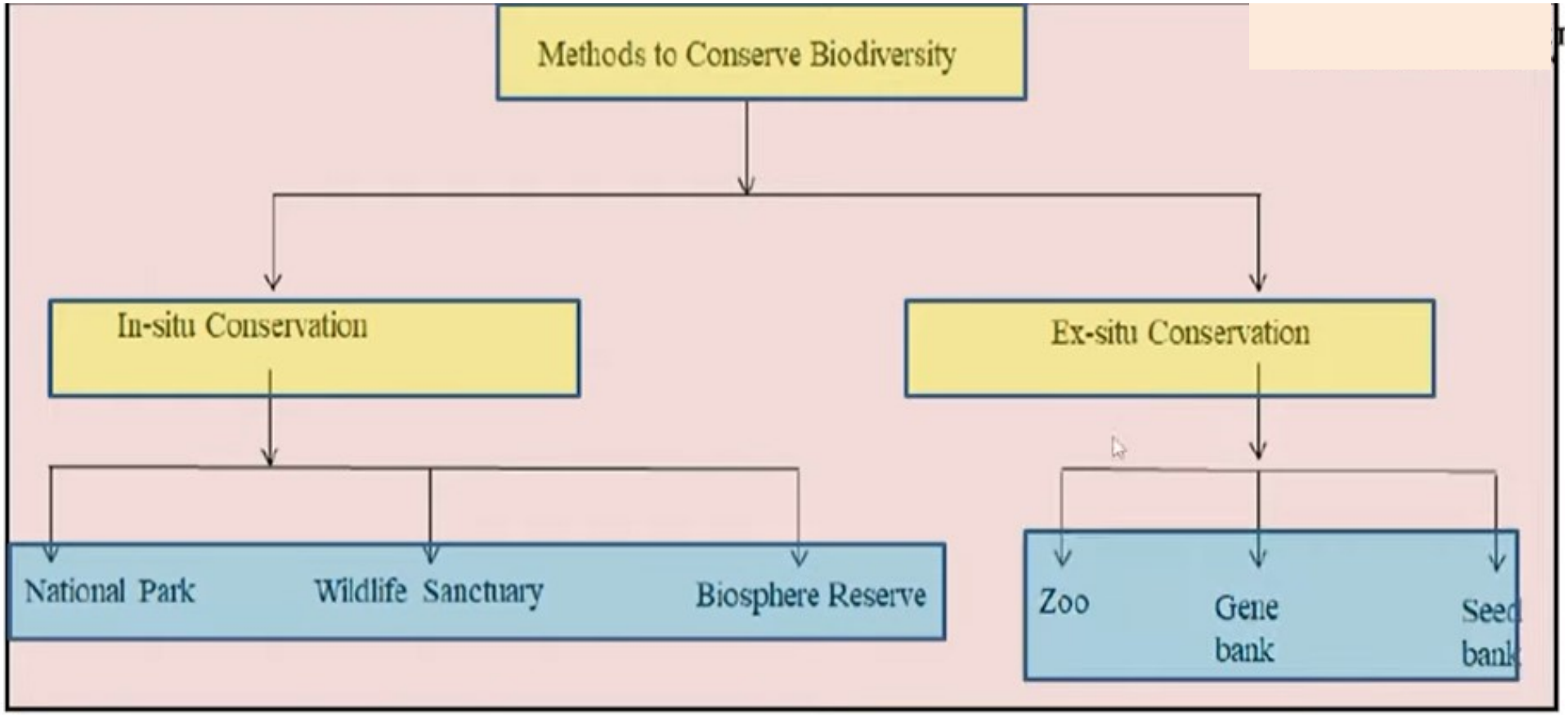
Biodiversity
Part 6

BIODIVERSITY CONSERVATION STRATEGIES


Methods to Conserve Biodiversity
In-situ Conservation
Ex-situ Conservation
National Park
Wildlife Sanctuary
Biosphere Reserve
Zoo
Gene bank
Seed bank

1- In-situ conservation

National Park

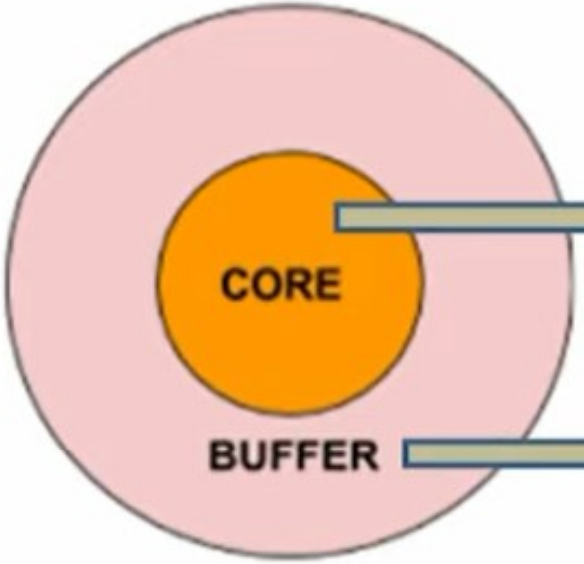
Wildlife sanctuary

Biosphere reserve

National Park

- National Park is a protected area in which legal protection is provided to ecosystem including flora and fauna.
- High level of protection to species
- Human activities are prohibited except tourism

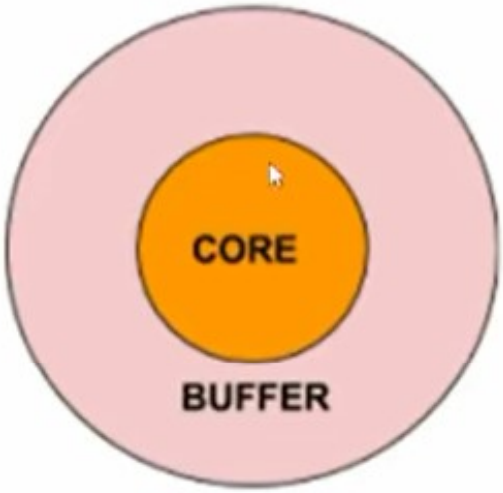
National Park



- Area resricted only for wildlife
- No human activity permitted

- Limited activity like Tourism permitted

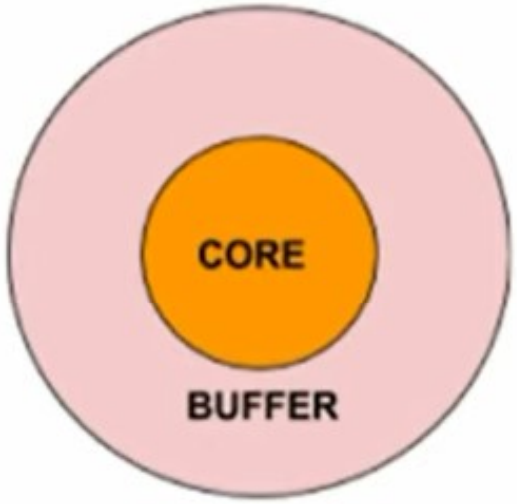
National Park



Silent Valley National Park (Kerala, India)

National Park

Jim Corbett National Park (Uttarakhand, India)



National Park

101 National Parks in India (as on Dec 2019)

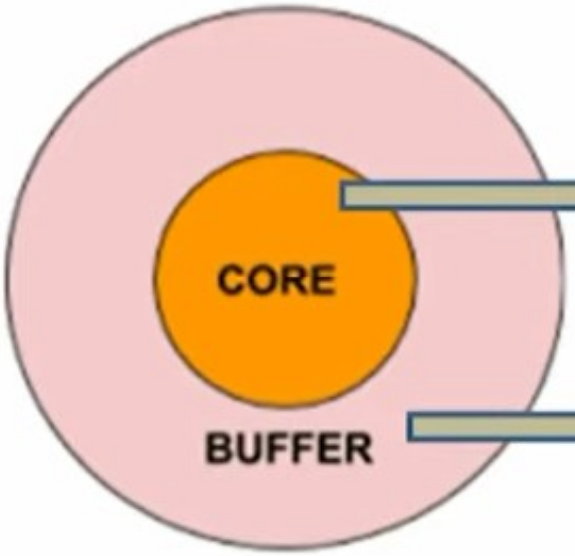
Wildlife Sanctuary

NEHA GREEN PLANET
LEARNING FOR MAKING PLANET GREEN

- Wildlife sanctuary is a protected area which is created to protect a particular species of local, national or global importance.

- Human activities are prohibited in core area but in buffer zone activities like grazing, collection of fuel wood, tourism etc are allowed

Wildlife Sanctuary

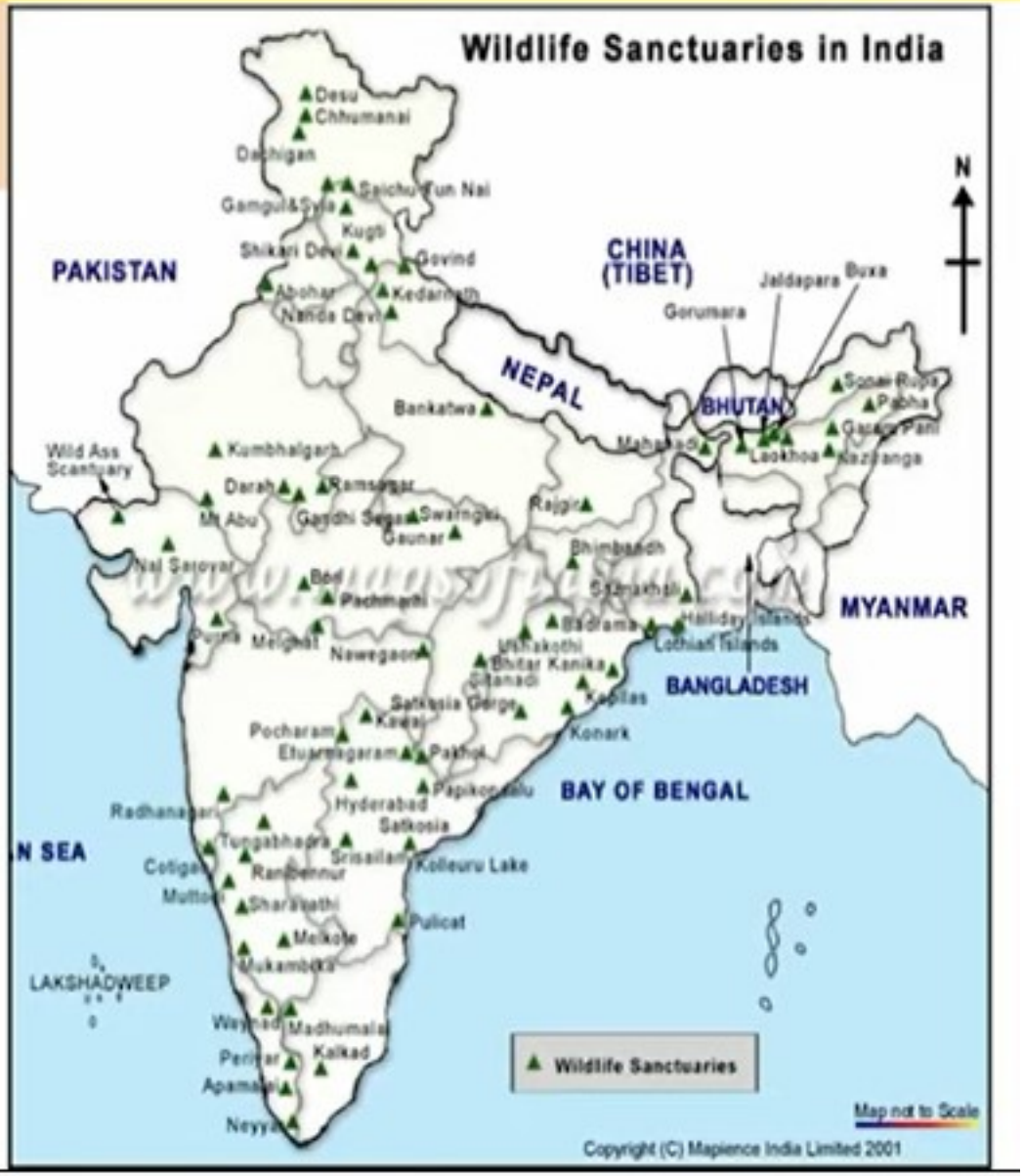


- Area resricted only for wildlife
- No human activity permitted

- Activity like Tourism, fuelwood collection, grazing etc are permitted

Wildlife Sanctuary

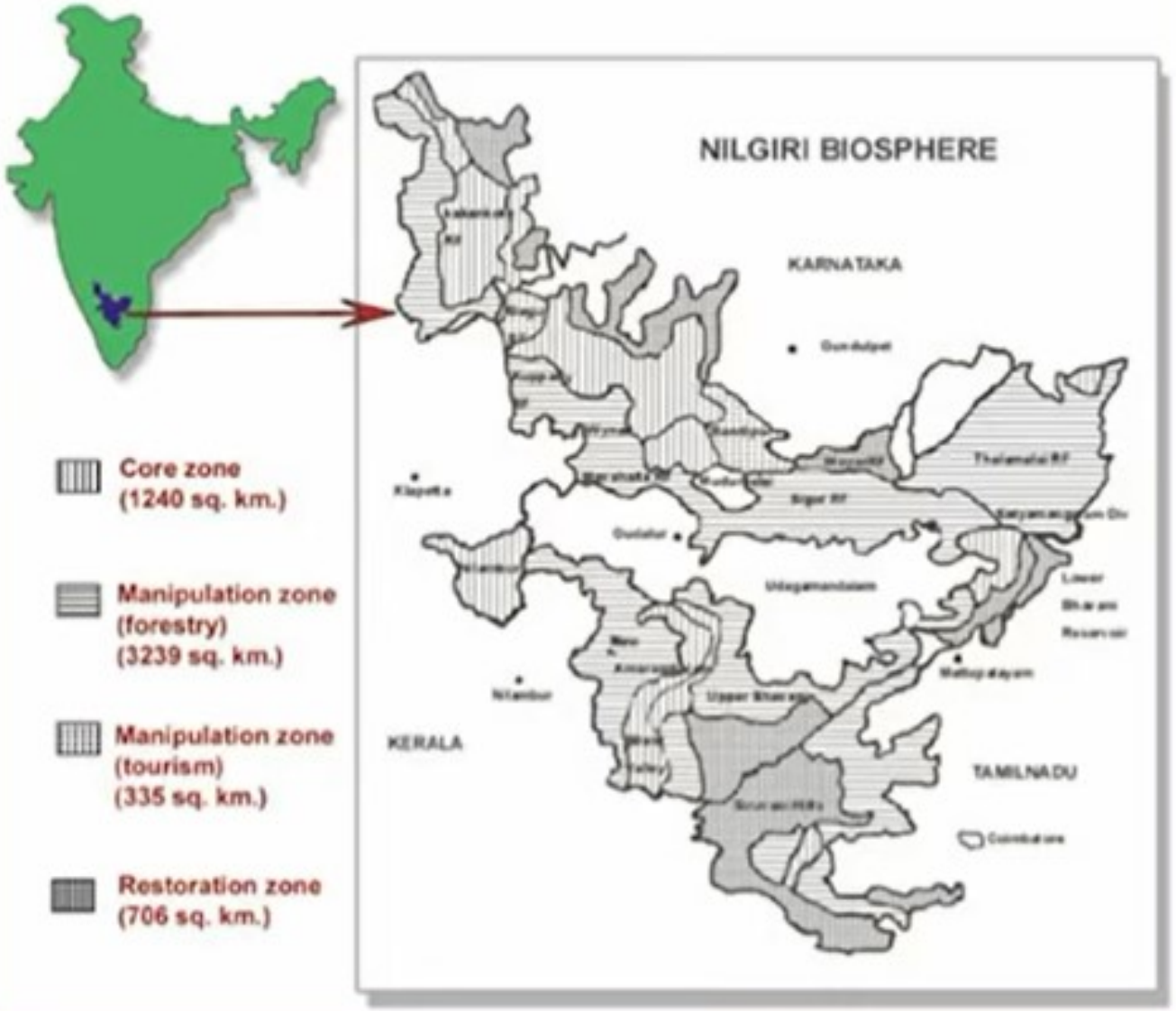
553 Wildlife sanctuary in India (as on Dec 2019)



Biosphere Reserve

Internationally recognized within the framework of UNESCO's Man and Biosphere (MAB) programme and nominated by national governments.

Biosphere Reserve



Biosphere Reserve

18 Biosphere reserves in India

Parameter	National Park	Wildlife Sanctuary	Biosphere Reserve
Protection type	Protection of wildlife	Reserved for species-oriented plant or animal	Ecosystem oriented-reserves all forms of life
Legislation	Wildlife Protection Act	Wildlife Protection Act	Internationally recognized within the framework of UNESCO's Man and Biosphere (MAB) programme and nominated by national governments.
Level of Protection	Greater degree of protection than sanctuaries	Lesser degree of protection	Greater Degree of Protection
Regulation of Human Activities	Activities like grazing, hunting, forestry or cultivation etc. are strictly prohibited.	Allowed to a limited extent in the wildlife sanctuaries	No interference except in buffer and transition zone
Boundaries	Clearly delineated by legislation	Not sacrosanct	Clearly delineated by legislation
Upgradation and Downgradation	Cannot be downgraded to a Wildlife Sanctuary	Can be upgraded to a Wildlife Sanctuary	National Parks and wildlife Sanctuaries may become a part of Biosphere Reserve
IUCN Status	Category II of the protected areas	Category IV of protected areas.	Roughly corresponds to IUCN Category V of protected areas.

2- Ex-situ conservation

2- Ex-situ conservation

Gene Bank

Genetic material is stored for future use.

Genetic material is stored using liquid nitrogen at very low temperature to avoid damage. This method of storage is known as cryopreservation

Example – NBPGR (National Bureau of Plant Genetic Resources), Delhi

Seed Bank

A seed bank is a place where seeds are stored to preserve genetic diversity for the future

Example – Indian Agricultural Research Institute (IARI), Delhi

Zoo

A zoo is a facility in which animals are housed within enclosures, cared for, displayed to the public, and in some cases bred for conservation purposes.

Example- National Zoological Park, Delhi

Botanical Garden

A botanical garden or botanic garden is a garden dedicated to the collection, cultivation, preservation and display of a wide range of plants labelled with their botanical names.

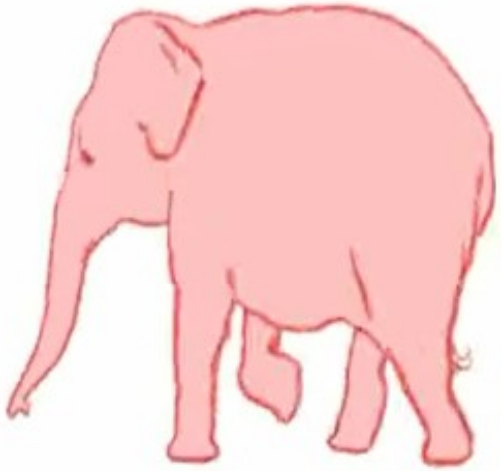
TERMS USED FOR SPECIES IN CONSERVATION

1. Umbrella species

- Species which are important for maintainence of healthy ecosystem.
- Example – Predator like Tiger

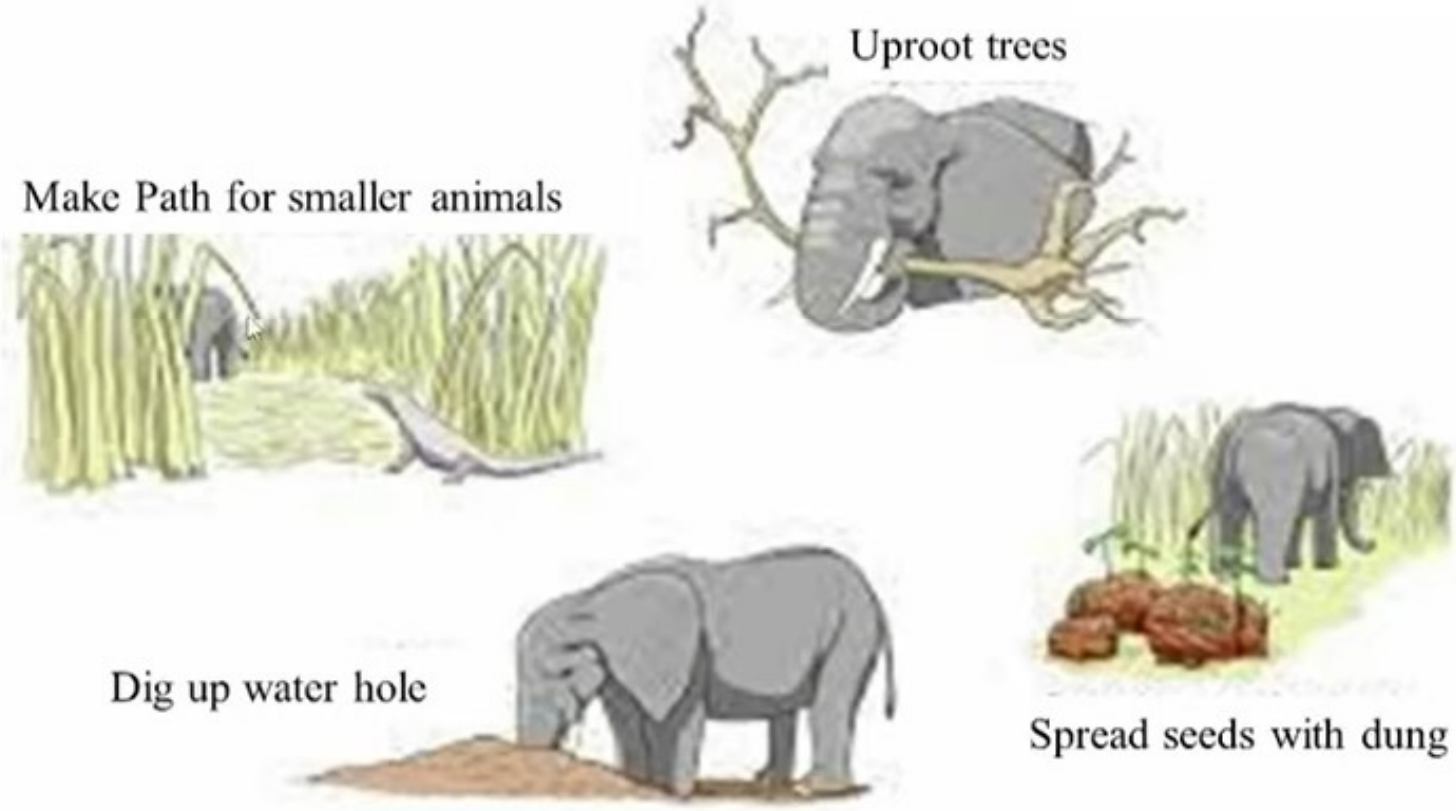
Grass ⟵ Deer ⟵

2. Keystone species



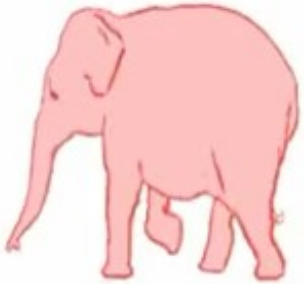
- Keystone species are valuable species for ecosystem
- These species help in maintaining balance of ecosystem. Absence of these species could lead to collapse of ecosystem
- Example - Elephant

2. Keystone species



3. Flagship species

- Flagship species are those which are ecologically, culturally or emotionally significant in the society.
- Government highlight these species to strengthen conservation efforts.



4. Indicator species

- Indicator species are sensitive to variations in climatic condition.
- These species respond quickly to any change in temperature or other environmental parameters.
- So these species indicate overall health of ecosystem
- Example – Frog, Lichen

RE-INTRODUCTION OF SPECIES

RE-INTRODUCTION OF SPECIES

Today, many species are on the verge of extinction which necessitates immediate conservation efforts. This can be done by reintroduction programs which are focused on returning any species back in their known habitat. According to IUCN, "**Re-introduction**" is an attempt to establish a species in an area which was once part of its historical range, but from which it has been extirpated or become extinct. Re-introduction is necessary to maintain

RE-INTRODUCTION OF SPECIES

Re-introduction is carried out to meet following objectives:

(i) to enhance the long-term survival of a species

(ii) to re-establish a keystone species in an ecosystem

(iii) to maintain and/or restore natural biodiversity

(iv) to provide long-term economic benefits to the local and/or national economy

(v) to promote conservation awareness

For example, Sariska Tiger Reserve (Rajasthan) faced sharp decline in tiger population during 2004-2008 due to poaching activities. In order to revive tiger population in Sariska Tiger Reserve, eight tigers from Ranthambore were re-introduced in Sariska Tiger Reserve.

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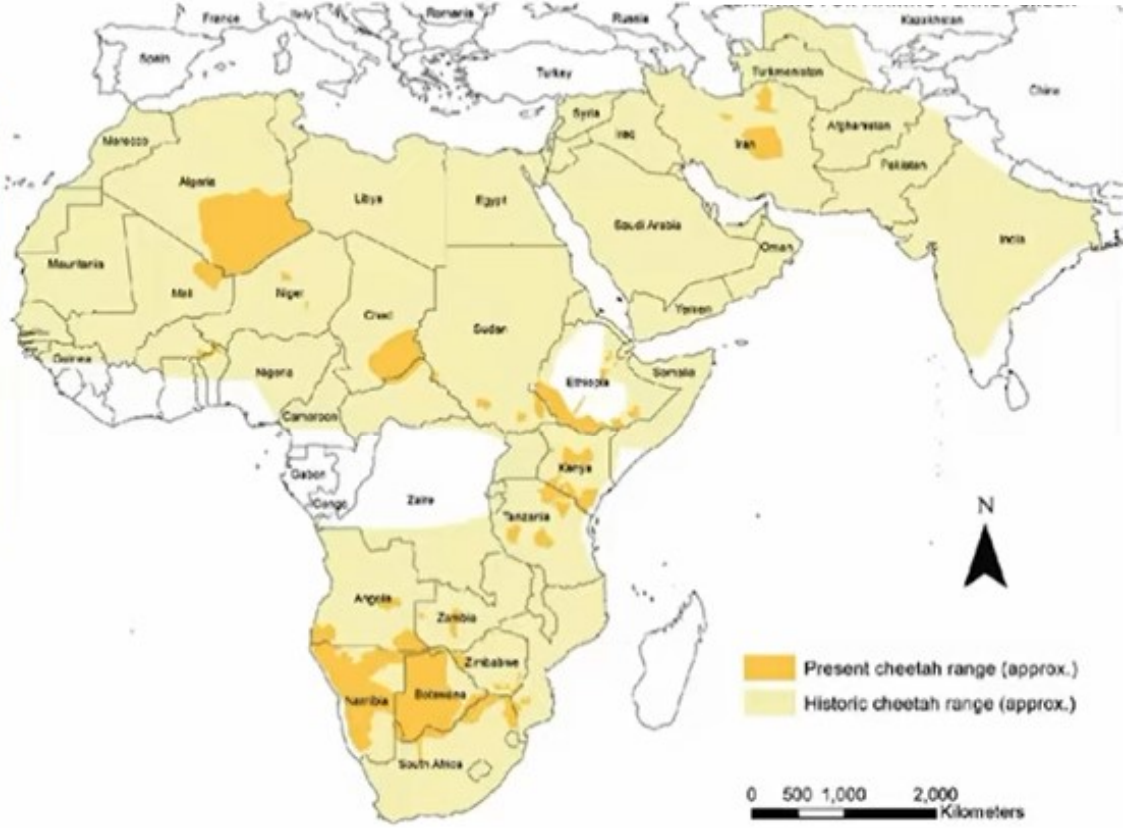


RE-INTRODUCTION OF SPECIES

Hunting of Cheetah

Loss of habitat

Unavailability of Prey

RE-INTRODUCTION OF SPECIES

During the rule of Akbar, there were as many as 10,000 cheetahs

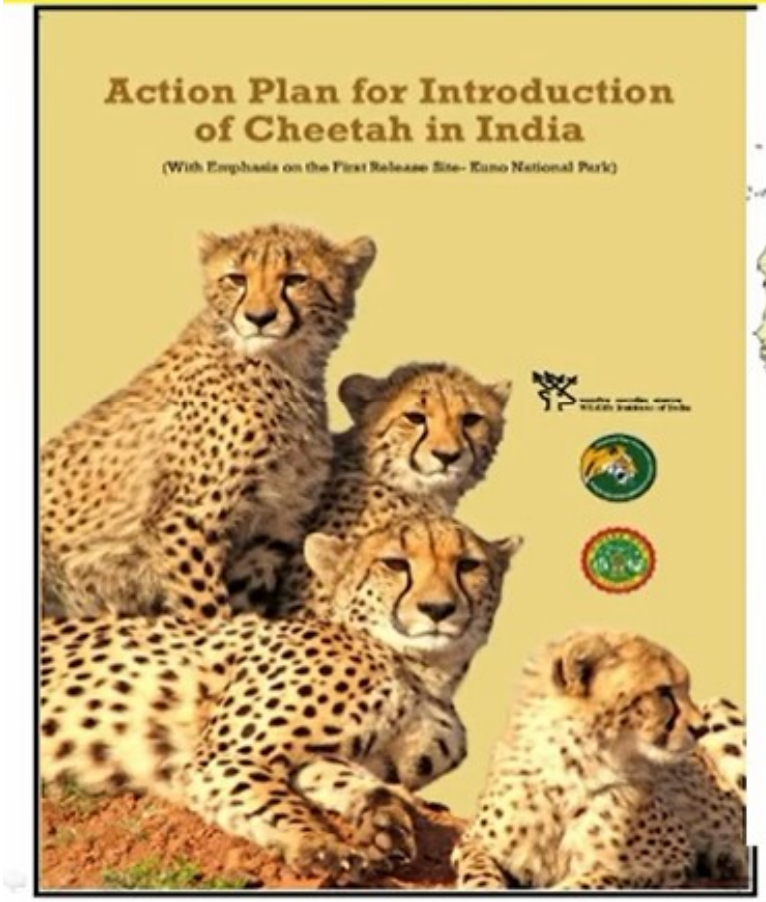
RE-INTRODUCTION OF SPECIES

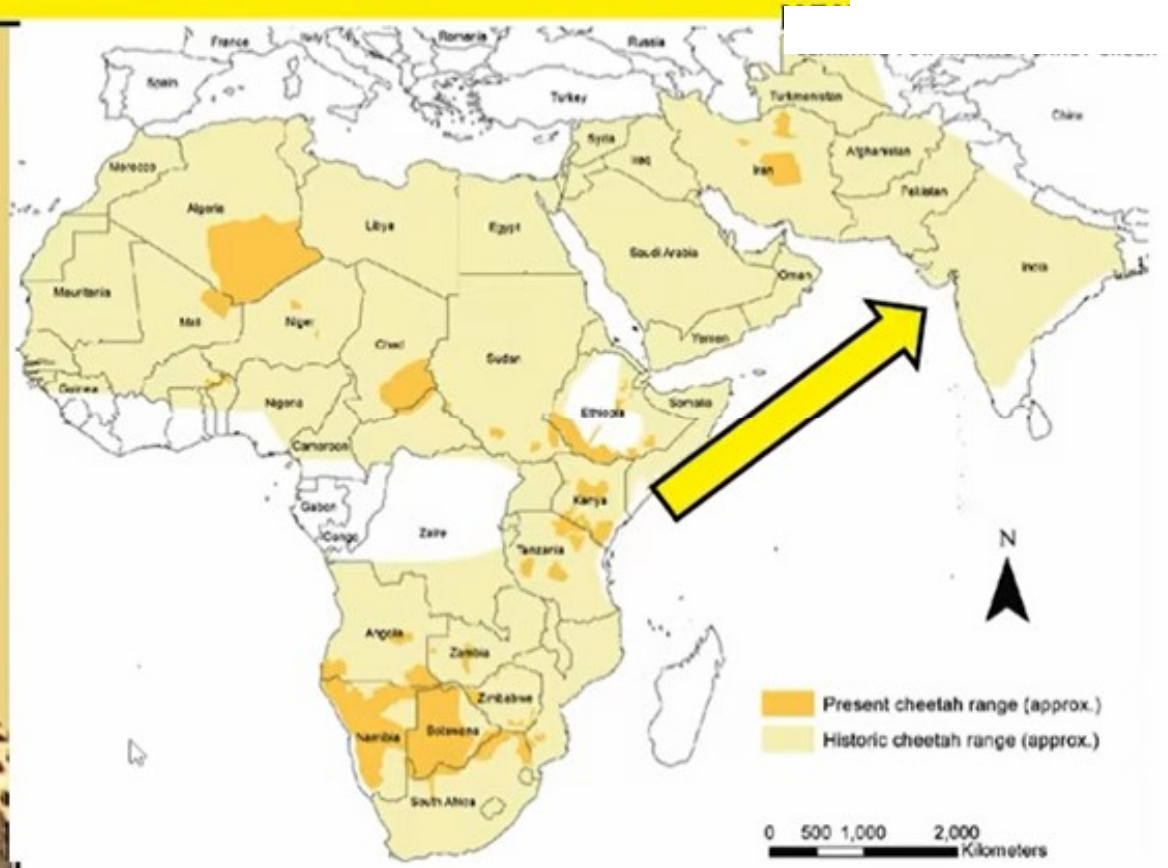
Between 1799 and 1968, there were at least 230 cheetahs.

RE-INTRODUCTION OF SPECIES

- The last cheetahs in the wild were recorded in 1948 where three of them were shot in the Sal forests of Koriya District (in present-day Chhattisgarh), and a few sporadic reports from Central and Deccan regions till the mid-1970s.

RE-INTRODUCTION OF SPECIES





RE-INTRODUCTION OF SPECIES

RE-INTRODUCTION OF SPECIES

Benefits from Re-Introduction of Cheetah in India

1. Viable population of Cheetah in India
2. Ecological balance
3. Long term economic benefits through eco-tourism
4. Increase in Biodiversity
5. Conservation awareness

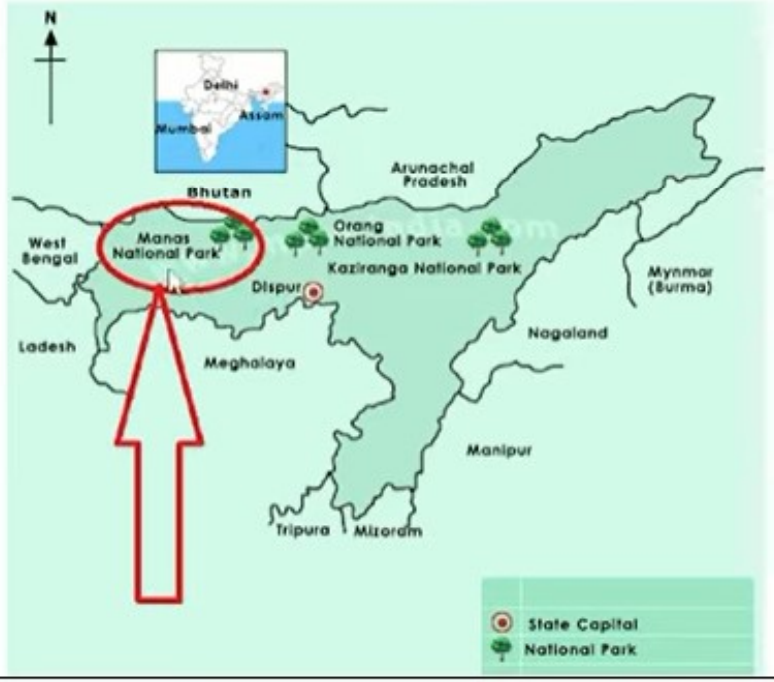
TRANSLOCATION OF SPECIES

According to IUCN, **"Translocation"** is deliberate and mediated movement of wild individuals or populations from one part of their range to another.

important step to maintain population balance in ecosystem, to reduce human-animal conflicts, to increase or reduce population or for recreational or commercial purpose. This intentional movement of plants and animals from one place and releasing them in another is crucial to improve survival chances of species and to improve biodiversity of region.

TRANSLOCATION OF SPECIES

For example, few Rhinoceros were translocated from Kaziranga National Park to Manas National Park to increase population of Rhinoceros in Manas National Park.



THANK YOU

Acknowledgements:
https://www.youtube.com/watch?v=wNjIJaXaTkQ&list=PLIC0i9IRboHb19v2dF0yuenG7xDOGJLeP