturbance of tiger habitat.
- Eventually, **Project Tiger**, the national tiger-conservation programme, **was given more powers** and the NTCA and the Wildlife Crime Control Bureau was formed in 2006.

1.5. International Initiatives

1.5.1. International Tiger Day

- The International Tiger Day (also known as Global Tiger Day) is **celebrated every year on 29 July** to raise awareness for tiger conservation.
- The goal of observance of the day is to promote the protection and expansion of the wild tiger habitats and to gain support through awareness for tiger conservation.
- It was **founded in 2010 at the St. Petersburg Tiger Summit**.
- The summit had issued the St. Petersburg Declaration on Tiger Conservation with an aim to **double the big cat population by 2022**.

1.5.2. St. Petersburg Declaration

- In an effort to save tigers from extinction, 13 Government representatives met at the **International Tiger Conservation Forum** which took place from 21-24 November 2010 in St. Petersburg, Russia.
- They endorsed the St. Petersburg Declaration and agreed to double tiger numbers by 2022.
- Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Russia, Thailand and Vietnam are the tiger range countries that committed towards implementing the **Global Tiger Recovery Program**, the strategic plan envisaged by the St. Petersburg Declaration.
- The **13 countries** have agreed to strengthen international collaboration, improve scientific monitoring to help restore the species' habitats and transboundary corridors, and halt poaching and illegal trade of tigers and tiger products.

- The Recovery Program underscores the importance of creating incentives for local people to protect tigers and strengthening wildlife law enforcement and legislation in order to achieve the St. Petersburg targets.

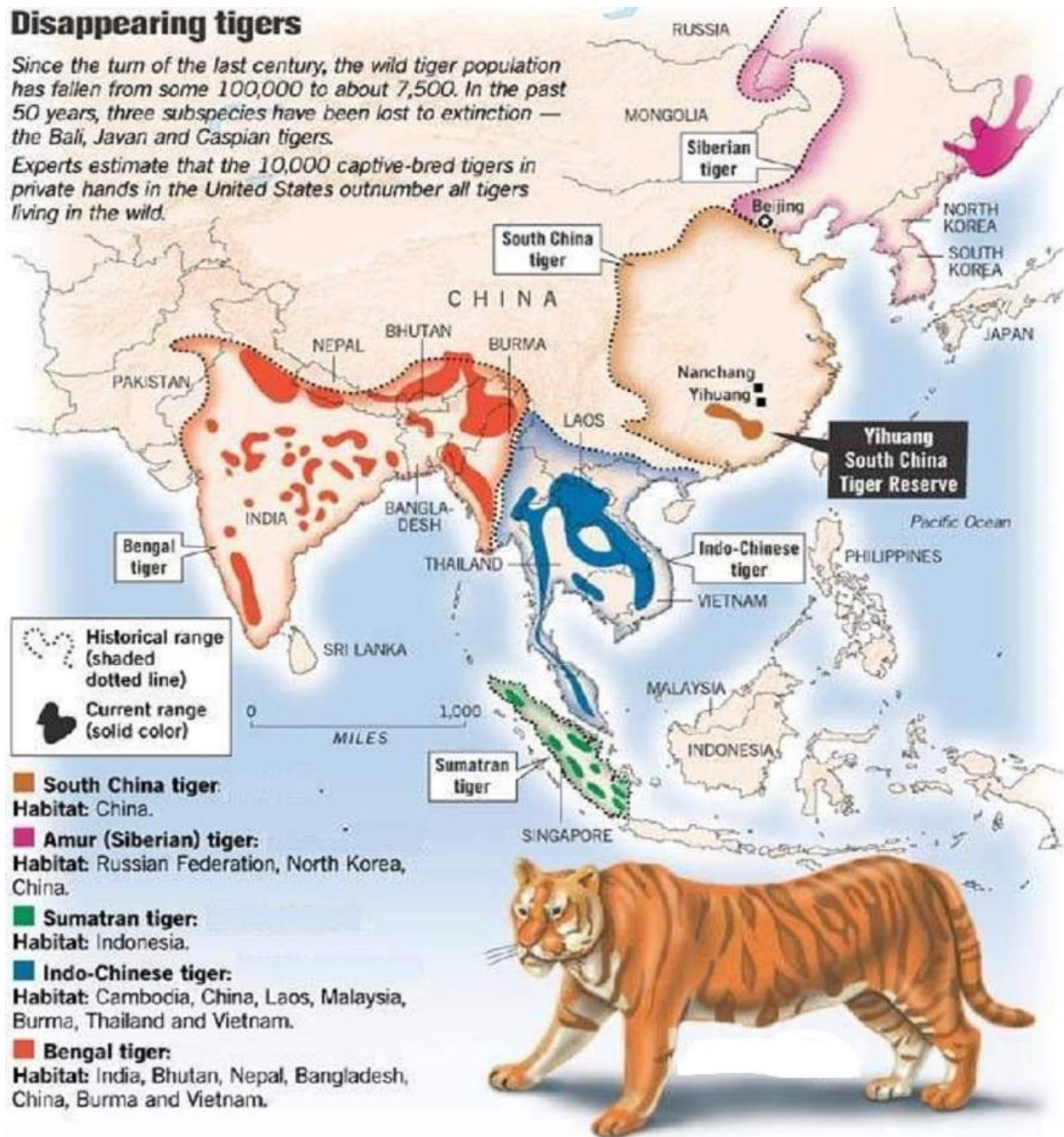


Figure: Tiger range countries

1.5.3. Global Tiger Forum (GTF)

- The Global Tiger Forum (GTF) is the only inter- governmental international body established with members from willing countries to embark on a global campaign to protect the Tiger.
- The GTF was **formed in 1993** on recommendations from an international symposium on Tiger Conservation at New Delhi, India.
- It focuses on **saving the remaining 5 subspecies of Tigers** distributed over 13 Tiger Range countries of the world.
- It utilises co-operative policies, common approaches, technical expertise, scientific modules and other appropriate programmes.
- The first meeting of the Tiger Range countries to set up the forum was held in 1994, in which India was elected to the Chair and was asked to form an interim secretariat.
- In 1997, the GTF became an independent organisation.

2. Lion Conservation in India

2.1. Asiatic Lion

- Its scientific name is *Panthera leo persica*.
- It is a subspecies of the lion which survives today **only in the Gir Forest** of Gujarat, India.
- In the IUCN Red list of threatened species, they are categorised as **endangered species**.
- The Asiatic lions once ranged from the Mediterranean to the north-eastern parts of the Indian subcontinent, but excessive hunting, water pollution and decline in natural prey reduced their habitat.

2.1.1. Conservation Issues

- The lions face the usual threats of poaching and habitat fragmentation.
- Farmers on the periphery of the Gir Forest (known as Maldharis) frequently use crude and illegal electrical fences.
 - These are usually intended to protect their crops from Nilgai but lions and other wildlife are also killed.
- Lions are frequently **poisoned** for attacking livestock.

- Nearly 15,000 to 20,000 open wells dug by farmers in the area for irrigation have led to many lions drowning.
- **Floods, fires and epidemics.** The restricted range of lions makes them especially vulnerable.
- **Habitat overcrowding.** The Gir forest is now overcrowded with lions. If this situation persists, then it may soon lead to problems related to carrying capacity.

2.2. Conservation Efforts

- Conservation efforts for Asiatic Lions were made for the first time in the year 1910.
- The Nawab of Junagadh imposed a ban on the hunting of lions within the boundaries of his province. The ban continued even when India gained independence in 1947.
- In the 1960s, the Gir forest, the home of the last surviving Indian lions, was converted into a National Park and Sanctuary.
- The **Lion Conservation Programme** was launched in **1965**. Since then the number of lions has been increasing steadily.
- Presently, Kuno-Palpur Project in Madhya Pradesh is being undertaken with a view to reduce the lion overcrowding at Gir. The excess population of lions will be relocated here. Palpur-Kuno has been a former lion habitat.

2.3. Project Lion

2.3.1. Initiation of Project Lion

- Project Lion was **announced on August 15, 2020**, during the 74th Independence Day celebrations.
- The programme has been launched for the conservation of the Asiatic Lion, whose last remaining wild population is in Gujarat's Asiatic Lion Landscape.

2.3.2. Aim of Project Lion

- It aims at **habitat development** by engaging modern technologies in management as well as in addressing the issue of diseases in lions.
- The project would also **address the Human-Wildlife conflict**. This would involve local communities living in the vicinity of the lion landscape, and would also provide livelihood opportunities.

2.3.3. Implementation of Project Lion

- The Project will be **under the Ministry of Environment, Forest and Climate Change** and is **modelled on the lines of Project Tiger**.
- The project has established three "gene pool" sites at Rampara in Saurashtra, and Sakkarbaug and Satveerada in Junagadh for the purpose of breeding the lions.
- The project has also identified six new potential sites of reintroduction of the species in the country.

2.3.4. Six new potential sites

Six new sites apart from the Kuno-Palpur Wildlife Sanctuary that were identified under Project Lion are:

- Madhav National Park, Madhya Pradesh.
- Sitamata Wildlife Sanctuary, Rajasthan.
- Mukundra Hills Tiger Reserve, Rajasthan.
- Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh.
- Kumbhalgarh Wildlife Sanctuary, Rajasthan.
- Jessore-Balaram Ambaji WLS and adjoining landscape, Gujarat.

2.4. Status of Asiatic Lions

- In June 2020, the Gujarat Forest Department announced an increase in the population of Asiatic lions in the Gir forest region.
- Total **674 lions were recorded** compared to the 523 in the Lion Census of 2015.
- The count was estimated from a population observation exercise called Poonam Avlokan in place of the 15th Lion Census.
 - The 15th lion census was due to be conducted on 5th and 6th June 2020, but was postponed indefinitely due to the Covid-19 outbreak.
- The lion population has **grown by almost 29%** from the last count in 2015.
- Moreover, the distribution of the lions has expanded from 22,000 sq. km in 2015 to 30,000 sq. km in 2020. This shows that the geographical distribution area for Gir forests's lions has increased by 36%.
- Over the last several years, the lion population in Gujarat has been steadily rising because of community participation, emphasis on technology, wildlife healthcare, proper habitat management and steps to minimise human-lion conflict.

3. Rhinoceros conservation in India

3.1. Greater One-horned Rhinoceros

- The Indian Rhinoceros (*Rhinoceros unicornis*), also called Greater One-horned Rhinoceros, belongs to the Rhinocerotidae family.
- Listed as a **vulnerable** species, the large mammal is primarily found in parts of north-eastern India and in protected areas in the Terai of Nepal, where populations are confined to the riverine grasslands in the foothills of the Himalayas.
- Weighing between 2260 kg and 3000 kg, it is the fourth largest land animal and has a single horn, which measures 20 cm to 57 cm in length.

Five species of Rhino

- There are **five species** of rhino: white and black rhinos in Africa, and the greater one-horned, Javan and Sumatran rhino species in Asia.

IUCN Red List Status of five Rhino species

- **Black Rhino: Critically endangered**
- White Rhino: Near Threatened
- One-Horned Rhino: Vulnerable
- **Javan Rhino: Critically Endangered**
- **Sumatran Rhino: Critically Endangered**

3.1.1. Conservation Issues

- In the nineteenth and early twentieth century, the Indian Rhinoceros was hunted persistently.
- The Indian rhino is illegally poached for its horn, which some cultures in East Asia believe has healing and potency powers and therefore is used for Traditional Chinese Medicine and other Oriental medicines.
- Habitat loss is another threat.

3.2. Conservation Efforts

- In the early 1900s, officials became concerned at the rhino's declining numbers.
- By 1908 in Kaziranga, one of the rhino's main ranges, the population had fallen to around 12 individuals. In 1910, all rhino hunting in India became prohibited.

- **Operation Rhino** is a major success of conservation. Only 100 remained in the early 1900s; a century later, their population increased to about 2000 again.
- The governments in Nepal and India have taken major steps toward Indian Rhinoceros conservation with the help of the World Wildlife Fund (WWF).
- The Kaziranga National Park (having the highest number of rhinos) and Pobitora reserve forest (having the highest Indian rhino density in the world) are the most important rhino habitats.
- The **National Rhino Conservation Strategy adopted by India in 2019** aims to **increase the rhino distribution by 5% by 2030**.
 - It has called for active **engagement between India and Nepal** to conserve the greater one-horned rhinoceros.

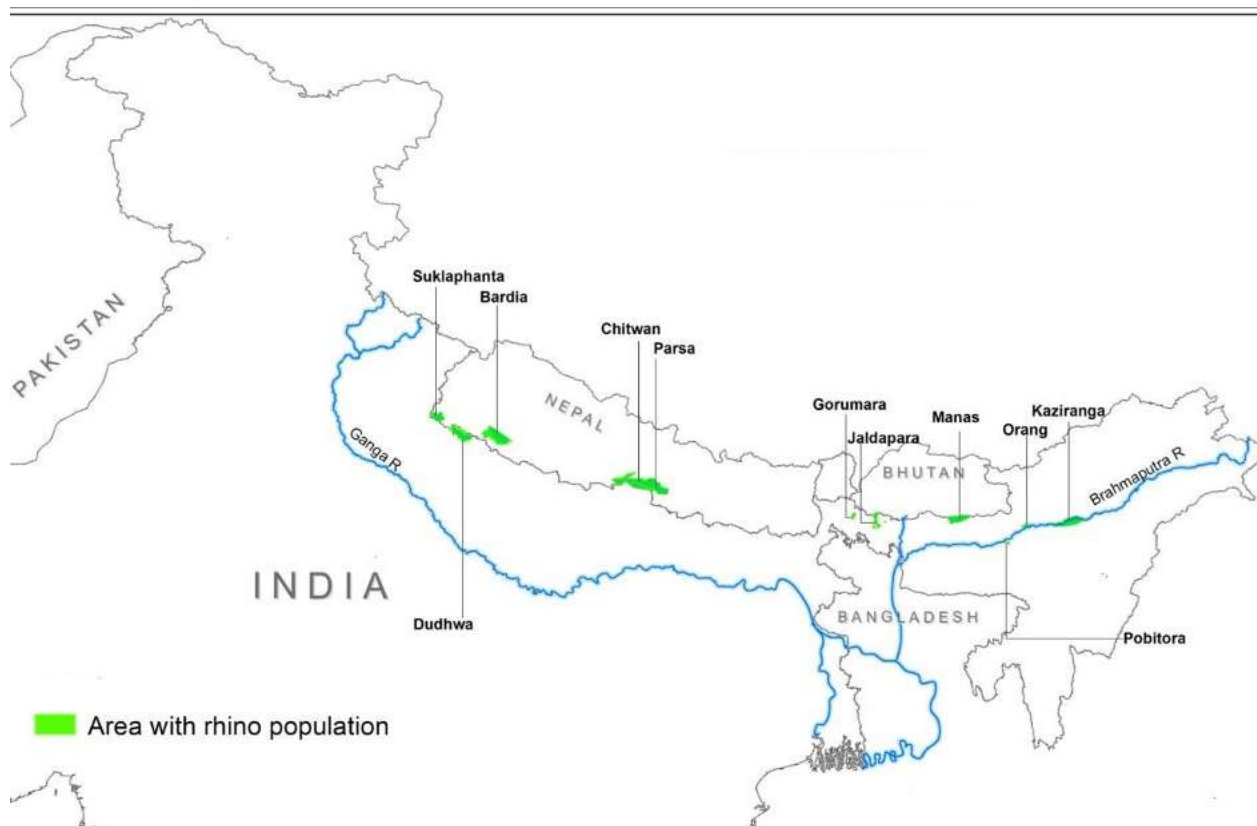


Figure: Habitat of Greater One-horned Rhinoceros

3.3. Indian Rhino Vision 2020 (IRV2020)

3.3.1. Initiation of IRV2020

- It was launched in 2005 and came to a close in April 2021.

3.3.2. Aim of IRV2020

- The main aim of the IRV2020 was **to achieve a population of 3000 wild rhinos in Assam** distributed over 7 of its protected areas (PAs) by the year 2020.
- Seven protected areas are Kaziranga, Pobitora, Orang National Park, Manas National Park, Laokhowa wildlife sanctuary, Burachapori wildlife sanctuary and Dibru Saikhowa wildlife sanctuary.
- **Wild-to-wild translocations** were an essential part of IRV2020 – moving rhinos from densely populated parks like Kaziranga National Park, to ones in need of more rhinos, like Manas National Park.

3.3.3. Implementation of IRV2020

- IRV2020 was implemented by the Department of Environment and Forests of the Government of Assam.
- The Bodo Autonomous Council was an active partner in the programme.
- The programme was supported by WWF-India, WWF AREAS (Asian Rhino and Elephants Action Strategy) Programme, The International Rhino Foundation (IRF), Save the Rhinos Campaign of Zoological Institutions worldwide and a number of local NGOs.

3.3.4. Performance of IRV2020

- It came to a close after translocating two rhinos from Pobitora Wildlife Sanctuary to Manas National Park in Assam on 13 April 2021. It was the eighth round of rhino translocation under IRV2020.
- With this, the IRV2020 is believed to have reached its target of achieving a population of 3,000 rhinos in Assam.
- However, the plan to spread the population of the rhinos across four protected areas beyond Pobitora wildlife sanctuary, Orang and Kaziranga national parks was not accomplished.

3.4. Number and distribution

- Decisive action against poaching, in conjunction with habitat creation, has helped increase the population of the greater one-horned rhinoceros to **4,014**.
- The number of the one-horned rhinos was 426 higher than the tally reported in 2018, as stated by the State of Rhino Report 2022.
- A decade ago, the population of the one-horned rhino was 2,454.
- **Kaziranga alone reported 200 more rhinos** than the number recorded in 2018.

- The population is growing largely due to the governments of India and Nepal creating habitat for rhinos, while also preventing poaching.
- Assam's Kaziranga National Park is the largest habitat for the species (2,613), followed by
 - Jaldapara National Park in West Bengal (287),
 - Orang National Park in Assam (125),
 - Pobitora Wildlife Sanctuary (107),
 - Gorumara National Park in West Bengal (52),
 - Manas National Park in Assam (40) and
 - Dudhwa National Park in Uttar Pradesh (38).

4. Elephant conservation in India

4.1. Asian Elephants

- Asian Elephant (*Elephas maximus*) is the largest terrestrial mammal of India.
- In the past, they were believed to be widely distributed – from Tigris – Euphrates in West Asia eastward through Persia into the Indian sub-continent, South and Southeast Asia including Sri Lanka, Java, Sumatra, Borneo and up to North China.
- However, currently they are confined to the Indian Subcontinent, South East Asia and some Asian Islands - Sri Lanka, Indonesia and Malaysia.
- **More than half of all wild Asian elephants are found in India.**
- They have been listed as '**Endangered**' on the IUCN Red List since 1986.

Some Facts about Elephants

- Elephant families have a matriarchal head, meaning that an older, experienced female elephant leads the herd.
- A family usually consists of a mother, her sisters, daughters and their babies (calves).
- Female family units range from three to twenty five elephants.
- Female elephants help each look after each other's calves. Babysitting other female's calves is important for elephant development; young females learn how to look after the young, and the calves are shown how it's done.
- They are known to develop strong, intimate bonds between friends and family members. Also they have the longest-known gestational (pregnancy) period of all

mammals, lasting up to 680 days (22 months).

- Females between 14 - 45 years may give birth to calves approximately every four years with the mean interbirth intervals increasing to five years by age 52 and six years by age 60.

4.1.1. Habitat of elephants in India

- Elephants being a wide ranging animal requires large areas.
- The requirement of food and water for elephants are very high and therefore their population can be **supported only by forests** that are under optimal conditions.
- The status of elephants can be the best indicator of the status of the forests.
- The current distribution of wild elephants in India is confined to South India, North East including North West Bengal, Central Indian states of Orissa, South West Bengal and Jharkhand, and North West India in Uttarakhand and Uttar Pradesh.

4.1.2. Conservation Issues

The greatest threats to Asian elephants are:

- **Habitat loss**, fragmentation, and degradation;
- **Illegal killing** (e.g. for their ivory and other products or in retaliation for human-elephant conflicts); and
- The **loss of genetic viability** resulting from small population size and isolation.

Man-elephant conflict

- Human-elephant conflicts are taking place increasingly in Tamil Nadu, Assam, Kerala, Odisha, Jharkhand, West Bengal etc. due to
 - degradation and fragmentation of habitat,
 - blockage of corridors,
 - illegal harvesting,
 - enclaves within forests,
 - labour colonies on corridors within tea/coffee estates, trespass, movement of pilgrims and so on.
- At least 100 elephants and 400 human beings are dying every year in the country due to the human-animal conflict.

4.2. Project Elephant (PE)

4.2.1. Initiation of Project Elephant

- Project Elephant was launched by the Government of India in the year **1992 as a Centrally Sponsored Scheme.**

4.2.2. Objective of Project Elephant

- To protect elephants, their habitat & corridors.
- To address issues of man-animal conflict.
- Welfare of domesticated elephants.

4.2.3. Implementation of Project Elephant

- The Ministry of Environment, Forest and Climate Change provides financial and technical support to major elephant range states in the country through Project Elephant.
- The Project is being **mainly implemented in 16 States:** Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Jharkhand, Karnataka, Kerala, Maharashtra, Meghalaya, Nagaland, Orissa, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

4.2.4. Main activities under Project Elephant

- **Ecological restoration** of existing natural habitats and migratory routes of elephants;
- **Development of scientific and planned management** for conservation of elephant habitats and viable population of Wild Asiatic elephants in India;
- **Promotion of measures** for mitigation of man elephant conflict in crucial habitats and moderating pressures of human and domestic stock activities in crucial elephant habitats;
- **Strengthening of measures** for protection of Wild elephants from poachers and unnatural causes of death;
- Research on Elephant management related issues;
- Public education and awareness programmes;
- Eco-development and veterinary care.

4.3. Monitoring of Illegal Killing of Elephants (MIKE) Programme

4.3.1. Initiation of MIKE Programme

- **Mandated by COP** (Conference of the Parties) **resolution of CITES**, MIKE program started in South Asia in the year **2003**.

4.3.2. Objectives of MIKE Programme

- To measure levels and trends in the illegal hunting of elephants;

- To determine changes in these trends over time; and
- To determine the factors causing or associated with such changes, and to try and assess in particular to what extent observed trends are a result of any decisions taken by the Conference of the Parties to CITES.

4.3.3. Implementation of MIKE Programme

- Project Elephant has been formally implementing the MIKE Programme in 10 Elephant Reserves since 2004.
- Under the programme, **data is being collected from all sites** on a monthly basis in specified MIKE patrol form and submitted to the Sub Regional Support Office for South Asia Programme located in Delhi who are assisting the Ministry in the implementation of the programme.

4.3.4. MIKE sites in India

1. Chirang-Ripu Elephant Reserve (Assam)
2. Deomali Elephant Reserve (Arunachal Pradesh)
3. Dihing Patkai Elephant Reserve (Assam)
4. Garo Hills Elephant Reserve (Meghalaya)
5. Eastern Dooars Elephant Reserve (West Bengal)
6. Mayurbhanj Elephant Reserve (Odisha)
7. Shivalik Elephant Reserve (Uttarakhand)
8. Mysore Elephant Reserve (Karnataka)
9. Nilgiri Elephant Reserve (Tamil Nadu)
10. Wayanad Elephant Reserve (Kerala)

List of Elephant Reserves in India

S. No.	Elephant Reserve	State	Date of Notification	Total Area (Sq. Km)
1	Rayala ER	Andhra Pradesh	09.12.2003	766
2	Kameng ER	Arunachal Pradesh	19.06.2002	1892
3	South Arunachal ER	Arunachal Pradesh	29.02.2008	1957.50
4	Sonitpur ER	Assam	06.03.2003	1420
5	Dihing-Patkai ER	Assam	17.04.2003	937
6	Kaziranga – Karbi Anglong ER	Assam	17.04.2003	3270
7	Dhansiri-Lungding ER	Assam	19.04.2003	2740
8	Chirang-Ripu ER	Assam	07.03.2003	2600
9	Badalkhol-Tamor Pingla	Chhattisgarh	15.09.2011	1048.30

10	Lemru ER	Chhattisgarh	2022	450
11	Singhbhum ER	Jharkhand	26.09.2001	4530
12	Mysore ER	Karnataka	25.11.2002	6724
13	Dandeli ER	Karnataka	26.03.2015	2,321
14	Wayanad ER	Kerala	02.04.2002	1200
15	Nilambur ER	Kerala	02.04.2002	1419
16	Anamudi ER	Kerala	02.04.2002	3728
17	Periyar	Kerala	02.04.2002	3742
18	Garo Hills ER	Meghalaya	31.10.2001	3,500
19	Intanki ER	Nagaland	28.02.2005	202
20	Singphan ER	Nagaland	16.08.2018	23.57
21	Mayurbhanj ER	Odisha	29.09.2001	3214
22	Mahanadi ER	Odisha	20.07.2002	1038
23	Sambalpur ER	Odisha	27.03.2002	427
24	Nilgiri ER	Tamil Nadu	19.09.2003	4663
25	Coimbatore ER	Tamil Nadu	19.09.2003	566
26	Anamalai ER	Tamil Nadu	19.09.2003	1457
27	Srivilliputtur ER	Tamil Nadu	19.09.2003	1249
28	Agasthyamalai ER	Tamil Nadu	12.08.2022	1,197.48
29	Uttar Pradesh ER	Uttar Pradesh	09.09.2009	744
30	Terai ER	Uttar Pradesh	2022	3049
31	Shivalik ER	Uttarakhand	28.10.2002	5405
32	Mayurjharna ER	West Bengal	24.10.2002	414
33	Eastern Dooars ER	West Bengal	28.8.2002	978

4.4. Elephant Census

- The number of **29,964** elephants were registered in the most recent elephant census, which was conducted in 2017.
- The elephant census is conducted **once every 5 years**.
- As per Elephant Census 2017, **Karnataka has the highest number** of elephants (6,049), followed by Assam (5,719) and Kerala (3,054), respectively.
- As far as regions are concerned, the highest population was in the southern region (11,960) followed by the northeast region (10,139), east-central region (3,128) and northern region (2,085).

- The Asian Nature Conservation Foundation (ANCF) at the Indian Institute of Science (Bengaluru), several NGOs and independent conservationists aided the Project Elephant Directorate and forest departments of 23 states in this exercise.
- A nationwide campaign, “**Gaj Yatra**”, to protect elephants, which has to cover 12 elephant range states was launched during the presentation of the Elephant census.
- The 2017 census indices indicate that the elephant population is increasing including birth rate and even their geographical range has increased.
- However, it shows a marginal increase in elephant population ever since the 1990s.
- Due to habitat fragmentation, elephants are moving out to agricultural landscapes leading to an increase in man-elephant conflict resulting in both crop damage and loss of lives of elephants.

4.5. Other Initiatives for Protection of Elephants

4.5.1. Elephant as the national heritage animal of India

- The Elephant has been declared as the national heritage animal by the Government of India in 2010 after the recommendations of the standing committee on national board for wildlife.

4.5.2. Hathi Mere Sathi

- It was **launched at Elephant- 8 ministerial meeting** which was held in Delhi on 24th may 2011.
- The campaign aims to improve the conservation, protection and welfare of elephants in India.
- It was conducted by the Ministry of Environment and Forests, in collaboration with the Wildlife Trust of India.

4.5.3. The campaign Mascot Gaju

- It focuses on various groups which include local people near elephant habitats, youth, policymakers and others.
- The scheme envisions to set up elephant centres all over the country in the elephant landscapes.

4.5.4. Elephant Task Force

- It was instituted by the Union government **in 2010** under the leadership of historian Mahesh Rangarajan to evaluate the elephant conservation policy in India and develop future action.

4.5.5. Gaj Gaurav award

- It is conferred for the commendable efforts of local communities, frontline staff and mahouts working at grass root level to conserve elephants in wild and captivity.

4.5.6. Gaj Utsav 2023

- The Gaj Utsav-2023 was inaugurated at the Kaziranga National Park by the President of India on April 7, 2023.
- The two-day event commemorated the **30th anniversary of Project Elephant** and aimed to promote awareness about the conservation of elephants and their habitats, reduce human-elephant conflicts, and ensure the welfare of captive elephants.

4.6. Elephant Corridors in India

4.6.1. What is an Elephant Corridor?

- Elephant corridor is the narrow strip of forested lands which connects larger elephant habitats with significant elephant populations.
- It acts as a **conduit for the movement of elephants** between the elephant habitat.
- It is necessary to enhance species survival and birth rate of the elephant population in the wild.

4.6.2. Number of Elephant Corridors in India

- There are **around 88 elephant corridors** in India out of which 20 are in South India, 12 in North Western India, 14 in North West Bengal, 20 in Central India and 22 in North Eastern India.
- About 77.3% of these corridors are regularly used by the elephants and one-third of these corridors are of high ecological priority.

4.6.3. Major threats to elephant corridors

- Elephant **habitat loss** which occurs due to developmental activities such as the construction of roads, railways, buildings, holiday resorts and electric fencing etc.
- **Mining activities** such as coal mining and iron ore mining have been described as the single biggest threats to elephant corridors in Central India.
- Most of the elephant reserves are unable to accommodate all the elephants due to lack of grazing grounds, which results in **man-elephant conflict** due to the destruction of crops by elephants.