

Chapter-6

1. What is Nature and Environment?

- **Nature** includes all physical and biological entities such as forests, rivers, animals, and mountains.
- **Environment** refers to the surroundings in which living organisms exist. It includes both **natural components** and **human-made structures**.

2. Climate and Climate Change

2.1 Climate

Climate refers to the **long-term average of weather patterns** in a particular region.

2.2 Climate Change

Climate change is a **significant and lasting alteration** in climate patterns over decades or longer.

Causes of Climate Change

A. Natural Causes

1. **Solar Activity** – Variations in the sun's energy output
2. **Albedo Effect** – Changes in reflectivity of Earth's surface or cloud cover
3. **Volcanic Eruptions** – Ash clouds can block sunlight, temporarily cooling Earth

B. Human-Induced Causes

- Emission of **greenhouse gases** (CO₂, CH₄)
- **Deforestation**
- **Industrialization** and burning of fossil fuels

Effects of Climate Change

1. Rising global temperatures
2. Melting glaciers and sea level rise
3. Increased frequency of extreme weather events
4. Loss of biodiversity
5. Disruption of agriculture and food security

Control Measures

- Reducing emissions of greenhouse gases
- Protecting forests and promoting afforestation
- Using energy-efficient technologies
- Practicing the **3Rs**: Reduce, Reuse, Recycle
- Raising public awareness through education

3. Endangered Species of Nepal

Mammals and Birds of Concern

- **Mammals:** Bengal Tiger, One-Horned Rhinoceros, Snow Leopard, Red Panda, Chinese Pangolin, Gharial
- **Birds:** White-Rumped Vulture, Spiny Babbler

Reasons for Endangerment

- Loss of habitat
- Poaching and illegal hunting
- Pollution
- Climate change
- Invasive species

4. Conservation of Endangered and Rare Plants in Nepal

Major Methods:

- Establishment of **Protected Areas** (e.g., national parks, reserves)
- **Reforestation** and habitat restoration
- **Ex situ conservation** in botanical gardens and seed banks
- Involving **local communities** in conservation efforts
- Scientific **research and monitoring** of species populations
- Implementation of **legal protections** under wildlife acts
- **Public awareness campaigns** through education and outreach

5. Conservation of Endangered and Rare Animals

Key Strategies:

- Protected habitats (e.g., Chitwan, Bardia, Sagarmatha, Langtang National Parks)
- Anti-poaching units and wildlife policing
- Community-based conservation involving local stewards
- Translocation of animals to safer habitats
- International cooperation on species preservation
- Habitat restoration and ecological balance
- Legal enforcement and fines for violations
- Public awareness programs

Example of Success:

Vulture populations in Nepal have improved due to **safe feeding zones**, a **ban on diclofenac**, and **community-led conservation** programs.

6. Protected Animals and Birds of Nepal

According to the **National Parks and Wildlife Conservation (NPWC) Act, 2029**:

Mammals (selected examples):

- [Bengal Tiger](#)
- [Red Panda](#)
- [One-Horned Rhinoceros](#)
- [Chinese Pangolin](#)
- [Snow Leopard](#)

Birds (selected examples):

- Giant Hornbill
- Bengal Florican
- Cheer Pheasant
- Himalayan Monal
- Lesser Florican

7. Common Medicinal Plants of Nepal

Plant Name	Scientific Name	Uses
Holy Basil (Tulsi)	<i>Ocimum sanctum</i>	Boosts immunity, supports respiration
Neem	<i>Azadirachta indica</i>	Antimicrobial, improves skin health
Heart-leaved Moonseed	<i>Tinospora cordifolia</i>	Antioxidant, immune booster
Turmeric	<i>Curcuma longa</i>	Anti-inflammatory, wound healing
Asiatic Pennywort	<i>Centella asiatica</i>	Enhances skin regeneration
Aloe Vera	<i>Aloe barbadensis</i>	Soothes skin, digestive aid
Yarsa Gumba (Caterpillar Fungus)	<i>Cordyceps sinensis</i>	Increases stamina and energy
Malabar Nut	<i>Adhatoda vasica</i>	Treats respiratory ailments
Calamus (Bhojo)	<i>Acorus calamus</i>	Used for digestive health
Mugwort	<i>Artemisia vulgaris</i>	Cosmetic and insect-repellent use

Quick Revision Summary

- **Nature** refers to living and non-living natural components
- **Environment** includes nature + human-made surroundings
- **Climate change** is caused by both natural and human factors
- Key effects: warming, glacier melt, biodiversity loss
- Nepal's endangered species include the **tiger, rhino, panda**, etc.
- Conservation includes protected areas, law enforcement, and public participation
- Nepal has a rich diversity of **medicinal plants** used traditionally

Common Mistakes to Avoid

- Confusing **climate** with **weather** (weather is short-term)
- Listing only human causes of climate change; **natural causes** also exist
- Mixing **in situ** (in natural habitat) with **ex situ** (outside habitat) conservation
- Forgetting **local examples** from Nepal when discussing conservation