

Review Article

Ecology, management and restoration of rangelands

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ABSTRACT

Environmental Education Programme at CES in collaboration with Karnataka Environment Research Foundation (KERF) referred as ‘Know your Ecosystem’ focuses on the importance of investigating the Ecosystems within the context of human influences, incorporating an examination of Ecology, Economics, Culture, Political Structure, and Social Equity as well as Natural Processes and Systems. The goal of Environment Education is to develop an Environmentally literate public. It needs to address the connection between our conception and practice of Education and our relationship as Human cultures to Life-sustaining Ecological Systems. For each Environmental issue there are many perspectives and much uncertainty. Environmental Education cultivates the ability to recognize uncertainty, envision alternative scenarios, and adapt to changing conditions and information. These knowledge, skills, and mindset translate into a citizenry who is better equipped to address its common problems and take advantage of opportunities, whether Environmental concerns are involved or not.

KEYWORDS

Ecosystem | Conservation | Environment Education | Sustainable Management | Sustainable Development

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Introduction

Environmental protection is the practice of protecting the natural environment by individuals, organizations and governments. Its objectives are to conserve natural resources and the existing natural environment and, where possible, to repair damage and reverse trends.

Due to the pressures of overconsumption, population growth and technology, the biophysical environment is being degraded, sometimes permanently. This has been recognized, and governments have begun placing restraints on activities that cause environmental degradation. Since the 1960s, environmental movements have created more awareness of the multiple environmental problems. There is disagreement on the extent of the environmental impact of human activity, so protection measures are occasionally debated.

Explanation

Environmental conservation is basically the practice of us humans to save the environment from collapsing, such as loss of species, ecosystems due to pollution and human activities. This helps both trees and animals since some of us are dependent on them to survive. We need to save trees because they convert the carbon dioxide (CO₂) we produce from factories and such to oxygen (O₂) for us to breathe and respire. Loss of species is another deal. If more and more species go extinct, then we would not be able to see them once again and will make it extremely hard for scientists to study them. Not to mention, it disrupts the food web and can mess up the whole ecosystem as well.

Conservation works in two ways. It is meant to protect nature by protecting vital resources,

and it is also a way of living that works against the irresponsible practices of businesses and large corporations. Green living takes away the power from those who have no interest in using their influence to promote the greater good of our world and choose to add to the problem instead. The more money we keep out of the pockets of big businesses who do not care for the environment, the more we can do for the planet. Environmental conservation comes in many forms and reminds us to be mindful of daily choices. No matter how busy your life may be, it remains easy to make small, yet necessary, changes for the good of the earth.

Conservation policies also focus on materials conservation and energy conservation, which are seen as important to protect the natural world. Conservationists have vision that development is necessary for a better future, but only when the changes occur in ways that are not wasteful. Biological data demonstrates that wildlife species are vanishing faster than ever before in earth's history, while the average global temperature is dangerously rising. The glaciers are melting, extreme weather events are becoming more common and if necessary steps are not taken immediately to conserve the environment.

Humans and other species on earth are at high risk due to an unprecedented climate change which may threaten the very existence of life. Although the planet's climate is known to go through cycles and to change dramatically in the past as well, the climate change we are already witnessing is primarily a result of human activities. It is seen that scientific progresses have enabled human beings to harness natural resources of nature for their wellbeing. Recently, humans have exploited

natural resources that results in increased pollution and other related issues. There are several types of conservation that affect the state of the environment.

Water Conservation

Water Conservation According to the World Health Organization, over one billion people worldwide do not have access to safe drinking water. In the United States, western states may face their own water crisis due to rising populations and limited availability of treated water. The availability of clean water is affected by pollution.

Soil Conservation

Soil conservation is to avert soil from erosion or reduced fertility caused by misuse, acidification, salinization or other chemical soil contamination. The dust bowls of 1930 demonstrate the intense impacts of poor soil management. With the combination of dry, windy conditions, the national oceanic and atmospheric administration estimates that the impacts lasted up to eight years in some states, resulting in tons of topsoil loss.

The loss of topsoil is dangerous since most of the soil nutrients are found in this soil layer. Soil erosion introduces contaminants and sediment into aquatic resources, increasing the environmental impact. Soil conservation is the management of soil to prevent its destruction. Today, agricultural practices and land management focus soil conservation as a way to ensure soil nutritional quality and to prevent water pollution. There are several techniques for improved soil conservation such as crop rotation, cover crops, conservation tillage and planted windbreaks and affect both erosion and fertility. When plants, especially trees, die, they decay and became part of the soil.

Wetland conservation

The wetlands cover diverse and heterogeneous assemblage of habitats ranging from lakes, estuaries, river flood plains, mangroves, coral reef, and other related ecosystems. Abundance of water at least for a part of the year is the single dominant factor. The main aim of wetland conservation to protect and preserve areas where water exists near the earth's surface, such as swamps, marshes, and bogs. Wetlands cover at least six per cent of the earth and have become a focal issue for conservation due to the ecosystem services they provide. According to the U.S. Geological Survey, over half of the Wetlands of the contiguous 48 states have been lost. Wetlands provide valuable flood protection as well as habitat for plants and wildlife. The U. S. Environmental Protection Agency estimates that one-third of the nations threatened, and endangered species depends strictly on wetlands, making it one of the types of conservation necessary to prevent further environmental losses. Conservation efforts may focus on restoration of wetland habitat through control over invasive species. Other methods include prevention of runoff into wetlands through buffer strips planted adjacent to waterways.

Energy Conservation

Increased cost of fossil fuels and mounting environmental concerns have made energy conservation a top priority with governments and individuals. Energy conservation can also involve more complex solutions such as alternative fuel power plants. The goal of energy conservation is to balance the need for energy with the environmental impact of fulfilling those needs. There are many types of energy conservation such as renewable

energy can be generated continuously practically without decay of source. For examples solar energy, wind energy, geothermal energy, hydro energy. Non-renewable energy is energy that comes from the ground and is not replaced in a relatively short amount of time. For example, energy generated from combustion of fossil fuels, coal, and gas. The types of conservation demonstrate that there are ways to protect the environment through the wise use of resources. The conflict between conserving natural resources and development can be resolved with increased awareness of the environment impacts of resource use. In this way, the effects can be minimized.

Major environmental challenges for humans in contemporary period due to over population and increased activities of humans are as under:

- Loss of wildlife habitat which in turn brought many wildlife species on the brink of extinction.
- Loss of forests which further increases the levels of carbon dioxide and other greenhouse gases in the atmosphere, increasing the greenhouse effect and further warming the planet. As an example, when buying wooden garden furniture always ensure its from renewable sources.
- Extreme exploitation of natural resources, preventing the natural systems from replenishing.
- Increased discharge of carbon dioxide, mainly by fossil fuel burning that contributes to the climate change.
- Increased production of synthetic materials as a substitute for the natural ones, with many being extremely

toxic to the environment or/and taking centuries to decompose.

- To conserve the environment and reverse the threatening climate change effects on whole world, it requires a global action to achieve a global effect.

Unfortunately, poor nations which mainly depend on the natural environment for survival need help to tackle poverty to be able to deal with environmental concerns.

Ways to conserve the environment

Conservation of forest resources
deforestation: deforestation is the clearing of natural forests by logging or burning of trees and plants in a forested area. Due to deforestation, presently about one half of the forests that once covered the earth have been destroyed. It occurs for many different reasons, and it has several negative implications on the atmosphere and the quality of the land in and surrounding the forest.

It is recommended by experts that humans should not cut trees and use trees in smaller quantity. It is advised that humans should not burn poly bags, because it produces a lot of smoke and carbon dioxide. The government of a state should ensure that there should be less and less forest fires and the people living near the area should be careful. Another way to conserve environment is to prevent construction of too many dams and reducing the consumption of minerals. One of the best ways to conserve environment is hydro-power and solar power. Power can be generated from these sources and these are the best ways for natural resources conservation like fossil fuels. There is also way to conserve natural resource like trees. It can be conserving through recycling process. Many products

come from the trees like papers, cups, cardboards, and envelopes. By recycling these products, people can reduce the number of trees cut down a year. One should make the most use of these paper products without being wasteful and then recycle them. This is best method for conserving natural resources. Fossil fuels on earth will not last forever therefore human must make efforts to conserve these fossil fuels. To conserve fossil fuels, it is advised to choose to buy a hybrid car. To summarize, conservation is the protection of natural resources which are features of environment that are important and value of to human in one form or the other. However, the progression of modern cultivation has had a great impact on planets natural resources. So, conserving natural resources is must in present situation.

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