

Destruction of forest and its consequences in Yamuna basin region of Garhwal Himalaya

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Abstract

Forests are considered as the lifeline of human civilization. It is the principle natural resource that serves the basis of human development. And provide the raw material for many industries. Forests also enrich the biological diversity and regulate the weathering conditions. They reduce the pollution by consuming carbon di oxide and liberating oxygen. Life can't be imagined without forests on this planet. The Yamuna basin region of Garhwal Himalaya is well known for its physiographic and cultural beauty. It is spread over an area of about 6885 sq. km between 30°18'N to 31°20' N longitude and 77°49' E to 78°31' E latitude from greater Himalaya up to foot hills of Shivalik. The region comprises several Taals, bugyals, landscapes and a unique wealth of flora and fauna. It is full of natural resources. Peoples depend on forest for the basic needs like food, fodder, fuel (3F), agricultural needs and for construction of houses. *Rhododendron orberium*, *Cedrus deodara*, pines, *kharsu*, *moru*, *Banj* etc. are the main timber providing trees of the forest this region. Thus the forest serves the basis for the rural economy. It also conserves the valuable biodiversity of the region.

At present population explosion has badly affected the nature & the natural resources. Forests are being fallen down to suit the needs of the exploding population. Several environmental conferences have been organized around the globe for conservation of nature and natural resources but yet no satisfactory results have been achieved. Yamuna basin region is also facing the problem of deforestation. The forests' cover is depleting because of various causes like construction works, forest fire, grazing, and by the act of humans.

In this paper, an approach has been made to describe the potential causes of forest destruction in the Yamuna basin region and its consequences.

Keywords: biological diversity, *Rhododendron orberium*, population explosion.

Introduction

Forests are the complex ecosystems in nature that are made up of a various types of trees supporting different lives. It also includes the soils that support the trees and the water bodies running through them. Thus the piece of land with huge trees and many animals & birds housing there and water bodies running through it, can be called as forest. Forest regulates the weathering conditions through transpiration and checks the rate of pollution. They purify air by consuming carbon di oxide and liberating oxygen. Forests are important natural resources on earth. It supports all the basic needs of human beings. Man has very close relationships with the forests since very past, when he used to live in caves in jungles. In the past man used to put on the clothes made up with tree bark, feed on vegetation & other animals of jungle. At present Forests are considered as the wealth of the nation and play crucial role in its economy. It provides the raw materials and space for the establishment of industries. As per as the rural areas are concerned the forest are said to be the soul of the rural life. Every activity in the rural areas is supported by the forest. In agriculture, plough and the handles of the agricultural tools are made from wood, fodder for feeding the cattle, fire wood and the timber for construction works is obtained from the forests. The Yamuna basin region of Garhwal Himalaya has 65% of forest cover occupied by *Pinus roxburghii*, *Rhododendron orberium*, *Cedrus deodara*, *Pyrus pashia*, *ficus auriculata*, *juglans regia*, *Morus alba* etc. The

region is well recognized for forests of *Cedrus deodara* & several Taals (such as sartaal, bhuj Taal) & bugyals such as Harkidun, Kedarkantha, faachkandi etc.

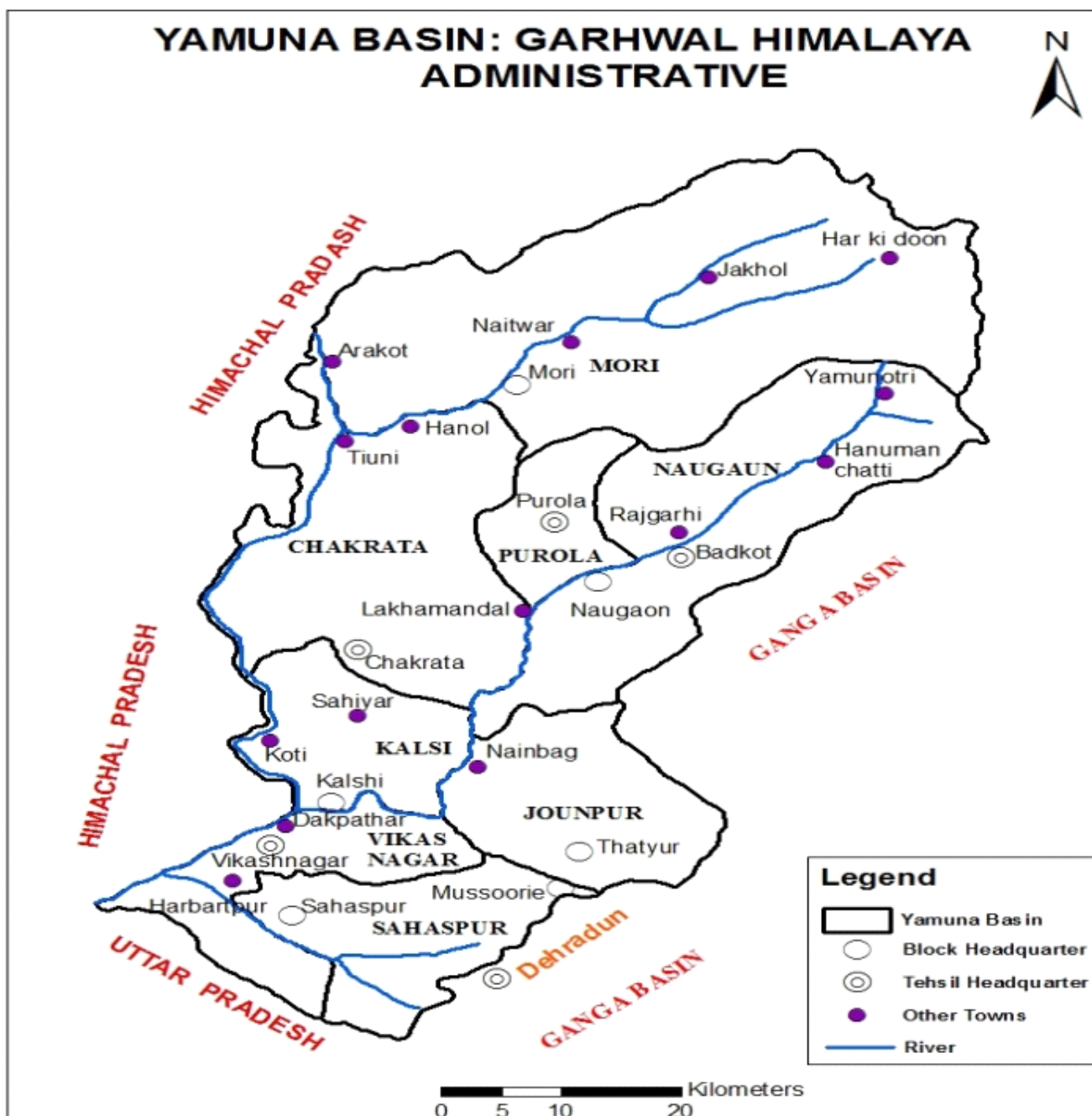
But at present the forest cover all over the world is decreasing with a high rate. Deforestation has become a big trouble at the global level. Due to his dominating nature, man is exploiting the nature and the natural resources. Despite of the improvements in education, information and general awareness of the importance of forests, rate of deforestation has not reduced much. Still there are many communities and individuals who destroy forest lands for personal gains. The study area is also facing the problem of de forestation. That is adversely affecting the society. In the Yamuna basin region of Garhwal Himalaya people is shading down the forest for construction of houses, hotels, lodges and roads.

Study Area

Yamuna basin region of Garhwal Himalaya is spread between 30°18' N to 31°20' N latitude and 77°49' E to 78°31' E longitude and comprises an area of about 6885 sq. km. area from greater Himalaya up to foot hills of Shivalik. It encloses three blocks of district Uttarkashi (Naugaon, Purola and Mori), Kalsi and Sahaspur blocks of Dehra Dun and Thatyur block of Tehari district and makes its boundaries with Himachal Pradesh in in west and the Ganga basin region in the east. The forests of the valley are divided in two forest

divisions: one is Yamuna forest division and another one is Tons forest division. The Yamuna forest division is spread over an area of about 70,096 hectares and Tons forest division over

an area of about 68,701.4 hectares. It is full of natural beauty and well known for its floral and faunal wealth. Yamuna is the principal river of the region.



Objective: -The main objective to study the

- 1:- Deforestation in Yamuna basin region.
- 2:- Causes of deforestation in the region
- 3:- Consequences of deforestation
- 4:- Conservative parameters.

Methodology: The information contained in the present study has been collected from department of forest govt. of Uttarakhand, field survey and discussion with local peoples.

Deforestation

Deforestation in simple term means the felling and clearing of forest cover in order to accommodate agricultural, industrial or urban use. It involves permanent end of forest cover to make

that land available for residential, commercial or industrial purpose. Deforestation can also be seen as removal of forests leading to several imbalances ecologically and environmentally. Deforestation is an urgent global problem, causing climate change, soil erosion, pollution, etc. In the Yamuna basin region of Garhwal Himalaya deforestation has become a serious problem. The forests of the study area bear chiefly the pine trees that have become a terror of fire in the region. Several hectares of forest area got burned due to the forest fire every year. That costs the loss of several vegetation and animal species. This column presents findings of a study of the Yamuna basin region, and contends that forest degradation has started creating problems in the region that could be proved very serious in near future.

Figures for Deforestation in Yamuna basin region of Garhwal Himalaya



Fig 1: Raadi top-I



Fig 2: Raadi top II



Fig 3: Rawada-Khand Road



Fig 4: Yamuna bank at Kharadi



Fig 5: Kishala-binaka



Fig 6: Chaptari sliding zone

Causes of Deforestation in Yamuna Basin Region of Garhwal Himalaya

1. Agricultural activities: agricultural activities are one of the major factors affecting forest- cover in Yamuna basin region. Due to overgrowing demand for food products, huge amount of trees are being fallen down to grow crops and for cattle grazing. In the interior area of the region rural people set fire to their fields in order to avoid the unwanted weeds that got spread to the nearby forests and results in the huge destruction of the forests.

2. Logging: Apart from agricultural uses, wood is used as fuel both directly and indirectly, therefore trees are chopped for fuel supplies. Firewood and charcoal are examples of wood being used as fuel. The rural areas of the region completely depend upon forests for fire wood, as the LPG is least in use in the area.

3. Construction activities: Construction of minor hydropower projects, roads, mining etc. in the study area causes land slide which in turn causes destruction of forests. Rawada, Gheti and Jankichatti minor hydro-power projects, four lane project on national highway-123 and other projects of road construction has degraded a huge area of forests in the study area.

4. Desertification of land: Some of the other factors that lead to deforestation are also part natural and part anthropogenic like desertification of land. It occurs due to land abuse making it unfit for growth of trees

5. Forest fires: Forest fire is the principal cause of deforestation in Yamuna basin region. Hundreds of trees are lost each year because of it. Fire, either caused by anthropogenic means or by natural means results a huge loss of forest cover every year.

6. Inertness of citizens: Citizens of the region are not aware about their forests. They are not interested to take part in environmental activities. They set fire to their agricultural fields in order to avoid the unwanted weeds that unfortunately got spread over the nearby forests.

Effects of Deforestation

1:- Climate imbalance: Deforestation affects the climate in many ways. It reduces the water vapor and humidity in the atmosphere making the soil drier. Forest degradation badly affects the rainfall pattern. Changes in rainfall pattern in Yamuna basin region are being observed since last few years that are only because of deforestation.

2:- Rise in temperature: Trees play important role in controlling the temperature of the globe by absorbing the greenhouse gases. They decrease their surrounding temperature through the process of transpiration. But because of deforestation temperature of earth is rising up. The temperature in the study area has risen very high at present melting down the glaciers.

3:- Effect on Water Cycle: when forests are destroyed, the atmosphere, water bodies and the underground water table all are affected. Trees absorb and retain water in their roots. A large part of the water that circulates in the ecosystem remains inside the plants. Some of this moisture is transpired into the atmosphere. When this process is broken, the atmosphere and water bodies begin to dry out.

4:- Pollution: Deforestation leads to pollution of air, water and land. It leads to the change in the physic-chemical and biological properties of air, water and land.

5:- Soil erosion: Soils (and the nutrients in them) when are exposed to the sun’s heat. Its moisture is dried up, nutrients

evaporate and bacteria that help break down organic matter are affected. Eventually, rain washes down the soil surfaces and erosion takes place. Soils never get their full potential back.

6:- Loss of Biodiversity: The Yamuna basin region of Garhwal Himalaya is rich in biodiversity. But habitat loss due to deforestation leads to extinction of many species in the region. Sparrow, eagle, jackal, deer, musk deer, stag etc. have become endangered.

Conservative Parameters

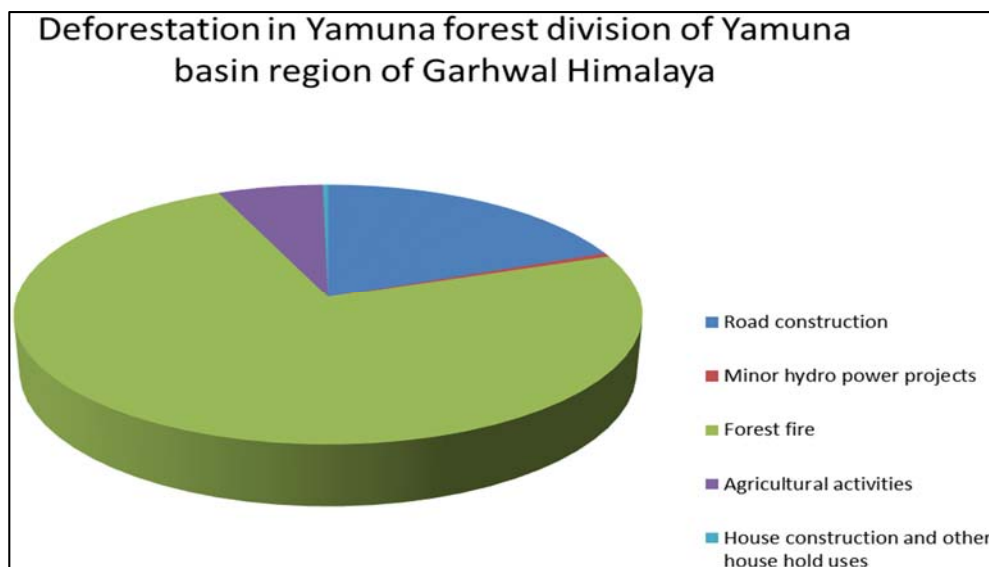
- 1- Environmental education
- 2- Reforestation
- 3- Proper use of forests.
- 4- Controlling the forest fires and use of chemical fertilizers.

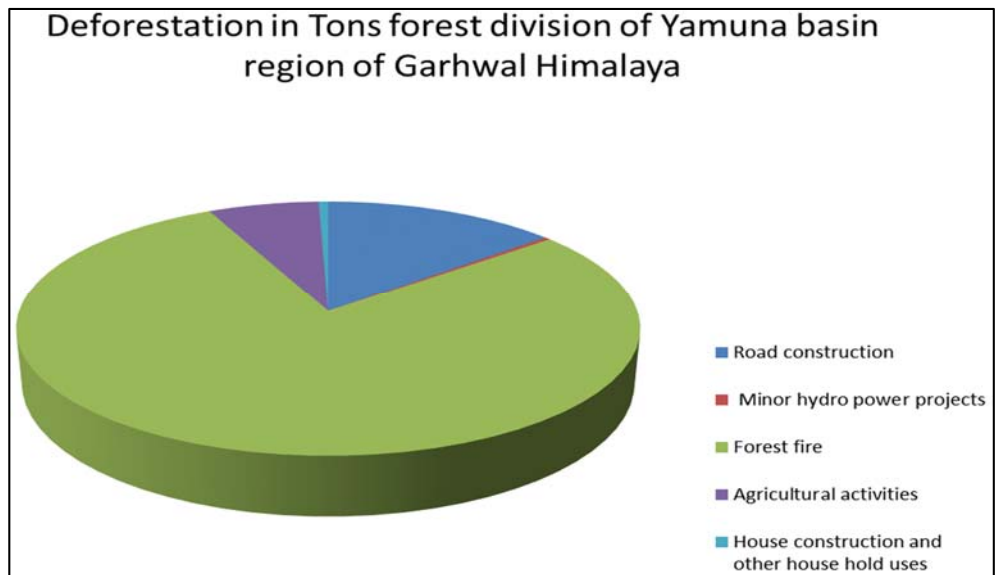
Result and Discussion

In the Yamuna basin region of Garhwal Himalaya deforestation has become a serious problem. Forest fire and Construction work contributes maximum to deforestation. Thousands of hectares of forest got burned due to forest fire every year. The running four-lane project of central government on National highway-123 and the other constructional activities has deforested a huge area of forest in Yamuna basin region of Garhwal Himalaya. It has led to several ecological and environmental imbalances. It has changed the climate of the region. The change in the rainfall pattern proves to be the strong evidence for the climate change. Deforestation is causing vast destruction of valuable flora and fauna of the region. It has badly affected many species of wild animals in the region like oriental turtle Dove, Wedge tailed sunbird, Eagle, Vulture, Asiatic jackal, Porcupine etc. The local peoples are vary inactive about their forests nobody wants to take part in the in the conservation of their environment.

The principal causes of deforestation in Yamuna basin region of Garhwal Himalaya includes:-

Forest division	Causes of deforestation in Yamuna basin region of Garhwal Himalaya with affected area				
	Road construction	Minor hydro power projects	Forest fire	Agricultural activities	House construction and other house hold uses
Yamuna forest division	620 hectares	15 hectares	2400 hectares	200 hectares	10 hectares
Tons forest division	370 hectares	9 hectares	2100 hectares	175 hectares	15 hectares





Conclusion

Forests are the basis of human civilization. They purify air, regulate the weathering conditions and check the rate of pollution. Forests are important natural resources on earth that supports all the basic needs of human beings. They are important for country's economy. So we have to utilize our forest resources properly and should work for reforestation.

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