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Study of Effects of Deforestation on Ecosystem in Course of Study Related to the Biological Science at Various Levels

Dr. Ashwani Kumar Gupta

Assistant Professor in zoology, Regional Institute of Education, Ajmer, Rajasthan, India

Abstract **- Deforestation is the forest clearance or removal of forest lands to form the ranches or urban use. The deforestation not only removal of forest land but also disturb the wild life and wild life ecosystem Due to this the migration of wild animals towards the urban and rural areas for their searching the food and sheltizing in urban and rural areas. It is harmful for the human beings and life of domestic animals and it creates the improper ecosystem, which is against the nature. The disturbances of biodiversities, soil erosion, atmosphere also created by deforestation. The diseases may be spreaded by deforestation, due to the migrations of wild animals.**

Keywords: Deforestation, Ecosystem, Migration, Harmful Effects and Diseases.

1. Introduction

Deforestation has a major impact on the productivity of our crop lands; Deforestation is the forest clearance or removal of a forest land to forms, ranches or urban use. The removal of trees without sufficient reforestation has resulted in habitat damage, biodiversity loss and aridity. Deforestation causes extinction, changes to climatic conditions, desertification and displacement of populations, as observed by current conditions and in the past through the fossil record.

Deforestation also reduces bio sequestration of atmospheric carbon dioxide, increasing negative feedback cycles contributing to global warming. Global warming also puts increased pressure on communities who seek food security by clearing forests for agricultural use and reducing arable land generally. Deforested regions typically incur significant other environmental effects such as soil erosion and degradation into wasteland.

As a result of gross mismanagement of natural resources including land, certain irreversible changes have triggered the breakdown of nutrient cycles and microclimatic equilibrium in the indicating the onset of desertic conditions.

2. Causes of Deforestation

According to Aldhous (1993), Gupta (1988), Skole and Tucker (1993) the tropical rainforests have been particularly subject to destruction since the 1950s due to increased export of tropical hardwoods to Europe, Japan and the United States. According Vincet (1992) the tropical hardwoods have relatively homogenous surf large dimensions making it possible to produce long, wide plank of uniformly high quality, prized in the timber in Harvesting of a forest itself takes a tall during construction of the necessary access roads.

In drier areas, tropical rainforests are being exploited for the collection or fuel wood that, along with charcoal, is the main energy source for a large number of the poor in the thirst world. Ever form of fuel wood biomass, including wood, twigs, crop residues and grass, is especially important in Nepal, India, China, Kenya, Zimbabwe, Brazil and Egypt, among other countries, and in many of them, it is short supply. According to Lawson, Callaghan and Scott (1984), even developed countries are increasingly turning to obtaining energy from plants to bypass the use of fossil fuels. Deforestation is a consequence of over-exploitation of our natural ecosystems for space, energy and materials. The basic reasons for such extensive deforestation are :-

1) Expansion of Agriculture

As demands on agricultural products rise more and more land is brought under cultivation for which forests are cleared, grass-lands ploughed, uneven ground leveled, marshes drained and even land under water is reclaimed. However, this expansion is usually marked with more ecological destruction then rationality. Governments often distribute land under forests to land less people, instead of redistributing already established farm -lands, however, wasteful, unequal and unjust the distribution, of ownership of land may be.

2) Extension of cultivation on Hill slopes

Outside humid tropical zone, in most of the third world countries, major forests often occur on hill tops and slopes. Through agriculture, has nearly always been concentrated on

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plains and floors of valleys, farming on narrow flat steps cut one after another across the slope or terrace farming is an age-old practice. It has never been extensive because of the gruelling labour and low productivity However the ever rising human numbers and their necessities have forced many to go up to mountain slopes for cultivation. More and more slopes are cleared of plants, steps carved out and against many odds cultivation is attempted. After a few crops the productivity and declines and torrential sub-tropical rains carry down massive quantities of precious top soils to streams and rivers. While denuding hill slopes, the silt and sediments settle further down rising stream bottom and river beds aggravating the flood situation.

3) Cattle Ranching

The soil degenerates within a short span of time due to over-grazing and massive soil erosion occurs, Cattle ranching has done much damage to the tropical cover in South and Central America

4) Shifting Cultivation

It is often blamed for destruction of forests. In fact it is poor fertility of soil which has given rise to suck a pattern of farming, shifting cultivators, therefore, worked in harmony with nature. However, the demands of growing population have shortened the follow periods drastically. The soil is unable to regain its fertility before it is put to use again. This cause degradation of soil and failure of crops after crops. As crops fail more and more land is cleared of forests to be put to similar over-exploitation. The overall result is that lush green forests are being gradually replaced by barren waste land. The firewood collection and timber Harvesting are also factors to cause the deforestation.

3. Consequences of Deforestation

One of the immediate effects of deforestation is an acceleration of soil erosion with the consequences of decreased fertility, and hence productivity, because of the removal of nutrients and organic matter. Soil erosion also converts relatively homogenous land surfaces to a series of gullies, reducing access, as well as increasing the sediment load in streams, reduces their productivity. The increased sediment load can also lead to choking of a stream resulting in flooding of adjacent bend and increased leaching of valuable nutrients from that soil. Logging that results in substantial increased leaching of valuable nutrients from that soil. Logging that results in substantial increased of downed woody debris can dramatically increase susceptibility to fire.

4. Ecosystem

Living organisms and their nonliving environment are inseperably interrelated and interact with each other. Any unit that includes all the organisms in a given area interacting with the physical environment so that a flow of energy leads to clearly defined biotic structures and cycling of materials so that a flow of energy leads to clearly defined biotic structures and cycling of materials between living and nonliving components is an ecological system or ecosystem.

5. Forest Ecosystem

The terrestrial system in which diving things such as trees, insects, animals, and people interact is referred to as a forest ecosystem and The forest ecosystem is a functional unit or a system which comprises of abiotic resources available in forest (Soil, water etc) biotic resources (plants and animals) and man as its interacting units. A forest is a large and complex ecosystem and hence has greater species diversity. The forest ecosystem plays an essential role in to the environment at helps to balance the climate of the Earth. One of the major roles that forests play is that it provides us oxygen to breathe. Trees help to maintain the bikinied of carbon dioxide in the atmosphere. Besides this, forest, also help to prevent soil erosion, rainfall, purifying the air etc.

6. Deforestation and Ecosystem

Deforestation is the clearing of forests to obtain lumber and provide space for either agricultural zones or urban development. As a result of massive global urbanization and agricultural development, deforestation is a major factor contributing to climate change. Deforestation alters not only nearby ecosystems - communities of interacting organisms and their environments but also that the atmosphere on a global level, with divesting results.

Biodiversity is the number of species in a given ecosystem. Since different species eat different goods and live in different types of habitats, a diverse set of vegetation can enable a greater variety of animals to live in an area. When forests are cleared to make space for large plantations growing one type of crop such as sugarcane or soy, wildlife diversity tends to plumber as species are displaced. However, if crops are introduced on a smaller scale and do not displace native species they can actually increase diversity since they can act as a habitat for birds and herbivores.

Deforestation also affects nearby rivers, streams and other water sources soil are removed through nutrients from the soil reaching which happens when water removes Soluble nutrients from the soil and carries them elsewhere. Water sources in deforested areas were shown to have higher nitrate

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levels, lower dissolved oxygen levels, and somewhat higher temperatures than in forested areas, Water temperatures increase because the trees that provide cover from sunlight are cut down. All these factors disrupt a river ecosystem because the species that live in the stream have adapted to conditions before the deforestation and may be negatively impacted by the sudden changes.

Deforestation also affects on the atmosphere with forest and its immediate surroundings. The greenhouse gases emission come from deforestation, from the burning trees and the resulting of photosynthesis, which effect on the gaseous contents of the air, because the air is the mixture of different gases. As trees are cut down and burnt, the carbon they contain is released into the atmosphere. Although the increased levels of carbon dioxide may stimulate forest growth.

The soil that provides nutrients for vegetation in ecosystems is also affected by deforestation. Soil in deforested areas is exposed to more sunlight, which increases the soil temperature and oxidizes the carbon in the soil to carbon dioxide. Some of the carbon dioxide released into the atmosphere comes from dead vegetation that decomposes in the ground. In havily deforested areas, soil erosion and nutrient run off are common after a rainfall.

The deforestation may spreads the diseases, including those originating from birds, such as avian flu climate change have already affected migration patterns, and infected birds may move to deforested areas that are more suitable habitats for them, spreading their diseases to the local, birds. Diseases that are are more common in open space with more sunlight exposure. These diseases inflect not only birds and vertebrates found in these ecosystems, but also any humans that are exposed to these insects either in the wild or in nearby urban areas.

7. Conclusions and Recommendations

On the base of this study, the following conclusions are highlighted.

(i) The deforestation may disturb the proper ecosystems and urban areas, due to migration of animals created after deforestation.
(ii) The improper ecosystems may be created after immigration of wild animals in rural and urban areas as well as emigration of domestic animals in deforested or forest areas.
(iii) The aquatic resources are also affected by deforestation with biotic and abiotic factors.
(iv) Deforestation affect on the atmosphere of forest and nearest surroundings with after disturbing proper and balanced air quality and gaseous contents of air.
(v) Soil erosion is also created by deforestation with harmful effects on the soil to cultivation of crops and vegetation.
(vi) The deforestation may spread the diseases including those originating from birds, such as avian flu.

Since the life sciences along with the physical sciences have received much more attention to revise and refresh courses of study, there is an urgent need now to lay emphasis on the protection of environment all over the world and thence to provide better life to the living beings of this planet. In order to maintain a proper balance between the environment and human survival it becomes imperative to incorporate concepts of immediate concern that have direct implication not only to theory but practical work and their subsequent application for environmental protection and human survival. This is also significant with the viewpoint to bring out social awareness towards the protection of environment, human survival and them to mountain the ecological balance.

Based on the conclusions of this study, the following recommendations are proposed.

(i) Awareness to protect the life of wild animals that are disappearing from the forest on account of excessive cutie cuttings of the forests which provide them the natural environment and protection for their free and harmonious development.
(ii) Awareness about the rare and endangered species plants that are disappearing from the surface of the earth on account of excessive cultivation and deforestation.
(iii) Awareness about the protection of grassland that is reducing day by day excessive cultivation owing to increasing population.
(iv) Awareness about the increasing of forest protection of wild life and proper ecosystem in environments of forests, rural and wild and urban areas.

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