

ENVIRONMENTAL STUDIES

UNIT-I

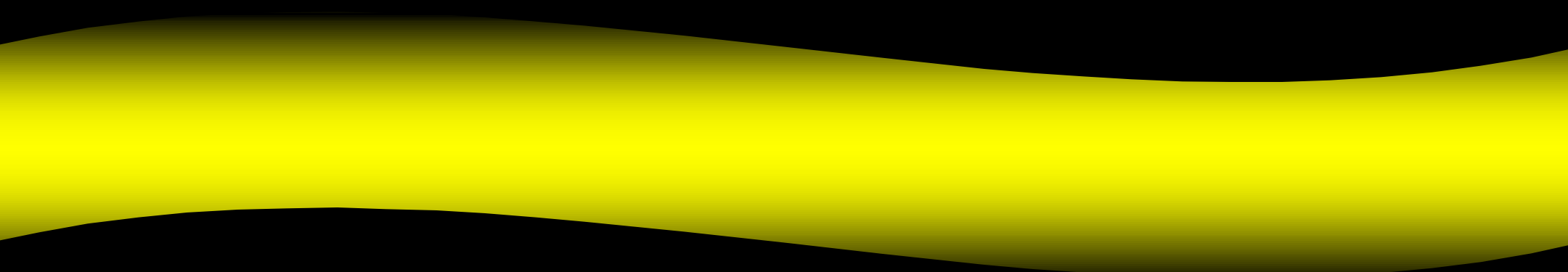
THE MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES



19 9 2006

DEFINITION, SCOPE AND IMPORTANCE

- Environment is the physical and biotic habitat that surrounds us.
- Environmental literacy is the capability for a contextual and detailed understanding of environmental problem in order to enable analysis, synthesis, evaluation and ultimately sound and informed decision making at a citizen's level.

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- ES deals with every issue that effects a living organism.
 - Its components include biology,geology,chemistry,physics,enginee ring,sociology,health,anthropology,econom ics,statistics,computers and philosophy.



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SCOPE

- Study the natural history: a forest, a river, a mountain, a desert or a combination of these elements.
- Our dependence on nature: Protect earth's environmental resources.
- Respect for nature and all living creatures is not new to India.

Application of technological innovations

- Growing more food by using fertilizers and pesticides.
- Developing better strains of domestic animals and crops
- Irrigating farmland through mega-dams and developing industry.

- Non-renewable resources such as minerals and oil are those which will be exhausted in the future if we continue to extract these without a thought for subsequent generations.
- Renewable resources such as timber and water can be regenerated by natural processes such as regrowth or rainfall.
- Natural resources can be compared with money in a bank. Sustainable development.



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Activity 1

- Take any article that you use in daily life: a bucket full of water, or an item of food, a table or a book.
- Trace its components through a journey backwards from your home to its origin as natural resource in our environment.
- How many of these components are renewable resources and how many are non-renewable?

RESOURCE

- What is the value of the resource and where does it originate?
- Who uses it most intensively and how?
- How is it being overused or misused?
- Who is responsible for its improper use-the resource collector, the middle man, the end-user?
- How can we help to conserve it and prevent its unsustainable use?

IMPORTANCE OF ES

- Environment is not a single subject
- Plastic, waste food, solid waste byproducts...
- Air pollution leads to respiratory problems
- Water pollution to gastrointestinal diseases
- And many pollutants are known to cause cancer.



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Activity 2

- Think of all the things that you do in a day. List these activities and identify the main resources used during these activities. What can you do to prevent waste, reuse articles that you normally throw away and what recycled materials can you use?
- Think of the various energy sources you use every day. How could you reduce their use?

Activity 3

- Attempt to assess the level of damage to the environment due to your actions that have occurred during your lifetime if you continue in your present ways.
- Examples for the above activity: Plastic, Fossil fuels, water, Food, Paper, Electrical Energy.

PLASTIC: PLASTIC BAGS, PLASTIC BALL PENS

- Make a list of the plastic articles you usually use.
- How can you reduce the amount of plastic you use?
- What effects does plastic have on our environment?
- Where does the plastic come from and how is it made? Are the manufacturing processes environmentally friendly?
- What happens to it when you throw it away? Where does it go?

FOSSIL FUELS: PETROL, DIESEL, NATURAL GAS

- How much do you use? Can you reduce your consumption?
- What effect does it have on the air we breathe?
- When we leave a motorbike or car engine running during a traffic stop, we don't remember that the fuel we're wasting is a part of a non-renewable resource that the earth cannot regenerate.

WATER

- How much do u really need to use, as against how much u waste when u: a) Brush ur teeth? b) have a bath? C) Wash clothes? D) Wash the scooter or car?
- Where did the water come from? What is the actual source? How has it reached u?
- Where will the waste water go?
- Do u feel u should change the way u use water? How can u change this so that it is more sustainable?

FOOD

- Where has it come from? How is it grown?
What chemicals r used in its production?
- How does it reach u?
- How is it cooked?
- How much is wasted? How is the waste disposed off?

PAPER

- What is it made from?
- Where does it come from and how is it manufactured?
- How much do u use and how much do u waste? How can u prevent this wastage?

ELECTRICAL ENERGY

- How much do u use everyday? Where does it come from?
- How do u waste it? How can u conserve energy?

Productive value of nature

- Advances in fields like Biotechnology.
- New medicines developed.
- Flowering plants and insects: Protect them
- Once a species is lost, man cannot bring it back.
- For crops to be successful, the flowers of fruit trees and vegetables must be pollinated by insects, bats and birds.

Aesthetic/Recreational value of nature

- This is created by developing national parks and wildlife sanctuaries in relatively undisturbed areas.
- In an urban setting, green spaces and gardens are vital to the psychological and physical health of city dwellers.

The option value of nature

- Utilizing goods and services furnished by nature vs. adverse impact on nature's integrity.
- We can use its resources sustainable and reduce our impact on the environment.
- Or destroy its integrity.

NEED FOR PUBLIC AWARENESS

- We feel that everything must be done by Govt.
- Everything is possible through public awareness.
- News papers, TV, Radio must take responsibility.

Suggested further activities for concerned students:

- Join a group to study nature such as WWF-I(World wide Fund for nature –India) or BNHS(The Bombay Natural History Society)
- Begin reading news paper articles and periodicals like Down to earth, WWF-I News letter, Sanctuary magazine etc.
- Join local movements : saving trees in ur area.
- RRR: Reduce, Reuse, Recycle.
- Visit a National Park or Sanctuary....

Institutions in Environment

- There are **two** type of institutions in environment, they are
 - Government Organizations
 - Non-Government Organizations

Government Organizations

- The Government organizations are as follows,
 - BSI (www.envfor.nic.in)
 - ZSI (www.zsi.gov.in)

BSI-Botanical Survey of India

- Established in **1890** at the **Royal Botanic Gardens, Calcutta**.
- In **1952**, plans were made to recognize the BSI and formulate its objectives.
- The BSI currently has **nine** regional centers.

ZSI-Zoological Survey of India

- Established in **1916**.
- It's mandate was to do a symmetric survey of fauna in India.
- Its origins were collections based at the **Indian Museum at Calcutta**, which was established in **1875**.
- It has done an enormous amount of work on taxonomy and ecology.
- It currently operates from **16** regional centers.

Non-Government Organizations

- The following are the NGO's
 - BNHS (www.bnhs.org)
 - WWF-I (www.wwfindia.org)
 - CSE (www.cseindia.org)
 - CPR-EEC (www.cpreec.org)
 - CEE (www.ceeindia.org)
 - BVIEER (<http://environment.bharativedyapeeth.edu>)
 - UKSN (www.usnpss.org)
 - Kalpavriksh (www.kalpavriksh.org)
 - SACON (www.sacon.org)
 - WII (www.wii.gov.in)
 - MCBT (www.madrascrocodilebank.org)

BNHS-Bombay Natural History Society, Mumbai

- Begin as a small society of **six** members in **1883**.
- Its influence is on wild life policy building, research, popular publications.
- Publishes a popular magazine called **Hornbill** and also an internationally well-known journal on Natural History.
- Helped the government to frame wild life related laws and taken up battles such as '**save the silent valley campaign**'.

WWF-I World Wide Fund for Natural India, New Delhi

- Initiated in 1969 in Mumbai, after the head quarters is shifted to New Delhi.
- Attention on wild life education and awareness.
- It runs several programs, including the Natural Clubs of India program from school children.

CSE-Center for Science and Environment, New Delhi

- The activities including organizing campaigns, holding workshops and conferences, and producing environment related publications.
- Publication material is in the form of books, posters, video films and also conducts work shops and seminars on bio-diversity related issues.

CPR-EEC CPR Environmental Education Center, Chennai

- Setup in 1988.
- Conducts a variety of programs to spread environmental awareness and create an interest in conservation among the general public.
- To promote conservation of nature and natural resources.
- Its programs include components on wild life and biodiversity issues.
- Produces large number of publications.

CEE-Center for Environmental Education, Ahemadabad

- Initiated in 1989.
- Wide range of programs on the environment and produces a variety of educational material.
- CEE's Training in Environment Education program has trained many environmental educators.

BVIEER-Bharati Vidyapeet Institute of Environmental Education and Research, Pune

- Part of Bharati Vidyapeet deemed university.
- The institute has a PhD, master's and Bachelor's Program in Environmental Sciences.
- It also offers an innovative diploma in Environment education for in-service teachers.
- Biodiversity conservation is a major focus of its research initiatives.

UKSN-Uttarkhand Seva Nidhi, Almora

- This organization is a Nodal agency that supports NGOs in need of funds for their environment related activities.
- Its main target is sustainable resource use at the village level through training school children.
- Its environment education program covers about 500 schools

Kalpavriksh, Pune

- This NGO, initially Delhi based, is now working from Pune.
- 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.
- Responsible for developing India's National Biodiversity strategy and Action plan in 2003.

Salim Ali center for Ornithology and Natural History (SACON), Coimbatore

- Initially conceived as being a wing of the BNHS, it later evolved into an independent organization based at Coimbatore in 1990.
- It has instituted a variety of field programs that have added to the country's information on our threatened biodiversity.

WII- Wildlife Institute of India, Dehradun

- Established in 1982.
- This institute is established as a major training for forest officials and for research in wild life management.
- Its most significant publication has been planning a Wild Life Protected Area Network for India.

MCBT-Madras Crocodile Bank Trust, Chennai

- The first Crocodile conservation breeding center in Asia, was founded in 1976 to conserve Indian Crocodiles and establish a program for the conservation and propagation of other species.
- MCBT has an ongoing Environmental Education Program for the villages and schools that include nature camps, training workshops for teachers.

People in Environment

- The following are the well-known names in the last century include environmentalists, administrators, legal experts, educationalists, and journalists.
 - Indira Gandhi
 - S.P.Gadgil
 - M.S.Swaminathan
 - Madhav Gadgil
 - M.C.Mehta
 - Anil Agarwal
 - Medha Patkar
 - Sunderlal Bahuguna

Indira Gandhi



- As PM played a very significant role in the preservation of India's Wild Life.
- During her period, the network and protected areas grew from 65 to 98.
- Wild life protection act was formulated during her period.

S.P.Godrej



- Was one of the India's greatest supporter of wild life conservation and nature awareness programs.
- Between 1975 and 1999, received 10 awards for his conservation activities, he was awarded the Padmabhushan in 1999.

M S Swaminathan



- One of the India's foremost agricultural scientists.
- Founded the MS Swaminathan Research Foundation in Chennai

Madhav Gadgil



- Well known ecologist in India.
- His interests range from broad ecological issues such as developing community Biodiversity registers studies on the behaviour of mammals, birds, and insects.
- He has written several articles, published papers in journals...

M.C.Mehta



- India's most famous environmental lawyer.
- Since 1984, he has filed several public interest litigations for supporting the cause of environmental conservation.
- His most famous and long-drawn battles supported by the supreme court include protecting the Tajmahal, cleaning up the Ganges river.....

Anil Agarwal



- Was a journalist who wrote the first report on the state of India's Environment in 1982.
- He founded the CES, an active NGO that supports various environmental issues.

Medha Patkar



- Known as one of rural India's Champions, has supported the cause of the downtrodden tribal people whose environment is being affected by the dams on the Narmada River.

Sunderlal Bahuguna



- His chipko movement has become an internationally well-known example of a highly successfully conservation action program through the efforts of local people for guarding their forest resources.
- His fight to prevent the construction of Tehri dam in a fragile earthquake-prone setting is a battle that continues to wage

International Environmental Thinkers

- Charles Darwin(wrote Origin of Species)
- Ralph Emerson (spoke of the dangers of commerce to our environment in 1840s)
- Henry Thoreau (wrote that the wilderness should be preserved in 1860s)
- John Muir (saved the great ancient sequoia trees in California's forests; he formed Sierra club in 1890s)
- Aldo Leopold (designed the early policies on wilderness conservation and wildlife management in 1920s)
- Rachel Carson (wrote Silent Spring;several articles on effects of pesticides on nature and mankind)
- EO Wilson (entomologist and wrote Diversity of Life in 1993)

17th Century has been described as the

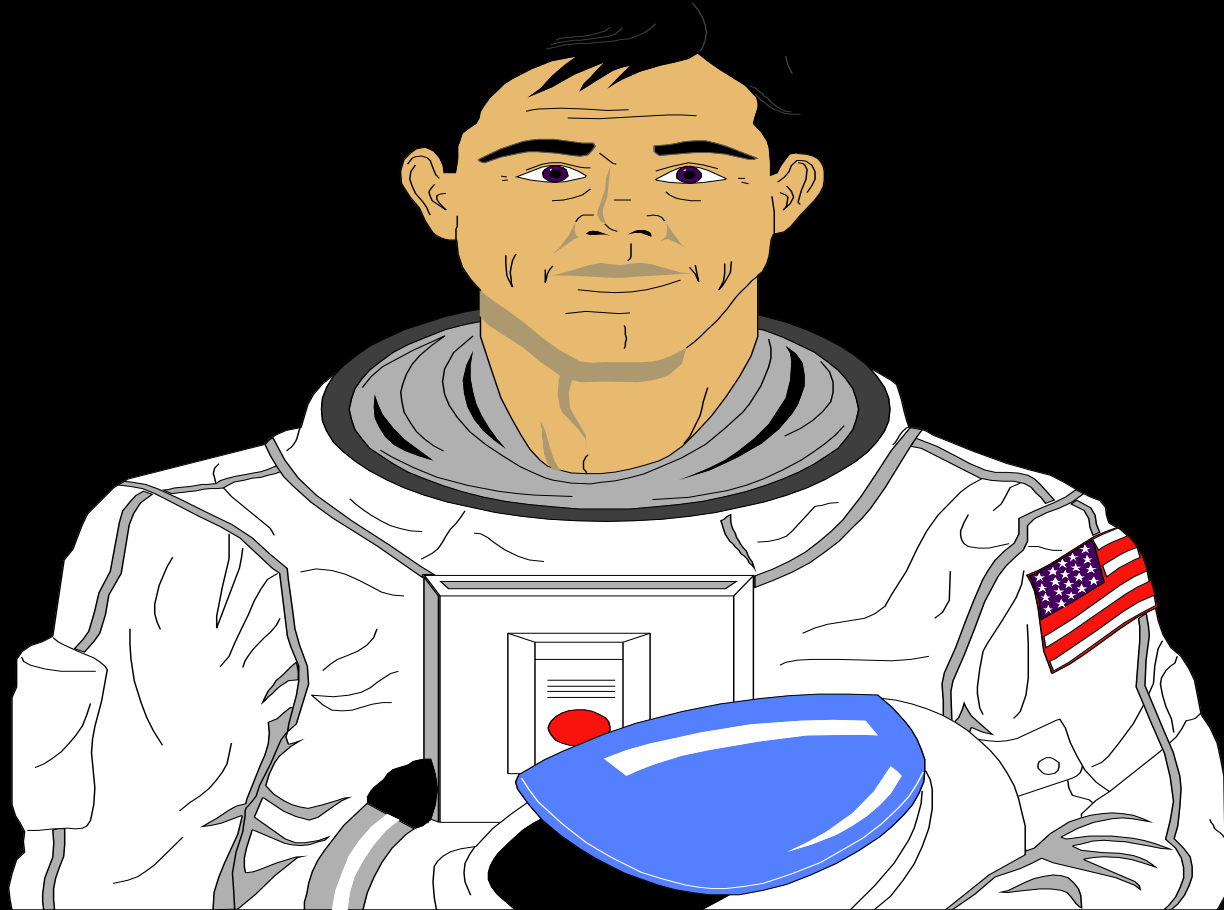
AGE OF FAITH



18th Century is considered as the
AGE OF REASONING



19th Century was
AGE OF PROGRESS



20th Century was AGE OF STRESS

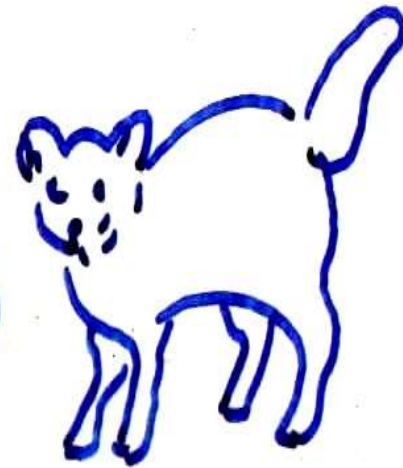
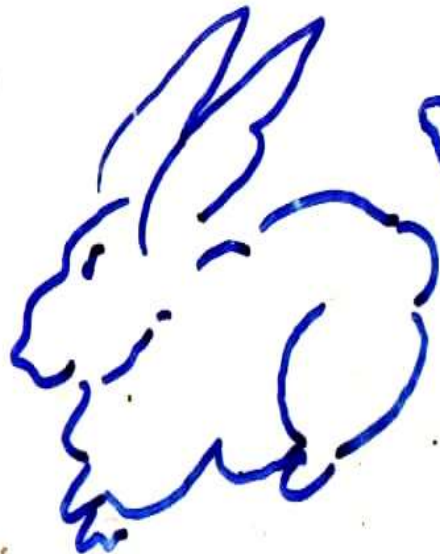
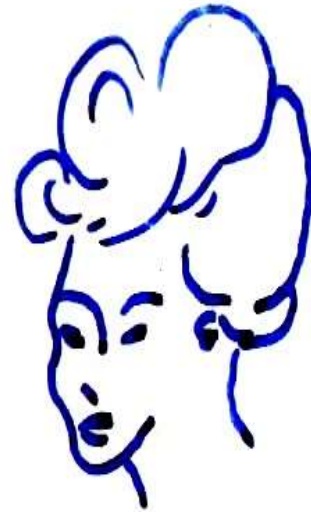
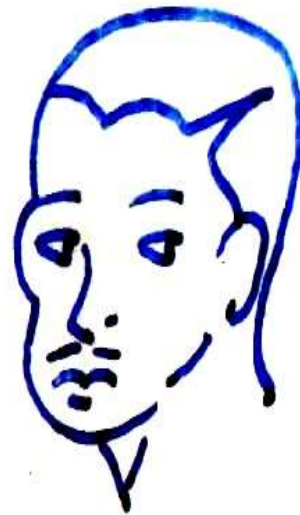


Will 21st Century be

Age of Panic or Age of Peace?



You have to decide.



What is this a
Picture of?

