



## **FOREST FIRES IN INDIA**

The most common hazard in forests is forest fire. Forest fires are as old as the forests themselves. They pose a threat not only to the forest wealth but also to the entire regime to fauna and flora seriously disturbing the bio-diversity and the ecology and environment of a region. During summer, when there is no rain for months, the forests become littered with dry senescent leaves and twigs, which could burst into flames ignited by the slightest spark. The Himalayan forests, particularly, Garhwal Himalayas have been burning regularly during the last few summers, with colossal loss of vegetation cover of that region.

### **Causes of Forest Fire**

Forest fires are caused by Natural causes as well as Man made causes

- Natural causes- Many forest fires start from natural causes such as lightning which set trees on fire. However, rain extinguishes such fires without causing much damage. High atmospheric temperatures and dryness (low humidity) offer favorable circumstance for a fire to start.
- Man made causes- Fire is caused when a source of fire like naked flame, cigarette or bidi, electric spark or any source of ignition comes into contact with inflammable material.

### **Classification of Forest Fire**

Forest fire can broadly be classified into three categories;

- Natural or controlled forest fire.
- Forest fires caused by heat generated in the litter and other biomes in summer through carelessness of people (human neglect) and
- Forest fires purposely caused by local inhabitants.

### **Types of Forest Fire**

There are two types of forest fire i) Surface Fire and ii) Crown Fire

- **Surface Fire**-A forest fire may burn primarily as a surface fire, spreading along the ground as the surface litter (senescent leaves and twigs and dry grasses etc) on the forest floor and is engulfed by the spreading flames.
- **Crown Fire**- The other type of forest fire is a crown fire in which the crown of trees and shrubs burn, often sustained by a surface fire. A crown fire is particularly very dangerous in a coniferous forest because resinous material given off burning logs burn furiously. On hill slopes, if the fire starts downhill, it spreads up fast as heated air adjacent to a slope tends to flow up the slope spreading flames along with it. If the fire starts uphill, there is less likelihood of it spreading downwards.

### **Vulnerability**

The youngest mountain ranges of Himalayas are the most vulnerable stretches of the world susceptible to forest fires. The forests of Western are more frequently vulnerable to forest fires as compared to those in Eastern Himalayas. This is because forests of Eastern Himalayas grow in high rain density. With large scale expansion of chirr (Pine) forests in many areas of the Himalayas the frequency and intensity of forest fires has increased.

### **Preparedness and Mitigation Measures**

Forest fires are usually seasonal. They usually start in the dry season and can be prevented by adequate precautions. Successive Five Year Plans have provided funds for forests fighting. During the British period, fire was prevented in the summer through removal of forest litter all along the forest boundary. This was called "Forest Fire Line" This line used to prevent fire breaking into the forest from one compartment to another. The collected litter was burnt in isolation. Generally, the fire spreads only if there is continuous supply of fuel (Dry vegetation) along its path. The best way to control a forest fire is therefore, to prevent it from spreading, which can be done by creating firebreaks in the shape of small clearings of ditches in the forests.

### **Precautions**

The followings are the important precautions against fire:

- To keep the source of fire or source of ignition separated from combustible and inflammable material.
- To keep the source of fire under watch and control.
- Not allow combustible or inflammable material to pile up unnecessarily and to stock the same as per procedure recommended for safe storage of such combustible or inflammable material.
- To adopt safe practices in areas near forests viz. factories, coalmines, oil stores, chemical plants and even in household kitchens.
- To incorporate fire reducing and fire fighting techniques and equipment

while planning a building or coal mining operation.

- In case of forest fires, the volunteer teams are essential not only for fire fighting but also to keep watch on the start of forest and sound an alert
- To arrange fire fighting drills frequently.

### **Impacts of Forest Fires on Biological Environment**

Forest fires also pose serious health hazards by producing smoke and noxious gases, as the events in Indonesia after the forest fires on the islands of Sumatra and Borneo in 1977 have shown. The burning of vegetation gives off not only carbon dioxide but also a host of other, noxious gases (Green house gases) such as carbon monoxide, methane, hydrocarbons, nitric oxide and nitrous oxide, that lead to global warming and ozone layer depletion. Consequently, thousands of people suffered from serious respiratory problems due to these toxic gases. Burning forests and grasslands also add to already serious threat of global warming. Recent measurement suggest that biomass burning may be a significant global source of methyl bromide, which is an ozone depleting chemical.