



Simplifying Test Prep

eBook

IAS Prelims Exam

Environmental Ecology & Bio-diversity

Preface

The Civil Services Preliminary Exam has gone a sea change after 2011. Various new dimensions have been added to it in these years and the candidates are finding it difficult to qualify in the Civil Services Preliminary Exam. There is a phenomenal increase in the questions from the Environment, Biodiversity, Climate change Issue and the likes. After the inclusion of Indian Forest Services in the Preliminary Examination, the number of questions from the science stream is on the rise.

This book focuses on the basics of the Environmental Science and is written in a very lucid language to fully explain the ecological concepts. The concepts are supported with the figures wherever it is required. Moreover important updates have been made to the data tables and the latest data related to the environment is incorporated in this e-book.

The Latest **Forest Survey Report 2013** is one of the key features of this e-book. This e-book is meticulously designed for the Civil Services Preliminary Exam and hence 200 hundred Multiple Choice Questions. This e-Book also includes the various initiatives taken by India to mitigate the Climate Change issues.

Moreover this e-book also include the latest happening in the area of Environment, Biodiversity, Climate Change mitigation initiatives around the world and more activities in these areas.

We hope that this e-book will be helpful in the preparation of IAS Exam and will serve the purpose.

Jagranjosh Team

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INTRODUCTION

Environment is not a single subject. It is an integration of several subjects that include both Science and Social Studies. To understand all the different aspects of our environment we need to understand biology, chemistry, physics, geography, resource management, economics and population issues. Thus the scope of environmental studies is extremely wide and covers some aspects of nearly every major discipline.

What is Environment?

Environment can be defined as the surroundings or conditions in which a person, animal, or plant lives or operates. The term “environment” refers to all elements of the physical and biological world, as well as the interactions between them. Environment plays pre-eminent role in the life cycle of human being as human life is highly dependent on environment. Environment has Productive value, Aesthetic/Recreational value; which has been explained later on under the paragraph of “What Environment does for us”.

What is Ecology?

Ecology can be defined as the branch of biology that deals with the relations of organisms to one another and to their physical surroundings. It can also be defined as the scientific study of the interaction among organism and their environment. The word Ecology literally means “study of the house”. Ecology is a multi-dimensional science as it has relationship with the other branches of science such as Geography, Geology, Meteorology, Pedology, Physics and Chemistry. This inter-relation with other branches of science makes it one of the most important branch of science.

What Environment does for us?

- **Productive value of nature:** Raw materials that are used for
 - developing new medicines
 - industrial products and
 - Are storehouses from which to develop thousands of new products in the future?
- **Aesthetic/Recreational value of nature:** The aesthetic and recreational values that nature possesses enliven our existence on earth. A true wilderness experience has
 - Recreational value
 - Incredible learning experience.
 - It brings about an understanding of the oneness of nature and the fact that we are entirely dependent upon the intricate functioning of ecosystems.

- **The option values of nature:** If we use up all our resources, kill off and let species of plants and animals become extinct on earth, pollute our air and water, degrade land, and create enormous quantities of waste, we as a generation will leave nothing for future generations. Our present generation has developed its economies and lifestyles on unsustainable patterns of life. However, nature provides us with various options on how we utilize its goods and services. This is its option value. The option value allows us to use its resources sustainably and preserve its goods and services for the future.

NGO and Advocacy Institution in the field of Environment

There have been several Government and Nongovernment organizations that have led to environmental protection in our country. They have led to a growing interest in environmental protection and conservation of nature and natural resources. Some of them are.

- **Bombay Natural History Society (BNHS), Mumbai:** the BNHS began as a small society of six members in 1883. The influences on wildlife policy building, research, popular publications and people's action have been unique features of the multifaceted society. It is India's oldest conservation research based NGO and one that has acted at the forefront of the battle for species and ecosystems.
 - The BNHS publishes a popular magazine called **Hornbill** and also an internationally well-known **Journal on Natural History**.
 - Its other publications include the **Salim Ali Handbook on birds**, **JC Daniel's book of Indian Reptiles**, **SH Prater's book of Indian Mammals** and **PV Bole's book of Indian Trees**.
- **World Wide Fund for Nature (WWF-I), New Delhi:** The WWF-I was initiated in 1969 in Mumbai after which the headquarters were shifted to Delhi with several branch offices all over India. The early years focused attention on wildlife education and awareness. It runs several programs including the **Nature Clubs of India program** for school children and works as a think tank and lobby force for environment and development issues.
- **Center for Science and Environment (CSE), New Delhi:** Activities of this Center include organizing campaigns, holding workshops and conferences, and producing environment related publications. It published a major document on the '**State of India's Environment**', the first of its kind to be produced as a Citizen's Report on the Environment. The CSE also publishes a **popular magazine, 'Down to Earth'** which is a Science and Environment fortnightly
- **CPR Environmental Education Centre, Madras:** The CPR EEC was set up in 1988. It conducts a variety of programs to spread environmental awareness and creates an interest in conservation among the general public.
- **Centre for Environment Education (CEE), Ahmedabad:** The Centre for Environment Education, Ahmedabad was initiated in 1989. It has a wide range of programs on the

environment and produces a variety of educational material. CEE's Training in Environment Education {TEE} program has trained many environment educators

- **Bharati Vidyapeeth Institute of Environment Education and Research (BVIEER), Pune:** This is part of the Bharati Vidyapeeth Deemed University. The Institute has a PhD, a Masters and Bachelors program in Environmental Sciences. It also offers an innovative Diploma in Environment Education for in-service teachers. It implements a large outreach programme that has covered over 135 schools in which it trains teachers and conducts fortnightly Environment Education Programs.
- **Uttarakhand Seva Nidhi (UKSN), Almora:** The Organization is a Nodal Agency which supports NGOs in need of funds for their environment related activities. Its major program organizing and training school teachers to use its locale specific Environment Education Workbook Program.
- **Kalpavriksh, Pune:** This NGO, initially Delhi based, is now working from Pune and is active in several other parts of India. Kalpavriksh works on a variety of fronts: education and awareness; investigation and research; direct action and lobbying; and litigation with regard to environment and development issues. **Kalpavriksh was responsible for developing India's National Biodiversity Strategy and Action Plan in 2003**
- **Salim Ali Center for Ornithology and Natural History (SACON), Coimbatore:** This institution was Dr. Salim Ali's dream that became a reality only after his demise. He wished to support a group of committed conservation scientists on a permanent basis. Initially conceived as being a wing of the Bombay Natural History Society (BNHS) it later evolved as an independent organization based at Coimbatore in 1990.
- **Wildlife Institute of India (WII), Dehradun:** This Institution was established in 1982, as a major training establishment for Forest Officials and Research in Wildlife Management. Its most significant publication has been **'Planning A Wildlife Protected Area Network for India'** (Rodgers and Panwar, 1988). It also has an Environment Impact Assessment (EIA) cell. It trains personnel eco-development, wildlife biology, habitat management and Nature interpretation.
- **Botanical Survey of India (BSI):** The Botanical Survey of India (BSI) was established in 1890 at the Royal Botanic Gardens, Calcutta. However it closed down for several years after 1939 and was reopened in 1954. In 1952 plans were made to reorganize the BSI and formulate its objectives. By 1955 the BSI had its headquarters in Calcutta with Circle Offices at Coimbatore, Shillong, Pune and Dehra Dun. Between 1962 and 1979, offices were established in Allahbad, Jodhpur, Port Blair, Itanagar and Gangtok. The BSI currently has nine regional centres. It carries out surveys of plant resources in different regions.

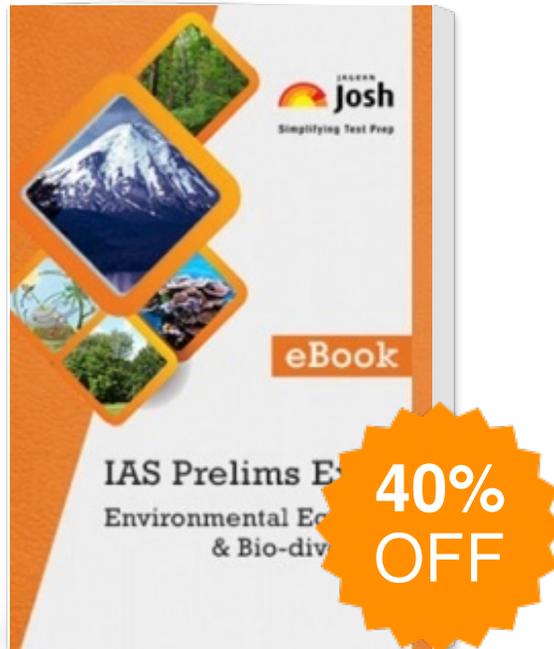
- **Zoological Survey of India (ZSI):** The ZSI was established in 1916. Its mandate was to do a systematic survey of fauna in India. It has over the years collected 'type specimens' on the bases of which our animal life has been studied over the years. Its origins were collections based at the Indian Museum at Calcutta, which was established in 1875
- The **Centre for Environmental Research and Education (CERE)** is a Mumbai-based not-for-profit organization that works to promote environmental sustainability through action-oriented education, awareness and advocacy. CERE was established in 2002 by Dr. (Ms.) Rashneh N. Pardiwala, an ecologist from the University of Edinburgh and Mrs. Kitayun Rustom, an environmental educationist. CERE is also a pioneer in the field of corporate sustainability and carbon management systems where they help organisations map their carbon footprint, meet international reporting standards, implement low cost carbon reductions strategies which ensure considerable financial savings and engage in staff awareness activities.
- The **Foundation for Ecological Security (FES)** is a registered non-profit organisation based in Anand, Gujarat, India working towards the ecological restoration and conservation of land and water resources in ecologically fragile, degraded and marginalised regions of the country, through concentrated and collective efforts of village communities. FES has been involved in assisting the restoration, management and governance of Common Property Land Resources since 1986.

Famous Personalities

There are several internationally known environmental thinkers. Among those who have made landmarks, the names that are usually mentioned are Charles Darwin, Ralph Emerson, Henry Thoreau, John Muir, Aldo Leopald, Rache Carson and EO Wilson.

- **Charles Darwin** wrote the 'Origin of Species', which brought to light the close relationship between habitats and species. **Alfred Wallace** came to the same conclusions during his work.
- **Ralph Emerson** spoke of the dangers of commerce to our environment way back in the 1840s.
- **Henry Thoreau** in the 1860s wrote that the wilderness should be preserved after he lived in the wild for a year.
- **John Muir** is remembered a having saved the great ancient sequoia trees I California's forests. In the 1890s he formed the Sierra club, which is a major conservation NG in the USA.
- **Aldo Leopald** was a forest official in the US in the 1920s. He designed the earl policies on wilderness conservation and wildlife management.

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Publisher : Jagran Josh

Author : Jagran Josh Expert

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