ZOO504 – MIDTERM MERGED PPT (LECTURE 01 TO 100) wildlife

Prepared By:

All About Biotech

AARISH ALI & TEAM (+96569002641)

Note:

Students must follow the course announcement for midterm syllabus & any up-gradation in the course.

Wildlife

Introduction



Introduction

"Wildlife" refers to neither cultivated or domesticated nor tamed organisms.

Or

Organisms that grow or live wild in an area without being intervened by humans.



Introduction

Wild life is natural renewable resource with a great importance throughout world.

It comprises innumerous varieties of living organism in their natural habitats.

- Wild Plants
- Wild Animals
- Fungi
- Microorganisms

Introduction

Wildlife can be found in all ecosystems.

- Deserts
- Forests
- Rain forests
- Plains
- Grasslands

Habitat determines any wildlife species found in any area.



Introduction

The amount and distribution of food, water, cover, and space will influence the type and survival of wildlife in that area.

Some wild species require special habitat features for their existence.



Introduction

Snags:

- Dead or partially dead standing trees. Nesting sites for forest-dwelling bats/birds.

Cavity Trees:

- Holes excavated in snags by woodpeckers. Shelter and nesting cover by many species.

Introduction

Rocky Outcrops and Caves:

- Rattlesnakes use small cave like openings in outcrops as hibernacula.

Wet Lands:

- Migratory birds



END

Wildlife

Introduction



Importance - Significance

Wildlife is an integral part of an ecosystem.

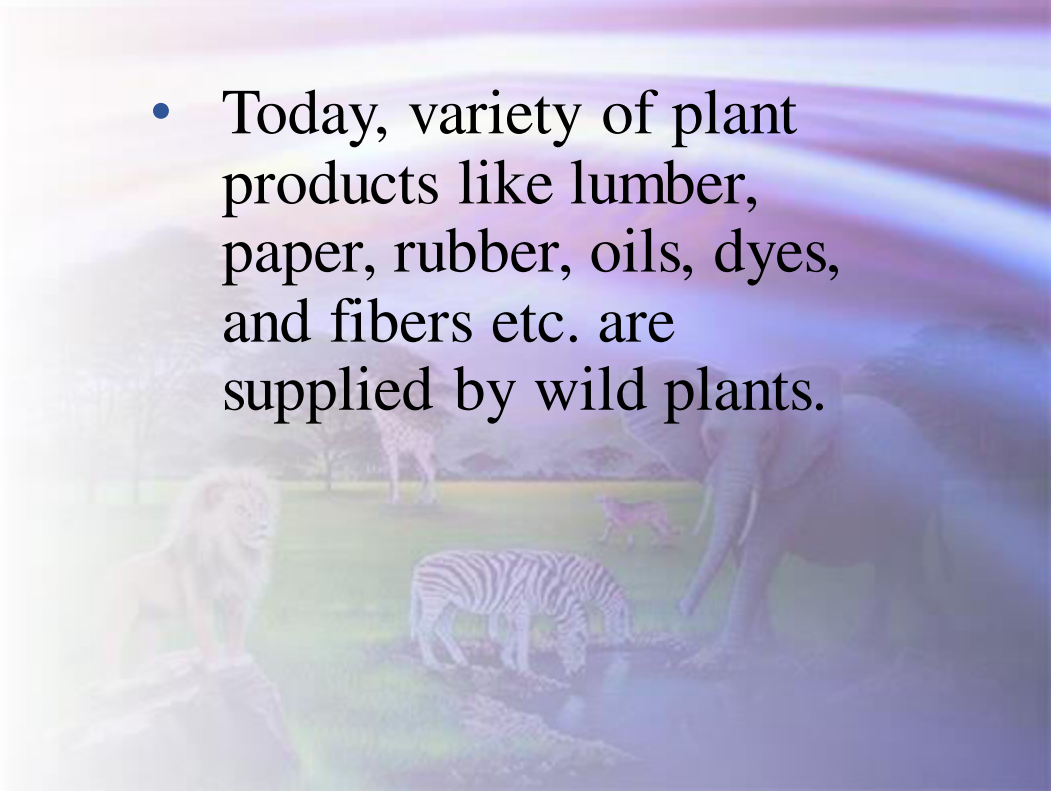
- Human himself as animal inter-related and inter-dependent on wildlife for its survival.

- From clothes to medicines, building materials to variety of chemicals all are extracted from exiting wildlife around us.

Importance - Significance

- About 90% of the domestic food crops now cultivated are descendants of wild plants.

- Today, variety of plant products like lumber, paper, rubber, oils, dyes, and fibers etc. are supplied by wild plants.



Importance - Significance

- Plants recycle nutrients necessary for agricultural production and help maintain soil fertility.
- Wild plants or their extracts are a source of medicine for an estimated 80% of the world's population.
- Source of oxygen.



Importance - Significance

- Insects and birds add to the economic gains through pollination of plants.

- Maintaining the ‘balance of Nature’. e.g. Carnivore-herbivore balance.



END

Wildlife

Benefits of Wildlife



Gene Bank

Gene banks are the bio-repositories used for the preservation of genetic material.

Wildlife can be served as a source of Gene Bank.



Gene Bank

Agriculture

- Many wild relatives of crops, plants and presence of useful seeds are screened out and selected.
- Such selection can then be introduced to breeding programs.

Gene Bank

Animal Husbandry

- Wild species' genotype may have a gene particularly resistant to parasites or to a particular disease.
- Such genes are of great value, especially if incorporated into local livestock to create hardier and even more productive animals.

Gene Bank

- Blood samples of the wild animals can be screened which would be helpful for identifying and resolving causes of disease epidemics.



END

Wildlife

Benefits of Wildlife



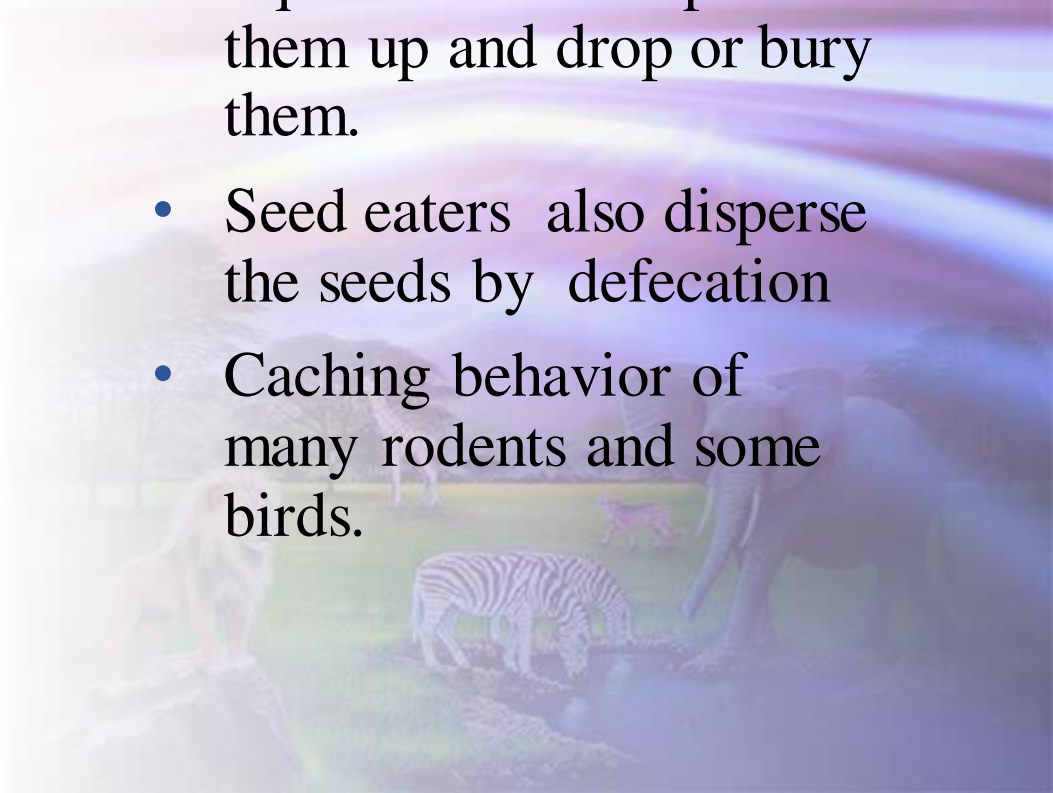
Plant Propagation

Wild animals can be helpful to plant propagation in various ways

- Pollination------ (Honeybees, hummingbirds, and some bats. etc.)
- Pollen stick to bee's body and legs which then transferred to flower it visits.

Plant Propagation

- Dispersal of seeds------ (squirrels, birds, rodents etc.)
- Seeds can stick to fur
- Squirrels or birds pick them up and drop or bury them.
- Seed eaters also disperse the seeds by defecation
- Caching behavior of many rodents and some birds.



Plant Propagation

- Conifer trees (pine, spruce, fur, etc.) use their pinecones - there are seeds in there that can be eaten or distributed by mice and other animals.

Hence if the animals get extinct or moved due to environmental conditions, the plants will not propagate effectively.

END

Wildlife

Benefits of Wildlife



Ecological Balance

- Scavengers (Vultures, eagles, jackals, hyaenas etc.) & decomposers serves to perform important tasks.
  - Nutrients recycling
  - Humus formation
  - Cleaning of environment



Ecological Balance

- Soil erosion can be prevented by wild plant cover.
- Mixing of litter by movement of wild animals.



END

Wildlife

Benefits of Wildlife



Economic Importance

From the economic point of view wildlife is important and serves as source of

- **Tourism**

  Fascination with the beauty of wild animals drives tourism worldwide.

  e.g. Safari park in Lahore Pakistan.

  Kruger National Park in South Africa.

Economic Importance

- **Animal Protein**

  e.g. In some forested area in Latin America, wildlife acts as animal protein source.

- **Bushmeat** (Wild meat)

  Wild meat tends to have less fat than domestic meat and can be a good source of iron, Vitamin A and Vitamin B.

Economic Importance

- **Trading of Bushmeat**

  In sub-Saharan Africa there is a long tradition of trade between rural areas and the major towns, where it is sold as a high-priced delicacy.



Economic Importance

- **Ranching and Farming**

  Commercial ranching and farming of wild animal occurring in countries like China, Zimbabwe & Thailand.



END

Economic Importance

- Traditional medicine/ Pharmaceutics

  e.g. *Nerium oleander* (Anvirzel)

- Wood

  Wildlife resources like wood from trees are used for making houses.

- Silk
- Paper
- Leather/Hide
- Ivory

Wildlife

Benefits of Wildlife



Scientific Importance

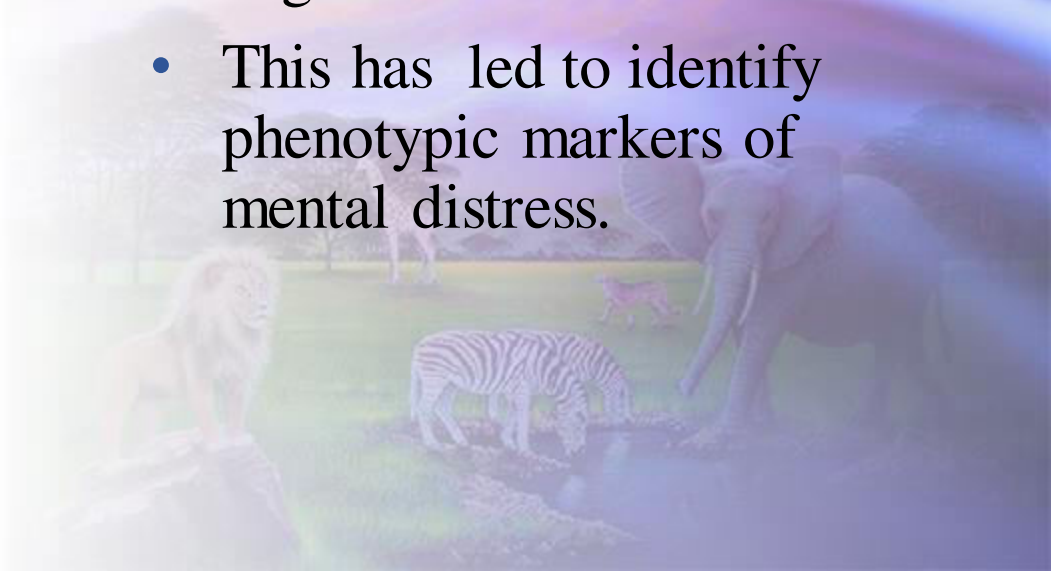
- Wild animals as Experimental Animals -
  - Monkeys, Rabbits, Guinea-pigs, Rats etc.

- Recovery/Cure of diseases-
  - Leukaemia
    - *Rosy periwinkle* leaves extract as anticancer

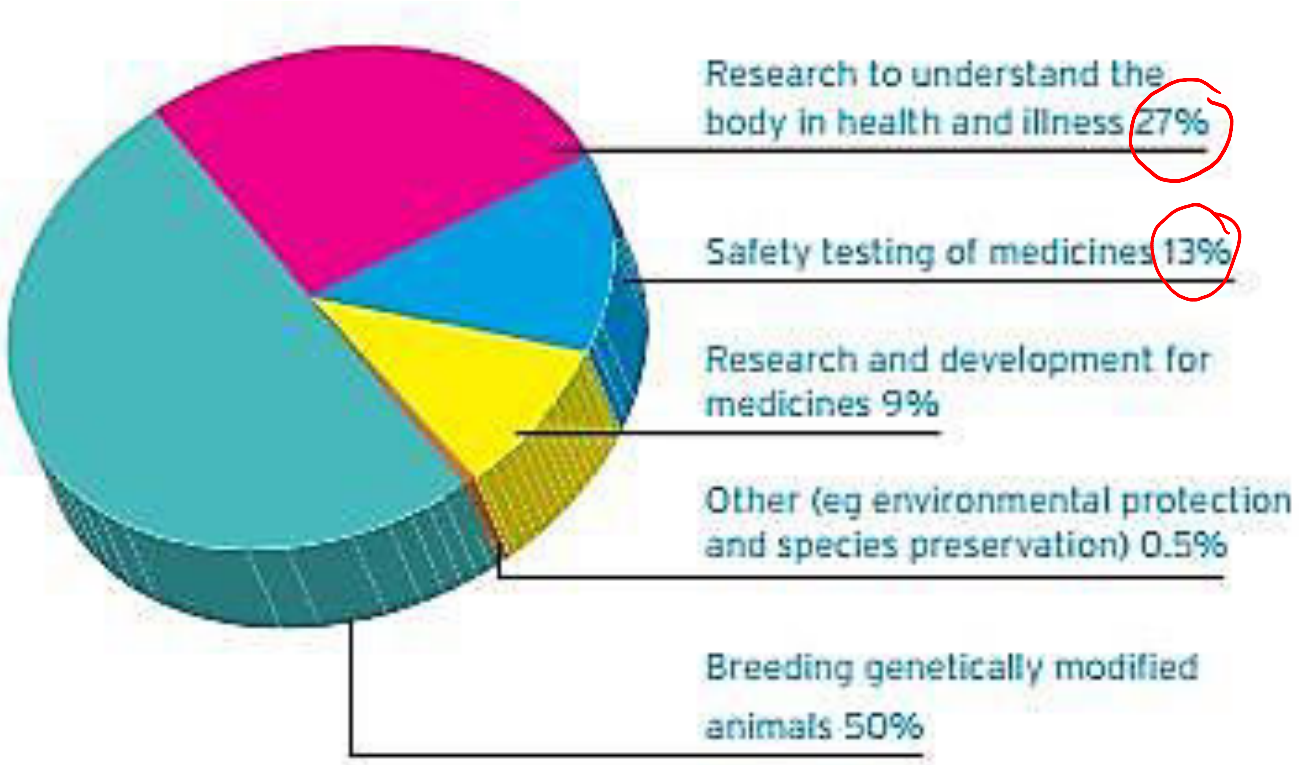


Scientific Importance

- Ebola
  - Ebola vaccine (VSV-EBOV) found 100% safe Initially tested in primates,
- Wildlife provide a means of developing models for disorders of behavior and cognition.
- This has led to identify phenotypic markers of mental distress.



Scientific Importance



Adapted from
Understandinganimalresaerch.org.uk

Scientific Importance

- Wildlife is also applicable for the studies of anatomy, physiology, ecology and evolutionary aspects.



END

Wildlife

Terminologies



Terminologies I

Prior to the discussion about wildlife it is useful to learn some important terms that will recur in the course.

- Biodiversity: Variability among living organisms from all sources
- Carnivore
- Ecosystem



Terminologies I





- Endangered species: e.g. Asian Elephant, Bengal Tiger etc.
- Endemic species: e.g. Galapagos fauna
- Exotic species
- Extinct species: e.g. Woolly Mammoth

Terminologies I

- Feral: Organism that has changed from being domesticated to being wild, natural, or untamed. e.g. Goats, Cats etc.

END



Wildlife

Terminologies



Terminologies II

Some recurring terms in the Wildlife course.

- Game Reserve: An area where regulated hunting & shooting is allowed.
- Habitat: Natural home of the an organism.
- Home Range: where an animal lives and moves on a periodic basis



Terminologies II

- I.U.C.N: International Union for Conservation of Natural Resources.
- National Park: Public recreational area where flora and fauna are in their natural state.
- Population
- Predator
- Prey

END



Wildlife

Terminologies



Terminologies III

Some important terms in the Wildlife course.

- Protected Area
- Ramsar site
- Red Data Book
- Safari Park
- Sanctuary
- Territory
- Wetland
- W.W.F

END

Wildlife

Terminologies



Terminologies IV

Important terms to understand in the Wildlife course.

- W.W.F.P.
- Zoo/Zoological Garden
- Zoological Museum
- Zoological Park
- Zoonosis
- Ex-situ conservation
- In-situ conservation

END

Wildlife

Positive values of Wildlife



Aesthetic & Recreational Value

It is the pleasure to enjoy the beauty of wildlife

- People enjoy seeing plants and animals in their natural habitats for recreation.
- They are a source of joy, wonder, and pleasure for many people.

Aesthetic &Recreational Value

Effort By: AARISH ALI

- Wildlife tourism (ecotourism).
- Bird watching, is now a growing part of wildlife tourism.
- Animals photographed for recreational purposes also have aesthetic value.

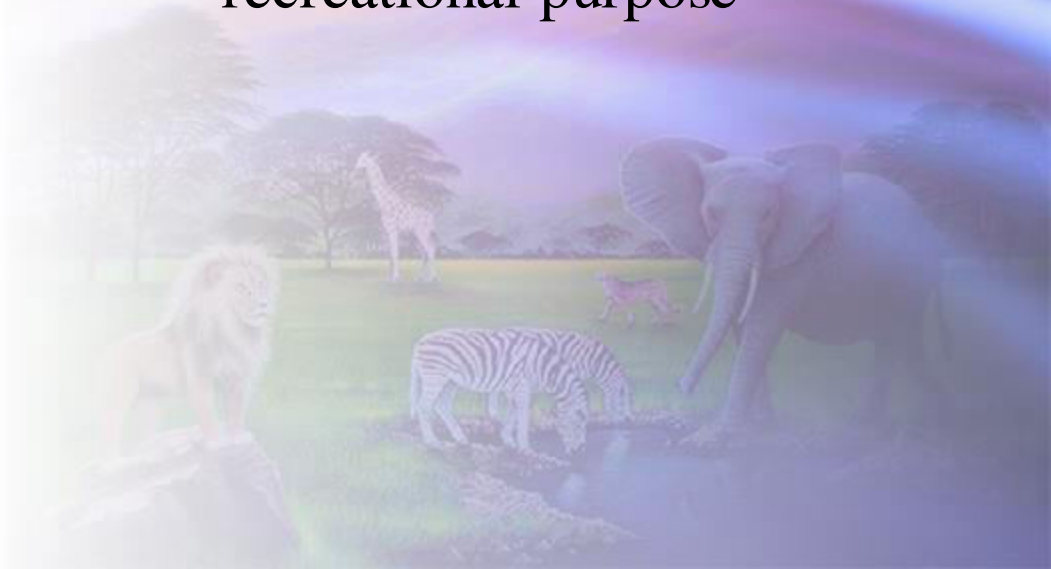


Aesthetic &Recreational Value

- Exotic game ranches

  Viewing non-native species in a “near-native” habitat.
- Visiting Safari parks/zoo as recreational activity
- Visiting hilly areas for recreational purpose

END



Wildlife

Positive values of Wildlife



Commercial Value

Wild life is natural renewable resource hence has a great economic value throughout world.

Trading

- Trading of wildlife and its products. e.g. Bush meat, Ivory, hide, trophy, fur etc.



Commercial Value

Tourism

- Fascination with the beauty of wild animals drives tourism worldwide.

Farming

- Commercial farming occurring in countries like China, Zimbabwe & Thailand for economic gains.

END

Wildlife

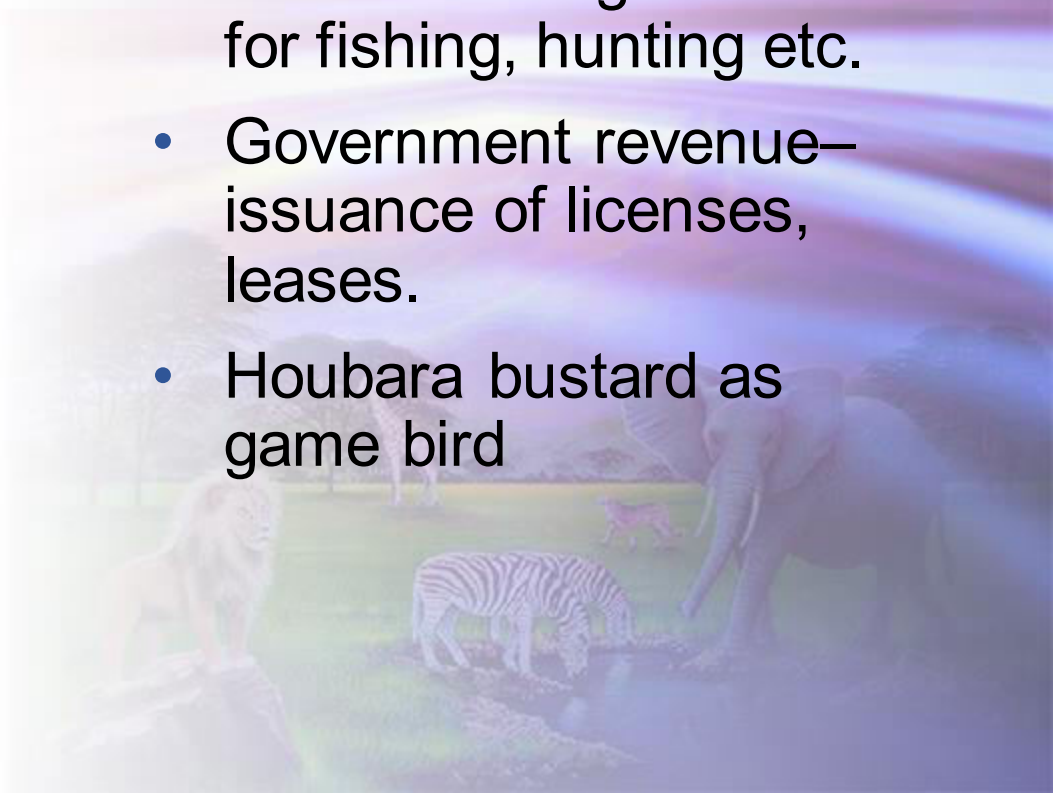
Positive values of Wildlife



Game Value

Wild life has immense values to hunt for sports

- Industrial Revenue— manufacturing of items for fishing, hunting etc.
- Government revenue– issuance of licenses, leases.
- Houbara bustard as game bird



Game Value

- Markhor hunting for trophy
- Situations of wild life animals is alarming due to extensive gaming.
- In Punjab-Pakistan hunting is not allowed after 1974 wild life act and Amendments in 1991
- Hence fishing be the only sports.

END



Wildlife

Positive values of Wildlife



Cultural Value

Wild life is a natural gift with cultural importance.

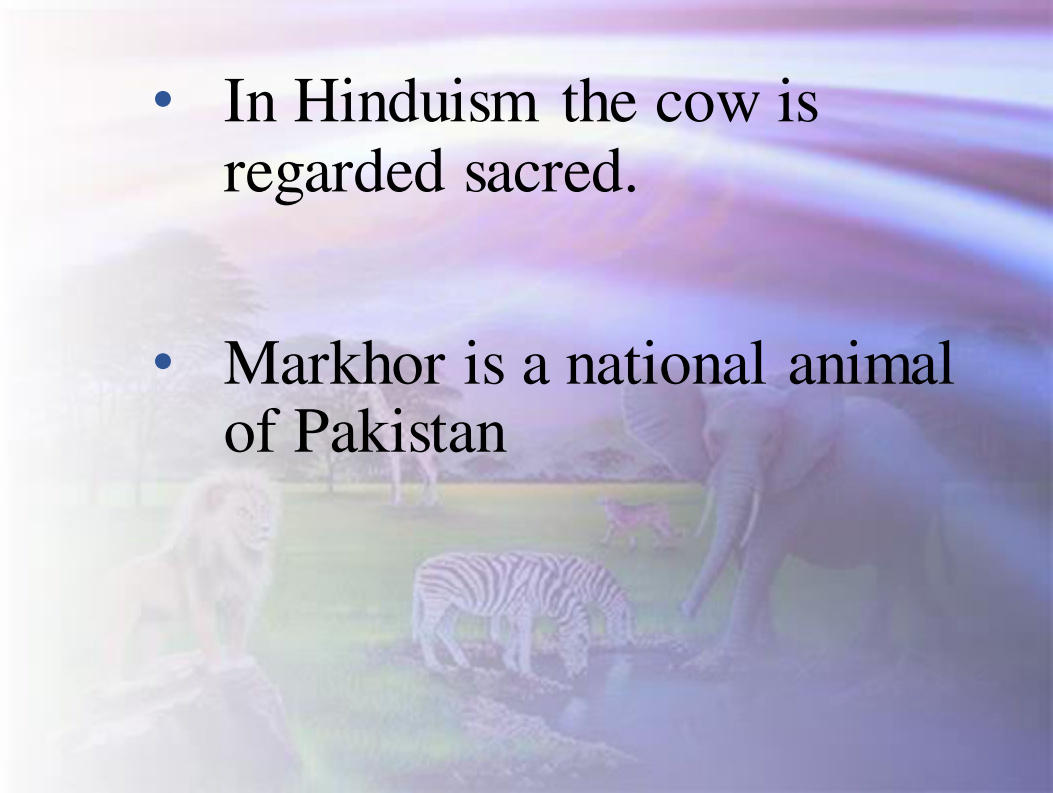
- Religions have often declared certain animals and their products to be sacred.
- Spiritually significant



Cultural Value

- Eagles, hawks and their feathers have great cultural and spiritualva lue to Native Americans as religious objects.
- In Hinduism the cow is regarded sacred.
- Markhor is a national animal of Pakistan

END



Wildlife

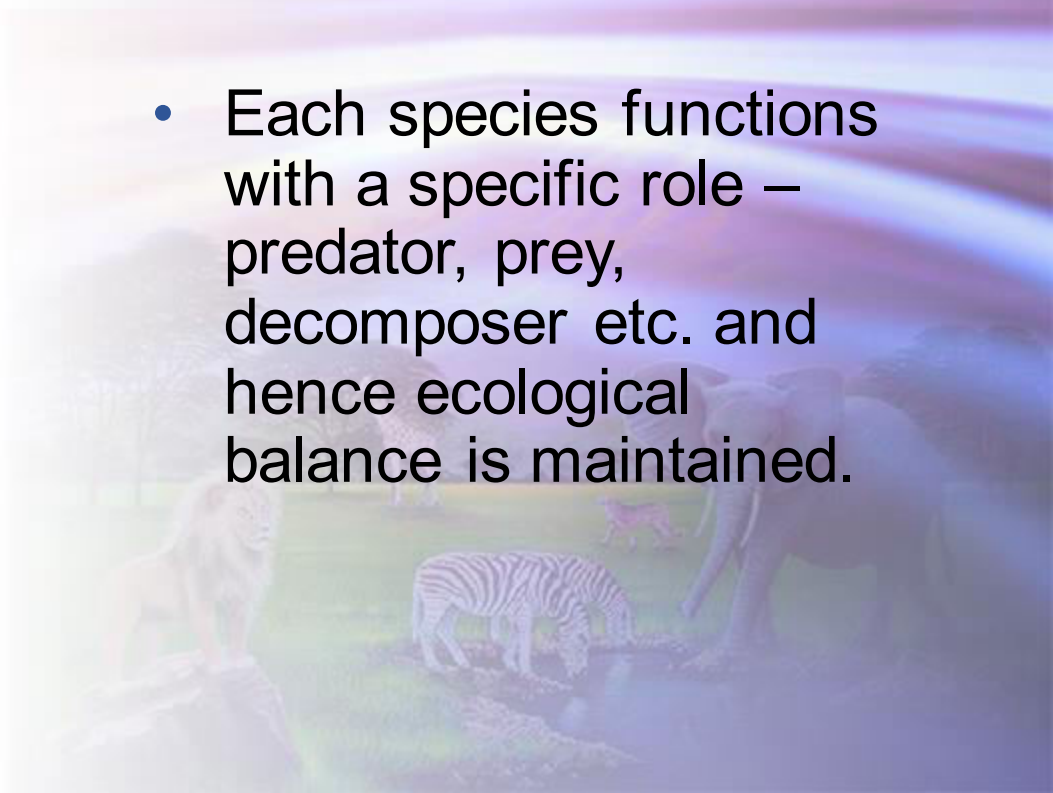
Positive values of Wildlife



Ecological Value

Wildlife play a very integral role in maintaining the fragile balance that ensures the wellness of the earth.

- Each species functions with a specific role – predator, prey, decomposer etc. and hence ecological balance is maintained.



Ecological Value

- Certain wild animals and bird are natural Scavengers such as kites, Vultures, eagles, jackals, hyaenas etc.)

- These help to maintain hygienic conditions by

  - Nutrients recycling
  - Humus formation
  - Cleaning of environment

END

Wildlife

Positive values of Wildlife



Scientific Value

Wildlife is applicable for the fundamental studies like anatomy, physiology, ecology and evolutionary aspects.

- Medicinal value of Wild flora and fauna
  - *Nerium oleander* (Anvirzel ™)
  - Cincona (Quinine)

Scientific Value

- Musk deer (Musk pod)– multiple effects particularly enhances myocardial function.

- Wild animals as Experimental Animals -
  - Monkeys, Rabbits, Guinea-pigs, Rats etc.



END

Wildlife

Negative Values of Wildlife



Predation

Negative impact of wildlife occurs when growing human populations overlap with established wildlife territory.

People lose their crops, livestock, property, and sometimes their lives



Predation

Baboons in South Africa attacking young cattle.

One-horned rhinos in Nepal destroying crops.

Bears and wolves killing livestock.

Wolf attacks sheep, and reindeers in Sweden.

The impacts of predation are huge.

Predation

In Russian Far East farmers raise captive deer for human consumption .

Deer are the natural prey preference for leopards, and in absence of wild prey, leopards venture into the deer farms in search of food.



END

Wildlife

Negative Values of Wildlife



Carrier of Diseases

Wild animals serves as a reservoir for many diseases (Zoonosis).

These diseases are

BACTERIAL

Bubonic plague

Host: Fleas; often found on rats and ground squirrel

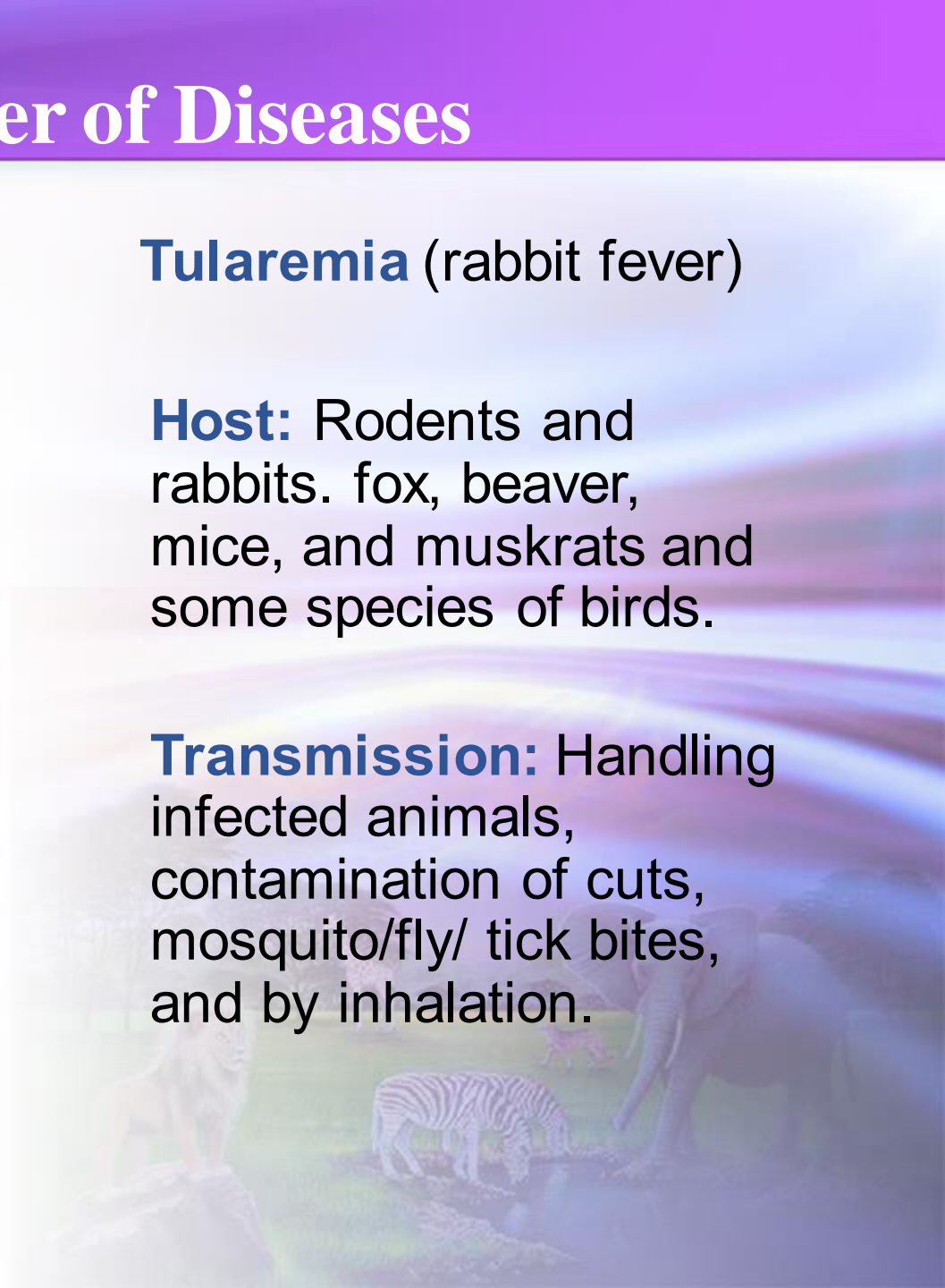
Transmission: Flea bite.

Carrier of Diseases

Tularemia (rabbit fever)

Host: Rodents and rabbits. fox, beaver, mice, and muskrats and some species of birds.

Transmission: Handling infected animals, contamination of cuts, mosquito/fly/ tick bites, and by inhalation.



Carrier of Diseases

Viral Diseases

The usual mode of viral transmission and dissemination is through the direct contact or aerosol contact with others of their own species.

Rabies(Hydrophobia)

Bite Wound Disease



Carrier of Diseases

Host: Any mammal, usually carnivores; highest incidence is in skunks, foxes, bats, and raccoons.

Transmission: Bite wounds, infected saliva in cuts or skin abrasions, aerosol in bat caves.

- Other causative agents of zoonotic diseases
  - Mycotic
  - Helminth parasitic
  - Protozoal

END

Wildlife

Negative Values of Wildlife



Destruction of Property

- Elephants frequently raid and destroy crops.
- Elephants eat up to 450kg of food per day.
- They are messy eaters, uprooting and scattering as much as is eaten.



Destruction of Property

- Losses due to elephant damage regarding plantations and timber are estimated to be around US$105 million per year.

- Bears are sometimes known to attack livestock and water pipes, raid orchards, and occasionally on storehouses of food.

END

Wildlife

Causes of Wildlife Depletion



Persecution of Human

Conflict between wildlife and human occur over

- Living space
- Food

These factors are the main threats to the continued survival of many species in different parts of the world.



Persecution of Human

The main factors of Persecution are:

Wildlife Trade

Trading of wildlife and its products. e.g. Bush meat, Ivory, hide, trophy, fur etc.



Persecution of Human

Trapping of Wild Animals

- Pets(cats etc.)
- Sold for Medical experimental studies (Monkeys, Rabbits etc.)
- For street shows, circuses (Bears,Parrots,Lions)



Persecution of Human

Poaching

- Illegal killing for tusks, oil, decoration (as stuffed preparation), Plumage.
- Illegal hunting for bush meat, trophies.

Absurd killing

- Tigers, jackals, wolves etc. are killed by the farmers.

END

Wildlife

Causes of Wildlife Depletion



Loss of Habitat

Habitat loss poses the greatest threat to species.

Habitat destruction is identified as a main threat to 85% of all species described in the IUCN's Red List.



Loss of Habitat

The world's forests, swamps, plains, lakes, and other habitats continue to disappear as they are harvested for human consumption.

Forest Loss and Degradation

Expansion of agricultural land, intensive harvesting of timber, wood for fuel etc. is the cause of forest loss.

Loss of Habitat

Palm oil plantations in the tropical regions of Africa, Latin America, and Asia have led the large scale destruction of important habitat for many species (Orangutans, tigers, elephants, rhinos).

In Malaysia and Indonesia where large tracts of rainforest are cleared to grow palm oil crops.

Loss of Habitat

It is an estimate that almost 70% of deforested areas are converted to agricultural land.

Coastal and Marine Areas

Population growth, urbanization, and industrialization results in marine and coastal degradation.

Loss of Habitat

Poverty, consumption and land-use patterns contribute to the degradation of marine habitats and to the destruction of the species that rely on them to survive.

Drainage of Wetlands

Wetlands are being drained for cultivation and building of roads etc.

END



Wildlife

Causes of Wildlife Depletion



Pollution

Pollution of various kinds have adversely affected wild animals.

Insecticides

- There has been a considerable damage to birds by insecticides spraying.

Oil Spillage

- Oceanic birds are killed by oil spillage from oil tankers in the sea.

Pollution

Noise Pollution

- It causes disturbance of hormonal and reproductive behavior of many wild animals.

Water Pollution

- Domestic as well as industrial waste dumped into water bodies causes decline in stocks of fishes.
- Animals like mussels have been unfit for human consumption.

Wildlife

Modes Of Wildlife Conservation



Study & Improvement Of Habitat

Habitat determines any wildlife species found in any area.

Wildlife can be found in all ecosystems.

- Deserts
- Forests
- Rain forests
- Plains
- Grasslands

Study & Improvement Of Habitat

Type and survival of wildlife in any area depends upon following features of habitat.

- Food
- Water
- Cover
- Space



Study & Improvement Of Habitat

Some wild species require special habitat features for their existence.

Snags:

- Dead or partially dead standing trees. Nesting sites for forest-dwelling bats/birds.



Study & Improvement Of Habitat

Cavity Trees:

- Holes excavated in snags by woodpeckers. Shelter and nesting cover by many species.

Habitat loss poses the greatest threat to species.



Study & Improvement Of Habitat

Effective steps should be taken for the improvement and development of habitat.

Things should be banned in nearby area.

- Urbanization
- Industrialization

END



Wildlife

Modes Of Wildlife Conservation



Preservation Of Habitat

Wildlife habitats are not stable.

Changes occurring in habitats is mainly due to

- Biotic succession
- Natural calamities
- Human intervention
- Pollution

These changes alter food, cover and other habitat resources for all wildlife species.

Preservation Of Habitat

Conservation strategies like *ex-situ* & *in-situ* can be applied for well being of wildlife and their habitat.

- National Parks
- Sanctuaries
- Reserve Forests etc.

Networks of such protected areas cover most of the representative habitat.

Preservation Of Habitat

Phenomena like

- Excessive cutting of trees
- Uprooting of plants
- Grazing of livestock
- Pollution

Must be checked in the protected areas to preserve the habitat.

END



Wildlife

Modes Of Wildlife Conservation



Wildlife Census

For implementation of various protective laws an accurate idea about population density of species is essential.

- Censuses require a lot of work, but these efforts serve an important purpose.



Wildlife Census

Census is mandatory to count numbers and distribution of wildlife populations.

- Proper planning
- Implementation
- Evaluation of conservation programs



Wildlife Census

- African elephant, which are under escalated threat from poaching, habitat loss and human–wildlife conflict.
- An aerial census conducted in the border between Kenya and Tanzania.



Wildlife Census

Census can be helpful in mapping factors of

- Animals roaming
- Water sources
- Human activities, such as livestock grazing and charcoal burning.



END

Wildlife

Modes Of Wildlife Conservation



Wildlife Legislation

To protect wildlife and nature from depletion and destruction, strict laws should be enforced.

- Various countries of the world have formed various laws to forbid killing of wildlife.



Wildlife Legislation

Laws and rules lays down regulations for declaration of

- Issue of ownership certificates.
- Issue of licences for conducting trade.
- Penal measures for violation.
- Punishment to poachers etc.

Wildlife Legislation

Stringent punishments have been provided against infringement of provisions of these rules.

Some common rules/Acts are.

- The Cutting of Trees (Prohibition) Act, 1992.
- The Wild Birds and Animals Protection Act, 1912.

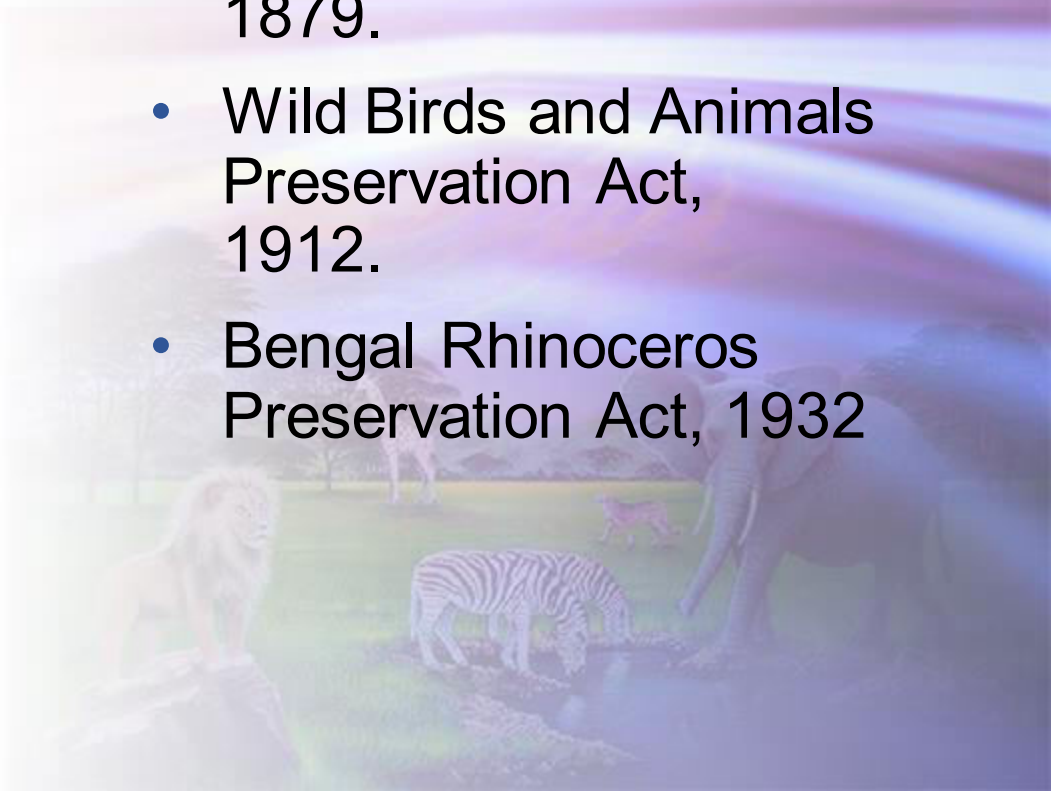
Wildlife Legislation

- The Pakistan Plant Quarantine Act, 1976
- The Pakistan Animal Quarantine (Import and Export of Animals and Animal Products) Ordinance, 1979
- The Pakistan Animal Quarantine (Import and Export of Animals and Animal Products) Rules, 1980.

Wildlife Legislation

- Madras Wild Elephant Preservation Act, 1873.
- All India Elephant Preservation Act, 1879.
- Wild Birds and Animals Preservation Act, 1912.
- Bengal Rhinoceros Preservation Act, 1932

END



Wildlife

Modes Of Wildlife Conservation



Wildlife Education

Generally people are ignorant about the utility of wildlife.

Thus, certain measures for mass education should be undertaken.



Wildlife Education

- At the formal level, schools, colleges and universities should include in the curriculum, the study of ecology, wildlife and conservation.

- The creation of awareness and right attitude towards wildlife and their conservation.



Wildlife Education

- Active involvement of Mass media such as newspapers and magazines, radio and television.

- Awareness among public about National parks and sanctuaries, zoological parks and natural history museums.



Wildlife Education

- Cinematography on wildlife and the necessity for conservation should be screened even to the remotest villages and to all classes of students, so that they develop love and affection towards wildlife.

END



Pollution

- Various natural calamities like floods, hurricane, fire etc. have also caused massive destruction of wildlife.



END

Wildlife

Modes Of Wildlife Conservation



Veterinary Service

Veterinarians are concerned with health of free-ranging wildlife populations and deals with the health of diverse range of species.

Veterinarians make important contributions to zoos, wildlife conservation, and ecosystems.



Veterinary Service

Major Challenges to Veterinarians

- Environmental contaminants
- Infectious diseases
- Outbreaks that potentially threaten wild and domesticated animals as well as humans.

Wildlife veterinarians are necessary and should made available to care of wild animals.

Veterinary Service

Veterinarians are to prevent

- Infectious disease transfer at the domestic animal-wildlife interface.
- Movement of diseases between wildlife and domestic species.
- Reducing contact between domestic and wild animals where necessary.

END

Wildlife

Modes Of Wildlife Conservation



Wildlife Awareness

Most people of any country are ignorant about the utility of wildlife.

Hence, for the conservation of wildlife there is a great need of educating people.



Wildlife Awareness

To achieve this goal following methods can be adapted.

- Celebration of wild life week every year.
- Publicity through media and film shows.
- Holding conducted tours, essay competitions, lectures, seminars, etc.

Wildlife Awareness

- Setting up nature clubs in educational institutions.
- Publication of wildlife books and journals.
- Establishment of natural history museums etc.

END



Wildlife

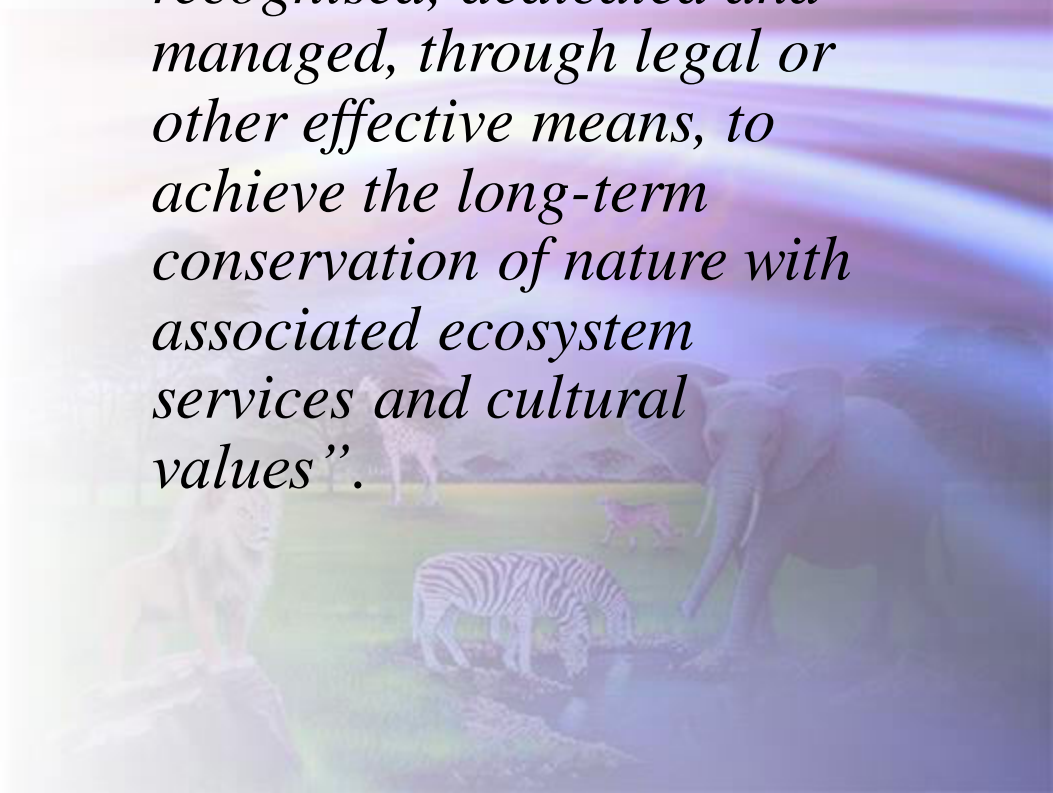
Modes Of Wildlife Conservation



Establishment Of Protected Areas

Protected Area

“ A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”.



Establishment Of Protected Areas

Protected areas are one of the most effective tools for conserving species and natural habitats.

- National Parks
- Sanctuaries

Particular species of animal which is rare is given importance for conservation in a protected area.

Establishment Of Protected Areas

- In Pakistan, Lal Suhanra at Bahawalpur conserves Black buck.
- In India, Gir Forest at Gujarat, conserves lions.
- W. Bengal conserve one-horned rhinoceros etc.

END



Wildlife

Modes Of Wildlife Conservation



Role of International Agencies

For the conservation of threatened and endangered species and ecosystems, it is a need an hour to involve international agencies.

The agencies provide finical and technical assistance.



Role of International Agencies

- W.W.F.: World Wildlife Fund.
- I.U.C.N.: International Union for Conservation of Natural Resources.
- C.I.T.E.S.: Convention on International Trade in Endangered Species.



Role of International Agencies

Small Grants Programme (SGP)

- *"Small support for long term impact".*

SGP of WWF-Pakistan has been supporting grass root level organizations and researchers to strengthen efforts to conserve threatened and endangered species and ecosystems.

Role of International Agencies

Under the programme more than 450 projects have been successfully completed.

SGP has supported innovative conservation initiatives for priority species and ecosystem.

- Marine turtles
- Snow leopard
- Indus River dolphin
- Sharks

Role of International Agencies

- Mangroves forests
- Indus river delta
- Coniferous forests.

Collaborative research programs should be initiated with neighboring countries with common ecosystem.



END

Wildlife

Wildlife Agencies



Significant Organizations

For the conservation of threatened and endangered species and ecosystems, it is a need an hour to involve international agencies.

The agencies provide finical and technical assistance.



Significant Organizations

Wildlife Conservation Society (WSC) (1895):

- 500 projects in more than 60 nations around the world that are intended to help protect both wildlife and the wild places in which they live.
- Gorillas, tigers and ocean giants.



Significant Organizations

PAWS-CHICAGO

- Provides healthcare and rehabilitation to wild animals.

Pakistan Animal Welfare Society (PAWS)

- Aims to create an equitable relationship between humans and animals in Pakistan.



Significant Organizations

Gorilla Doctors (1980s):

- Dian Fossey- Founder
- Team of veterinarians that cares for mountain gorillas of Rwanda, Uganda and National Republic of Congo



Significant Organizations

Wildlife Alliance(1994):

- Protection to forests and wildlife in the Southeast Asian tropical belt.

International Fund For Animal Welfare (IFAW) (1969):

- “Rescue and protect animals around the world”

Significant Organizations

Saving seals, whales, elephants and tigers are significant projects of IFAW.

W.W.F (1961):

- To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

Significant Organizations

World Society for the Protection of Animals:

- Promote treatment of animals and good animal welfare
- Whales, bears and orangutans are included

African Wildlife Foundation(1961):

- To ensure the wildlife and wild lands of Africa will endure forever.

Significant Organizations

Animal Welfare Institute (1951):

- Eliminate the impact of human actions detrimental to endangered species.



END

Wildlife

World Wide Fund for Nature (W.W.F.)



Worldwide Fund for Nature



World's largest voluntary organization.

- Setup in 1961.

Headquarter:

- Its headquarter is at Gland, Switzerland.

Symbol:

- Giant Panda is the official symbol of W.W.F.

Worldwide Fund for Nature

History:

- Previously, it was known as World Wildlife Fund (W.W.F).
- In 1990, it was renamed as Worldwide Fund for nature.

WWF revised its mission statement to:

“Stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature,”

Worldwide Fund for Nature

Mission can be accomplished by:

- Conserving the world's biological diversity
- Ensuring that the use of renewable natural resources is sustainable;
- Promoting the reduction of pollution and wasteful consumption.

Worldwide Fund for Nature

- Organization raises funds for urgent conservation requirements.

- Promoting conservation through the worldwide education campaign and public consciousness.



Worldwide Fund for Nature

Committee:

An executive committee comprising

- President
- Ten members of the Board of Trustee of W.W.F.

- Responsible to the Board for the administration of the fund.

Worldwide Fund for Nature

- Board can also include influential individuals from a wide variety of professions such as science, finance, art, advertising, trade and diplomates to utilize their talents.



Worldwide Fund for Nature

Collaboration:

W.W.F. works in collaboration with:

- IUCN
- UNO
- UNESCO
- UNEP
- FAO

END



Wildlife

International Union for Conservation of Nature and Natural Resources (I.U.C.N)



IUCN

History:

- IUCN was founded in 1948.
- It is leading international, non-government organization concerned with conservation.
- Network of governmental and non-governmental organization.



IUCN

Members:

IUCN has more than:

- 475 member organizations.
- 116 government agencies in 133 countries.



IUCN

Functions:

- Monitoring the status of conservation.
- Developing plans for dealing with problems such as the World Conservation strategy.
- Promoting action on their plans by government or organizations.



IUCN

- Coordinating communication between the members and the commissions as well as the development.
- Providing advice and assistance to complement conservation measures.
- Selection and management of WWF projects.

IUCN

- Managing the UNEP and C.I.T.E.S secretariat.
- Performing the continuing duties under conservation of wetlands of international importance, specially by waterfowl habitats.

END



Wildlife

Species Survival Commission (SSC)



Species Survival Commission

The SSC is one of the commission of IUCN, the World Conservation Union.

Mandate of the Commission :

The Commission shall conduct its activities in accordance with its mandate as established by the World Conservation Congress.



Species Survival Commission

Aim:

"To conserve biological diversity by developing and executing programmes of study, save, restore and manage wisely the species and their habitats".



Species Survival Commission

Vision:

The work of SSC is guided by the Vision of:

"A just world that values and conserves nature through positive action to reduce the loss of diversity of life on earth"



Species Survival Commission

Goal:

The overriding Goal of the Commission is:

"The species extinction crisis and massive loss of biodiversity are universally adopted as a shared responsibility and addressed by all sectors of society taking positive conservation action and avoiding negative impacts worldwide".

Species Survival Commission

Objectives:

- Assessing and monitoring biodiversity.
- Analyzing the threats to biodiversity.
- Facilitating and undertaking conservation action.
- Convening expertise for biodiversity conservation.

END

Wildlife

Species Survival Commission (SSC)



Species Survival Commission

Achievements to date: date:

- The IUCN Red List
- Species Conservation Strategies
- Policies and Guidelines
- Supporting the implementation of environmental friendly rules

Species Survival Commission

Current initiatives:

- Interdisciplinary action
- The use of The IUCN Red List
- Increasing the taxonomic coverage of the SSC

Challenges for the future:

- Response of species to climate change

Species Survival Commission

- Area-based conservation planning
- Rapid decline of large animals in Asia
- Save Our Species (SOS)

Facts and Figures:

- The SSC is governed by a Steering Committee, which is headed by the Commission Chair.

Species Survival Commission

- SSC done its work by Specialist Groups, Red List Authorities and Task Forces.
- Bird groups
- Freshwater Fish Specialist Group
- These groups are governed in a joint collaboration between the SSC and Wetlands International.

Species Survival Commission

- There are currently 112 Specialist Groups.
- The number of SSC members is constantly changing.
- At the end of 2011 it stood at around 8,000.
- Individual members are invited to join by the Chair of each group.

END



Wildlife

Convention on International Trade in Endangered Species (C.I.T.E.S)



C.I.T.E.S

History:

- CITES came into force in 1975, and became the only global treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
- Currently 180 countries, including the United States, implement CITES.

C.I.T.E.S

- A Secretariat, in Geneva, Switzerland.
- Permanent committees
- Non-governmental organizations.

Conference of the Parties meets every 3 years to review CITES implementation and assess the status of species in trade.

C.I.T.E.S

Cacti, iguanas, and parrots parrots represent some of of the approximately 35,000 35,000 species protected by by CITES.

Species protected under CITES are listed in one of three appendices:



C.I.T.E.S

Appendix I

Species threatened with extinction and provides the greatest level of protection, including restrictions on commercial trade.

Examples include gorillas, sea turtles, most lady slipper orchids, and giant pandas.



C.I.T.E.S

Appendix II

Species that, although currently not threatened with extinction, may become so without trade controls.

Examples include American ginseng, paddlefish, lions, American alligators, mahogany, and many corals.



C.I.T.E.S

Appendix III

Species for which a range country has asked other parties to help in controlling international trade.

Examples include map turtles, walrus and Cape stag beetles.

END



Wildlife

Convention on International Trade in Endangered Species (C.I.T.E.S)



C.I.T.E.S

Monitoring trade

The backbone of CITES is the permit system that facilitates international cooperation in conservation and trade monitoring.

Permits are issued only if a country's Management and Scientific Authorities determine that trade is legal and does not threaten the species' survival in the wild.

C.I.T.E.S

These permit allows inspection at ports of export and import to quickly verify that CITES specimens are properly documented.

This trade monitoring has created an information on the management and use of CITES species worldwide.



C.I.T.E.S

CITES has helped global conservation of species.

CITES provides tools to effectively conserve the world's diverse natural resources.

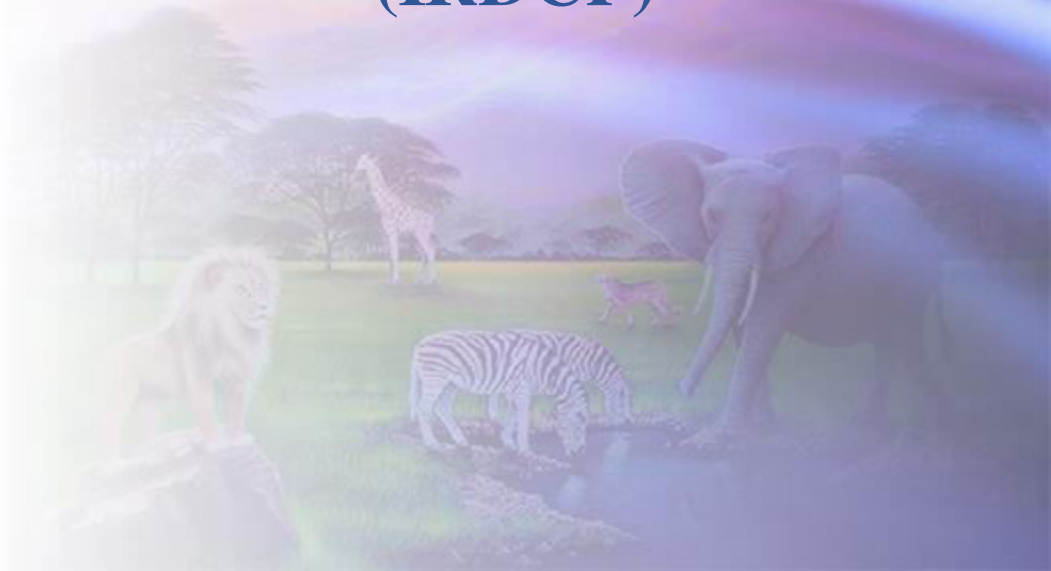
It control global over-exploitation of wildlife.



END

Wildlife

Indus River Dolphin Conservation Project (IRDCP)

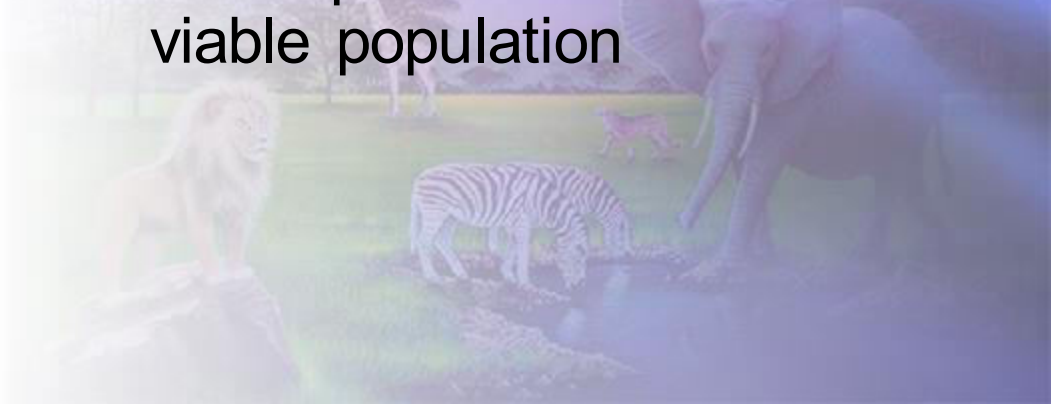


IRDCP

Introduction:

Indus River Dolphin *(Platanista gangetica minor)*, an endangered species endemic to the Indus River system in Pakistan.

This project was developed to conserve a viable population



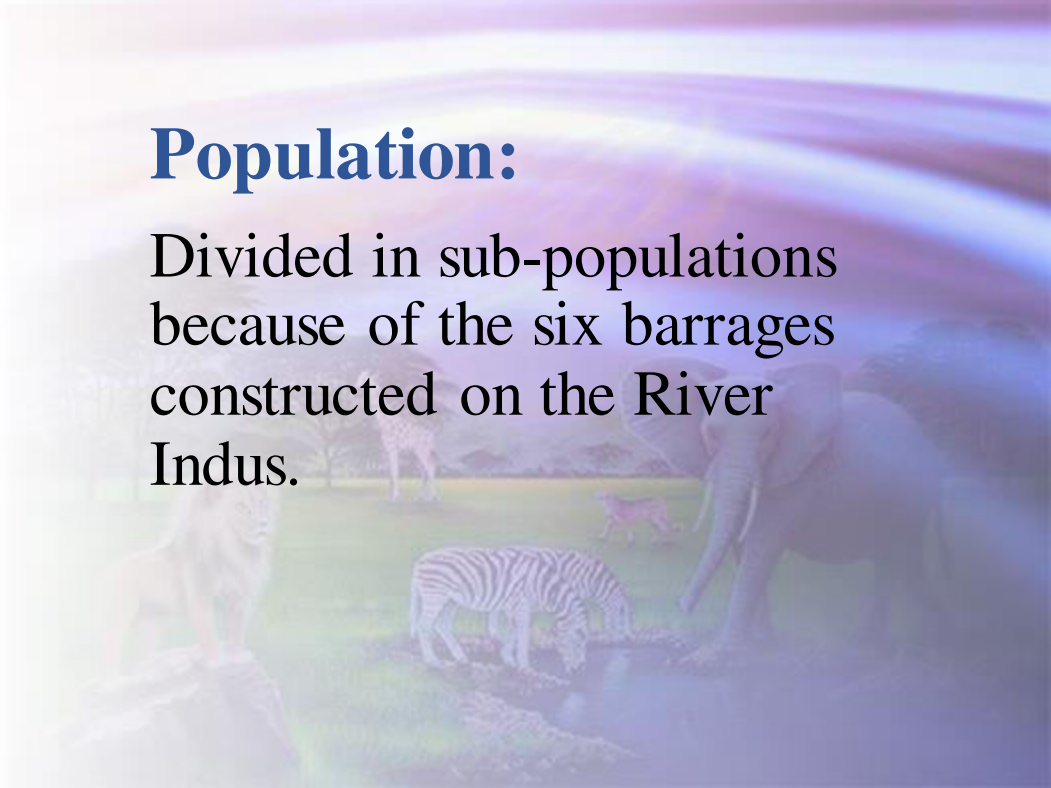
IRDCP

Habitat:

Habitat has been reduced to one fifth of its historical range and further degraded due to shortage of water.

Population:

Divided in sub-populations because of the six barrages constructed on the River Indus.



IRDCP

Project Area:

- Covering an area of 200 km between Guddu and Sukkur barrages in the province of Sindh and some extensions of the project covers the Punjab.



IRDCP

Project Objectives:

- Protecting the innate biodiversity of the Lower Indus River Basin Eco-system.
- Ensuring the sustainable use of riverine biodiversity.
- Promoting actions to mitigate pollution and the wasteful extraction of riverine resources.

IRDCP

Project Sponsors:

- WWF-Switzerland
- Swedish International Development Agency (SIDA)
- Engro-foods Limited, Pakistan.



IRDCP

Effort By: AARISH ALI

Stakeholders:

- WWF-Pakistan
- Sindh Wildlife Department (SWD)
- Agriculture Extension Department, Sindh (AED)
- Sindh Environmental Protection Agency (SEPA)
- Sindh Fisheries Department (SFD)

IRDCP

Project Approach:

The Indus River Dolphin Conservation Project focuses on the root causes of biodiversity loss by linking the protection of the Indus River Dolphin with measures in the agricultural and fisheries sectors.

END



Wildlife

International Whaling Commission (I.W.C)



I.W.C

- Set up in 1946 as an international agreement to regulate whaling and to provide for conservation of whale stocks.
- The Commission has a membership of 88 Contracting Governments.



I.W.C

I.W.C is mandated, to cooperate with other intergovernmental organizations including:

- International Maritime Organization (IMO)
- Regional Marine Fisheries (RFMOs)
- Marine Council
- UNEP



I.W.C

Collaborations:

Collaboration with other international organizations on some issues include:

- Climate change
- Marine debris
- Marine safety
- Habitat degradation
- Marine Protected Areas
- Marine Science

I.W.C

Headquarters:

The headquarters of the I.W.C is in Impington, near Cambridge, England.

The Commission has three main committees:

- Scientific
- Technical
- Finance and Administration

I.W.C

The purpose of the I.W.C as as specified in its constitution is

"Safeguarding for future generations the great natural natural resources represented by the whale stocks;"

Original members consisted consisted only of the 15 whale-hunting nations.

END

Wildlife

Regional Wildlife Rules In Pakistan



Significant Wildlife Acts/Laws

Significant Acts to protect and preserve wildlife are as under:

- Cattle-Trespass Act, 1871
- Prevention of Cruelty to Animals Act, 1890
- Animals Slaughters Control Act, 1963



Significant Wildlife Acts/Laws

- Balochistan Sea Fisheries (Amendment) Act, 1994
- Balochistan Sea Fisheries Ordinance, 2001
- Balochistan Sea Fisheries (Amendment) Act, 2009
- Balochistan Animal Slaughter Control (Amendment) Act, 2010

Significant Wildlife Acts/Laws

- Balochistan Goats (Restriction) (Amendment) Act, 2010
- Karachi Cattle Slaughter Control Act, 1950
- Convention On The Conservation Of Migratory Species Of Wild Animals, 1979
- Punjab Goats (Restriction) Ordinance, 1959

Significant Wildlife Acts/Laws

- Punjab Fisheries Ordinance, 1961
- Punjab Animals Slaughter Control Act,1963
- Punjab Livestock, Dairy and Poultry Development Board Act, 1974
- Punjab Wildlife (Protection, Preservation, Conservation and Management) Act, 1974

Significant Wildlife Acts/Laws

- Punjab Livestock Associations and Livestock Associations Unions (Registration and Control) Ordinance, 1979
- Punjab Animals Compound Feed and Feed Stuff Ordinance, 2002
- Sindh Wildlife Protection, Ordinance,1972

Significant Wildlife Acts/Laws

- Sindh Fisheries (Amendment) Act,2003
- Sindh Fisheries (Amendment) Act, 2011
- Sindh Wildlife Protection (Amendment) Act, 2008
- West Pakistan Goats (Restriction) Ordinance, 1959



Significant Wildlife Acts/Laws

- West Pakistan Goats (Restriction) (Sind Repeal) Act, 1972
- West Pakistan Goats Restrictions Rules, 1961
- Azad Jammu and Kashmir, Wildlife (Protection, Preservation, Conservation and Management) Ordinance, 2011

END

Wildlife

Act-Ordinance



Features of the Wildlife Act

Features common in all Provincial Acts or Ordinances of Pakistan are discussed here, taking Punjab Act as an example:

Short Title

- This Act may be called the Punjab Wildlife (Protection, Preservation, Conservation and Management) Act, 1974.

Features of the Wildlife Act

Definitions

- Board" means the Punjab Wildlife Management Board constituted under section
- "Exotic" means wildlife species not native to Pakistan
- Section" means a section of this Act
- Prescribed" means prescribed by rules

Features of the Wildlife Act

Appointment of Officers

- Government may determine the number and class of officers including honorary officers to be appointed under this Act.



Features of the Wildlife Act

Powers of an Honorary Officer

- Honorary officer appointed under section 3 shall have such powers of an officer as may be prescribed.
- The officer shall hold office for a period of three years unless the appointment is revoked earlier.

Features of the Wildlife Act

Constitution of Board

The Board shall consist of

- Chairman
- Vice-Chairman
- Number of members as may be appointed by Government.



Features of the Wildlife Act

- Chief Minister of the Punjab shall be the chief warden and *ex-officio* Chairman of the Board.
- Minister incharge of the Department shall be the *ex-officio* Vice Chairman of the Board.



Features of the Wildlife Act

- Secretary to Government, Forestry, Wildlife, Fisheries and Tourism Department shall be the *ex-officio* Secretary of the Board.

END



Wildlife

Act-Ordinance



Features of the Wildlife Act

Funds

- The board shall maintain books of account and shall get it audited.
- The Board shall take necessary steps for rectification of an audit objection.



Features of the Wildlife Act

Restrictions on hunting

No person shall

- Hunt any protected animal.
- Hunt any game animal except under a permit.

Prohibition of Employ Hawks and Dogs for Game Animals without Special License



Features of the Wildlife Act

Animals found dead killed or caught unlawfully

- Any meat or trophy thereof shall be the property of Government.

Certificate of Lawful Possession

- No person shall be in possession of any wild animal unless he be in possession of a certificate of lawful possession.

Features of the Wildlife Act

Restrictions on Import and Export of Animals, Trophies or Meat

No person shall

- Receive by gift, purchase or otherwise any animal of a kind specified in the Second Schedule
- Unless a valid certificate of lawful possession in respect thereof.

Features of the Wildlife Act

Restrictions on Dealing in Animals, Trophies and Meat

Wildlife Sanctuary

National Park

Game Reserve



Features of the Wildlife Act

Penalties

- Imprisonment which may extend to a period of one year or with the fine.

Killing or Capturing in Self Defense

- Any person kills any wild animal in self defense or that of any other person's life.

END

Wildlife

Act-Ordinance



Features of the Wildlife Act

Onus of Proof

- When in any proceedings taken under this Act.
- Wild animal, trophy or meat shall be presumed to be the property of until the contrary is proved.



Features of the Wildlife Act

Power to Search Without Warrant

- Provided that no premises shall be searched under this section except under the authority of a warrant issued by the magistrate having jurisdiction in the area.



Features of the Wildlife Act

Power to Seizure

- Any officer authorized by Government in this behalf, may seize any wild animal, dead or alive anything whatsoever used or suspected to have been used in the commission of an offence under this Act.



Features of the Wildlife Act

Duty to produce permit on demand made by any officer or person authorized in this behalf.

Duty of coupe purchaser, chowkidar, village watchman, etc.



Features of the Wildlife Act

Procedure when offender not known or cannot be found

- When the offender is not known or cannot be found any officer authorized in this behalf may, if he finds that an offence has been committed, confiscate the property used in the commission of the offence.

END

Wildlife

Act-Ordinance



Features of the Wildlife Act

Power to Arrest

- Any officer authorised, without orders from a magistrate and without a warrant, arrest any person against whom a reasonable suspicion exists of his having been concerned in any offence under this Act.



Features of the Wildlife Act

Power to release on bond of a person arrested

- Any officer not below the rank of the Game Inspector or of an equivalent rank may release such person on his executing a bond to appear.

Power to prevent commission of offence

Features of the Wildlife Act

Persons who may lodge complaints

- Cognizance of any offence under this Act shall not be taken by any court except on the complaint of the officer.



Features of the Wildlife Act

Power to Seizure

- Any officer authorized by Government in this behalf, may seize any wild animal, dead or alive anything whatsoever used or suspected to have been used in the commission of an offence under this Act.



Features of the Wildlife Act

Court which is competent to take cognizance of offences

- No court inferior to that of a Magistrate of the First Class shall take cognizance.

Power to try offences summarily



Features of the Wildlife Act

Power to compound offence

- Government may, by notification in the official Gazette, empower an officer to accept from any person against whom reasonable suspicion exists that he has committed any offence under this Act, a sum of money by way of compensation for such offence.

Features of the Wildlife Act

Prosecution of offences under any other law

- Nothing contained in this Act shall be deemed to prevent any person from being prosecuted under any other law.



END

Wildlife

Act-Ordinance



Features of the Wildlife Act

Government may invest officer with certain powers

- Of Civil court to compel the attendance of witnesses and the production of documents and material objects;
- To hold an inquiry into offences
- To prosecute a case before a magistrate.

Features of the Wildlife Act

- Officers, etc. to be public servants
- Protection of action taken under this Act
- Duty of Police Officer
- Delegation of Powers



Features of the Wildlife Act

Power of Sale or Exchange

Power to make Rules

Power to add to or exclude from Schedules

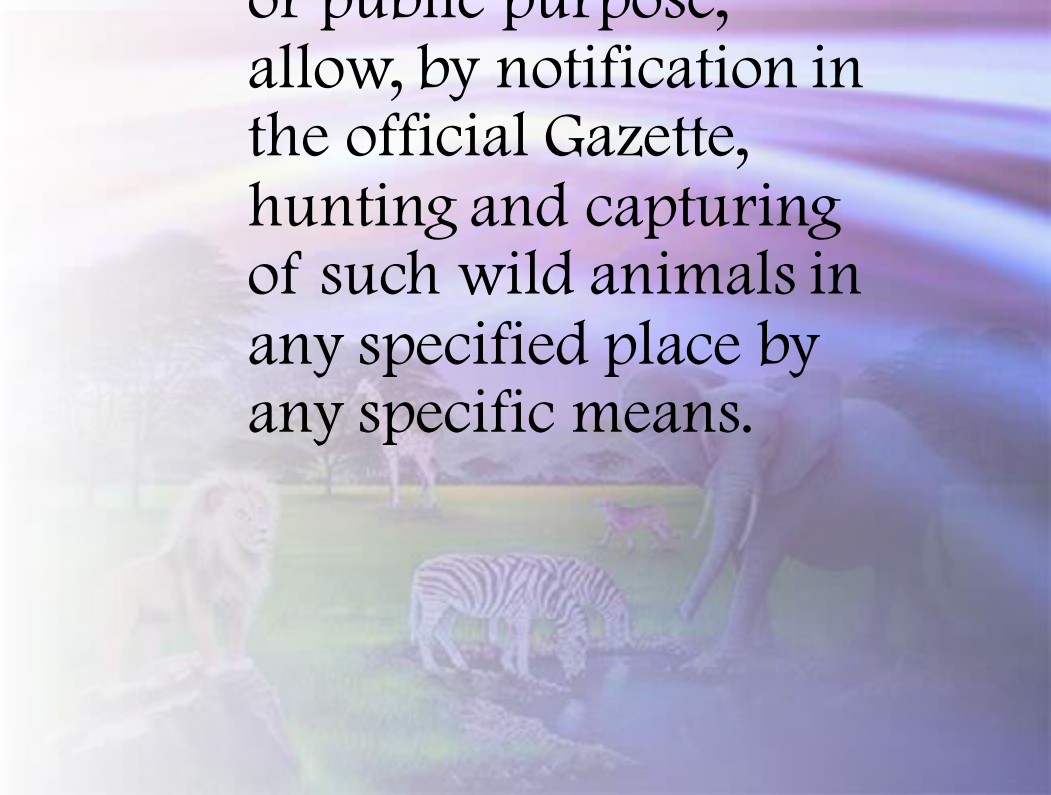
- Government may, for scientific management, public purpose exercise the above mentioned powers.



Features of the Wildlife Act

Power to grant exemption

- Government may, in the interest of any scientific or public purpose, allow, by notification in the official Gazette, hunting and capturing of such wild animals in any specified place by any specific means.



Features of the Wildlife Act

Dissolution of the Board

- Government may, by notification in the official Gazette, declare that the Board shall be dissolved on such date and with such consequences as may be specified in the notification.



Features of the Wildlife Act

Schedules

Along with the ordinance, four schedules have been issued which are referred as

- First
- Second
- Third
- Fourth



Features of the Wildlife Act

Schedule I:

- Wild animals that can be hunted on an ordinary permit, with the details of everything is mentioned.

Schedule II:

- Animals, trophies or meat for the possession, transfer or export of which certificate of lawful possession is required.

Features of the Wildlife Act

Schedule III:

- Wild birds and animals protected throughout the year.

Schedule IV:

- Wild birds and animals which are not protected.



END

Wildlife

IUCN Categories of Protected Areas



Concept of Protected Areas

Protected area is

“ A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”.



Concept of Protected Areas

Protected areas are one of the most effective tools for conserving species and natural habitats.

IUCN classify protected areas according to their management objectives.



Concept of Protected Areas

The categories are

- Recognized by international bodies, United Nations and many national governments.
- Considered be the global standard for defining and recording protected areas.
- Increasingly being incorporated into government legislation.



Concept of Protected Areas

IUCN Protected Areas Categories System

- Category I
  - Category Ia (Strict Nature Reserve)
  - Category Ib (Wilderness Area)
- Category II (National Park)

Concept of Protected Areas

- Category III (Natural Monument or Feature)
- Category IV (Habitat/Species Management Area)
- Category V (Protected Landscape/\Seascape)
- Category VI (Protected area with sustainable use of natural resources)



Wildlife

IUCN Categories of Protected Areas



Category Ia: Strict Nature Reserve

Definition:

- Protected areas that are strictly set aside to protect biodiversity where human visitation, use and impacts are strictly controlled to ensure protection of the conservation values.



Category Ia: Strict Nature Reserve

Primary objective

To conserve

- Regionally
- Nationally
- Globally outstanding ecosystems
- Species (occurrences or aggregations)
- Geo diversity features



Category Ia: Strict Nature Reserve

Other Objectives

- To preserve ecosystems.
- To secure examples of the natural environment for scientific studies.
- To minimize disturbance through careful planning.
- To conserve cultural and spiritual values associated with nature.

Category Ia: Strict Nature Reserve

Distinguishing features

The area should generally:

- Have a largely complete set of expected native species.
- Be capable of being managed to ensure minimal disturbance.
- Be free of significant direct intervention by modern humans.

Category Ia: Strict Nature Reserve

- Have a full set of expected native ecosystems, largely intact with intact ecological processes, or processes capable of being restored with minimal management intervention.
- Be managed for relatively low visitation by humans.



Category Ia: Strict Nature Reserve

Role in the landscape/seascape

- Protecting some of the earth's richness that will not survive outside.
- Protecting additional ecosystem services.
- Providing areas where ecosystems can be studied in as pristine an environment as possible.

Category Ia: Strict Nature Reserve

- Protecting natural sites that are also of religious and cultural significance.

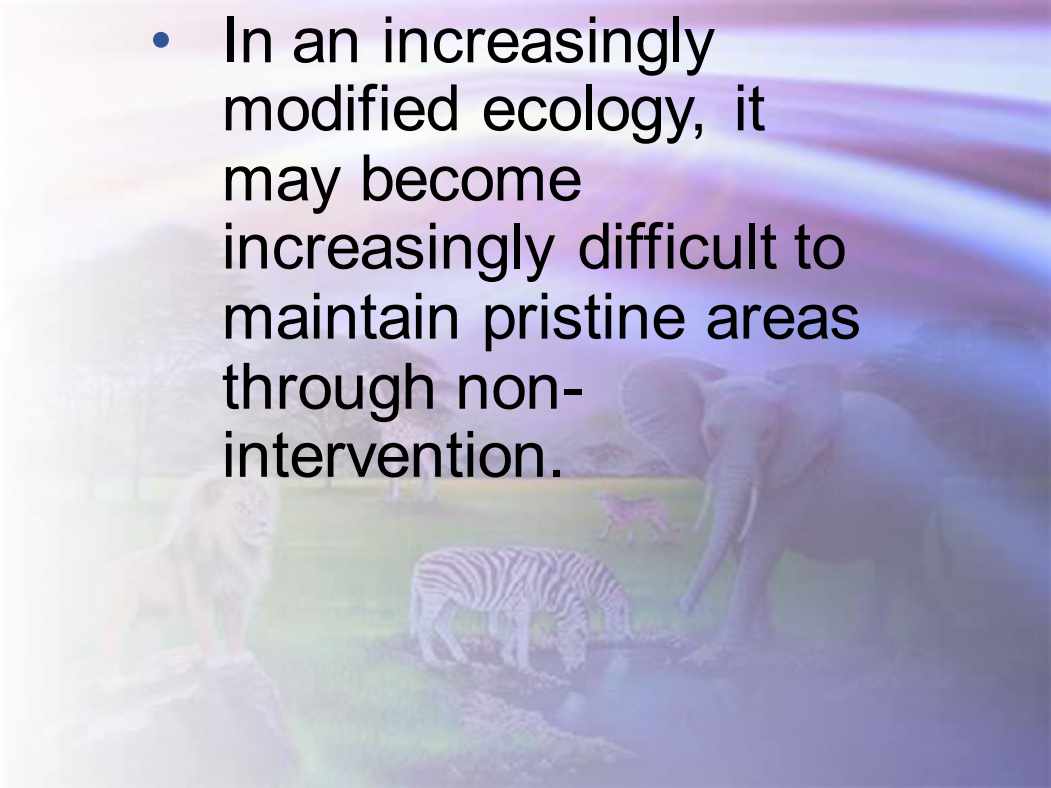
Issues for consideration

- There are few areas not under some kind of legal or at least traditional ownership, so that finding places that exclude human activity is often problematic.

Category Ia: Strict Nature Reserve

- Most apparent problem is with climate and air pollution
- New and emerging diseases.
- In an increasingly modified ecology, it may become increasingly difficult to maintain pristine areas through non-intervention.

END



Wildlife

IUCN Categories of Protected Areas



Category Ib: Wilderness Area

Definition:

- Protected areas that are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation.

Category Ib: Wilderness Area

Primary Objective

- To protect the long-term ecological integrity of natural areas that are undisturbed by significant human activity.



Category Ib: Wilderness Area

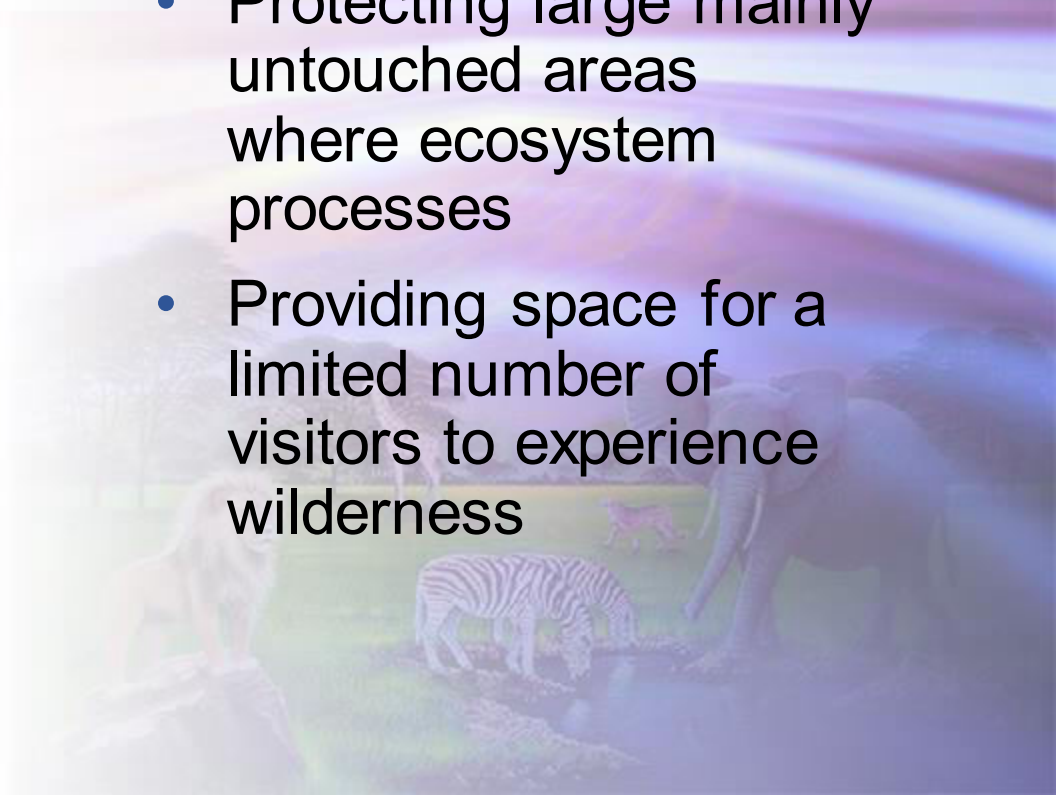
Other Objectives

- To enable indigenous communities to maintain their traditional wilderness-based lifestyle.
- To protect the relevant cultural and spiritual values and non-material benefits to indigenous or non-indigenous populations.

Category Ib: Wilderness Area

Role in the landscape/seascape

- Protecting compatible ecosystem services
- Protecting large mainly untouched areas where ecosystem processes
- Providing space for a limited number of visitors to experience wilderness



Category Ib: Wilderness Area

Distinguishing features

- Be free of modern infrastructure, and industrial extractive activity.
- Be free of inappropriate or excessive human use or presence.
- Containing a large percentage of the original extent of the ecosystem.

Category Ib: Wilderness Area

END

Issues for Consideration

- Some wilderness areas include livestock grazing by nomadic peoples and distinctions may need to be made between intensive and non-intensive grazing; however this will pose challenges if people want to increase stocking density.

Wildlife

IUCN Categories of Protected Areas



Category II: National Park

Definition:

- Large natural or near natural areas set aside to protect large-scale ecological processes, which also provide a foundation for environmentally scientific, educational, recreational and visitor opportunities.



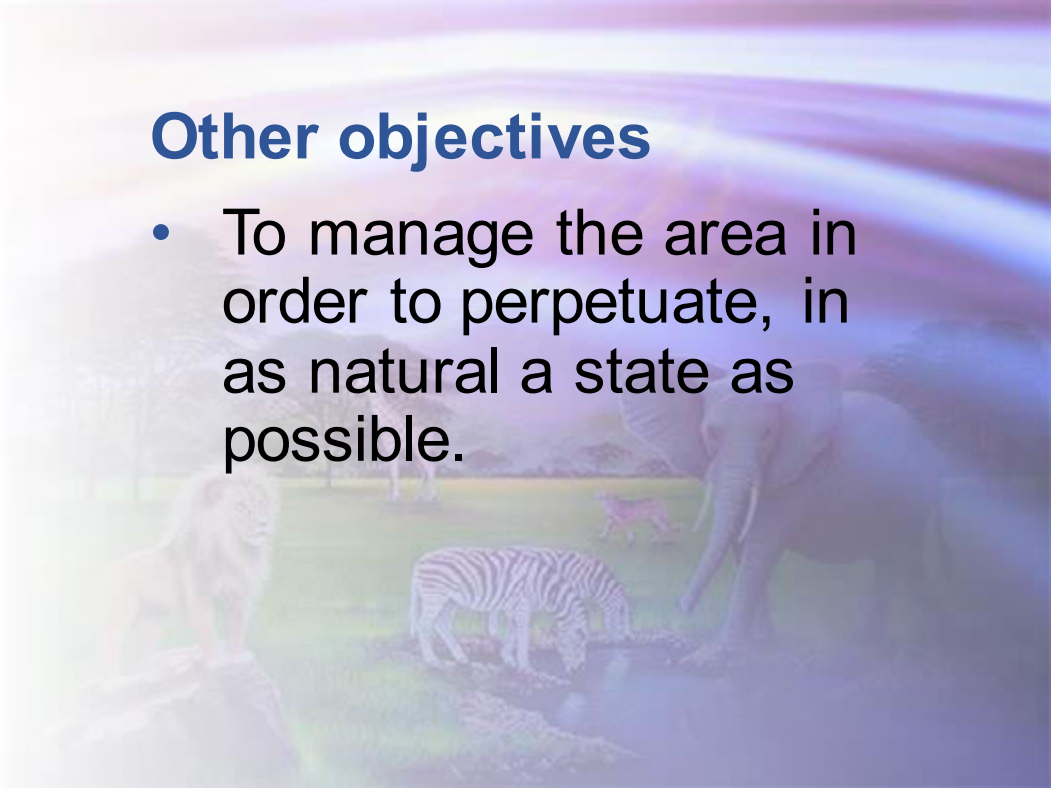
Category II: National Park

Primary objective

- To protect natural biodiversity along with its underlying ecological structure.

Other objectives

- To manage the area in order to perpetuate, in as natural a state as possible.



Category II: National Park

- To maintain viable and ecologically functional populations.
- To contribute to local economies through tourism.
- To manage visitor use for inspirational, educational recreational purposes.



Category II: National Park

Distinguishing features

- The area should contain representative examples of major natural regions, and biological and environmental features or scenery.
- It should be of sufficient size to maintain ecological processes.

Category II: National Park

- The composition, structure and function of biodiversity should be to a great degree in a “natural” state.

Role in the landscape/seascape

- Protecting larger-scale ecological processes.
- Protecting compatible ecosystem services.



Category II: National Park

- Protecting particular species and communities that require relatively large areas of undisturbed habitat.
- To inform and excite visitors about the need for and potential of conservation programmes.



Category II: National Park

- To support compatible economic development, mostly through recreation and tourism, that can contribute to local and national economies and in particular to local communities.



Category II: National Park

Issues for consideration

- Commercialization of land and water in category II is creating challenges in many parts of the world.



Wildlife

IUCN Categories of Protected Areas



Category III: National Monument-Feature

Definition:

- Protected areas set aside to protect a specific natural monument.
- They are generally quite small protected areas and often have high visitor value.



Category III: National Monument-Feature

Primary objective

- To protect specific outstanding natural features
- Their associated biodiversity and habitats.



Category III: National Monument-Feature

Other objectives

- To provide biodiversity protection in landscapes or seascapes that have otherwise undergone major changes
- To conserve traditional spiritual and cultural values of the site.

Category III: National Monument-Feature

Distinguishing features

- Category III protected areas are usually relatively small sites that focus on one or more prominent natural features and the associated ecology, rather than on a broader ecosystem.

Category III: National Monument-Feature

Natural geological and geomorphological features:

- Waterfalls, cliffs, craters, caves etc.

Culturally-influenced natural features:

- Cave dwellings



Category III: National Monument-Feature

Natural-cultural sites:

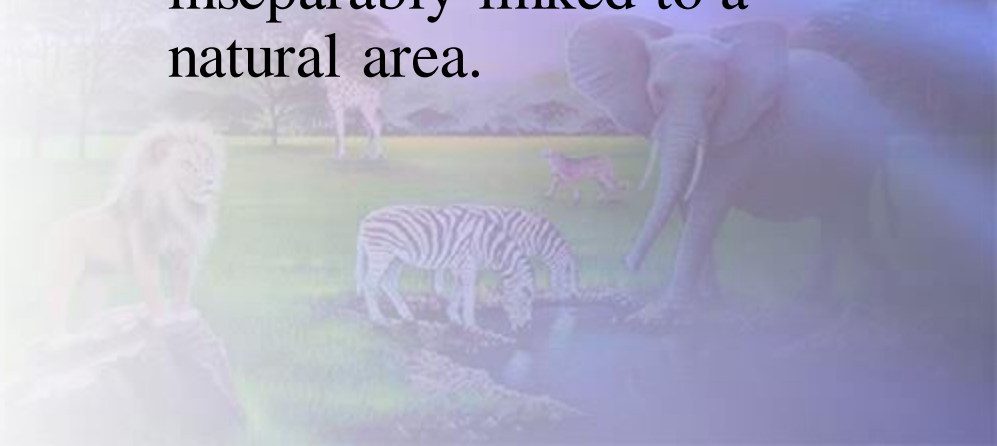
- Forms of sacred natural sites (sacred groves, springs, waterfalls, mountains, sea coves etc.) of importance to one or more faith groups



Category III: National Monument-Feature

Cultural sites with associated ecology:

- Where protection of a cultural site also protects significant and important biodiversity, such as archaeological or historical sites that are inseparably linked to a natural area.



Category III: National Monument-Feature

Role in the landscape/seascape

- An *opportunity* for environmental, cultural, education

END



Wildlife

IUCN Categories of Protected Areas



Habitat-Species Management Area

Definition:

- Protected areas aiming to protect particular species or habitats and management reflects this priority.



Habitat-Species Management Area

Primary objective

- To maintain, conserve and restore species and habitats.

Other objectives

- To protect vegetation patterns.



Habitat-Species Management Area

- To protect fragments of habitats as components of landscape or seascape-scale conservation strategies.
- To develop public education and appreciation of the species or habitat



Habitat-Species Management Area

Distinguishing features

- Protection of particular species
- Protection of habitats
- Active management to maintain target species
- Active management of culturally-defined ecosystems



Habitat-Species Management Area

END

Role in the landscape/seascape

- Protect critically endangered populations of species.
- Protect rare or threatened habitats.
- Maintain species that have become dependent on cultural landscapes where their original habitats have disappeared or been altered.

Wildlife

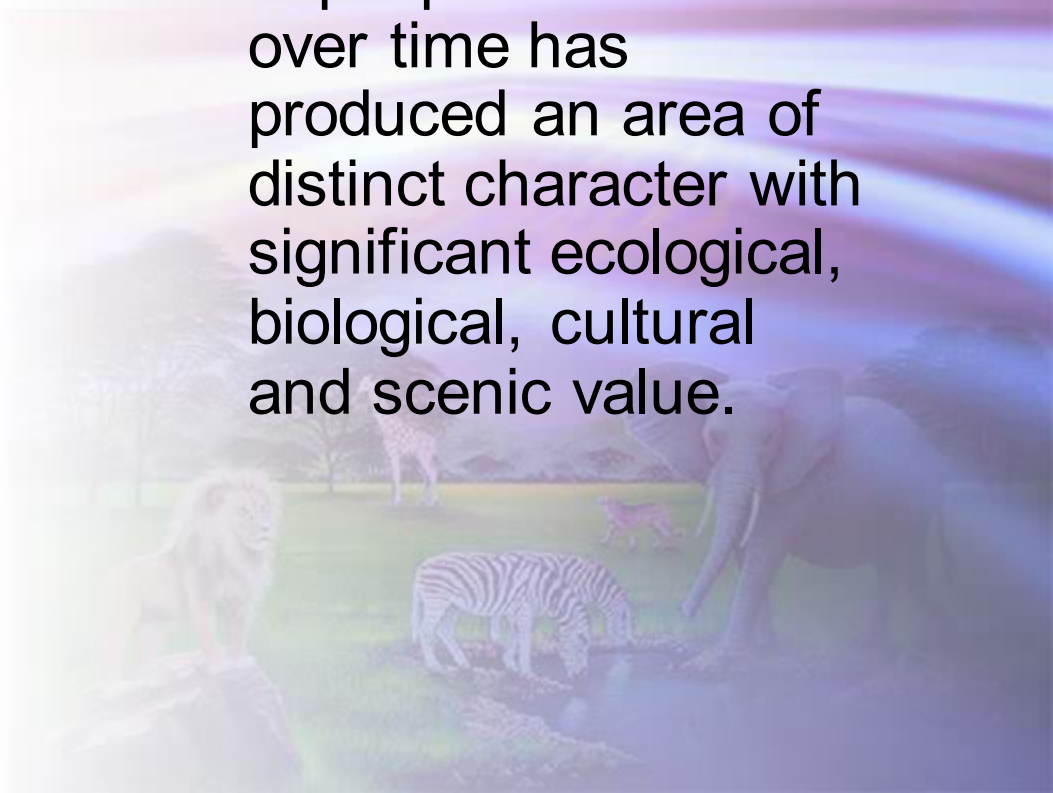
IUCN Categories of Protected Areas



Protected Landscape-Seascape

Definition:

- A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value.



Protected Landscape-Seascape

- Where safeguarding the integrity of this interaction is vital to protect and sustain the area and its associated nature conservation and other values.

Primary objective

- To protect and sustain important landscapes/seascaps and the associated nature conservation.

Protected Landscape-Seascape

Other objectives

- To maintain a balanced interaction of nature and culture through the protection of landscape and/or seascape
- To provide opportunities for enjoyment.
- To provide natural products and environmental services.

Protected Landscape-Seascape

Distinguishing features

- Landscape or coastal and island seascape of high or distinct scenic quality and with significant associated habitats.
- Opportunities for recreation and tourism consistent with life style and economic activities.

Protected Landscape-Seascape

Role in the landscape/seascape

- Category V protected areas may also act as linking habitat between several other protected areas.
- To provide a framework when conservation objectives need to be met over a large area.

END

Wildlife

IUCN Categories of Protected Areas



Category VI

Protected Area with Sustainable Use of Natural Resources

Definition:

Protected areas that conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems.



Category VI

Generally large, with most of the area in a natural condition

Where a proportion is under sustainable natural resource management

Where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.



Category VI

Primary objective

- To protect natural ecosystems
- Use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.



Category VI

Other objectives

- To promote sustainable use of natural resources.
- To promote social and economic benefits to local communities.
- To facilitate scientific research and environmental monitoring.
- To facilitate recreation and appropriate small-scale tourism.

Category VI

Distinguishing features

- It is not designed to accommodate large-scale industrial harvest.
- Achieve nature conservation.
- Category VI protected areas aim to conserve ecosystems and habitats



Category VI

Role in the landscape/seascape

- Protected areas are particularly adapted to the application of landscape
- It is particularly appropriate to the conservation of natural ecosystems when there are few or no areas without use or occupation.

END

Wildlife

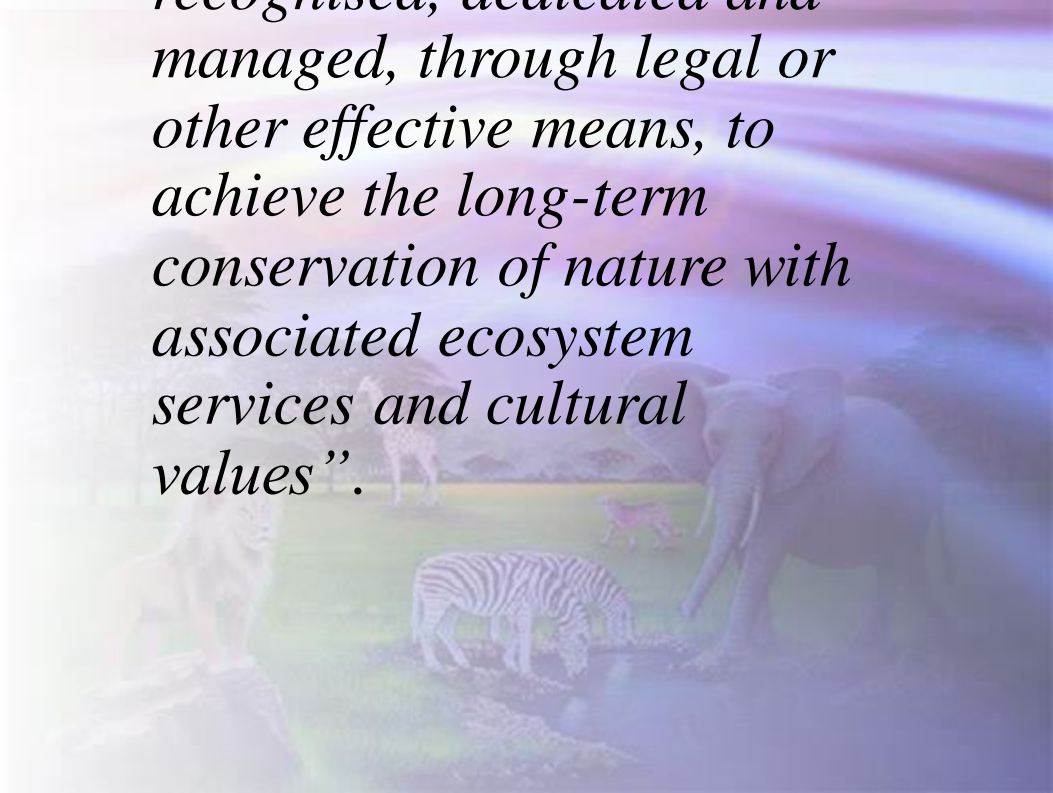
National Parks



Concept of National Parks

Protected Area

“ A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”.



Concept of National Parks

IUCN classify protected areas according to their management objectives.

Accordingly, there are six categories.

National Parks belongs to "Category II"



Concept of National Parks

IUCN Definition:

- Large natural or near natural areas (at least 1000 hectares) set aside to protect large-scale ecological processes, which also provide a foundation for environmentally scientific, educational, recreational and visitor opportunities.



Concept of National Parks

Concept:

- National Park is an area of outstanding scenic merit and natural beauty where the landscape, flora and fauna are protected and preserved in a natural state.
- Public access for recreation, education and research is provided.

Concept of National Parks

- Access roads and other facilities should be planned so they do not conflict with main objectives of National Parks.



Concept of National Parks

Acts prohibited under Law in National Parks:

- Firing of guns
- Hunting, killing, trapping or capturing wild animals inside or within a radius of three miles of its boundaries.
- Interfering with animals and plants
- Clearing land for cultivation.

Concept of National Parks

- Flow of polluted water is also prohibited.

Under the regulations, these acts may be allowed for scientific purposes or for the improvement of the park.

END



Wildlife

National Parks



General Rules

The Ministry of Interior is the responsible authority for National Parks.

The Ministry may establish a National Planning Commission to designate, alter or abolish areas for National Parks.

The Commission may review National Park management plans.



General Rules

National Parks are meant for

- Preserving the nation's unique natural scenery
- Protection of wild fauna and flora
- Preserving historic sites
- Providing public recreation
- Areas for scientific research.



General Rules

- Areas having unique landscapes, significant ecological systems, or habitats
- Biodiversity that are representative of the natural heritage of the nation.
- Administrative headquarters shall be established at each National Park.



General Rules

In accordance with the existing land use and the characteristics of the resources, a National Park may be divided into the following zones for management:

- Existing use area
- Recreation area
- Cultural/historic area
- Scenic area
- Ecological protected area

General Rules

The following activities shall be prohibited within the National Parks:

- Burning of vegetation or setting fires to clear land.
- Hunting animals or catching fish.
- Polluting water or air
- Picking or removing flower or any other vegetation.
- Engraving, sketching or defacing trees, bark, stone or signs.

General Rules

Within cultural/historic areas, the following activities shall be subject to prior permission from the Ministry of Interior:

- Repairing artifacts or historic monument.
- Repairing or reconstructing buildings.
- Making artificial alterations to original landscapes or landforms.

END

Wildlife

National Parks



List of National Parks in Pakistan

- Pakistan has 29 Protected Areas known as National Parks.
- As of 2012, 22 of these are under supervision of respective Provincial Governments and remaining are in private care.
- Only some of these are under the conservation scope of IUCN.

List of National Parks in Pakistan

- Ayub Park

  Rawalpindi
- Shandure-Phander National Park

  Ghizer
- Broghil Valley

  Chitral
- Central Karakoram

  Gilgit and Skardu
- Chinji

  Chakwal

List of National Parks in Pakistan

- Chitral Gol
  Chitral
- Deosai
  Skardu
- Deva Vatala
  Bhimber
- Ghamot
  Neelum
- Gurez
  Neelum



List of National Parks in Pakistan

- Hazarganji-Chiltan

  Quetta
- Hingol

  Awaran, Gwadar and Lasbela
- K2

  Gilgit, Skardu
- Kala Chitta

  Attock
- Khunjerab

  Gilgit

List of National Parks in Pakistan

- Kirthar
  Dadu
- Lal Suhanra
  Bahawalpur
- Margalla Hills
  Islamabad, Rawalpindi



List of National Parks in Pakistan

- Murree-Kotli Sattian-Kahuta

  Rawalpindi
- Pir Lasura

  Kotli
- Poonch River Mahaseer

  Kotli, Mirpur and Poonch
- Qurumber

  Ghizer



List of National Parks in Pakistan

- Saiful Muluk
  Mansehra
- Sheikh Buddin
  Dera Ismail Khan
- Toli Pir
  Poonch
- Panjal Mastan
  Bagh District

END



Wildlife

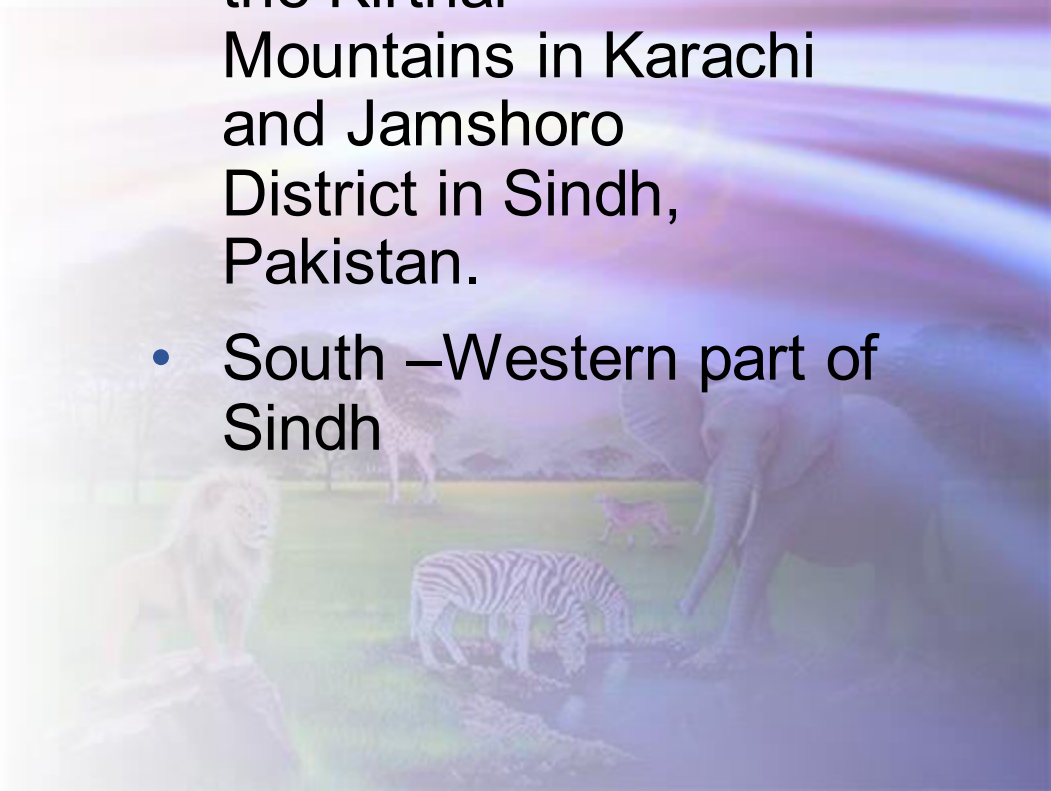
KIRTHAR NATIONAL PARK



Kirthar National Park

Location

- The **Kirthar National Park** is situated in the Kirthar Mountains in Karachi and Jamshoro District in Sindh, Pakistan.
- South –Western part of Sindh



Kirthar National Park

Establishment

- It was founded in 1970 and stretches over 3,087 square kilometres.
- Second largest National Park in Pakistan after Hingol National Park.
- Hub lake with 82 square km



Kirthar National Park

Major Fauna

26 principal species of mammals are believed to occur in the park.

- Indian leopards
- Striped hyenas
- Indian wolves
- Urials
- Chinkara gazelles
- Sind wild goats(Rarely)

Kirthar National Park

Birds fauna is equally rich with at least 58 varieties.

- Kingfisher
- Larks
- Eagles
- Vultures



Kirthar National Park

- This park is primarily established to protect and preserve wild goats and sheep of Sindh.
- 1971-1200
- 1977-2500
- Todate-4000
- Blackbuck antelopes are kept in enclosures for a reintroduction project at Kirthar National Park.

Kirthar National Park

- The park is accessible by four wheel drive vehicles
- Two rest houses belonging to the Sindh Wildlife Department are available for tourist accommodation.



END

Wildlife

Lal Suhanra National Park



Lal Suhanra National Park

Location

- Bahawalpur district of Punjab
- One of the largest Nationals Parks in South Asia.
- It is also a UNESCO declared Biosphere Reserve.



Lal Suhanra National Park

- Lal Suhanra is spread over 31,368 hectares
- Notable for the diversity of its landscape, which includes areas of desert, forest and wetland.



Lal Suhanra National Park

This park is primarily established to protect and preserve Black buck and chinkara

Todate-150

Nilgai

Indian rhino

have also been introduced there.



Lal Suhanra National Park

- Many species of animals can be found throughout the park.
- These include several wild animals of the desert such as
  - Wildcats
  - Rabbits bustards
  - Deer
- Reptiles in the park include the
  - Monitor lizard
  - Russell's viper etc.

Lal Suhanra National Park

More than 160 varieties of birds are also present, including:

- Houbara bustard
- Griffon vulture
- Crested honey buzzard
- Marsh harrier
- Hen harrier
- Laggar falcon
- Peregrine falcon
- Kestrel

END

Wildlife

National Parks



Chinji National Park

Chinji National Park was established in 1987.

Location:

- Talagang Tehsil, Chakwal District, Punjab, Pakistan

Area

- Chinji National Park covers a total area of 6,095 hectares (15,061 acres).



Chinji National Park

It is located close to Salt Range, about 130 km from Islamabad in the south.

Features:

- Deeply eroded land of Chinji consists of sandstone to igneous rocks, combined with small deposits of rock salt from the Salt Range.

Chinji National Park

- The area has an elevation imperial of 2,231 feet (680 m).
- Deep torrential streams and ravines slope into the Soan River, which passes through the area.
- The Park exhibits the biome of deserts and xeric shrub lands and falls in the ecoregion of 'Baluchistan xeric woodlands

Chinji National Park

- The area is characterized to have sub-tropical vegetation with many plant species of importance.

Effort By: AARISH ALI

Major Fauna

- The area is mainly meant for the protection of threatened species of Urial.



Chinji National Park

Chinji National Park is also a natural habitat of

- Chinkara
- Gazelle
- Wild boar
- Civet
- Wild hare
- Mongoose
- Porcupine

END



Wildlife

National Parks



Hazarganji Chiltan National Park

Hazarganji Chiltan National Park was established in 1978.

Mergence of Hazarganji State Forest and Chiltan State Forest.

Location:

- Mastung District of western Balochistan, Pakistan.

Hazarganji Chiltan National Park

Area:

- It covers 325,000 acre of land located close to the Koh-i-Chiltan mountain in Quetta's outskirt.

Features:

- The park is in the Sulaiman Mountains, with deseriand forest habitats.



Hazarganji Chiltan National Park

Major Flora:

- Pashtun Juniper
- Pistachio
- Almond
- Ash trees
- Wild figs

Major Fauna:

- The area is mainly meant for the restoration of endangered species of Chiltan Markhor

Hazarganji Chiltan National Park

- To date about 300-400 Sulaiman Markhor and around 800 Chiltan ibex survive within the park boundaries.
- The Suleiman Markhor is also present in the northern part of the Chiltan Range and a few urial still survive on the western slopes between 1,500m and 2,100m.

Hazarganji Chiltan National Park

Mammals other than Markhor in the park includes

- Indian wolf
- Stripped hyena
- Leopard
- Caracal
- Jackal
- Red fox
- Porcupine
- Desert hare

Hazarganji Chiltan National Park

Birds in the Park are

- Houbara bustard
- Griffon vulture
- Egyptian vulture
- Honey buzzard
- Laggar falcon
- Peregrine falcon
- Kestrel
- Indian sparrow hawk
- Scops owl
- Common cuckoo

Hazarganji Chiltan National Park

- European nightjar
- Long-billed pipit
- Orphean warbler
- Variety of wheatears
- Rock partridge
- Chukor



END

Wildlife

National Parks



Ayubia National Park

Ayubia National Park was declared a National Park in 1984.

Ayubia was named after Muhammad Ayub Khan, the then President of Pakistan.

Location:

- Abbottabad District, Khyber Pakhtunkhwa-Pakistan

Ayubia National Park

Area:

- Initial area was 1684 ha, expanded through northern extension in 1998.
- Total area 3,312 hectares (8,184 acres)

Features:

- This Natiopnal park is surrounded by three small towns(Nathia gali, Ayubia and Khanaspur)

Ayubia National Park

- Rainfall: 1,244 cm
- Temperature: 3 °C - 11 °C

The Area Supports

- Temperate coniferous forest
- Temperate broadleaf and mixed forest
- These forests have an average elevation of 8,000 feet (2,400 m) above the sea level.

Ayubia National Park

Major Flora:

The park holds 104 species of plants. The main floral species are

- *Cedrus deodara*
- Blue pine
- Yew
- Silver fir
- Horse chestnut
- Oak



Ayubia National Park

Major Flora:

Plants belonging to 19 families are known for their medicinal properties.



Ayubia National Park

Major Birds Fauna:

- The park harbors up to 203 species of birds.
- Golden eagle
- Vulture
- Eurasian sparrow
- Hawk
- Hill pigeon
- Khalij Pheasant (30 species)
- Spotted dove
- Collared dove

Ayubia National Park

Major Mammal Fauna:

Ayubia National Park supports 31 species of mammals.

- Asiatic leopard
- Hill fox
- flying squirrel
- Masked civet
- Rhesus Macaque

END

Wildlife

National Parks



Khunjerab National Park

Khunjerab National Park was established on 29 April 1979.

Location:

- Gilgit Baltistan-Pakistan.
- Adjacent to the Taxkorgan Natural Reserve in China.



Khunjerab National Park

Area:

- Spreads over 2,26,913 ha

Features:

- One of the highest National Parks in the world.
- It is Pakistan's third largest National Park.
- Area of Park lies at an elevation of 4000m.

Khunjerab National Park

Important Fact:

- The borders of the Park mapped in 1974, after a field survey to protect "Marcopolo Sheep".
- The population of that sheep was around 400 but had dropped to below 180 by the time of the completion of the Karakoram Highway.



Khunjerab National Park

Major Fauna

- The primary purpose of this park was to provide protection to the endangered **Marco Polo sheep**, which is only found in this area in Pakistan.
- Snow leopards
  - Worldwide---7,000-10,000
  - Khunjerab Park---More than 300

Khunjerab National Park

Other Mammalian Fauna

- Himalayan ibex
- Himalayan brown bear
- Red fox
- Tibetan wolf
- Blue sheep
- Western kiang (Wild
- Mountain weasel

Khunjerab National Park

- Beech marten
- Long-tailed marmot
- Eurasian lynx
- Large-eared pika
- Cape hare
- Wood mouse
- Royle's mountain vole
- Asian house shrew
- Etruscan shrew
- Grey dwarf hamster

Khunjerab National Park

Birds Fauna

- Golden Eagle
- Black vulture
- Marsh Harrier
- Eurasian Sparrow
- Himalayan Snow Cock
- Snow Partridge
- Grey Heron
- Snow Pigeon

Khunjerab National Park

Important Fact:

- According to WWF officials there is plan to turn “Khunjreb Park” into Peace Park”.
- To conserve area on sides of the boarder.



END

Wildlife

National Parks



Margalla Hills National Park

Location:

- North of the Islamabad City, Capital of Pakistan.

Area

- 12,000 ha

Features:

- Elevation range 550m to 1500m.
- Rugged topography
- Numerous valleys
- Precipitous slopes

Margalla Hills National Park

- Margalla hills have beautiful torrents gushing down in the monsoon.
- Natural springs are also present.
- The Park includes the Margalla Hills which form's the foothills of the Himalayas, along with Shakarparian Park and Rawal Lake.



Margalla Hills National Park

The park is rich in biodiversity

- 600 plant species
- 250 bird varieties
- 38 mammals
- 13 species reptiles.

Richness of species

- Sino-himalayan fauna
- Gray goral
- Barking deer
- Leopard

Margalla Hills National Park

Major Flora:

- In southern slopes
  - Deciduous and evergreen trees diverse shrub
- In the north
  - Pines
  - Oak



Margalla Hills National Park

Major Fauna:

- The fauna is mainly Indo Himalayan, with some overlapping of Palearctic species

Birds Fauna:

- The birds found here are residents as well as winter migrants from higher altitudes of the north, spring and summer visitor for breeding.

Margalla Hills National Park

- Larks
- Paradise flycatcher,
- Black partridge
- Shrikes pheasants
- Spotted doves
- Egyptian vulture
- Falcons
- Hawks
- Eagles



Margalla Hills National Park

Mammalian Fauna:

- Margalla has a variety of mammals
- Indian leopard
- Gray goral
- Barking deer
- Wild boar
- Golden jackal
- Red fox
- Porcupine



Margalla Hills National Park

Reptilian Fauna:

Margalla has a variety of reptiles

- Russell's viper
- Indian cobra
- Saw-scaled viper



END

Wildlife

National Parks



Chitral Gol National Park

Chitral Gol National Park is established in 1984

“Gol” is local langauge meaning “Valley”.

Location:

- Hindukush range
- Beside the Chitral River in Chitral District - Khyber Pakhtunkhwa-Pakistan.

Area:

- 7,780 ha

Chitral Gol National Park

Features:

- Rainfall is estimated to be 462 ml.
- Weather is cold and dry.
- The temperature ranges from -12.2 to 43.3 °C.

Major Flora:

- The park is rich in a particular tree
  - Cedar



Chitral Gol National Park

Major Fauna:

- Chitral National Park provide shelter to a vast biodiversity, especially Markhor.
- Holds the largest population of the Astor Markhor in the world.
- Siberian ibex
- Ladakh Urial
- Asian black bear

Chitral Gol National Park

- Snow leopard (Non-permanent resident)
- Tibetan wolf
- Red fox
- Yellow-throated marten
- Himalayan otter

Birds Fauna:

- Bearded vulture
- Himalayan vulture
- Golden Eagle
- Demoiselle crane

Chitral Gol National Park

- Peregrine falcon
- Himalayan snow cock
- Himalayan monal
- Snow partridge
- Rock partridge

END



Wildlife

National Parks



Hingol National Park

Hingol National Park was established in 1988.

It is now named as Dharune-Hingol National Park, formed by the mergence of two Parks.

Area:

- 165,700ha.

Location:

- It is located along the Makran coast in southwestern, Balochistan-Pakistan.

Hingol National Park

- It lies within three districts of Balochistan, Lasbela, Gwadar and Awaran.

Major Fauna:

The Park is rich in fauna and is known to support

- 35 species of mammals
- 65 species of amphibians and reptiles

Hingol National Park

- 185 species of birds

Animals provided protection in this National Park

- Wild Sindh ibex
- Baluchistan urial
- Chinkara gazelle

END



Wildlife

Wildlife Sanctuaries



Concept of Wildlife Sanctuaries

Definition:

Wildlife Sanctuary, is a protected area, provides an undisturbed breeding ground for the protection of wildlife.

- It is a naturally occurring sanctuary, may be an island.
- It provides protection for species from
  - Hunting
  - Predation
  - Competition

Concept of Wildlife Sanctuaries

- These wildlife refuges are generally officially designated territories.
- Such refuges can protect animals that are endangered.

Importance:

- National parks, wildlife sanctuaries and other protected spaces, help to conserve the natural world and benefit us in many ways.

Concept of Wildlife Sanctuaries

- A wildlife sanctuary is promoting conservation, and thus play an important role in society.

Purpose:

Animal sanctuaries exist for many specific reasons:

- Help to protect animals and safeguard their lives.

Concept of Wildlife Sanctuaries

- Animal sanctuaries give new homes to abandoned animals.
- Animals rescued from dangerous conditions.
- Help to protect animals from illegal activities.
- Serve as places where endangered animals breed and are therefore protected.

END



Wildlife

Wildlife Sanctuaries



General Rules

In the **Wildlife Sanctuary** public access is prohibited.

The following acts are also prohibited and one must abide by certain rules and regulation.

Rules:

- Entry or residence
- Land cultivation



General Rules

- Damaging or destructing vegetation
- Exploration of forest is not permissible except for reducing
  - Fire hazards
  - Epidemics
  - Insect attacks
  - Natural calamities
- No person shall hunt, kill or capture any animal.



General Rules

- No person shall be found in circumstances that it is his intent on to hunt, kill or capture any animal in a Wildlife Sanctuary.
- Introduction of any exotic species
- Causing any fire
- Polluting the water flowing in the Sanctuary

END



Wildlife

Wildlife Sanctuaries



Significant Wildlife Sanctuaries

In Pakistan presently there are 99 Wildlife Sanctuaries.

IUCN recognized number of Wildlife Sanctuaries in Pakistan.

Northern Area

- Astore
- Baltistan
- Naltar

Significant Wildlife Sanctuaries

Baluchistan

- Borraka
- Buzi Makola
- Ziarat Juniper
- Chorani

Khyber PakhtunKhwa(KPK)

- Manglot
- Argam Basti

Significant Wildlife Sanctuaries

Punjab

- Bajwaat
- Chumbi Surla
- Chashma and Taunsa Barrage Dolphin Sanctuary
- Cholistan
- Daphar



Significant Wildlife Sanctuaries

Sindh

- Cut Munarki Chach
- Deh Akro
- Dhoung Block
- Bijoro Chach
- Gulsher Dhand
- Hub Dam
- Hadero Lake
- Haleji Lake
- Kot Dinghano

Significant Wildlife Sanctuaries

- Mahal Kohistan
- Majiran
- Marho Kotri
- Nara
- Rann of Kutch
- Sadnani

END



Wildlife

Wildlife Sanctuaries



Astore Wildlife Sanctuary

Astore sanctuary was announced on 22 Nov 1975

- This sanctuary is contiguous to Baltistan Wildlife Sanctuary

Location:

- Astore District
- Between Nanga Parbat
- Gilgit–Baltistan, Pakistan

Astore Wildlife Sanctuary

Area:

- 41,440ha

Features:

- Altitude is from 1,212 m to 6,060 m
- Durable and precipitous geography
- Mostly consisting of meta-sedimentary stones
- Several kinds of igneous stones

Astore Wildlife Sanctuary

Primary objective

- The sanctuary is home to a small population of the near **threatened species, Markhor;**
  - National animal of Pakistan
  - It is a large species of wild goats unique to this region of the world

Astore Wildlife Sanctuary

Other fauna

- The sanctuary is also conservationist spot for endangered animals.
- Snow Leopard
- Brown Bear
- Lynx.

END



Wildlife

Wildlife Sanctuaries



Baltistan Wildlife Sanctuary

Baltistan Wildlife Sanctuary was established in 1975

Location:

- Skardu District
- Between the villages of Rondu and Shengus, in the Skardu District
- Baltistan region of Northern Pakistan
- South of the Indus River

Baltistan Wildlife Sanctuary

Area:

- 41,500 ha

Important Fact

- Baltistan Wildlife Sanctuary is contiguous with the Astore Wildlife Sanctuary to its South and East

Objective:

- Purpose of conserving the threatened species

Baltistan Wildlife Sanctuary

- Snow leopard
- Brown bear
- Lynx
- Tibetan wolf
- Tibetan sand fox
- Markhor
- Bharal
- Siberian ibex.



Baltistan Wildlife Sanctuary

END

Avifauna:

Studies indicate that the area is rich in avifauna.

- 109 birds species have been recorded from the Deosai plateau

This a breeding ground for variety of animals

- Warblers
- Buntings
- Red start

Wildlife

Wildlife Sanctuaries



Cholistan Wildlife Sanctuary

Cholistan Wildlife Sanctuary is part of the Cholistan desert

Location:

- Cholistan desert
- In the South Eastern portion of Punjab

Area:

- 660,921ha



Cholistan Wildlife Sanctuary

Mammalian Fauna

Some of the rare animals of this region are:

- Desert Wolf
- Indian Fox
- Red Fox
- Jackal
- Indian Grey Mongoose
- Nilgai
- Antelope
- Caracal Cat

Cholistan Wildlife Sanctuary

- Chinkara gazelle
- Blackbuck
- Small Indian civet

Reptilian Fauna

- Russells viper
- Saw scaled Viper
- Monitor lizard
- Indian Cobra



Cholistan Wildlife Sanctuary

Birds Fauna

- Saker Falcon
- Black-backed Vulture
- Houbara bustard



END

Wildlife

Wildlife Sanctuaries



Hub Dam Wildlife Sanctuary

Hab Dam Wildlife Sanctuary was declared in July 1974

It is Pakistan's third largest dam

Area:

- 27,219ha

Location:

- It is situated in the north of Karachi bordering the Kirthar National Park
- Balochistan

Hub Dam Wildlife Sanctuary

Features:

- Hab Dam Wildlife Sanctuary is covering an area of 32 square miles
- Much of the shoreline is steeply shelving and stony
- Many shallow bays
- Small islands



Hub Dam Wildlife Sanctuary

Features:

- The greater part of the reservoir (in Balochistan) is unprotected
- The Eastern shore and of the Dam (in Sindh) is protected in the Kirthar National



Hub Dam Wildlife Sanctuary

Fauna:

An ideal place for bird watching

- Waterfowl (both resident and migratory)
- The lake also provide refuge to migratory birds
  - Cranes
  - Pelicans
  - Ducks
  - Waders

Hub Dam Wildlife Sanctuary

END

Fauna:

The surrounding hills are home for

- Urial
- Sindh Wild Goat
- Chinkara Gazelle
- Pangolin
- Wolf
- Jackal
- Common fox
- Numerous reptiles



Wildlife

Wildlife Sanctuaries



Chashma and Taunsa Barrage Dolphin Sanctuary

Chashma and Taunsa Barrage Dolphin Sanctuary was declared open to the public in 1972

Location:

- Mianwali District, Punjab-Pakistan



Chashma and Taunsa Barrage Dolphin Sanctuary

Features:

For a wide variety of waterfowls including threatened species, an important site for

- Breeding
- Staging
- Wintering

- Mid-winter waterfowl counts in recent years have regularly exceeded 20,000 birds
- Anatidae (ducks, geese, swans)

Chashma and Taunsa Barrage Dolphin Sanctuary

- The endangered Indus Dolphin occurs in the river both upstream and downstream of the barrage

Issues for consideration:

- Taunsa Barrage Wildlife Sanctuary is currently confronted with multiple issues

Chashma and Taunsa Barrage Dolphin Sanctuary

- Limited cultivation is practiced inside the sanctuary area
- Clearing off the natural vegetation
- Alteration of the natural ecosystem
- Degrading wildlife habitat
- Invasion of alien species
- Hence, adverse environmental impacts.

Chashma and Taunsa Barrage Dolphin Sanctuary

Management Plan:

- WWF-Pakistan has developed a sustainable management plan
- Indus river dolphin conservation project

END



Wildlife

Wildlife Sanctuaries



Rann of Kutch Wildlife Sanctuary

The Great Rann of Kutch is a salt marsh.

- Located in the Thar Desert
- Kutch District of Gujarat, India and the Sindh, Province of Pakistan.



Rann of Kutch Wildlife Sanctuary

- Reputed to be one of the largest salt deserts in the world.

Location:

- This Sanctuary, is part of the great "Thar desert"
- Sindh-Pakistan

Area:

- Spread over 566,375 ha



Rann of Kutch Wildlife Sanctuary

Features:

- Stabilized heighted sand dunes
- Broad inter-dunal valleys of alluvial soil
- Integral with the large Rann of Kutch across the frontier with India
- Permanent saline marshes

Rann of Kutch Wildlife Sanctuary

Features:

- Coastal brackish lagoons
- Tidal mudflats
- Estuarine habitats
- Scarcity of water remains the potential threat to the ecosystem



Rann of Kutch Wildlife Sanctuary

Wildlife:

The site supports many locally and globally threatened species.

- Flamingos breeding site(More than 1% of the biogeographical population)
- Indian bustard
- Houbara bustard
- Sarus crane
- Hyena

Rann of Kutch Wildlife Sanctuary

Wildlife:

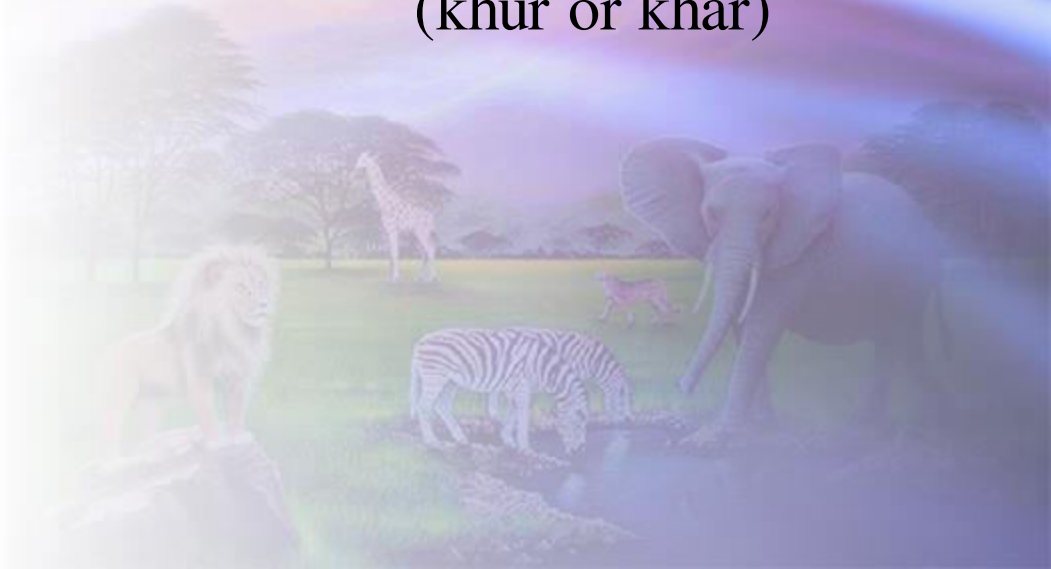
- 13 species of lark
- Peafowl
- Storks
- Chinkara Gazelle
- Nilgai
- Pangolin
- Desert Wolf
- Desert Cat



Rann of Kutch Wildlife Sanctuary

Wildlife:

- Famous for the Indian Wild Ass sanctuary
  - Home of the world's last population of Indian Wild Ass (khur or khar)



END

Wildlife

Game Reserves



Concept of Game Reserve

Definition:

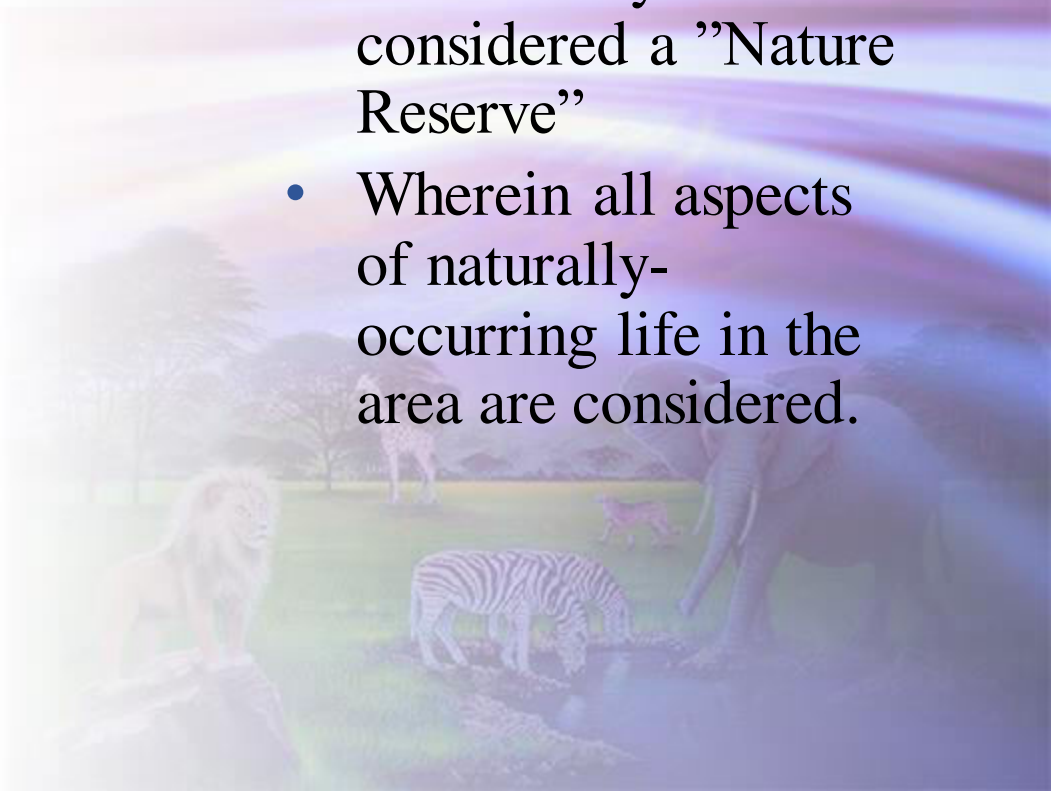
"A game reserve is an area wherein controlled hunting and shooting is permitted on permit basis"

A game reserve (wildlife preserve) is a large area of land where wild animals live safely or are hunted in a controlled way for sport.



Concept of Game Reserve

- In the game reserves the major focus is specifically the animals.
- If hunting is prohibited, a game reserve may be considered a ”Nature Reserve”
- Wherein all aspects of naturally-occurring life in the area are considered.



Concept of Game Reserve

Game Count:

- Game count to be conducted as it provides an estimation of the game population
- It is to ascertain the number of female animals, as this indicates the production potential.



Concept of Game Reserve

- Knowing game count statistic informs the farm's threshold and when, what and how much must be hunted.
- Managing erosion and conserving pasture are also crucial aspects.



Concept of Game Reserve

- It is an estimate that walking 6km to water isn't unnatural for an animal.
- Some of the Reserve's water points will be done away or moved to more suitable locations.

END



Wildlife

Game Reserves



General Rules

To ensure safety in Game reserve, one must adhere to the following rules and regulations and transgression may result in prosecution and or penalties.

Driving Areas

- Vehicles must remain on the designated roads at all times.

General Rules

- Off-road driving or driving on closed or no-entry roads is a serious offence.

Walking Areas

- Walking trails must be provided throughout the reserve
- One must be adhered to at all times so as to avoid disruption of vegetation and animal communities.

General Rules

Feeding of Wildlife is Prohibited

- The feeding or intentional disturbance of wildlife is a serious offence.
- By feeding any wildlife we are potentially SIGNING THEIR DEATH WARRANT .
- As animals may become dependent on humans

General Rules

- Animals may become aggressive and dangerous.

Flora & Fauna

- No plant, animal, wildlife or any natural or cultural items may be removed from the reserve without permission.



General Rules

- To cut, damage, destroy or be in possession of any plant or part thereof, including dry wood or firewood is a serious offence.

Invasive Species

- Importing of any specimen of an alien, invasive species into the reserve is prohibited.

General Rules

Fire Hazard

Other than with prior consent from reserve management

- Starting or causing of any fire, whether it be intentional or unintentional
- Even in a fireplace or container purposely made available, is strictly prohibited

General Rules

Smoking

- Smoking may only take place in designated smoking areas
- Cigarette butts must be disposed of in dustbins distributed throughout the reserve.



General Rules

Vandalism

- Buildings and sites of historical and cultural value exist within the reserve must be treated with respect at all times.
- Vandalism of any buildings or infrastructure is strictly prohibited.



Wildlife

Game Reserves



Significant Game Reserves

There are 96 Game reserves in Pakistan

- Federal territory 1
- Balochistan 7
- Northern Area 9
- Sindh 14
- Punjab 19
- KPK 38
- AJK 8

Significant Game Reserves

Religion wise significant game reserves

IUCN recognized 66 Game/Hunting reserves in Pakistan.

KPK

- Bilyamin
- Goleen Gol
- Gehrait Gol
- Sewagali
- Toshi

Significant Game Reserves

Northern Area

- Askor Nullah
- Chassi/Baushdar
- Danyor Nallah
- Nar/Ghoro Nallah
- Kilik/Mintaka

AJK

- Ghamoto
- Moji
- Mori Said Ali

Significant Game Reserves

Sindh

- Ghamot
- Khipro Forest
- Mando Dero
- Mirpur Sakro
- Sukkkur and Gaddu barrage game reserve
- Surjan, Sumbak, Eri and Hothiano
- Tando Mitha Khan

Significant Game Reserves

Punjab

- Abbasia
- Bahawalpur Plantation
- Chaupalia
- Cholistan
- Daulana
- Gat Wala
- Head Qadirabad
- Jabbar
- Kala Chitta
- Kot Zabzai
- Ucchali Complex

Significant Game Reserves

Baluchistan

- Gogi
- Wam
- Zangi Nawar
- Zawar khan

Federal Territory

- Islamabad

END



Wildlife

Game Reserve



Tooshi Game Reserve

Tooshi, a conservation area for Markhor

It is famous for the polo grounds of

- Shandur
- Broghil National Park
- Mastuj
- Booni
- Bamborat: area where the Kalash cultural festival is held every August of the year.

Tooshi Game Reserve

Location:

- Tooshi Game Reserve, is located along the paved road to Garam Chashma in Chitral's Lutkho district.



Tooshi Game Reserve

Area:

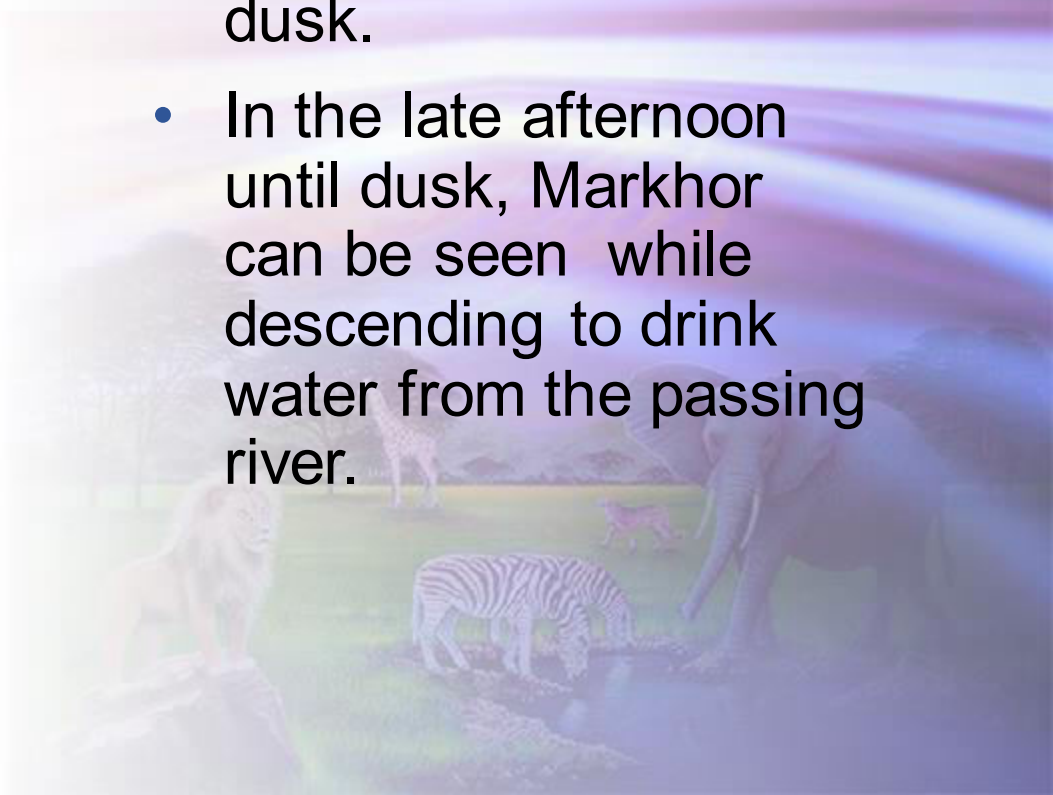
- It covers 1000 hectares
- It is proposed to be reclassified as a wildlife sanctuary, with readily viewable Markhor population.



Tooshi Game Reserve

- The jeep ride is just 20 minutes from Chitral town.
- The Markhor are best seen along the road at dusk.
- In the late afternoon until dusk, Markhor can be seen while descending to drink water from the passing river.

END



Wildlife

Game Reserve



Sukkur And Gaddu Barrage Dolphin Reserve

Location:

- The Indus Dolphin Reserve is a natural wetland and situated in the Sukkar
- From the Sukkur Barrage upstream to the Guddu Barrage near Kashmor, Northern Sindh.



Sukkur And Gaddu Barrage Dolphin Reserve

Location:

- In 1974 the Government of Sindh declared the Indus River between the Sukkur and Guddu Barrages an Indus dolphin Reserve.



Sukkur And Gaddu Barrage Dolphin Reserve

Surveys:

- From 1972 to 1978 several surveys were conducted between Guddu and Sukkur Barrages
- All of these surveys reported estimation of 187 or fewer animals.



Sukkur And Gaddu Barrage Dolphin Reserve

- A comprehensive assessment of the Indus River Dolphin population was made of their entire range by various agencies
  - WWF Pakistan
  - The Wildlife Departments of Sindh, Punjab and NWFP,
  - The Whale and dolphin Conservation Society, UK
- A minimum abundance estimate of 965 dolphins.

Sukkur And Gaddu Barrage Dolphin Reserve

- Between Chashma and Taunsa Barrages, 84 dolphins were recorded
- From Taunsa to Guddu Barrages, 259 dolphins
- Highest abundance was the between Guddu and Sukkur Barrages where 602 dolphins were observed.



Sukkur And Gaddu Barrage Dolphin Reserve

- A stretch of about 135 km of the Indus River from Sukkur Barrage upstream to Guddu Barrage.
- The Reserve includes the full width of the river when in space and a strip of land three miles wide on either side of the river.

END



Wildlife

Game Reserve



Kilik/Mintaka Game Reserve

The name of the game reserve is actually driven from *"The Mintaka Pass or Mingteke Pass or Mintika Pass" and the nearby "Kilik Pass"*

Mintaka means

" Thousand goats.



Kilik/Mintaka Game Reserve

Location

- Kilik/Mintaka Game Reserve lies along the border with China
- East of the Korakorum highway and the Khunjerab National Park.



Kilik/Mintaka Game Reserve

Geographical Location:

- Lies in Hunza, Gilgit District, on the Pakistan-China boader, 225km from the town of Gilgilt.



Kilik/Mintaka Game Reserve

Area:

- It includes 65,036ha

Features

- The terrain is rugged and mountainous
- There is a variety of rocks
  - Sedimentary
  - Metamorphic
  - Igneous
- Mixture of rock and mineral deposits

Kilik/Mintaka Game Reserve

Features

- Temperatures at higher elevations remain below freezing point for most of the year
- Winters are severe
- Summers cold and dry.
- Mostly precipitation is in the form of snow



Kilik/Mintaka Game Reserve

Fauna

Large mammals include

- Marco Polo sheep
- Ibex
- Snow leopard
- Brown bear
- Wolf
- Fox



Kilik/Mintaka Game Reserve

Fauna

The avifauna includes a variety of game birds, such as

- Chukar
- Snow partridge
- Raptors
- Vultures



END

Wildlife

Ramsar Convention



History & Concept

History

- Ramsar is one of the global inter-governmental environmental agreements.
- The treaty was negotiated in1960s by countries and NGOs



History & Concept

History

- To avoid the increasing loss and degradation of wetland habitat for migratory water birds
- In a 18 nations meeting it was adopted in the Iranian city of Ramsar On 2nd February 1971
- Came into force in 21st December 1975

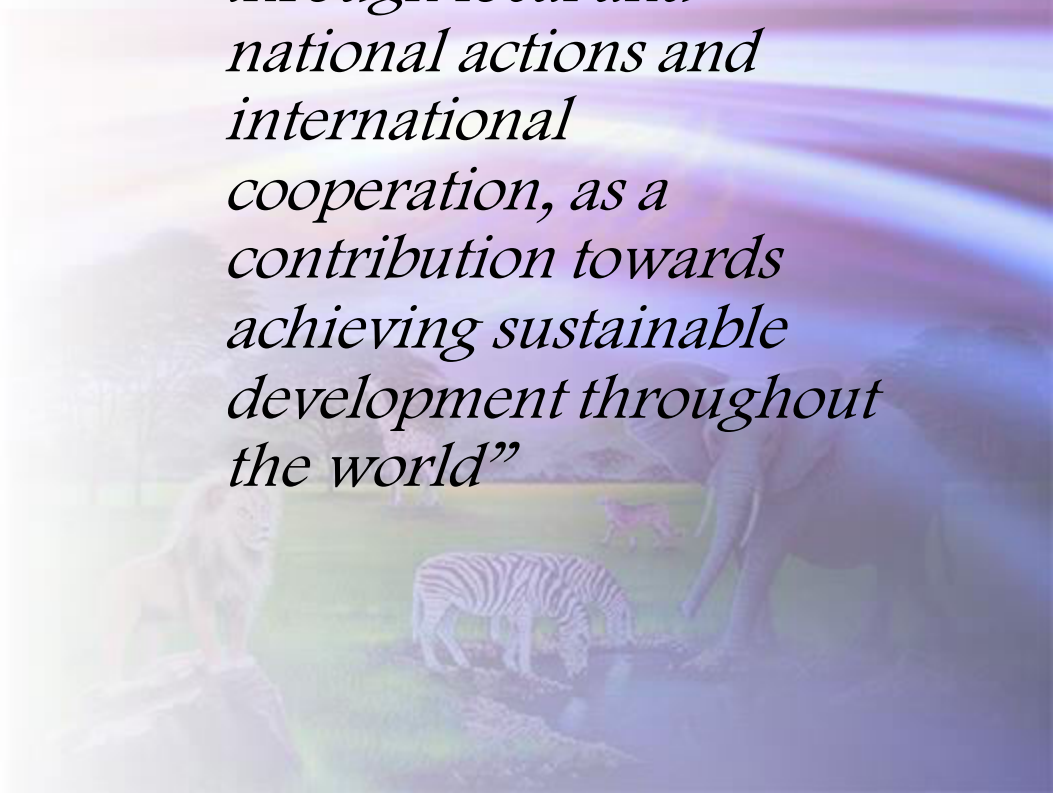


History & Concept

Mission

The Convention's mission is

> "*the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world*"



History & Concept

The Convention uses a broad definition of wetlands which includes

- All lakes and rivers
- Underground Aquifers
- Swamps and Marshes
- Wet Grasslands
- Peatlands



History & Concept

- Oases
- Estuaries
- Deltas
- Tidal flats
- Mangroves etc.



History & Concept

Concept

- Wetlands are among the most diverse and productive ecosystems.
- They provide essential services and supply all our fresh water.
- Wetlands continue to be degraded and converted to other uses.



History & Concept

The "three pillars" of the convention

The Contracting Parties(160)commit to:

- Work towards the wise use of all their wetlands.
- Designate suitable wetlands for the list of Wetlands of International Importance.



History & Concept

- Cooperate internationally on transboundary wetlands, shared wetland systems and shared species



END

Wildlife

Wetlands



Wetlands and Types

What are wetlands?

- Wetlands are areas where water is the primary factor controlling the environment and the associated plant and animal life.
- They occur where the water table is at or near the surface of the land, or where the land is covered by shallow water.

Wetlands and Types

Wetlands are defined according to Ramsar Convention as

"Areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters".

Effort By: AARISH ALI

Wetlands and Types

Types of Wetlands:

Five major wetland types are generally recognized.

- Marine
- Estuarine
- Lacustrine
- Riverine
- Palustrine



Wetlands and Types

Marine

- Coastal wetlands including coastal lagoons, rocky shores, and coral reefs.

Estuarine

- Including deltas, tidal marshes, and mangrove swamps.



Wetlands and Types

Lacustrine

- Wetlands associated with lakes.

Riverine

- Wetlands along rivers and streams.

Palustrine

- Wetlands that lacks flowing water, “marshy”;marshes, swamps and bogs

END

Wildlife

Wetlands



Importance of Wetlands

Wetlands are among the world's most productive environments providing

- Resources
- Enabling recreational activities
- Economic benefits



Importance of Wetlands

Source of recreation and tourism opportunities

- Hiking
- Fishing
- Bird watching
- Photography
- Hunting



Importance of Wetlands

Flood protection

- Acts as natural buffers, soaking up and storing a significant amount of floodwater.
- A wetland can typically store about three-acre feet of water, or one million gallons.



Importance of Wetlands

- Wetlands are cradles of biological diversity.
- They support high concentrations of
  - Invertebrate species.
  - Fish
  - Amphibians
  - Reptiles
  - Birds
  - Mammals



Importance of Wetlands

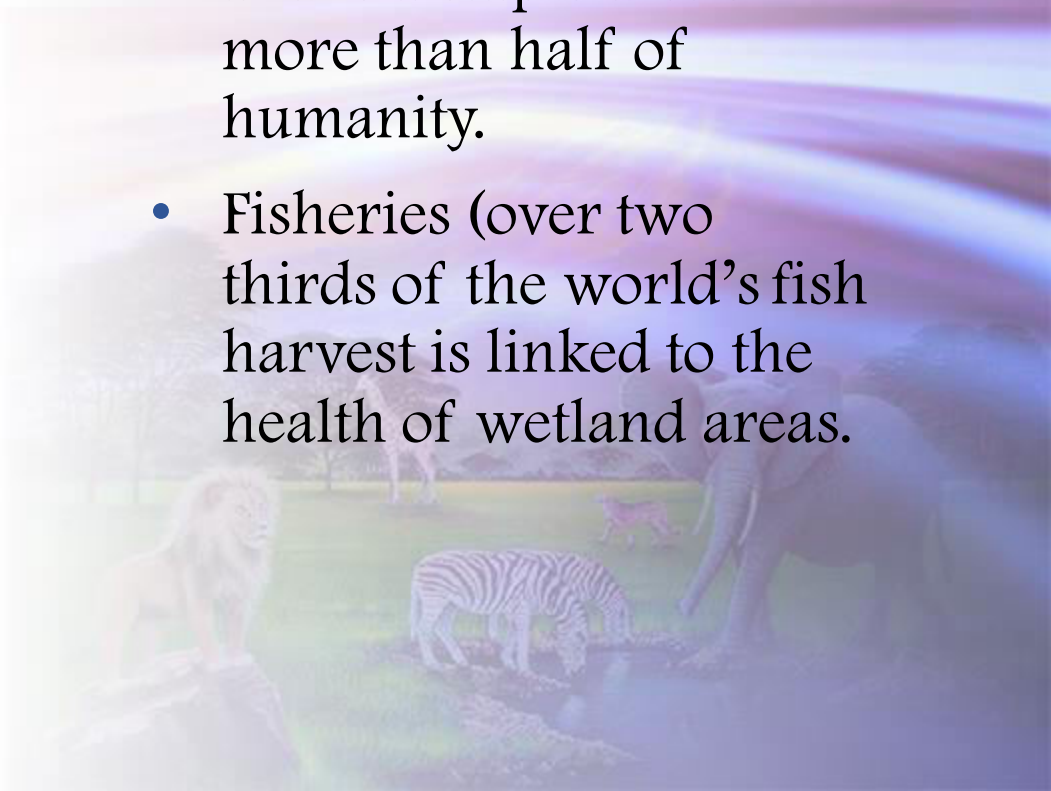
- Providing the water and primary productivity upon which countless species of plants and animals depend for survival.
- Wetlands are also important storehouses of plant genetic material.



Importance of Wetlands

Source of Food

- Rice, for example, is a common wetland plant, and is a staple diet of more than half of humanity.
- Fisheries (over two thirds of the world's fish harvest is linked to the health of wetland areas.



Importance of Wetlands

- Agriculture, through the maintenance of water tables and nutrient retention in floodplains.

Other Benefits

- Timber and other building materials.
- Energy resources, such as peat and plant matter.
- Wildlife resources.

Importance of Wetlands

Source of Herbal medicines

A wide range of herbal medicines are obtained from wetlands

- Medicinal leeches, *Hirundo medicinalis* for
  - Abscesses
  - Painful joints
  - Glaucoma
  - Venous diseases
  - Thrombosis

Importance of Wetlands

White willow, *Salix alba*, a riverine plant

- Original source of salicylic acid (SA)
- SA is the precursor of aspirin.
- Used in skin care products.

END



Wildlife

Criteria for Declaration of "Wetlands" of International Importance



Criteria for Declaration of a "Wetland"

Wetlands should be selected for the Ramsar List on account of their international significance in terms of the

- Biodiversity
- Uniqueness in
  - Ecology
  - Flora
  - Fauna
  - Limnology or hydrology

Criteria for Declaration of a "Wetland"

There are nine criteria for identifying Wetlands of International Importance.

Group A

- Sites containing representative, rare or unique wetland types



Criteria for Declaration of a "Wetland"

Criterion 1:

- If wetland contains a representative, rare or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.



Criteria for Declaration of a "Wetland"

Group B

- Sites of international importance for conserving biological diversity

- *Following "Criteria based on species and ecological communities"*



Criteria for Declaration of a "Wetland"

Criterion 2:

- A wetland should be considered internationally important if it supports
  - Vulnerable
  - Endangered or
  - Critically endangered species or
  - Threatened ecological communities.

Criteria for Declaration of a "Wetland"

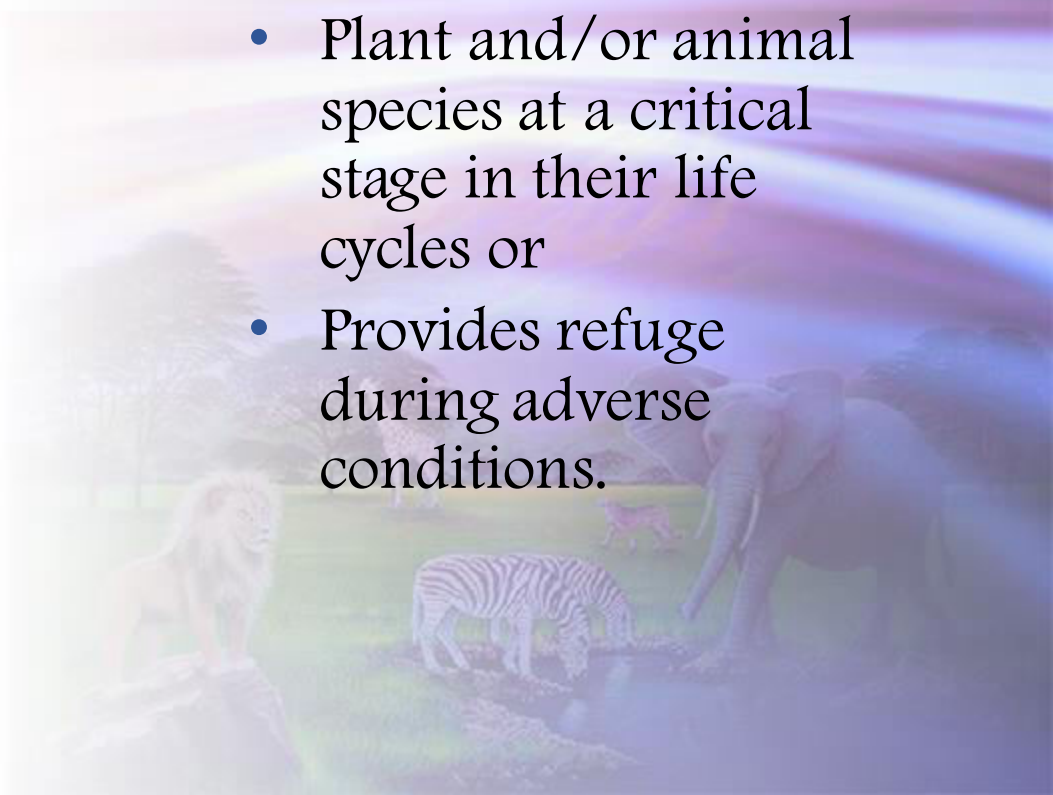
Criterion 3:

- A wetland should be considered internationally important if it supports
  - Populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

Criteria for Declaration of a "Wetland"

Criterion 4:

- A wetland should be considered internationally important if it supports
  - Plant and/or animal species at a critical stage in their life cycles or
  - Provides refuge during adverse conditions.



Concept of Game Reserve

- Most of the areas in game reserves have created to provide habitat protection for animal species commonly referred to as game (huntable species for sport or meat)



Criteria for Declaration of a "Wetland"

Specific criteria based on water birds

Criterion 5:

- A wetland should be considered internationally important if
  - It regularly supports 20,000 or more water birds.



Criteria for Declaration of a "Wetland"

Criterion 6:

- A wetland should be considered internationally important if
  - It regularly supports 1% of the individuals in a population of one species or subspecies of water bird.



Criteria for Declaration of a "Wetland"

"Specific criteria based on fish"

Criterion 7:

- A wetland should be considered internationally important if
  - It supports a significant proportion of indigenous fish subspecies, species or families, life-history stages

Criteria for Declaration of a "Wetland"

Criterion 7:

- Species interactions.
- And/or Populations that are representative of wetland benefits
- And/or Values and thereby contributes to global biological diversity.



Criteria for Declaration of a "Wetland"

Criterion 8:

- A wetland should be considered internationally important if
  - It is an important source of food for fishes, spawning ground, nursery
  - And/or Migration path on which fish stocks, either within the wetland or elsewhere, depend.

Criteria for Declaration of a "Wetland"

"Specific criteria based on other taxa"

Criterion 9:

- It regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian species.

END



Wildlife

Significant Ramsar sites of Pakistan



Ramsar Sites of Pakistan

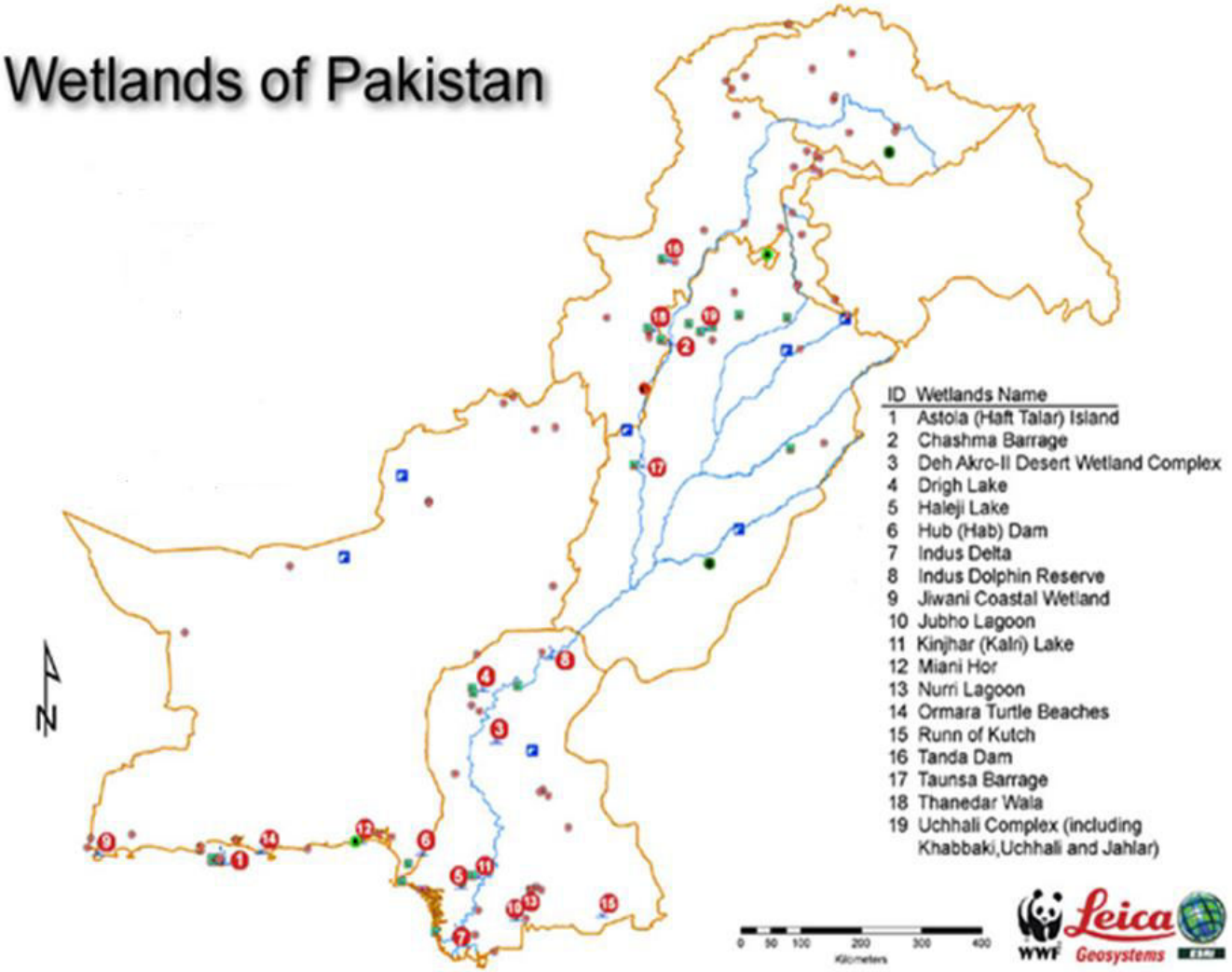
In 2013, 19 (nineteen) Ramsar sites has been declared in Pakistan.

Area

- Covering an area of 1,343,627 hectares (3,320,170 acres)



Ramsar Sites of Pakistan



Ramsar Sites of Pakistan

Religion wise significant game reserves

Baluchistan

- Astola Island
- Hub Dam
- Jiwani Costal Wetland
- Miani Hor
- Ormara Turtle beach

Ramsar Sites of Pakistan

Sindh

- Keenjhar (Kalri) Lake
- Haleji Lake
- Drigh Lake
- Indus Dolphin reserve
- Jubho lagoon
- Nurri Lagoon
- Deh Akro-II
- Indus Delta
- Runn of Kutch

Ramsar Sites of Pakistan

Punjab

- Uchhali Complex
- Taunsa Barrage
- Chashma Barrage

Khyber Pakhtunkhwa

- Tanda Dam
- Thanedar Wala

END



Wildlife

Threats to Wetlands



Threats to Wetlands

Half of the world's wetland have disappeared since long.

- Continued development in all aspects is the need of hour with proper management
- Unmanaged activites pose major threats to wetlands, despite their value and importance.

Threats to Wetlands

Human Activities:

Unfortunately, the increasing population pressure at the beginning of the last century, tightly inter connected with

- Growing need for food resources
- Poor knowledge of ecology of wetlands
  - "Wasted land"
  - Source of diseases

Threats to Wetlands

Industrial Development:

The rapid industrial development at the beginning of 19th century led to present-day situation of wetland being affected by human activities.



Threats to Wetlands

Major threats to wetlands:

Conversion of wetlands for:

- Commercial development
- Drainage schemes
- Extraction of minerals
- Overfishing
- Pollutants
- Constructions of dams

END

Wildlife

Threats to Wetlands



Industrial Threat to Wetlands

Industrialization and urbanization cause wetland degradation and loss by

- Changing quality & quantity of water
- Flow rates
- Increasing pollutant inputs
  - Sediment
  - Fertilizer
  - Human sewage

Industrial Threat to Wetlands

- Animal waste
- Road salts
- Pesticides
- Heavy metals

Hundreds of thousands of hectares of wetlands have been drained for agriculture

- Globally, agriculture accounts for 65% of the total water withdrawal on Earth

Industrial Threat to Wetlands

- The result is that as the water level drops, millions of trees and plants are dying because they are deprived of their life-sustaining supplies.



Industrial Threat to Wetlands

- Many small, medium and large modern industries emerged on the banks of the backwaters and rivers.
- They dump their wastes into the waterbed in an attempt to save the costs of pollution abatement.



Industrial Threat to Wetlands

- Agriculture and other industries such as paper making are often very wasteful and inefficient with water.
- Intensive use of agrochemicals has become a major threat for wetlands.
- They causing encroachment, reclamation, pollution, eutrophication, and biodiversity loss.

END

Wildlife

Threats to Wetlands



Invasive Species

Introduction of non-native species is posing a major threat to the wetlands.

- An invasive or alien species is established outside of its natural past or present distribution, whose introduction and/or spread threaten biological diversity.

Invasive Species

Impact of invasive species

- Invasive species have had severe impacts on
  - local aquatic flora and fauna
  - Can upset the natural balance of an ecosystem.



Invasive Species

Impact of invasive species

- An analysis of the IUCN Red List shows that alien species is one of the most common threat associated with species that have gone completely extinct.



Invasive Species

- Weeds(lantana, salvinia, caulerpa) and pest animals(pigs) compete with native wetland species and habitats.
- May replace them altogether by affecting water quality and destroy habitats through digging and wallowing.



Invasive Species

Weed infestation



Source; Status of Wetlands in Kollam District

Invasive Species

- An introduced plant lippia and fish European carp displaced native fish in rivers and wetlands.



END

Wildlife

Threats to Wetlands



Pollution

Wetland degradation is a big and growing problem occurring due to pollution inputs.

- Degraded wetlands are less able to perform their functions effectively.
- Pollution is the process or act that human did during routine activities and contaminated the environment

Pollution

- Harmful chemical substances may cause disturbance in environment health
- Although wetlands are capable of absorbing pollutants from the surface water
- BUT there is a limit to their capacity to do so.



Pollution

- The primary pollutants causing wetland degradation are
- Sediments
- Fertilizers
- Human sewage
- Animal waste
- Road salts
- Pesticides
- Heavy metals



Pollution

Pollutants can originate from many sources, including:

- Runoff from urban, agricultural and mining areas.
- Air pollution from cars, factories, and power plants.
- Old landfills and dumps that leak toxic substances.

Pollution

- Pollution in wetlands is a growing concern, affecting drinking water sources and biological diversity.
- Drainage and run-off from fertilized crops and pesticides used in industry introduce nitrogen and phosphorous nutrients and other toxins like mercury to water sources.

Pollution

- These chemicals can affect the health and reproduction of species, posing a serious threat to biological diversity.



END

Wildlife

Threats to Wetlands



Climatic Change

Climate change refers to

"*any change in climate over time, whether due to natural variability or as a result of human activity.*"

Climate change is also taking its toll in wetland degradation.



Climatic Change

Change in climate poses a fundamental threat to everything we love.

- Rise in temperature
- Melting glaciers
- Rising sea levels
- More frequent weather extremes.



Climatic Change

The changes in turn leads to

- Wetlands being swamped
- Some species of mangrove trees being submerged and drowned.
- Other wetlands- estuaries, floodplains, and marshes - are being destroyed through drought.

END

Wildlife

Threats to Wetlands



Vegetation Damage

Wetland plants are susceptible to degradation if subjected to hydrological changes.

Activities that can impair wetland vegetation

- Grazing by domestic animals.
- Introduction of nonnative plants that compete with natives.
- Removal of vegetation for peat mining.

Vegetation Damage

A wetland's characteristics evolve when hydrologic conditions cause

- The water table to saturate or inundate the soil for a certain amount of time each year.
- Any change in hydrology can significantly alter the soil chemistry and plant and animal communities

Vegetation Damage

Common hydrologic alterations in wetland areas include:

- Deposition of fill material for development.
- Drainage for development, farming, and mosquito control.
- Dredging and stream channelization for navigation, development, and flood control.

Vegetation Damage

- Diking and damming to form ponds and lakes.
- Diversion of flow to or from wetlands.
- Addition of impervious surfaces in the watershed, thereby increasing water and pollutant runoff into wetlands.



Vegetation Damage

What we can do?

- Conserve and restore wetlands on your property.
- Reduce the amount of fertilizers, herbicides, and pesticides applied to lawns and gardens.

END



Wildlife

Threats to Wetlands



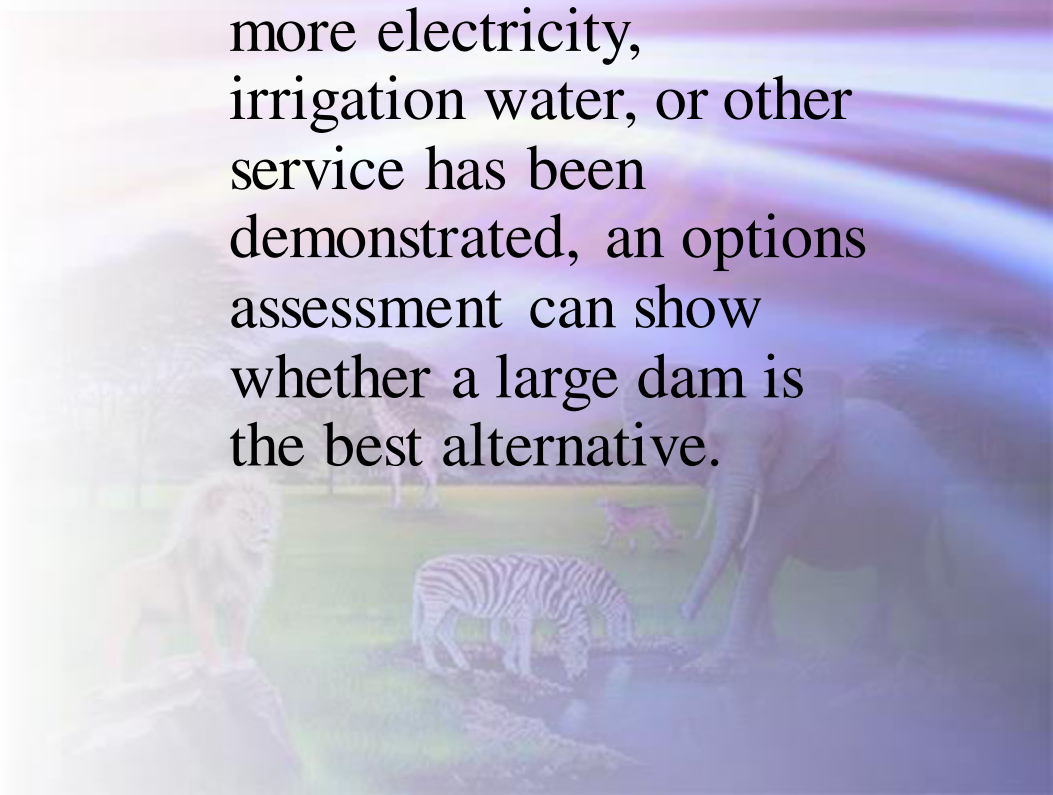
Construction of Dams

The major problem that affects any ecological system is the increase in population and accompanied changes in land use pattern



Construction of Dams

- Dams can play an important role in supporting the economic development of a country and its people.
- Once an urgent need for more electricity, irrigation water, or other service has been demonstrated, an options assessment can show whether a large dam is the best alternative.



Construction of Dams

Dams and Wetlands:

- Worldwide there are now over 40,000 dams which alter the natural flow of water and impact on existing ecosystems.



Construction of Dams

Bund Created Across for Road Construction



Source; Status of Wetlands in Kollam District

Construction of Dams

- Whilst there is much debate about the need for dams to be built
- WWF argues that development should be as sustainable as possible to ensure minimum negative impact on biodiversity.



END

Wildlife

Zoo Rules



History

Zoo is a facility in which animals are

- Housed within enclosures
- Displayed to the public
- They may also breed

- “Today, the zoo is on the list of inevitable field trips and vacation destinations.”

History

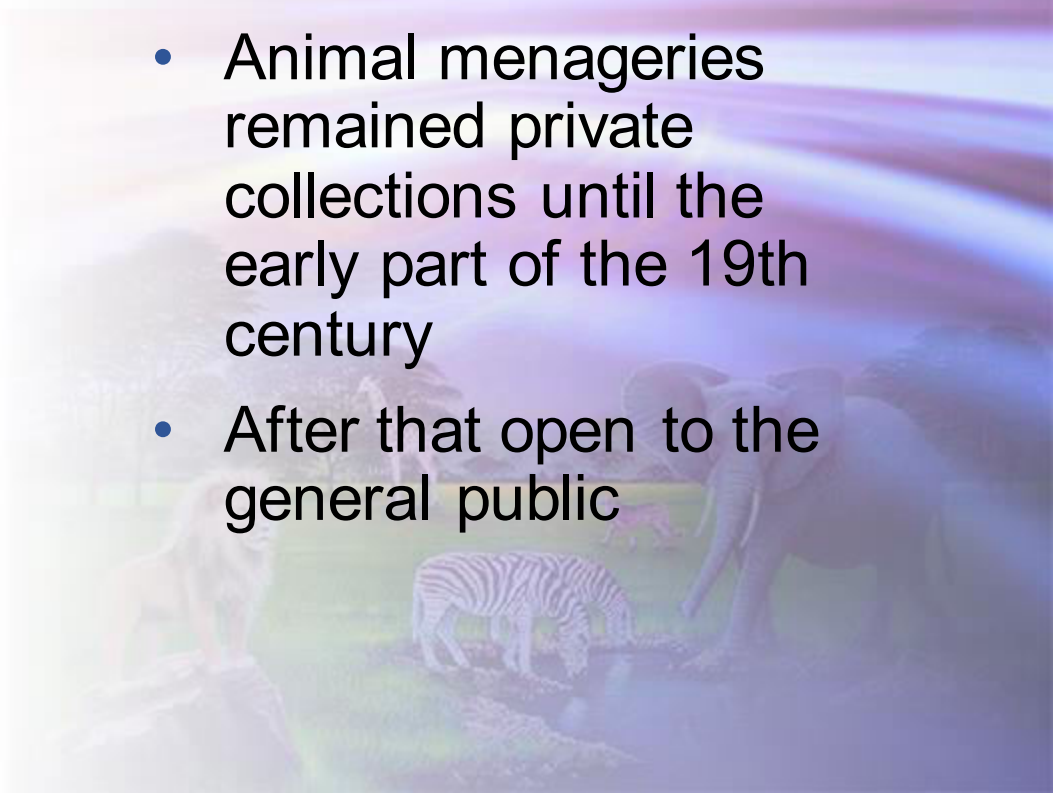
- Zoos have been for thousands of years, with well-known collections of animals
  - Egypt
  - China
  - Rome



History

The Period of the Kings and Emperors

- King Henry I created the first wild animal menagerie in Britain
- Animal menageries remained private collections until the early part of the 19th century
- After that open to the general public



History

Public Access

- Public accessibility in Western Europe began at zoological collections in
- Paris
- Vienna
- Dublin
- London lately



History

Place &Year of starting of Zoos

- Vienna zoo 1752
- Paris zoo 1793
- London zoo 1826
- Calcutta zoo 1854
- Trivandrum zoo 1857
- Philadelphia zoo 1874



History

- German collector, Carl Hagenbeck, built the first first wild animal park in 1848
- He allowed the animals animals outdoor access, access, believing their enclosure should more closely resemble nature nature



History

- The Zoological Society of London justified London ’s zoological collection as

  “The advancement of zoology and animal physiology and the introduction of new and curios subjects of the Animal Kingdom”.

END



Wildlife

Zoo Rules



History

19th and Early 20th Century

- There were only a small number of animal collections
- These consisted of animals from around the world
- Either captured by the Victorian explores
- Presented as gifts from parts of Africa and Asia in return for diplomatic favors

History

1950s: Zoo Boom

- In the 1950s, there was a ‘Zoo Boom’
- At that time entrepreneurs recognized the potential money to be made from exhibiting wild animals to satisfy public curiosity



History

- Until the 20th century, there was little or no concern for the welfare of zoo animals
- It was not until the late 1970s and early 1980s that the appearance of zoos began to change to reflect the public opinion
- People were then educated about the true conditions endured by zoo animals

History

Status of Zoos in Society

- Zoos exist in today's society for a myriad of reasons including
  - Conservation
  - Education
  - Science
  - Recreation



History

Proponents of animal rights, however, argue that

- Zoos reinforce the notion of human domination over non-human animals, which is never beneficial to animals.
- The existing laws are insufficient to protect the welfare of animals kept in captivity.

END

Wildlife

Zoo Rules



Objectives

Primary Objective:

"Conservation of Wildlife"

- No zoo shall take up any activity that is inconsistent with this objective.



Objectives

Primary Objective:

- The objective shall be to complement and strengthen the national efforts in conservation of the rich biodiversity of the country, particularly the fauna.”



Objectives

Visitors are also important factor

- To offer inspiring animal based experiences that connect people with wildlife and conservation plans.
- To offer every visitor a meaningful, and fun learning experience using a variety of innovative approaches.

Objectives

- To enable Zoo staff and volunteers to actively facilitate the delivery of engaging experiences for visitors.

Strategy for Achieving the Objectives:

- Zoos require a significant amount of resources in the form of
  - Land

Objectives

- Water
- Energy and money

- No new zoo shall be set up unless a sustained supply of these resources and technical support are guaranteed.
- Zoos shall prepare a long-term master plan for development to ensure optimum utilization of the such resources and finance.

Objectives

- Every Zoo shall maintain a healthy, hygienic and natural environment, so that the visitors get opportunity to experience a natural environment.



END

Wildlife

Zoo Rules



Categories of Zoo

Based on area, Zoological garden can be categorized into four Zoos

- Large Zoo
- Medium Zoo
- Small Zoo
- Mini Zoo



Categories of Zoo

Areas in hectares of the various categories of zoo

- Large Zoo
  - More than 75
- Medium Zoo
  - 50-75
- Small Zoo
  - 20-50
- Mini Zoo
  - Less than 20

Categories of Zoo

Number of the Animals exhibited

- Large Zoo
  - More than 750
- Medium Zoo
  - 500-750
- Small Zoo
  - 200-499
- Mini Zoo
  - 200



Categories of Zoo

Animal Variety exhibited

- Large Zoo
  - More than 75 numbers
- Medium Zoo
  - 50-75 numbers
- Small Zoo
  - 20-49 numbers
- Mini Zoo
  - 20 numbers

Categories of Zoo

Number of Endangered Species Exhibited

- Large Zoo
  - More than 15
- Medium Zoo
  - 15-10
- Small Zoo
  - 9-5
- Mini Zoo
  - Less than 5

Categories of Zoo

Annual Number of Visitors per Year

- Large Zoo
  - More than 0.75 million
- Medium Zoo
  - 0.5-0.75 million
- Small Zoo
  - 0.5-0.2 million
- Mini Zoo
  - Less than 0.2 million

END

Wildlife

Zoo Rules



General Guidelines for Administration

General guidelines that zoo administration must follow for its maintenance

- No zoo shall acquire any animal in violation of Wildlife Act.
- No zoo shall exhibit any animal that is seriously sick or injured.

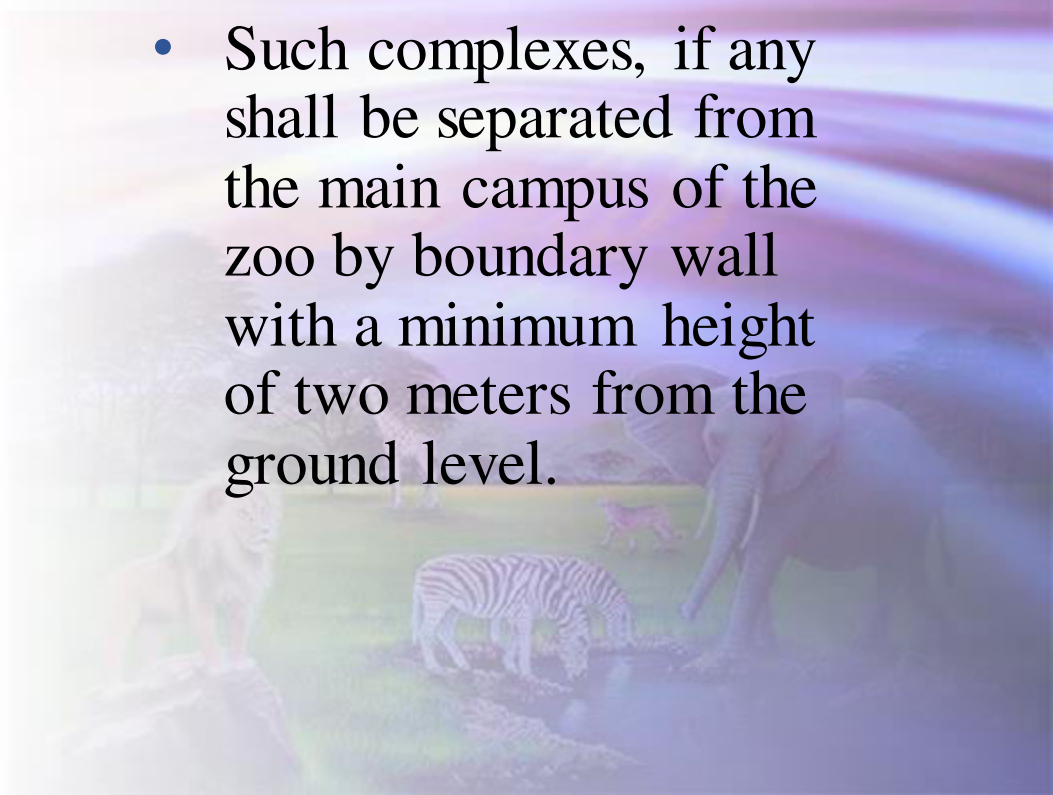
General Guidelines for Administration

- No zoo shall use any animal, other than the elephant in plains and yak in hilly areas for riding purposes.
- Each zoo shall be closed closed to visitors at least least once a week.
- Each zoo shall have a wall at least two meters meters high from the ground level.

General Guidelines for Administration

- No zoo shall have any residential complexes for the staff within the main campus for the zoo.

- Such complexes, if any shall be separated from the main campus of the zoo by boundary wall with a minimum height of two meters from the ground level.



General Guidelines for Administration

- No zoo shall keep any animal chained or tethered unless doing so is essential for its own well being

- The zoo operators shall provide a clean and healthy environment in the zoo by planting trees, creating green belts and providing lawn and flowers bed etc.

General Guidelines for Administration

- The built up area in any zoo shall not exceed twenty five percent of the total area of the zoo.

- The built up area includes administrative buildings, stores, hospitals, restaurants, visitors rest sheds, animal houses and pucca roads.

END

Wildlife

Zoo Rules



Administrative Pattern

General Administrative patterns

- Every zoo shall have one full-time officer in-charge of the zoo.
- The said officer shall be delegated adequate administrative and financial powers as may be necessary for proper upkeep and care of zoo.

Administrative Pattern

Large zoo

- At least one full time curator having the sole responsibility of looking after the upkeep of animals and maintenance of the animal enclosures.

- At least two full-time veterinarians.



Administrative Pattern

Medium zoo

- At least one full time curator having the sole responsibility of looking after the upkeep of animals and maintenance of the animal enclosures.
- At least one full-time veterinarians.



Administrative Pattern

Mini zoo

- The mini zoo may at least have arrangement with any outside veterinarian for visiting the zoo everyday to look after the animal.



END

Final Term Syllabus
Lecture 01 to 100

Efforts By

AARISH ALI (+96569002641)

Contact us to join our esteemed group

“All About Biotech”

Note:

Students must follow the course announcement for midterm syllabus & any up-gradation in the course.

REMEMBER IN PRAYERS

KEEP SMILING

SAY NO TO CURRUPTION

HELP TO OTHERS

Regards,

AARISH ALI & TEAM

“All About Biotech”

+96569002641