Forest Fires in India

Why in news?

Forest fires have been raging in the Coonoor forest range in the Nilgiris in Tamil Nadu for almost a week.

Status of forest fire in India
• **Fire season**-The forest fire season in India runs from November to June, with the peak occurring from February to May1. • **Fire prone areas**-As per State of the Forest Report 2019, *over 36% of India's forest cover is prone to fires*, with 4% being extremely prone and 6% very highly prone. • **Vulnerable forests**- *Dry deciduous forests* are more prone to severe fires, while evergreen and montane temperate forests are less susceptible. • **Forest fire prone States**- Regions like Northeast India, Odisha, Maharashtra, Jharkhand, Chhattisgarh, and Uttarakhand are particularly vulnerable during *November to June* period. • **South India**- *Telangana and Andhra Pradesh* are prone to forest fire, Tamil Nadu has experienced wildfires in recent years, indicating a shift in fire vulnerability patterns. • **Goa bushfire, 2023**- Large bushfires in Goa prompted an investigation to determine if they were caused by human activities. • **Forest fire, 2021-** A series of forest fires broke out in Uttarakhand, Himachal Pradesh, Nagaland-Manipur border, Odisha, Madhya Pradesh, and Gujarat, including in wildlife sanctuaries. • **Global range**- In 2015, approximately 3% of the world's forests, or 98 million hectares, were affected by fires, predominantly in tropical regions.

What is forest fire?

- A wildfire is an uncontrolled fire in an area of combustible vegetation that occurs in the countryside or rural area.
- Wildfires can burn in vegetation located both in and above the soil.
- **Ground fires-** It ignite in soil, thick with organic matter that can feed the flames, like plant roots.
- **Surface fires**- It typically burn in dead or dry vegetation that is lying or growing just above the ground. Parched grass or fallen leaves often fuel surface fires.
- **Crown fires** -It burn in the leaves and canopies of trees and shrub.

What is the reason of forest fire in India in 2024?

- As per Forest Survey of India, Mizoram leads with the highest number of reported forest fires, followed by Manipur, Assam, Meghalaya, and Maharashtra.

- ISRO’s satellite data indicates a surge in forest fires since early March, affecting areas along the Konkan belt, south-coastal Gujarat, southern Rajasthan, Madhya Pradesh, coastal and interior Odisha, and Jharkhand.

- **Conducive atmosphere**- Factors such as hot and dry temperatures, high tree density, and low humidity create an environment conducive to fire ignition and propagation.
- **High aridity**- Southern India has experienced high aridity and above-normal day temperatures in 2024, leading to dry conditions and increased fire risk.
- **High temperature**-February was recorded as the hottest month in South India since 1901, with January being the fifth warmest. These exceptionally high temperatures have accelerated the drying of biomass in forests, making them more susceptible to ignition.
- **Summer season**- Clear sky conditions and calm winds during the early phase of the summer season further exacerbate the risk of forest fires.
    - **Clear skies-** It increase solar radiation, intensifying the drying process
    - **Calm winds**- It allow fires to spread more rapidly.
- **Excess Heat Factor**- The Indian Meteorological Department (IMD) has warned of the prevalence of the Excess Heat Factor (EHF) over western Andhra Pradesh and neighboring Karnataka.

  EHF is an index used to quantify heatwave intensity relative to the local climate, it provides an estimate of excess temperature based on the last 30 days’ excess and the last three days’ extreme temperatures

- **Heat waves**- Elevated maximum temperatures, reaching up to 40 degrees Celsius in mid-March, indicate an increased risk of heatwaves, further intensifying the fire hazard.
- **Mild aridity**- The absence of rain and prevailing high temperatures have led the IMD to classify almost all districts of southern India under 'mild' aridity, which exacerbate the susceptibility of forests to fire incidents, posing significant challenges for fire management and suppression efforts.

Steps taken by India to combat forest fire

• **Early warning systems**- Utilizing MODIS and SNPP-VIIRS sensors to detect forest fires and provide real-time monitoring.
• **Fire danger rating**-Implementing the ***Forest Fire Danger Rating System*** based on the Canadian Forest Fire Danger Rating System (CFFDRS) for early warnings.
• **National Action Plan-** It empowers forest fringe communities and incentivizes collaboration with forest departments to minimize forest fires.
• **National Forest Fire Prevention and Management Scheme**- It is the Centrally Sponsored Scheme with the primary objective to enhance the prevention, control, and management of forest fires in the country.
• **Bambi bucket**- It is also called a helicopter bucket or a helibucket helpful in fighting wilfires, it is a specialised container that is suspended by cable under a chopper, and which can be filled by lowering into a river or pond before being flown above a fire and discharged aerially by opening a valve at the bottom of the bucket.
• **Forest Survey of India**- It monitors forest fires using satellite data and has initiated the Large Forest Fire Monitoring Programme using SNPP-VIIRS data.
• **Joint forest management**- It is an important tool for the participation of people in forest management, they play an important role in works related to the protection developmental work in and fringe and improvement of forests including the management of forest fires.

References

1. Indian Express- Forest fire in Nilgiris
2. FSI- Forest fire activities

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