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# **CBD's Asia Pacific Regional Workshop on Programme of Work on Protected Areas**

**12-15<sup>th</sup> October, 2009**

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## **Wildlife Institute of India: Mandate, Activities & Accomplishments**

***Wednesday, 14 October, 2009***

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**भारतीय वन्यजीव संस्थान  
Wildlife Institute of India**

# BACKGROUND

- ☀ Established as an attached office in May, 1982.
- ☀ Granted autonomous status by the Union Cabinet in November, 1985.

## OUR MISSION.....

- ☀ To nurture the development of Wildlife Science and promote its application in conservation, in consonance with our cultural and socio-economic milieu



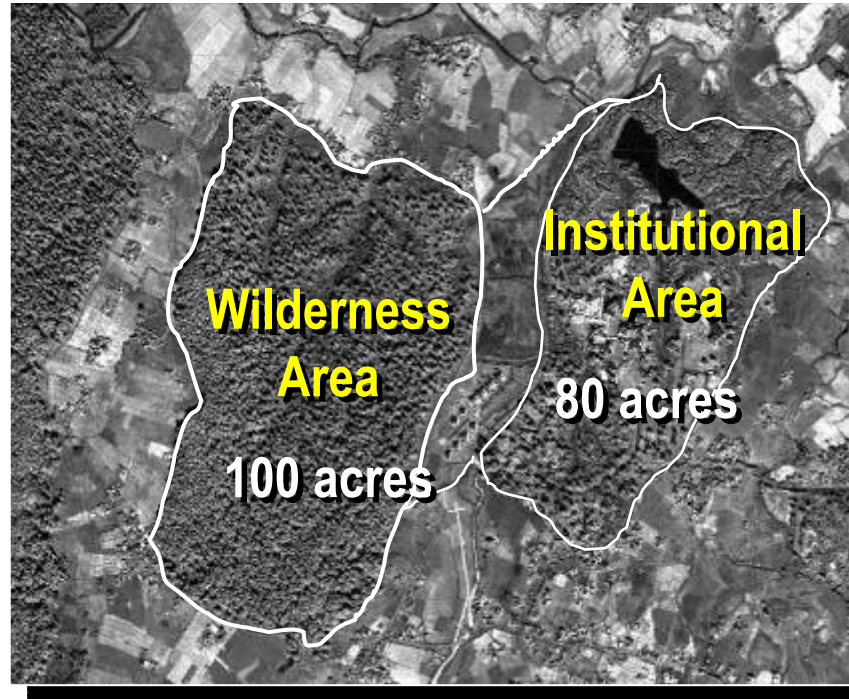
# MANDATE.....

- ☀ To build capacity through training, education and research in the field of wildlife conservation





# GLIMPSES OF CAMPUS BIODIVERSITY

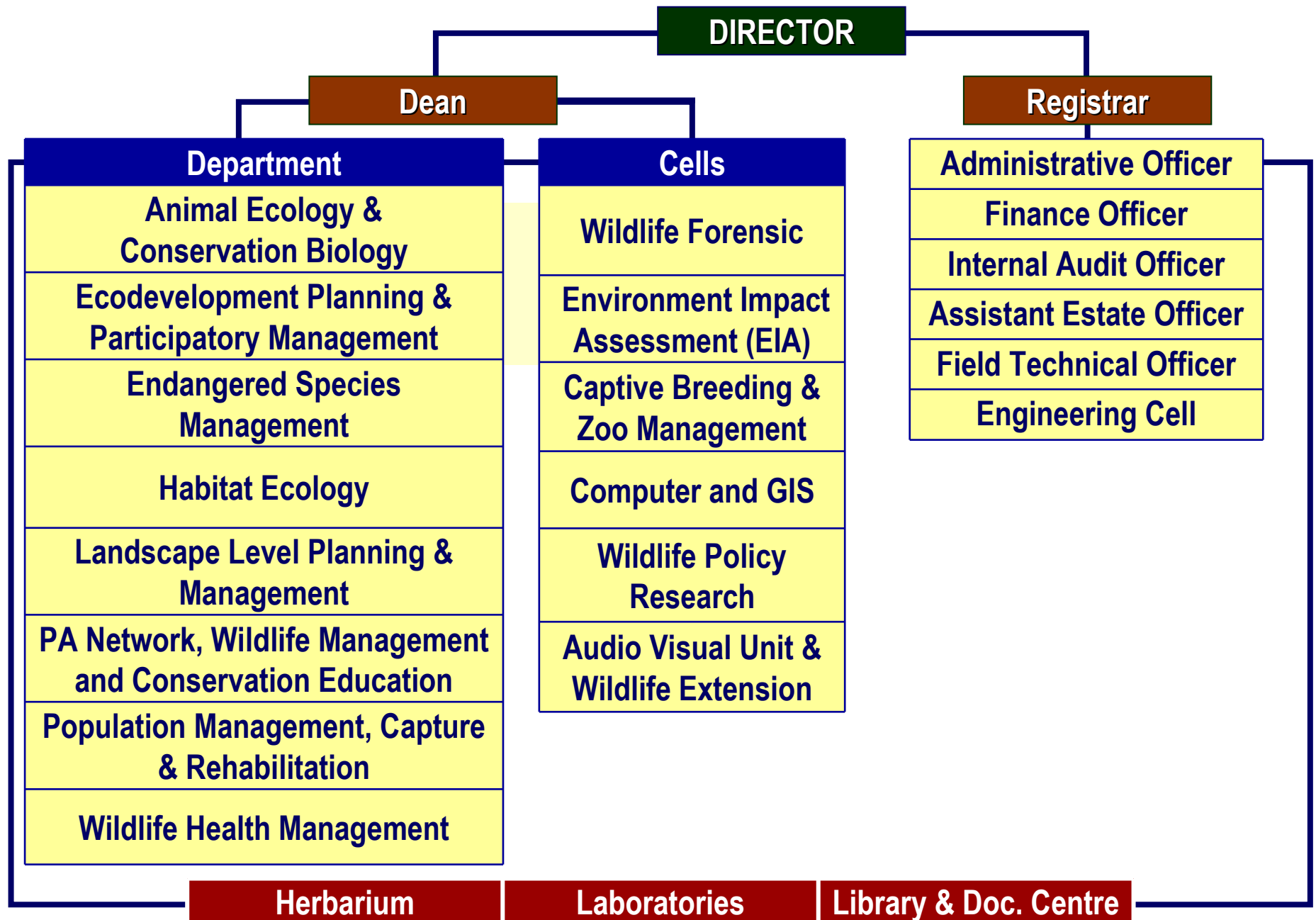


- ◆ ~ 540 spp. of vascular plants
- ◆ 309 species of birds
- ◆ 20 species of mammals
- ◆ 7 species of snakes
- ◆ 4 spp. of turtles
- ◆ 10 spp. of fish
- ◆ 32 species of butterflies
- ◆ 15 species of moths

# WII - Governance

<b>WII-Society (45 Members)</b>	<b>Chaired by Hon'ble Minister of Environment &amp; Forests, Government of India</b>
<b>WII-Governing Body (21 Members)</b>	<b>Chaired by Secretary, Ministry of Environment &amp; Forests, Government of India</b>
<b>WII-Finance Committee (5 Members)</b>	<b>Chaired by Director General of Forests &amp; Special Secretary, MoEF</b>
<b>WII-Training, Research &amp; Academic Council (25 Members)</b>	<b>Chaired by an eminent person in the field of wildlife nominated by President, WII Society</b>

# WII-Organisational Structure



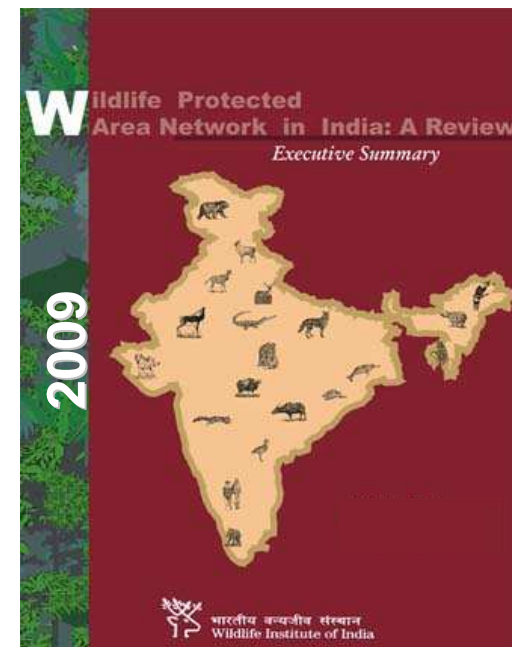
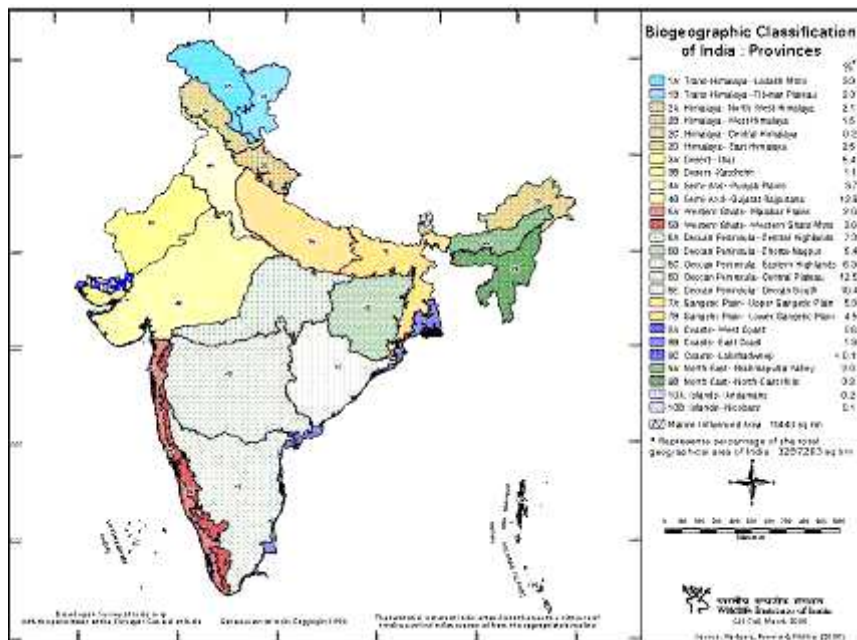
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# **Our Activities & Accomplishments**

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# Biodiversity Conservation through PA Network Planning



Category	1988			2009		
	Nos.	Area (km <sup>2</sup> )	%	Nos.	Area (km <sup>2</sup> )	%
National Parks	54	21,003	0.64	99	39,155	1.19
Wildlife Sanctuaries	372	88,649	2.70	513	118,417	3.60
Community Reserve	-	-	-	3	17.8	0.005
Conservation Reserve	-	-	-	43	1155	0.035
<b>Protected Areas</b>	<b>426</b>	<b>109,652</b>	<b>3.34</b>	<b>658</b>	<b>158,745</b>	<b>4.83</b>



# Management Effectiveness Evaluation of PAs...

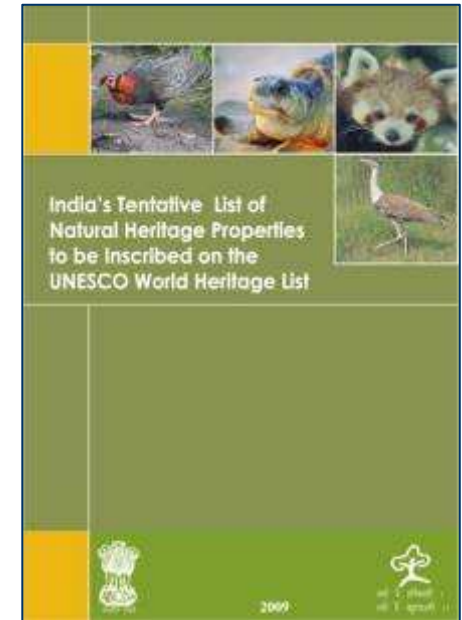
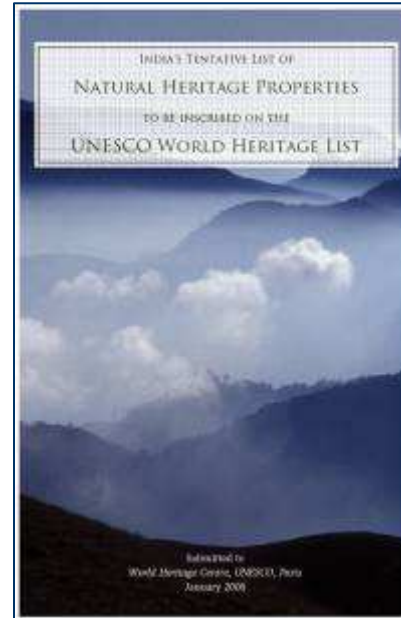
## How secure are Protected Areas...?



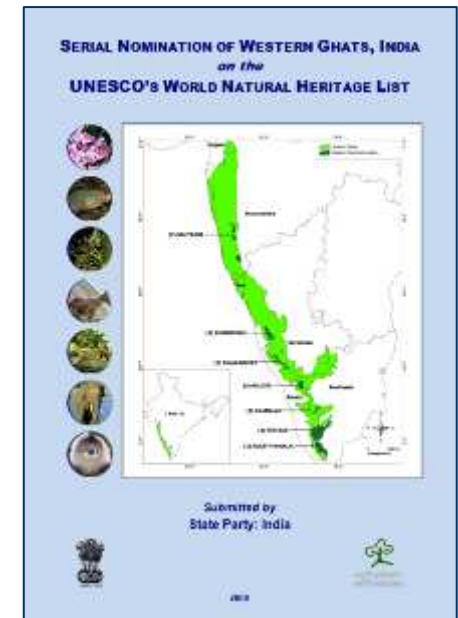
Element Name	No. of Criteria	Criteria
<i>Context</i>	03	Site values, Threats, Biotic pressures
<i>Planning</i>	09	Zonation, Management Plan, Stakeholders, Habitat Management, Protection, Human-Wildlife Conflict, Landscape Management
<i>Inputs</i>	05	Human Resources, Infrastructure, Funds, NGO inputs
<i>Process</i>	05	Trained Manpower, HRD, Livelihoods
<i>Outputs</i>	04	Dissemination, Visitor Services, Maintenance schedule
<i>Outcomes</i>	06	Population Trends, Threats abatement, Community relationship

# Salient contributions...

- ◆ Preparation of India's Tentative List of Natural World Heritage Properties



- ◆ Preparation of Dossier for the Western Ghats for nomination as World Heritage Site



# Capacity Building for Wildlife Conservation

## *Regular Courses for in-service forest officials*

- ☀ **9-month Postgraduate Diploma Course in Wildlife Management**
  - *30 courses; 556 professionals including 85 foreign trainees from 15 countries*



- ☀ **3-month Certificate Course in Wildlife Management**
  - *24 courses; 431 professionals including 63 foreign trainees from 14 countries*



# FOREIGN TRAINEES IN POSTGRADUATE DIPLOMA COURSE

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- **Afghanistan**
- **Bangladesh**
- **Bhutan**
- **China**
- **Cambodia**
- **Kazakistan**
- **Laos, PDR**
- **Malaysia**
- **Maldives**
- **Myanmar**
- **Nepal**
- **Palestine**
- **Sri Lanka**
- **Tanzania**
- **Vietnam**



# FOREIGN TRAINEES IN CERTIFICATE COURSE

➤ Bangladesh

➤ Bhutan

➤ China

➤ Cambodia

➤ Indonesia

➤ Laos, PDR

➤ Malaysia

➤ Mauritius

➤ Nepal

➤ Pakistan

➤ Singapore

➤ Sri Lanka

➤ Vietnam

➤ Zambia

# Capacity Building for Wildlife Conservation

## *Customized Training Programmes...*

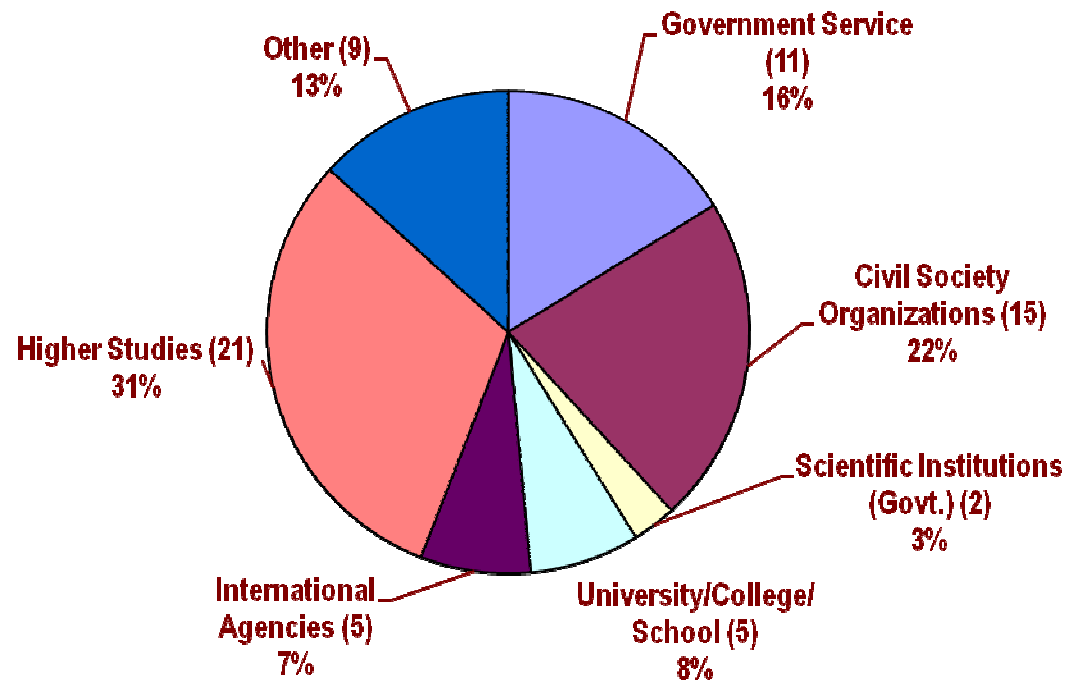
- ☀ **Customs & Central Excise Probationers Training Course (3 weeks)**
- ☀ **Zoo Management Course (2 & 3 weeks)**
- ☀ **IFS Compulsory Course (1 & 2 weeks)**
- ☀ **Sensitization Programmes for Central Military and Para-military Organizations**
- ☀ **Study tours for PA managers of neighboring countries**



# Capacity Building for Wildlife Conservation

## 2-year Masters Course in Wildlife Science

- ☀ Courses completed - 11
- ☀ Students passed out - 93



# Capacity Building for Wildlife Conservation

- ☀ **145 Research Projects completed (1986-2009)**
- ☀ **43 On-going Research Projects**
- ☀ **77 Ph.D. thesis awarded**
- ☀ **8 Ph.D. thesis submitted**
- ☀ **37 Ph.D. thesis ongoing**





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# **Species Conservation through Science**

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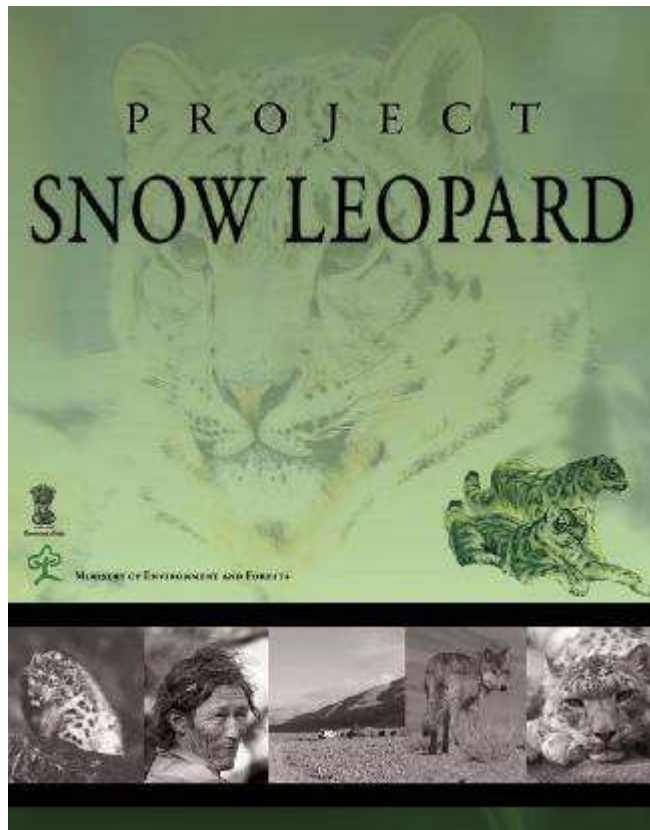
# Conservation of Species



Flagship,  
Rare,  
Endangered  
and  
Endemic



# Management of Large Carnivores: Snow Leopard



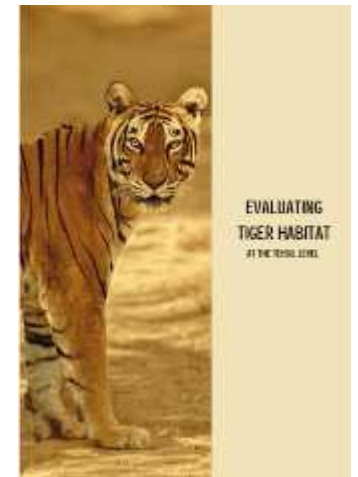


# Management of Large Carnivores: Tiger

- ◆ Population Dynamics, Dispersal, Metapopulation structure and Monitoring of Tiger, Co-predators, Prey and Habitat



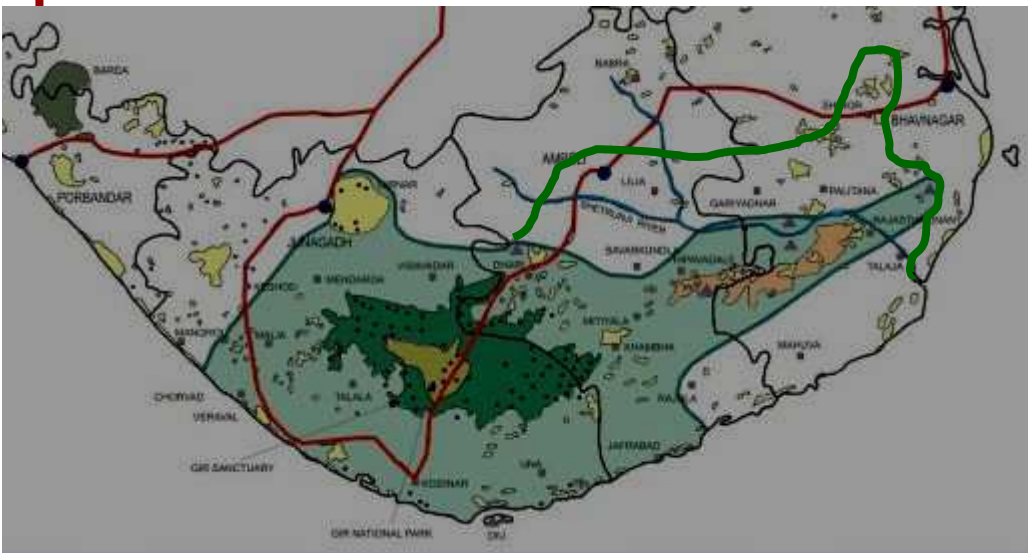
- ◆ Comparison of tiger population estimation methods using Pugmark, Camera Trap and DNA based analysis.





# Management of Large Carnivores: Lion

- ◆ Ungulate Habitat Ecology, Population Structure, Social Organization, Metapopulation Dynamics, Socio Economic Dependence and Conflict, and Monitoring



# Biology and Conservation of Endangered Sangai...



- ◆ Population dynamics, conservation genetics and behavior of Sangai Deer in Manipur.





# Formulation of Species Action Plans...



Guidelines on  
Preparation of Action Plan for  
Conservation of Terrestrial Species



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Wildlife Institute of India

February, 2009



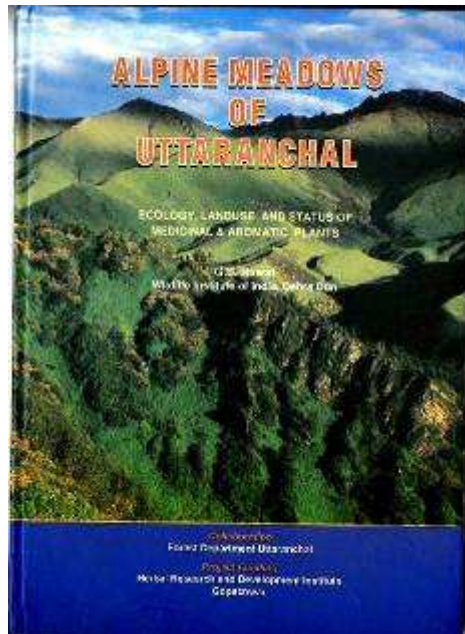
Guidelines on  
Preparation of Action Plan for  
Conservation of Marine Species



भारतीय वन्यजीव संस्थान  
Wildlife Institute of India

May, 2009

# Ecology & Management of Alpine Habitats





# The Terai Arc Landscape Conservation...



# Terai Arc Landscape: Composition

Shivalik Range (Mixed Forest)



Bhabar Tract (Dry Woodlands)



Terai Forests (Moist Woodland-Grassland mosaic)





# Terai Arc Landscape: Significance

Listed as a *Globally Important ECOREGION*, contains diverse mammalian assemblage, including threatened and obligate species.



The Flagship Species,  
dominates the conservation agenda



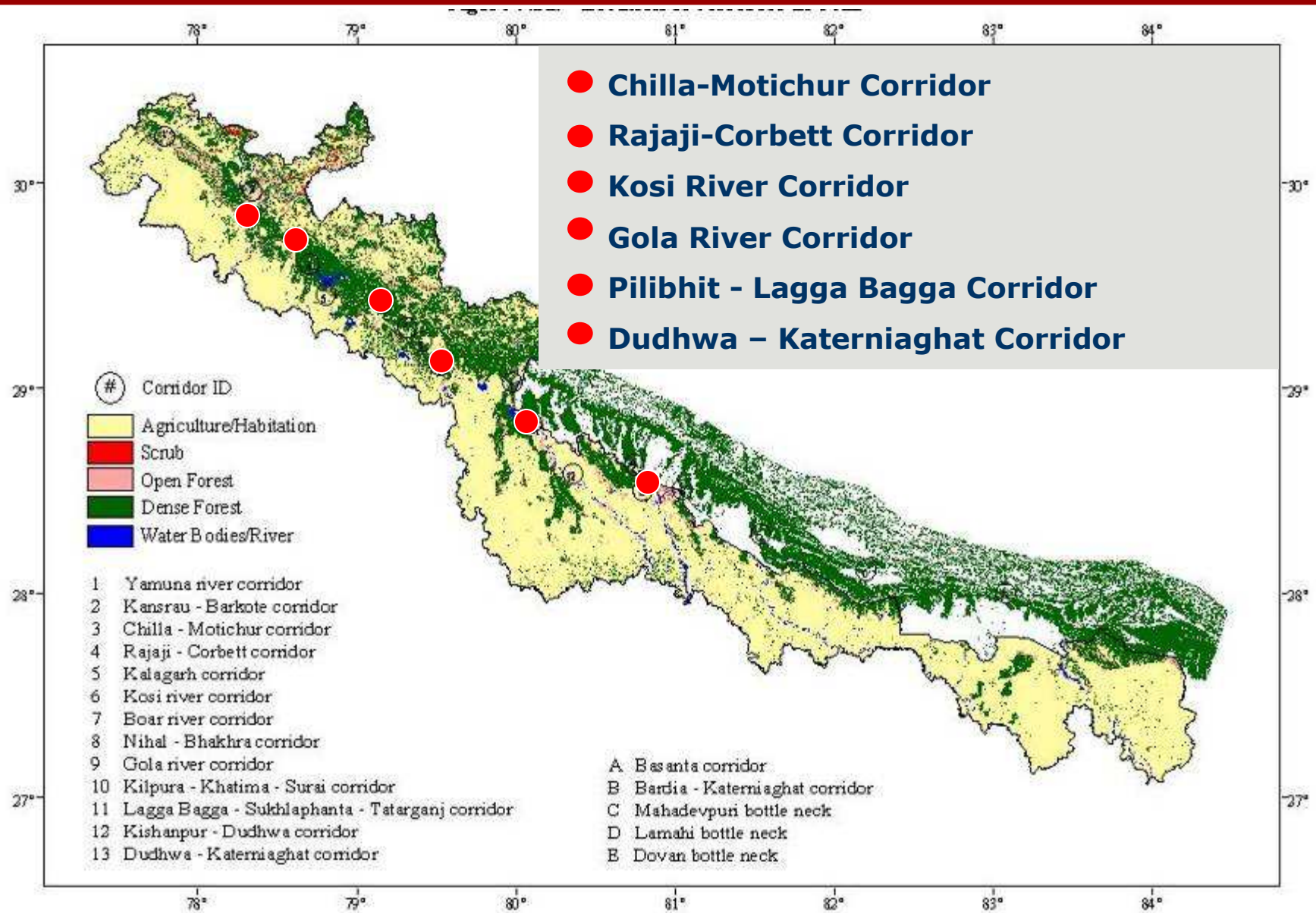
# Terai Arc Landscape: Significance

Home to Obligate Species, confined to isolated habitats, are facing local extinction. Landscape approach offers hope for these species



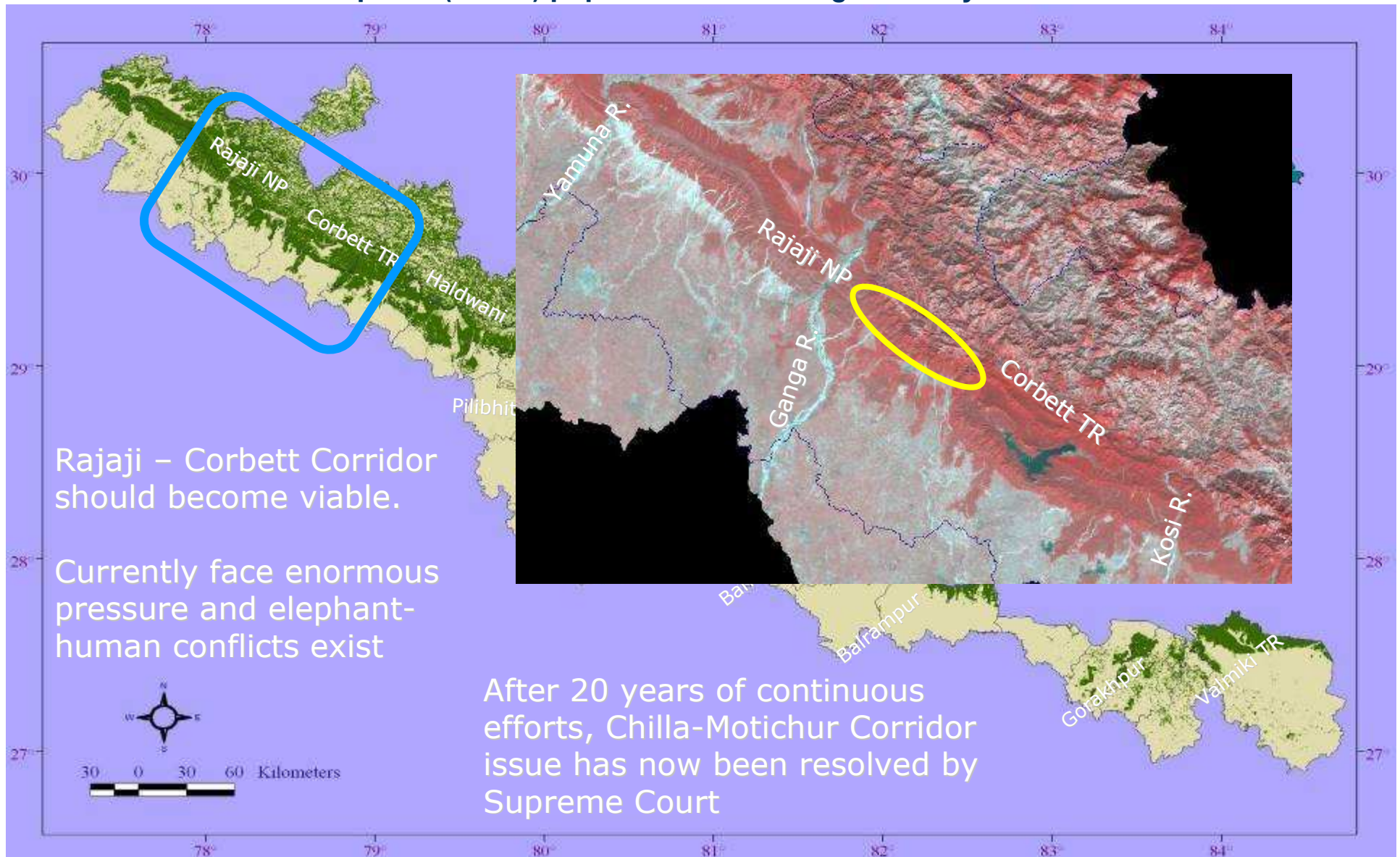


# Habitat Fragmentation and Corridors



# Rajaji-Corbett Landscape Unit

Largest contiguous forest, containing large Tiger (>150) and Elephant (>1000) populations that are genetically distinct







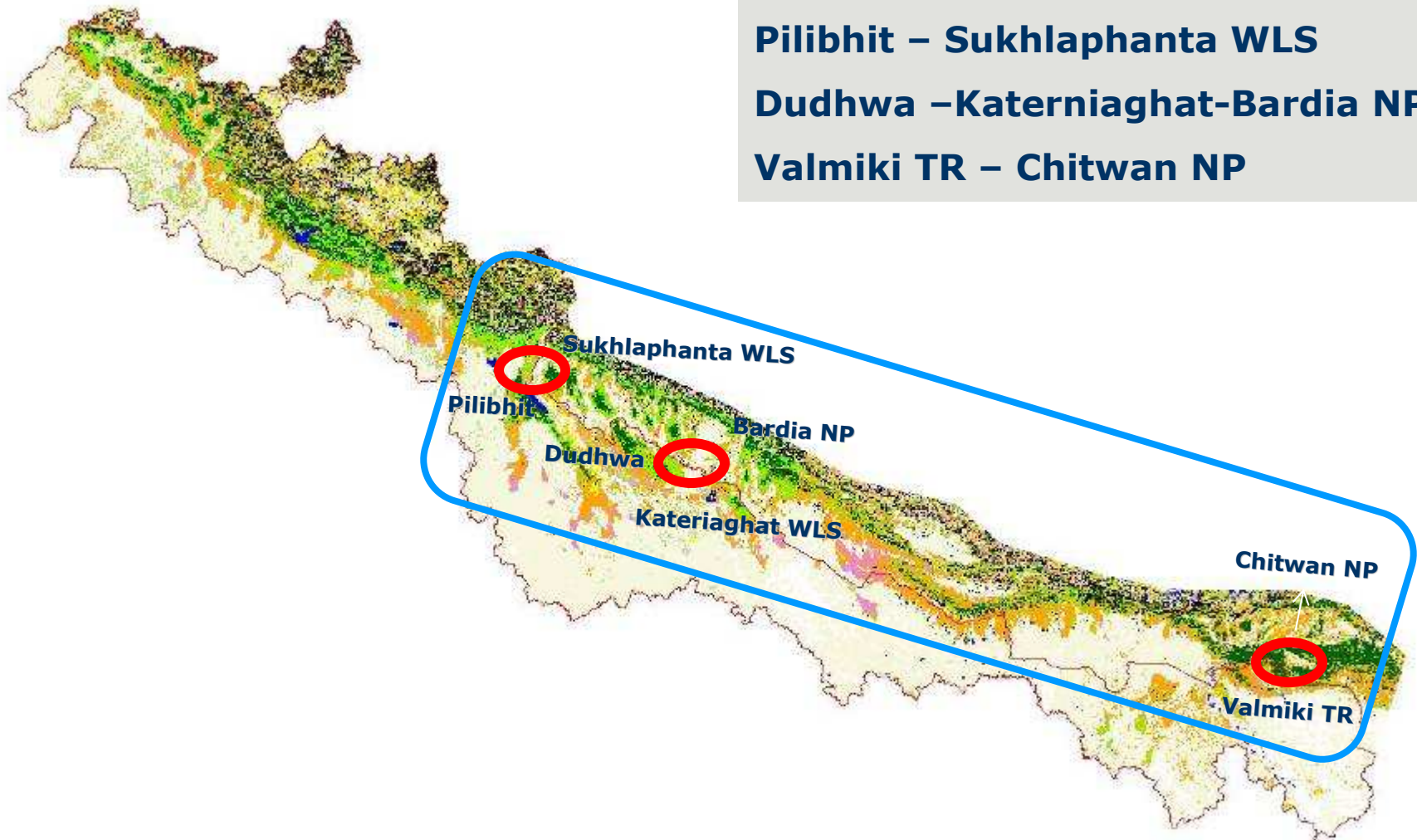
# Rajaji-Corbett Landscape Unit

Recovery of Tiger Population in Rajaji National Park  
after relocation of Gujjars

TIGER ID	2004	2005	2006	2007	2008	
RT - 001 ♂	Yellow					
RT - 002 ♀	Red	Red				
RT - 003 ♀		Red				
RT - 004 ♀		Red				
RT - 005 ♀		Red	Red	Red	Red	
RT - 006 ♂			Yellow	Yellow	Yellow	
RT - 007 ♀			Red	Red		
RT - 008 ♀			Red			
RT - 009 ♀			Red		Red	
RT - 010 ♀			Red			
RT - 012 ♂					Yellow	
RT - 013 ♀					Red	
RT - 014 ♀					Red	
RT - 022 ♂						Yellow
RT - 023 ♀						Red
RT - 024 ♀						Red



# Habitat Fragmentation in Terai Forests: need for transboundary cooperation



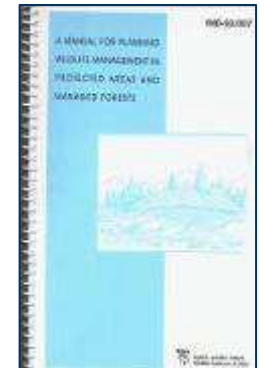
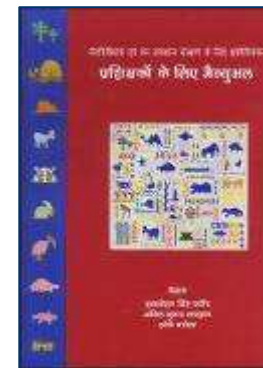
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# **Human Dimensions in Wildlife Conservation**

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# Human Dimensions in Wildlife Conservation

- Shift from exclusive to inclusive approach involving communities
- Emergence of new participatory models in Protected Area Management
  - *Kalakad Mundanthurai Tiger Reserve (KMTR)*
  - *Great Himalayan National Park (GHNP)*
  - *Periyar Tiger Reserve (PTR)*
  - *Gulf of Mannar Biosphere Reserve*
- National institutional capacity building in landscape conservation





# Wildlife Health Management

## *Teaching & Training*

- Modules on Wildlife Health Management and Wildlife Immobilization
- Captive management of wildlife
- Disease investigation and biological sampling
- Emerging and zoonotic diseases

## *Applied Research*

- Sero-epidemiological study on wild and domestic ungulates in Sariska Tiger Reserve
- Infectious diseases of lions
- Investigation of feline-panleucopaenia in tigers
- Mortality investigation of Himalayan musk deer
- Emerging zoonotic diseases



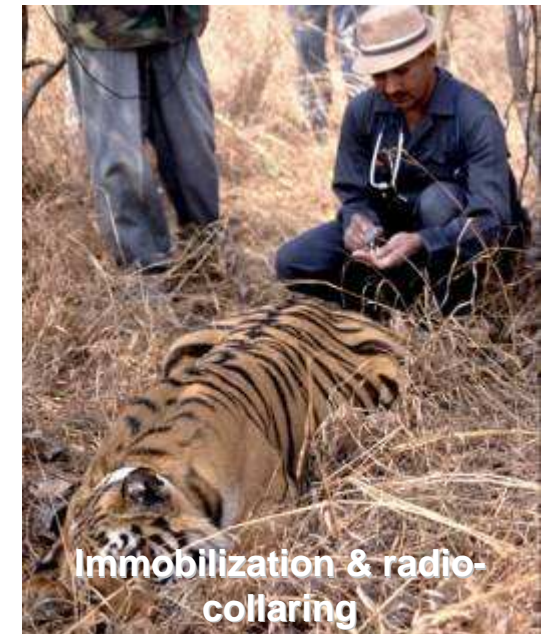
# Wildlife Health Management

## *Advisory Support to State Wildlife Agencies*

- Investigation of mortality events
- Medical management of injured wildlife and animals in distress
- Training of frontline staff
- Rescue and rehabilitation of trapped wild carnivores
- Immobilization and radio-collaring
- Species re-introduction

## *Regional Cooperation and Development of Programs*

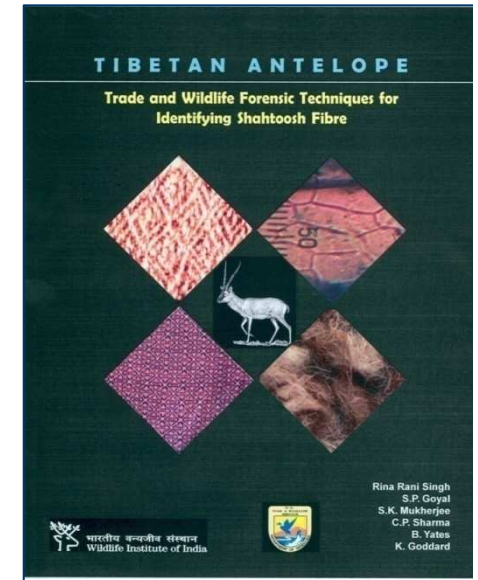
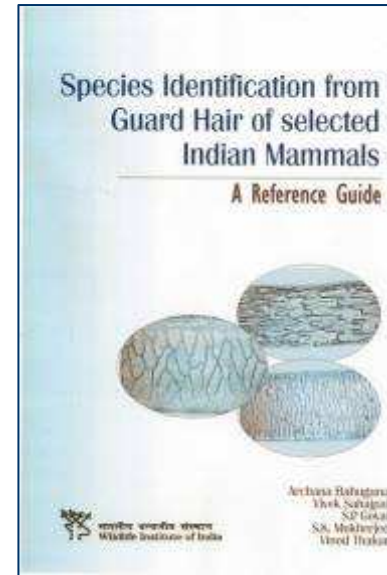
- **Indian Wildlife Health Cooperative (IWHC)**  
Advancement of the capabilities of veterinary colleges to provide diagnosis and investigation of disease outbreaks, information exchange, education and consultation to wildlife managers and veterinarians





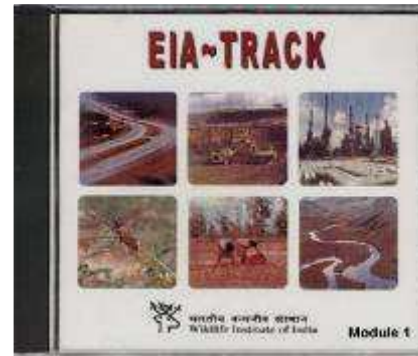
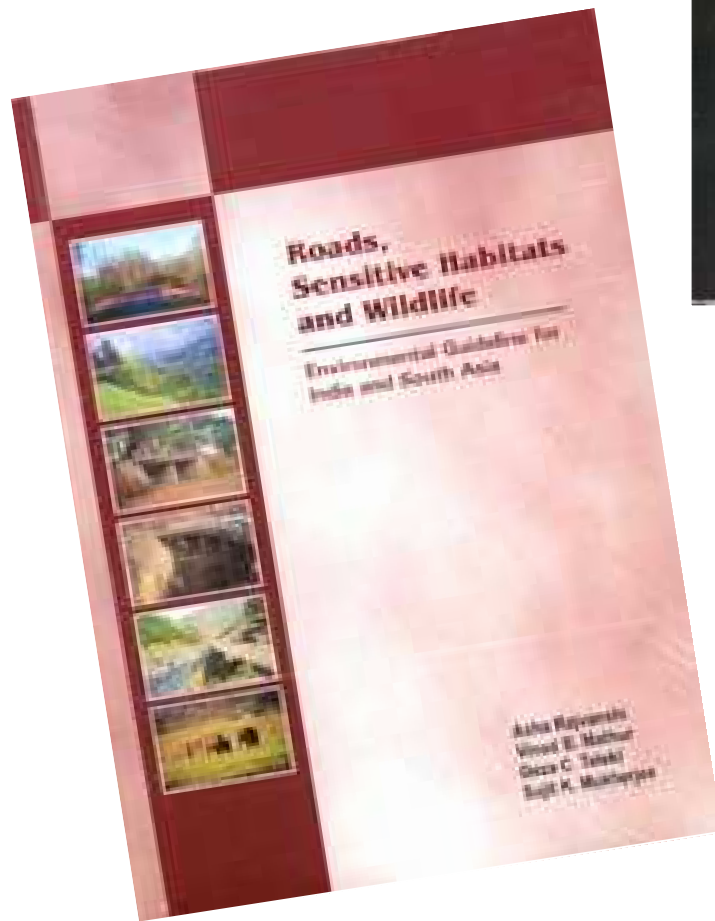
# Development of Wildlife Forensics Capability

- ◆ Species identification on morphological attributes
- ◆ DNA sequence profile of 65 Indian wild animal species have been prepared for use in species identification





# Building Capacity for Biodiversity-inclusive Impact Assessment

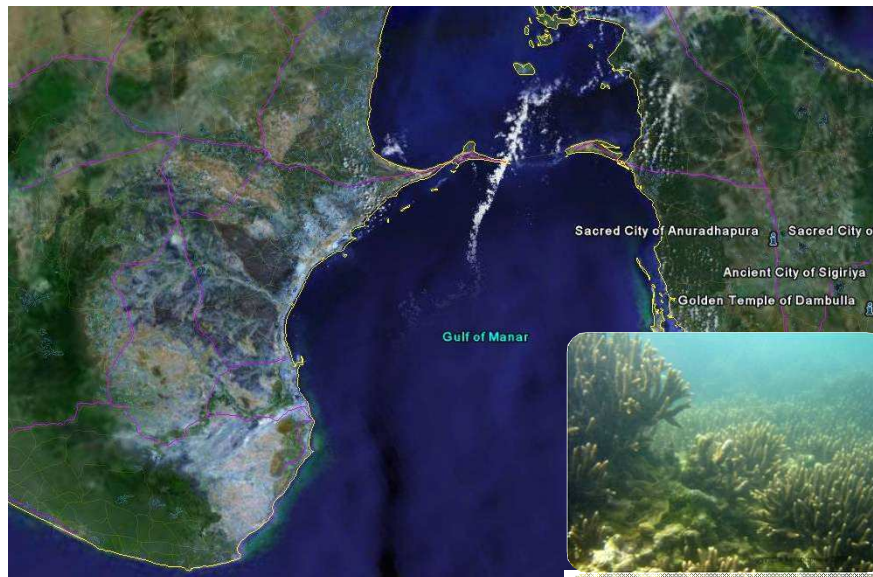


# Research and Management of Coastal & Marine Biodiversity



Identifying Important Coastal and Marine Biodiversity Areas (ICMBA) of India

State of Coastal and Marine Environment Report

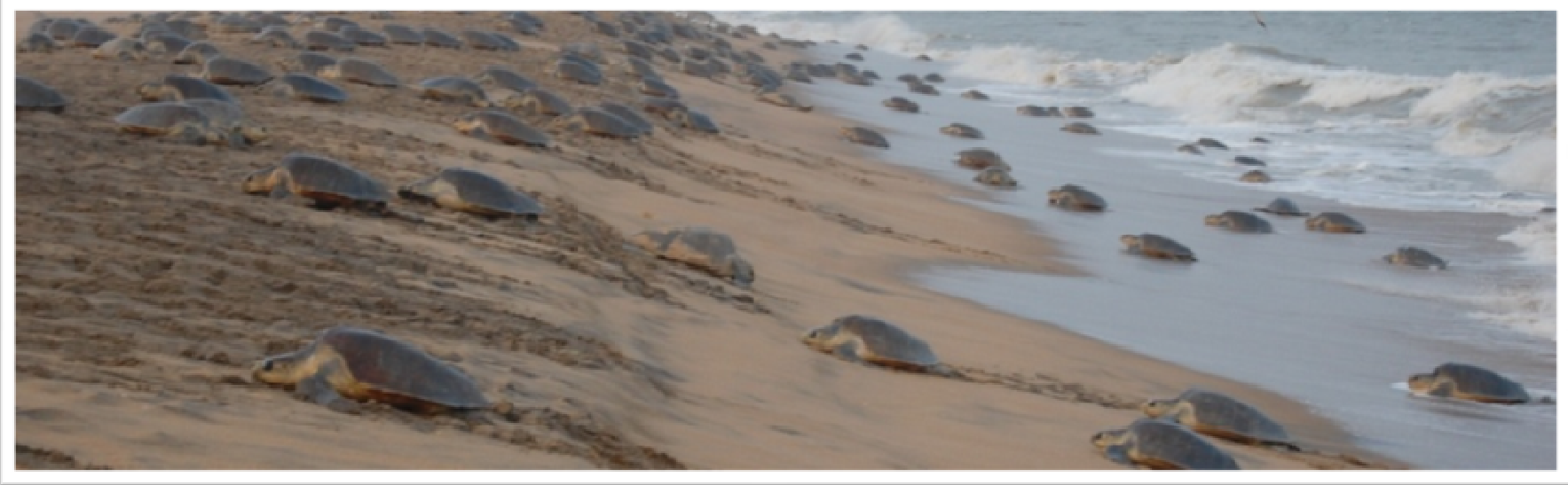
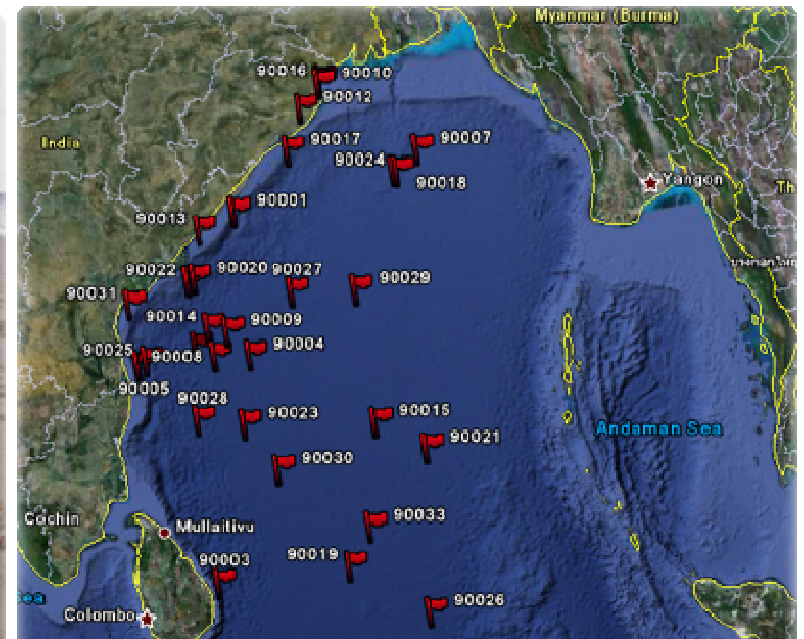


Planning a Network of Marine Protected Areas and Management Plan

Monitoring illegal trade on marine protected species



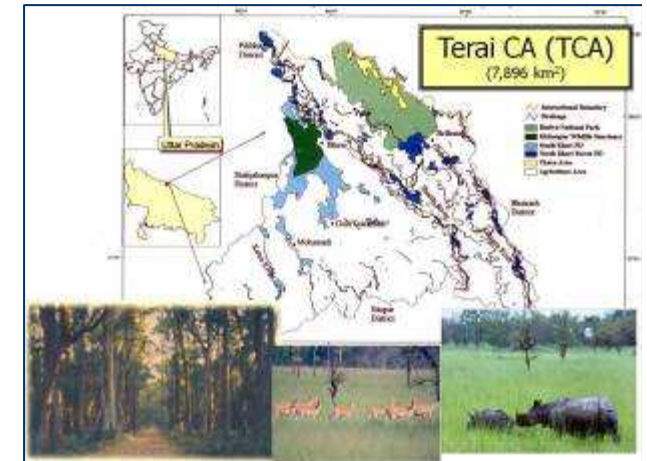
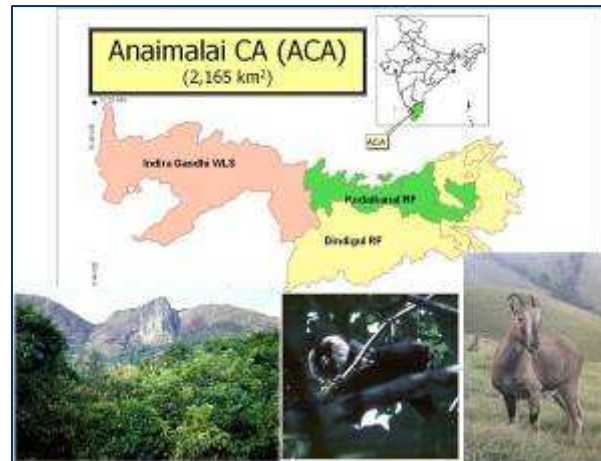
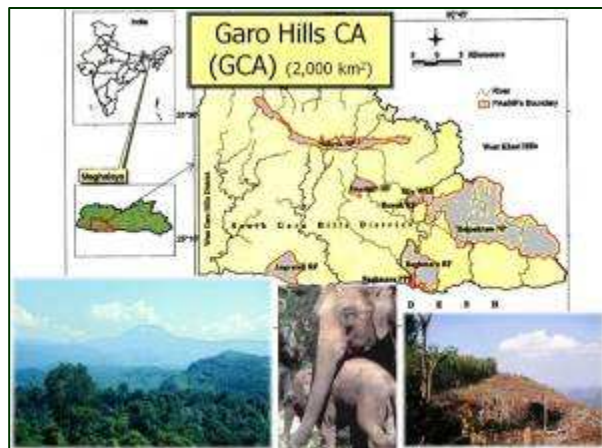
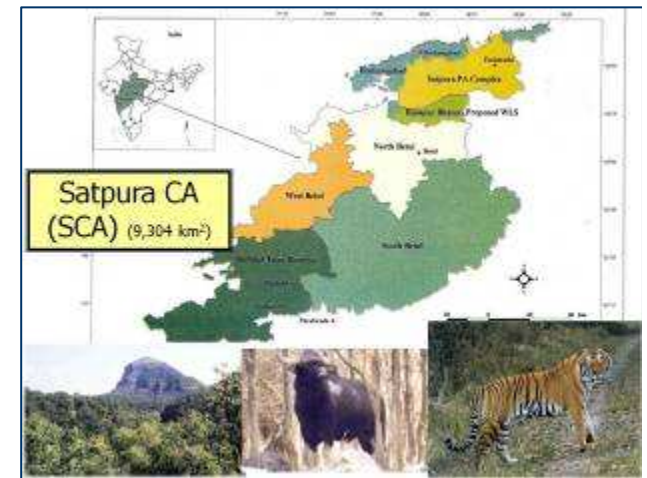
# Determining critical habitat requirements of globally migratory marine species for locating developmental projects



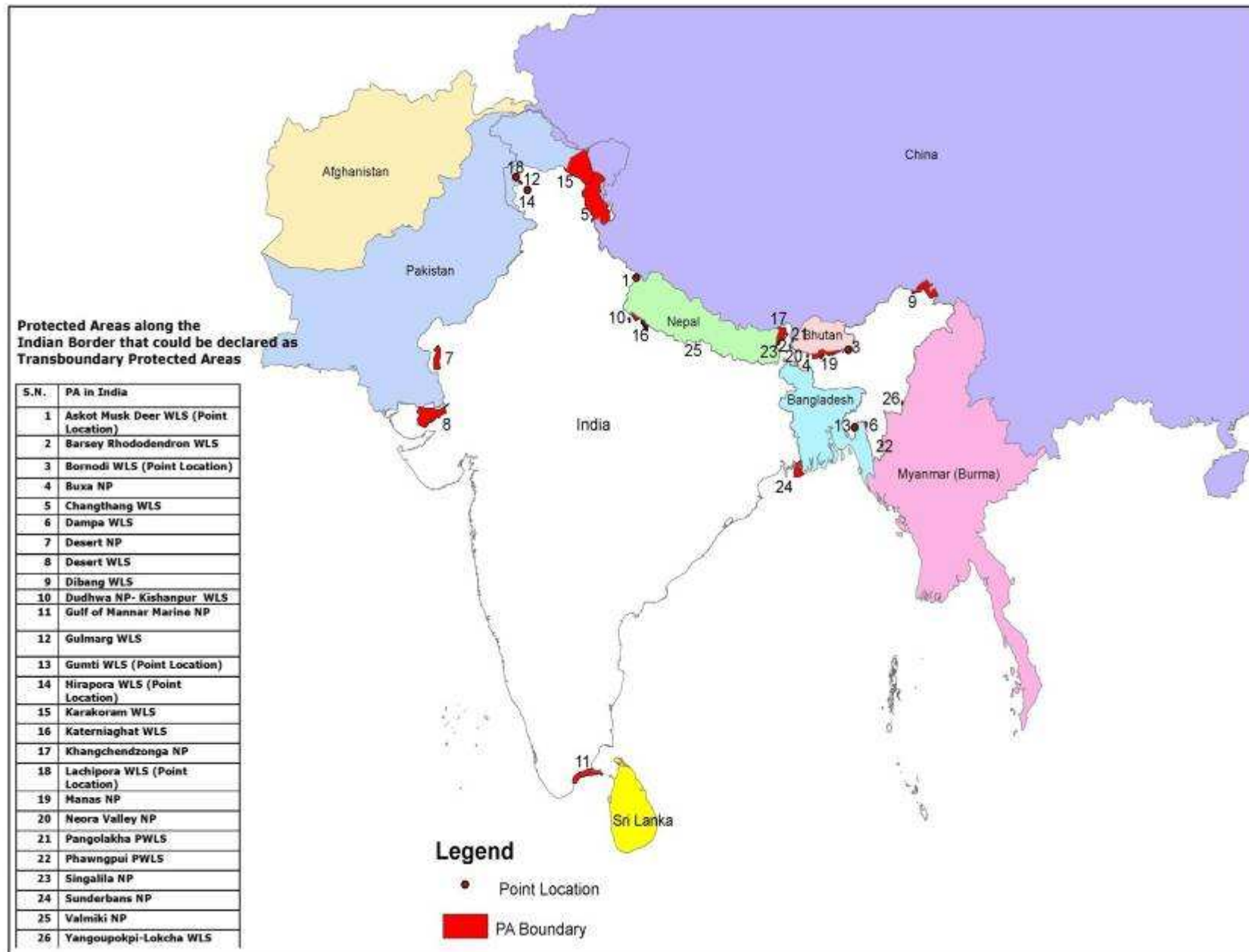


# Landscape Level Assessment & Planning

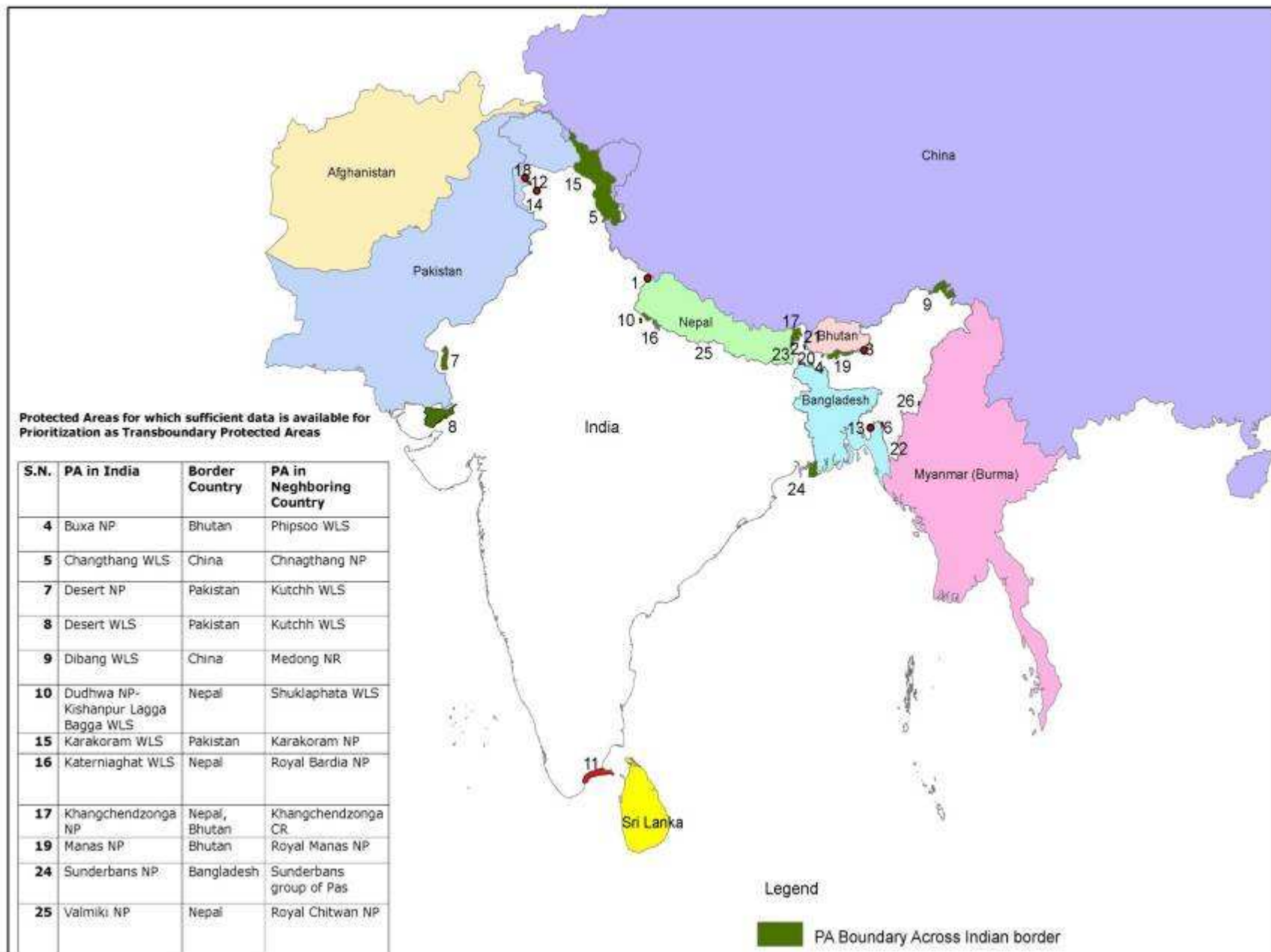
- ◆ Management of Matrix and integration with constituent land units (PAs, MFs, Community Lands, etc.) with stakeholder involvement



# Transborder Protected Areas...

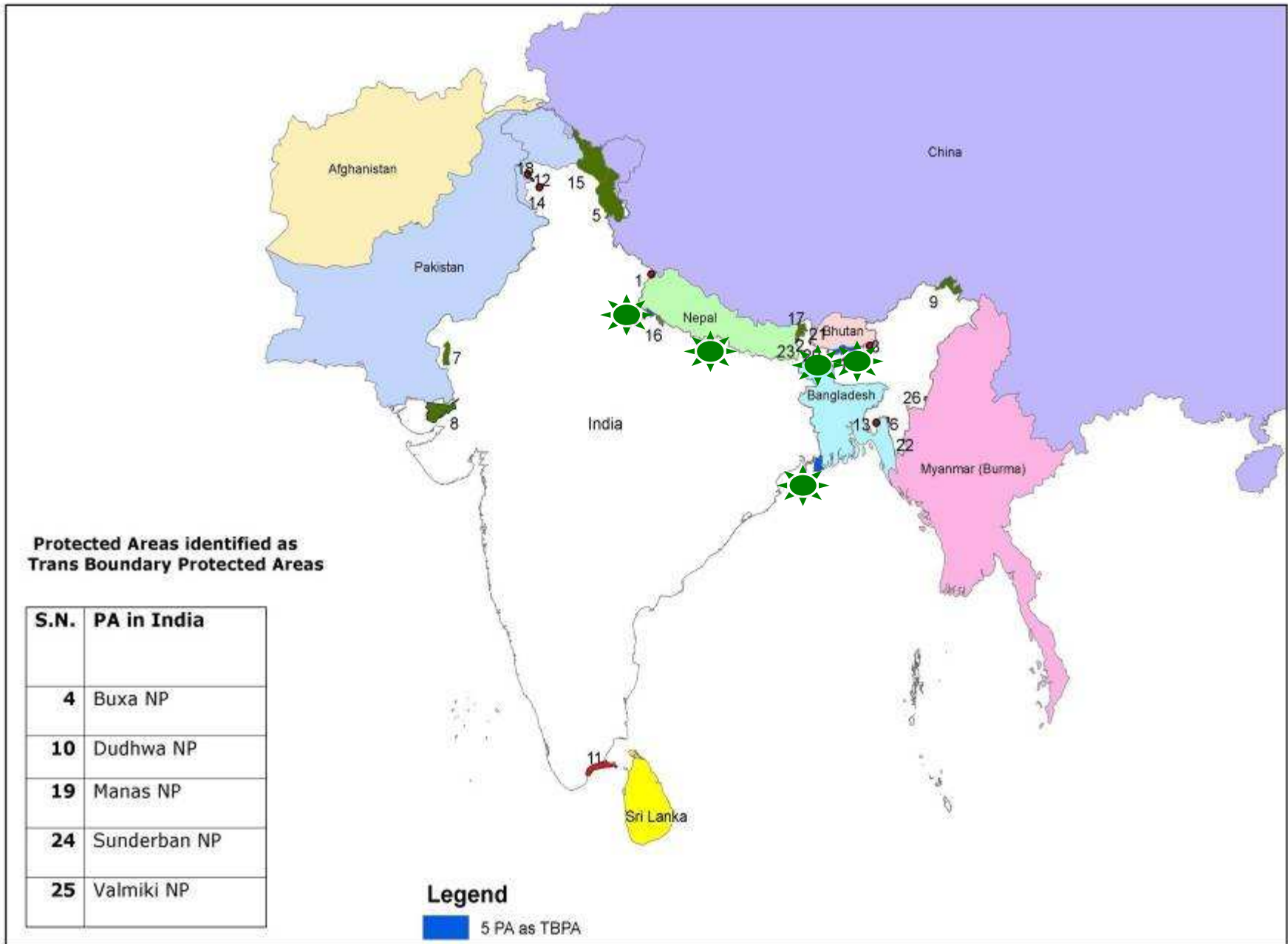


# Transborder Protected Areas...





# Transborder Protected Areas...



# COLLABORATION

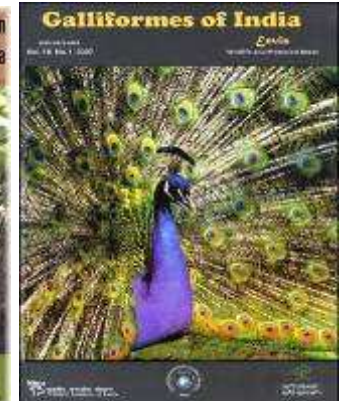
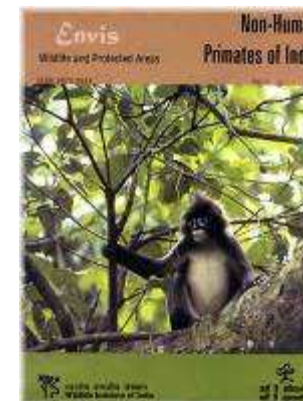
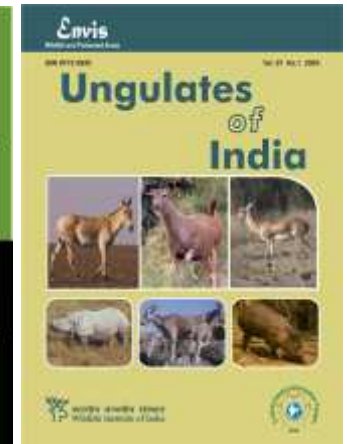
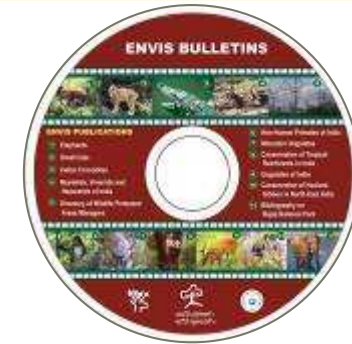
- ◆ **International Centre for Integrated Mountain Development (ICIMOD)**
- ◆ **United Nations Institute for Training and Research (UNITAR)**
- ◆ **UNESCO-United Nations Foundation**
- ◆ **Colorado State University (CSU), USA**
- ◆ **Smithsonian Institution (SI), USA**
- ◆ **International Association of Impact Assessment (IAIA)**
- ◆ **DAICT, Gujarat**
- ◆ **Central Avian Research Institute**
- ◆ **National Bureau of Animal Genetic Resources (NBAGR)**



# Dissemination of researched information through WII-ENVIS Centre on 'Wildlife & Protected Areas' (1997-2009)

## ☀ Thematic Bulletins

1. Elephants 1998
2. Smaller cats of India 1998
3. Indian Crocodilians 1999
4. Mustelids, Viverrids and Herpestids of India 1999
5. Directory of Wildlife Protected Area Managers 2000
6. Non-Human Primates of India 2001
7. Mountain Ungulates 2002
8. Conservation of Tropical Rain Forests in India 2003
9. Ungulates of India 2004
10. Conservation of Hoolock Gibbon  
(*Bunopithecus hoolock*) in Northeast India 2004
11. Bibliography on Rajaji National Park 2006
12. Galliformes of India 2007
13. Special Habitats and Threatened Plants 2008





# The Way Forward...

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- ◆ **Enhance research – management interface for effective management of wildlife resources**
- ◆ **Continue to mainstream conservation concerns in development planning**



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***Thank You !***

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