

[Article ID : 01/XI/01/1121]

FIRE- MAJOR THREAT TO INDIAN FOREST

Biplov Ch. Sarkar and Narendra Kumar

Department of Forestry
Doon (P.G.) College of Agriculture Science and Technology,
Dehradun, Uttarakhand

Every year the world faces extreme wild fires, which affecting millions of hectares of forest leading to adverse effects on biodiversity, ecosystem functioning and landscape stability. "Forest fire may be defined as an unclosed and freely spreading combustion that consumes the natural fuels. When a fire burns out of control it is known as Wild Fire (NIDM, 2014). The forest ecosystems are prone to the wildfire because of anthropogenic activities, natural fire, dry spell winter and uncontrolled burning etc. Every year India witnesses many incidents of forest fire in a vast geographical area. In India, forest fires are most commonly reported during March to April because of dry forest floor with litter, weeds trigger the forest fire. Fire may be beneficial for one ecosystem and may be dreadful for the other, depending upon the climatic conditions and type of vegetation. In natural forest ecosystem, forest fire plays significant role for natural recycling of nutrients and often helps to regenerate many tree species. However, the rampant forest fire is one of the biggest threats to our biodiversity. Every year many animals and human lost their life in wild fire (Pant, 2019).

Major Cause of Forest Fire

Forest fires are mostly classified as crown fires, surface fires and ground fires on the basis of intensity (Narendran 2001). The changing climatic abnormalities are going to make forest ecosystem more susceptible and increase the risk of burning. Like anthropogenic activities, natural factors, climate change etc. Almost every country has witnesses the unprecedented impact of wild fire in many ways.

Table 1: Causes of Forest Fire

Sl.	Natural	Anthropogenic	
		Deliberate causes	Accidental causes
1.	Lighting	Shifting cultivation	Collection of NTFPs
2.	Friction of rolling stone	To flush growth of <i>Tendu</i> leaves	Burning farm residues
3.	Rubbing of dry bamboo clumps	To have good growth of grass and fodder	Driving away wild animals
4.	Volcanic eruption	To settle score with forest department or personal rivalry	Throwing burning bidi/cigarettes
5.		To clear path by villagers	Camp fire by picnickers
6.		To encroach upon the forest land	Sparks from vehicle-exhaust/transformers
7.		Tribal traditions/customs	Uncontrolled prescribed burning
8.			Resin tapping
9.			Making charcoal in forests
10.			Extracting wine in forest
11.			Heating coal tar for road construction in forest

Damages caused by Forest Fire

Forest fire spreading over a large forest area in the country causes immense loss to the environment and the property. Ecological, economic and social impacts of the forest fire in India in brief may be enlisted as: loss of timber, loss of bio-diversity, loss of the wild life habitat, global warming, soil erosion and depletion of soil quality, loss of fuel wood and fodder, damage to water and the other natural resources, loss of natural regeneration, loss of Non Timber Forest Products, Ozone layer depletion. Apart from that smoke, soil erosion and floods, loss of livelihood also drastically changes micro and macro climatic condition. According to India State of Forest Report 2019, over 30,000 incidents of forest fires were reported.

Table 2. Recent Forest Fire in India

Area	Year	State	Damage
Similipal National Park	2021	Orrisa	Not Known
Bandipur forest fires	2019	Karnataka	The estimated burnt area about 10,920 acres
Uttarakhand forest fires	2016	Uttarakhand	The estimated burnt area about 11,210 acre

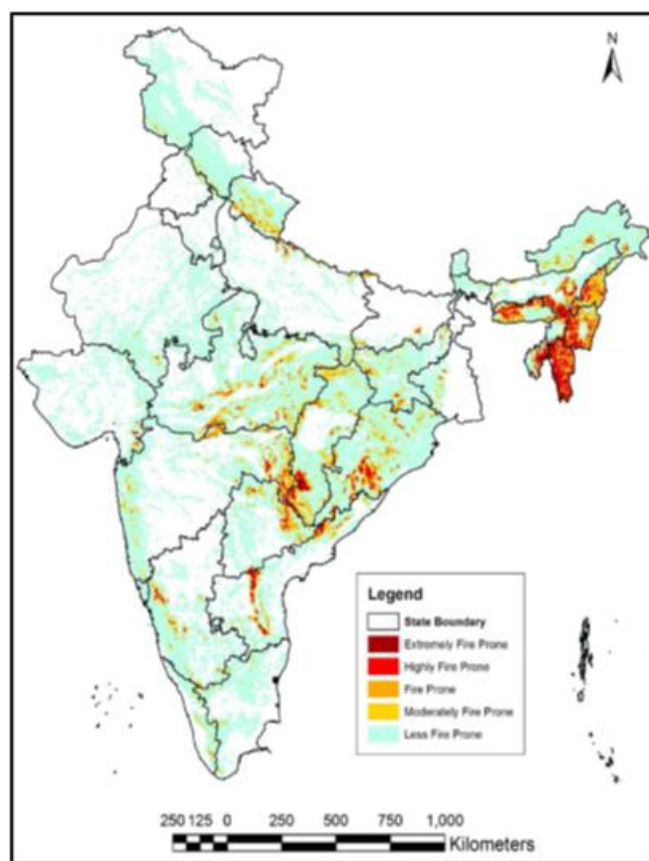


Fig. 1: India map showing fire prone forest areas (Source; FSI, 2019)

Control measures

Indirect preventive measures

- Organize seminars and workshops for local people.
- Prevention of human-caused fires through education and environmental modification.

- Forbidding collections of certain items of minor forest produce during summer.
- Prohibiting keeping and carrying of fire in forest areas in fire season.
- Legislative measures

Direct preventive measures

- Fire alert Forecasting systems
- Organisation, training and detailing of staff for fire control activity
- Hazard reduction
- Raising fire-breaking green belts
- Clearance of Fire line
- Implimentation of new fire fighting tools and techniques with enough man power

Conclusion

In present era of climate change, the forest fire became a serious threat to forest ecosystem, endagerned flora and fauna, human settlements, hydrological cycle etc. About 95% forest fires is caused due to the antropogenic activities. Therefore, all individual, need to understand their responsiblites to save forest ecosystem. Hence, persistant scientific research is need to carried out in forest fire prone area to create modern technique to check forest fire.

Reference

- Satendra and Kaushik, A.D. (2014). Forest Fire Diaster Management. National Institute of Disaster Management, Ministry of Home Affairs, New Delhi.
- Narendram, K. (2001). *Forest fires: Origin and Ecological Paradoxes*. General article. Resonance, November 2001.
- Pant, M. (2019). Forest Fire- A case study on the four national park of Uttarakhand. International Journal of Engineering Research & Technology, 8(5): 347-354.