



To the Point Environment & Ecology (Static)

Score 35+ Mark's In UPSC
Prelims 2023

RRR 2.0

Read | Revise | Remember

For UPSC, State PSC, CUET & All Other Competitive Exams

A Complete & Quick Aid For

LEARN FINITE

LEARN FINITE



AI Driven Ed-Tech Platform

Our Premium Features

1



SYLLABUS TRACKER

Track Your Syllabus
For UPSC Prelims
2023

Track Your Studies With Us And Know Exactly
What To Learn With Our Micro Topic Listing

Left Helps You To Get Your Copy

Customized Magazines

2

UPSC Prelims 2023

1. Generate Your Customised Magazine
1. Wait Of Monthly Current Affairs Compilation Is Over
1. Instantly Get Your Copy With A Single Click



Download app From Play Store & App Store

☎ 91222 34717

🌐 www.learnfinite.com

✉ info@learnfinite.com



LEARNFINITE

Read LESS Learn MORE

All Subjects Covered

Categorization useful for
Prelims as well as Mains

No Important articles
left

PART 1



₹ 299/-

UPSC Prelims 2023

Learn BITS

Annual Current Affairs Compilation

JAN 2022-DEC 2022

Revise **450+** Days Current Affairs
In Just **1 Week**

PART



AVAILABLE



For UPSC, State PCS, CUET & All Other Competitive Exams

✉ info@learnfinite.com

🌐 www.learnfinite.com

📞 91222 34717



Index

Environment, Ecology, Ecosystem, Biosphere, and Biomes	7
Environment	7
Habitat	7
Ecology.....	8
Ecology can be broadly classified as the following	8
Importance of Ecology	9
Prelims Question	10
Ecosystem	11
Classification of Ecosystem	11
Terrestrial ecosystems	12
Components of ecosystem	13
Functions of Ecosystem	14
Prelims Question	14
Important types of species in an ecosystem.....	15
Vegetative propagation	16
Prelims Questions	17
Ecosystem services	17
Ecological Niche	20
Point to be remembered for prelims trap	20
Prelims Question	20
Biosphere.....	21
Prelims Questions	23
Points to be remembered for prelims trap.....	23
Difference between mega diverse countries and biodiversity hotspots	24
Type of Conservation	25
Pedosphere	26



Biome.....	26
Major biomes of the world	27
Prelims Questions	32
Functions Of An Ecosystem.....	34
Energy Flow.....	34
Higher Tropic levels.....	35
Functional relationships between different tropic levels:	35
Food chain	35
Types of Food Chain.....	36
Point to be remembered for Prelims trap	37
Prelims Questions	37
Detritus food chain	38
Points to be remembered for prelims trap.....	38
Prelims Questions	38
Grazing Food Chain	39
Food web	39
Types of Food Web	40
Ecological pyramids.....	40
10 Percent Energy Rule.....	43
Homeostasis in Ecosystem.....	43
Ecological Efficiency	43
Ecological succession	44
Bioaccumulation & Bio magnification	46
Points to be remembered for prelims trap.....	46
Effects of biomagnification	46
Prelims Questions	47
Bio remediation	47



Types of bio remediation Microbial bioremediation, photoremediation and Mycoremediation.....	48
Bio remediation methods	48
Prelims Questions	49
BioGeoChemical cycle.....	49
Prelims Question.....	51
Terrestrial Ecosystems and its related topics.....	52
Forest types in India.....	52
Vertical distribution of Himalayan vegetation	56
Biogeographical zones	57
Prelims Questions	57
Classification of natural forest.....	59
Deforestation.....	60
Causes of Deforestation.....	60
Indian State of Forest report 2021.....	61
Point to be remembered for Prelims trap	63
Afforestation.....	65
Purposes of Afforestation	65
Steps taken for afforestation	65
Difference among wildlife sanctuary, National Park and biosphere reserves.....	66
UN REDD Program.....	68
REDD+	68
Difference between REDD+ and the UN-REDD programme.....	68
The forest carbon partnership facility	68
Forest investment program	68
Prelims Question.....	69
Desertification.....	70
Status of Desertification in India.....	70



Global Efforts to Prevent Desertification	72
Prelims Questions	73
Aquatic Ecosystem and its related topics.....	74
Aquatic ecosystem	74
Classification of Aquatic ecosystem	74
Type of Flora and Fauna.....	75
Prelims Questions	75
Factors responsible for productivity of Aquatic habitats.....	77
Difference between marine protected area and coastal regulation zone	80
Environmental Pollution and its related topics	82
Pollution.....	82
Types of pollution	83
Air Pollution	84
Air pollution sources classification.....	84
Thermal air pollution.....	84
Points to be remember for prelims trap.....	85
Greenhouse gases and global warming	89
Global Warming	91
Lifetime and potential of GHG	92
Effects of Air Pollution	93
Acid Rain.....	94
Initiatives to Control Air Pollution.....	96
International Initiatives.....	98
Water Pollution.....	101
Water pollution sources classification	101
Types of water pollution	101
Freshwater salinization syndrome	102



Marine Pollution	103
Main causes of water pollution.....	104
Point to be remember for a prelims trap.....	105
Biological Oxygen Demand (BOD) and Water	106
Chemical Oxygen Demand (COD) and Water	107
Groundwater pollution	107
Sea Water Pollution	108
Eutrophication	109
Measures taken by the Government for Water Pollution Prevention.....	111
Soil Pollution	111
Major agents of soil pollution	112
Pollutants	112
Harmful chemical that present in pesticides and insecticides.....	112
Effects of Soil Pollution	112
Solid waste pollution.....	114
Sources of solid waste.....	114
Types of solid waste substances	114
Points to be remembered for prelims trap.....	114
Radioactive pollution	116
Noise pollution.....	116
E-Waste.....	118
Land Degradation.....	119
Prelims Question	120
National Biodiversity Acts, Policies and Bodies	123
National Forest Policy, 1988.....	126
Prelims Questions	130
International Biodiversity Acts, Policies and Bodies.....	131



National park, Biosphere reserves, Ramsar wetlands, Wildlife sanctuaries and Tiger Reserves.....	132
Prelims Questions	135
Biosphere Reserves	137
International Status of Biosphere Reserves	147
Ramsar Sites in India	148
The success of Project Tiger	171
Project Cheetah	173
Why is the cheetah being brought back?	173
National park and wildlife sanctuary in India.....	174
National Park.....	174
Wildlife Sanctuaries	177
Conventions and Outputs	194



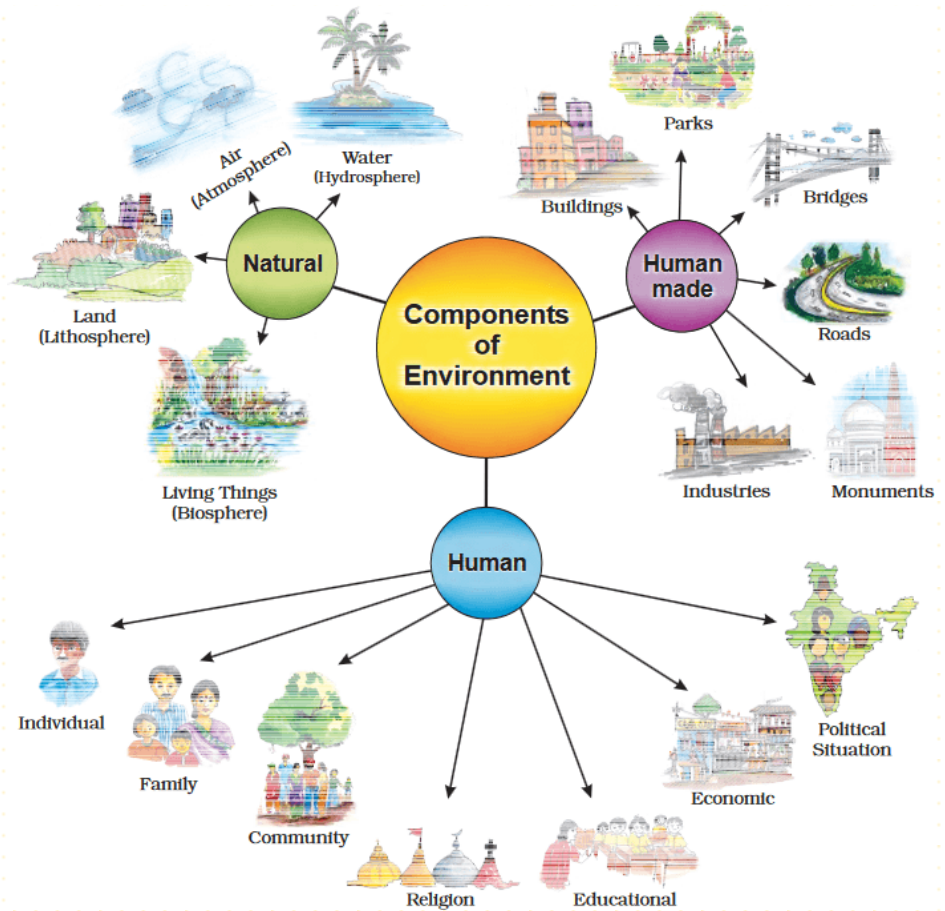
Environment, Ecology, Ecosystem, Biosphere, and Biomes

Environment

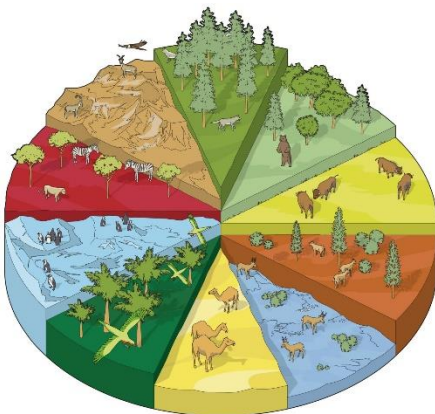
The environment can be defined as a sum total of all the living and non-living elements and their effects that influence human life. It means anything that surrounds us.

It can be living (biotic) or non-living (abiotic) things. It includes physical, chemical, and other natural forces. All living or biotic elements are animals, plants, forests, fisheries, and birds, non-living or abiotic elements include water, land, sunlight, rocks, and air.

They constantly interact with it and adapt themselves to conditions in their environment. In the environment, there are different interactions between, animals, plants, soil, water, and other living and non-living things.



Habitat



Habitat refers to the natural environment or physical surroundings where a particular species of plant, animal or organism lives and thrives. It includes all the living and non-living things that provide the necessary resources, such as food, water, shelter, and space, for an organism to survive and reproduce.

Habitats can be diverse and range from the depths of the ocean, to dense forests, arid deserts, grasslands, and even human-built environments like cities. The characteristics of a habitat are determined by factors such as climate, geology, topography, and the presence of other living organisms.

Ecology

About: Ecology is the study of organisms and how they interact with the environment around them.

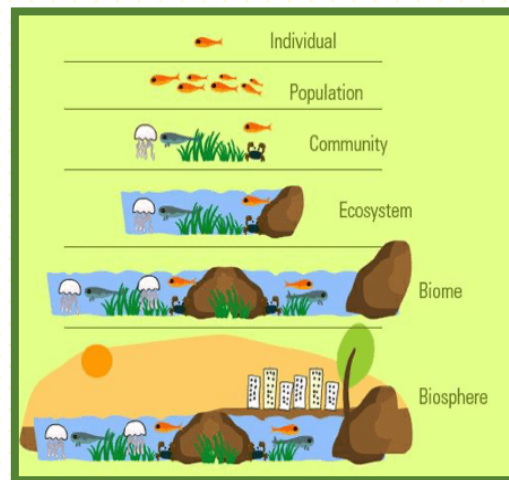
Levels of organisations in ecology

- ✔ **Individuals:** They are living beings who function independently such as bacteria, fungi, plants, etc.
- ✔ **Population:** Multiple individuals or organisms of a single species that live within a particular geographical area.
- ✔ **Community:** Two or more populations of different species occupying the same space simultaneously.

Ecology can be broadly classified as the following

Autecology: It is the study of an individual organism, an individual type of a species, or a population with respect to the natural habitat they are present. Here, only a single species of organism is taken into consideration; this could be accommodated within a laboratory.

Synecology: It is the study of a group of organisms belonging to different species and communities with respect to their natural habitat. Synecology is also termed as community ecology. A community is a group of organisms belonging to different populations including two or more different species that interact together in a defined geographical location in a particular time period.



Synecology is further divided into following

- ✔ **Population Ecology:** Study of interactions of individuals- population of single species with each other.
- ✔ **Community Ecology:** The study of inter-relationships and inter-dependencies of groups of individuals of distinct species of plants, animals and micro-organisms together.
- ✔ **Biome Ecology:** The study of interactions and interrelationships of more than one biological community in various stages of succession under similar climatic condition of the area concerned in the study.

Ecosystem Ecology: The study of interactions and inter-relationships of all organisms among themselves and with their environment

Global Ecology: Global ecology is the study of the interactions among the Earth's environments, land, air and seas.

Landscape Ecology - It deals with the study of the exchange of vitality, materials, living beings, and various other parts of the ecosystem. It also depicts the role of human impacts on landscape structures and functions.



Ecosystem Ecology: Ecosystem ecology is the integrated study of living and non-living components of biological systems. It also deals with their interactions inside an ecosystem.

Organismal Ecology: Organismal ecology is the study of an individual organism's conduct, morphology, physiology, etc. in relation to natural changes.

Molecular Ecology: Molecular ecology is the study of the environment on the generation of proteins and how these proteins influence life forms and their environment. This happens at the molecular level. DNA shapes the proteins that are connected with the environment. These interactions give rise to a few complex living beings.

Importance of Ecology

- ✔ It helps with the conservation of the environment.
- ✔ It helps in the allocation of resources.
- ✔ Proper knowledge of ecological requirements can prevent the wastage of natural resources.
- ✔ The study of ecology encourages the adoption of a lifestyle that can protect the environment.

Point to be remembered for Prelims trap	
Deep Ecology	Definition: It is considered as a movement or a concept that leads radical measures to protect the natural environment irrespective of their effects on human welfare.
Shallow ecology	Definition: It means preserving the natural environment and the ecosystems only if they are useful and valuable for human society.
Ecosophy	Definition: It is a philosophy of ecological harmony or equilibrium in the global natural ecosystems/environmental system

Table -1

Invasive Species			
An invasive species is an organism that is not indigenous, or native, to a particular area.			
Species	About	Native to	Distributed in India
Black Mimosa	Dense and Thorny	Tropical America	Across the country
Prosopis Juliflora	Water depended	Mexico	Across the country