

# Biosphere Reserves

- NP - National Park
- WS - Wildlife Sanctuary
- WHS - UNSECO World Heritage Site
- PT - Project Tiger
- PE - Project Elephant
- TR - Tiger Reserve

Name	Includes	State	Location	Imp. Animal
Cold Desert	NP	Himachal Pradesh	Lahaul and Spiti	Snow leopard
Nanda Devi	Nanda Devi NP	Uttarakhand	Chamoli, Pithoragarh & Bageshwar	Snow leopard, Black bear
Kanchenjunga	Kanchenjunga NP	Sikkim		Snow leopard, Red panda
Dihang Dibang	Mouling NP, Dibang WS	Arunachal Pradesh	Dibang Valley, Upper Siang, West Siang	Mishimi takin, Musk deer
Dibru-Saikhowa		Arunachal Pradesh	Dibrugarh and Tinsukia districts	Golden langur
Manas	Manas NP, WHS, PE, PT	Assam		Golden langur, Red panda
Nokerk	Nokerk NP	Meghalaya	West Garo Hills	Red panda
Kutch		Gujarat	Kutch, Rajkot, sundernagar	Indian wild ass
Panchmarhi		Madhya Pradesh	Hoshingabad, Betul, Chindwara	Giant squirrel, Flying squirrel
Panna	Panna NP	Madhya Pradesh	Panna, Chhatrapur	Tiger, Chiital, Sambhar, Chinkara, Sloth Bear

Name	Includes	State	Location	Imp. Animal
Achanakmar-Amarkantak		Chhattisgarh, Madhya Pradesh	Bilaspur, Anuppur	Four horned antelope, Indian wild dog, White runt vulture
Sundarban	Sundarban NP, TR, WHS	West Bengal		Bengal Tiger
Simplipal	Simplipal NP	Orissa	Mayurbhanj	Gaur, Bengal tiger, Asian elephant
Seshachalam		Andhra Pradesh	Chittoor, Kadappa	Slender lauris
Niligiri	NP- Bandipur, MAadumalai, Nagerhole, WS-Wayanad, Satyamangalam	Tamil Nadu, Kerala, Karnataka	Western Ghats - Madumalai, Nagarhole	
Agasthyamala		Kerala, Tamil Nadu		Niligiri nahar, Elephant
Gulf of Mannar	Gulf of Mannar NP	Tamil Nadu	Tuttikodi, Dhanushkodi	Dolphin, Whale, Dugongs
Great Nicobar	Campbell Bay NP, Galatea NP	Andaman & Nicobar		Nicobar long tailed macaque, salt water crocodile, malayan box turtle, sea turtle, nicobar tea shrew, reticulated python, coconut crab

## National Parks

- jammu & kashmir
  - dachigam
    - kashmiri Stag
  - hemis
    - asiatic ibex
    - snow leopard
    - great tibetan sheep
- himachal pradesh
  - great himalayan
    - blue sheep
    - snow leopard
    - brown bear
    - himalayan taher
    - musk deer

- maharana pratap
  - barking deer
  - sambhar
  - wild boar
  - leopard
- uttarakhand
  - jim corbett
    - bengal tiger
    - indian elephant
    - black bear
    - leopard
  - rajaji
    - elephant
    - chhittal
  - valley of flowers
    - asiatic black bear
    - musk deer
    - red fox
    - blue sheep
    - brown bear
    - leopard
- uttar pradesh
  - dudhwa
    - tiger
    - swamp deer
  - chandra prabha
- bihar
  - bhimbandh
    - tiger
    - leopard
    - peafowl
    - rabbit
    - barking deer
- jharkhand
  - betla
  - palamau ws
  - hazaribag ws

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## Wildlife and Ecology related data

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### Aquatic organisms

- **Neustons** - Unattached organisms which live at air-water interface such as floating plants, etc.
- **Periphytons** - They remain attached to stems and leaves of rooted plants or substances emerging above the bottom mud such as sessile algae

- **Planktons**
  - These are free floating species with limited powers of locomotion
  - This group includes
    - microscopic plants like algae (**phytoplanktons**)
    - animals like crustaceans and protozoans (**zooplanktons**)
- **Nektons** - This group includes animals which are swimmers
  - The animals range in size from the swimming insects to the the largest animals, **blue whale**
- **Benthos** - These are found living in the bottom of water mass

## Ecological Relationships

Effect on X	Effect on Y	Type of interaction
-	-	Competition
-	0	Amensalism
-	+	Exploitation
0	0	Neutralism
0	+	Commensalism
+	+	Mutualism

### Amensalism

- Organism inflicts harm to another organism without any costs or benefits received by itself
- eg. Sheep trampling grass

### Exploitation

- one species benefits at the expense of other
- eg. Predation, Parasitism, Herbivory
- Batesian mimicry is an exploitative interaction, where one species has evolved to mimic another, to the advantage of copying species but to the detriment of the species being mimicked

### Neutralism

- interact but do not affect each other

### Commensalism

- benefits one organism and the other organism is neither benefited nor harmed

### Mutualism

- species derive mutual benefit, for example an increased carrying capacity

### Competition

- interaction in which the fitness of one is lowered by the presence of another

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# IUCN Red list

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## Red Data Book

- Listing of threatened species
- **Gland, Switzerland**
- First issued in 1966
- Red means danger
- Includes CR, EN, VU, NT
- Critically endangered
  - reduction in population >90% over last 10 year
  - number is less than 50 mature individuals
  - high risk of extinction in wild

## Critically Endangered

- Pygmy Hog
  - ecological indicator of grassland
  - **only in Sonai Rupai area, Manas WS, Assam**
  - due to degradation of grasslands, dry season burning, grazing
- Andaman white toothed shrew
  - endemic to india
  - nocturnal
  - **mount harriet in south andaman islands**
  - **campbell bay NP, A&N**
- Elvira rat
  - large rock rat
  - endemic to india
  - **only in eastern ghats of tamil nadu**
  - tropical dry deciduous forests
- Namdapha flying squirrel
  - **Namdapha Tiger Resserve, Arunachal Pradesh**
  - tropical forests
- Malabar civet
  - **travancore**
  - nocturnal
- Sumatran & Javan Rhinoceres
  - **foothills of himalayas and NE India**
  - only a small number survive in Java and Vietnam
- Kashmir Stag/Hangul
  - native to india
  - **J&K**
- Himalayan Brown Bear

- **North tibet, far north india, north pak**
- Sexual dimorphism
- hibernation in october
- Kondana Rat
  - **pune, maharashtra**
  - endemic to india
  - tropical and sub-tropical dry deciduous forest