



## Forest Fires: A Very Big Concern

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### Why in News

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Since the advent of the year 2021, there has been a series of forest fires in many states of India, including in Wildlife Sanctuaries.

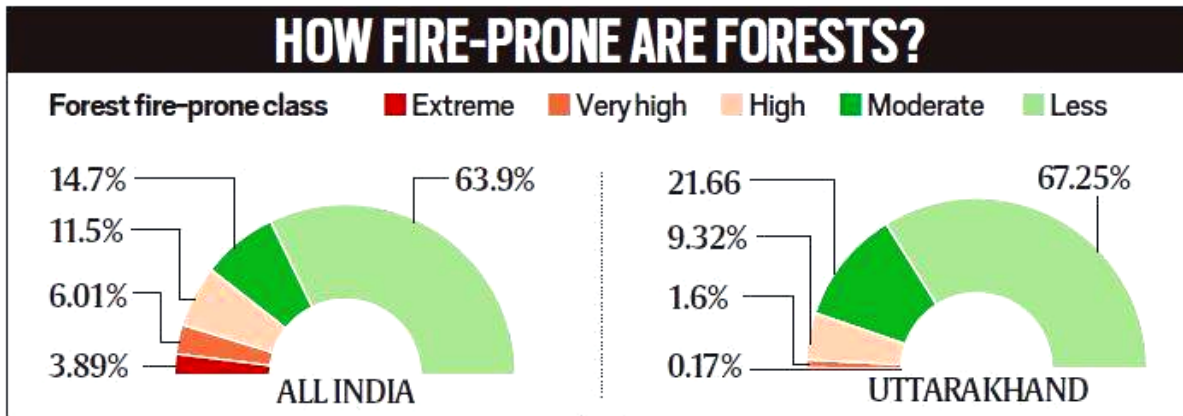
### Key Points

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- **Forest Fires:**
  - Also called **bush or vegetation fire or wildfire**, it can be described as **any uncontrolled and non-prescribed combustion or burning of plants in a natural setting** such as a forest, grassland, brush land or tundra, which consumes the natural fuels and spreads based on environmental conditions (e.g., wind, topography).
  - Forest Fires **can be incited by human actions**, such as land clearing, extreme drought or in rare cases by lightning.
  - There are **three conditions** that need to be present in order for a wildfire to burn: fuel, oxygen, and a heat source.
- **Instances of Forest Fires in 2021:**
  - January saw prolonged fires in Uttarakhand, Himachal Pradesh (Kullu Valley) and Nagaland-Manipur border (**Dzukou Valley**).
  - The **Simlipal National Park in Odisha** saw a major fire between February-end and early March.
  - Recent fires also include those in **Bandhavgarh Forest Reserve in Madhya Pradesh**, and in **sanctuaries for the Asiatic lion and the great Indian bustard in Gujarat.**

- **Vulnerability of India’s Forests to Fires:**

- As of 2019, **about 21.67% (7,12,249 sq km) of the country’s geographical area is identified as forest**, according to the **India State of Forest Report 2019** (ISFR) released by the Forest Survey of India (FSI), Dehradun.
  - Tree cover makes up another 2.89% (95, 027 sq km).
- Based on previous fire incidents and records, **forests of the Northeast and central India regions are the most vulnerable** areas to forest fires.
  - Forests in Assam, Mizoram and Tripura have been identified as **‘extremely prone’** to forest fire.
- **States with large forest areas under the ‘very highly prone’ category** include Andhra Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Maharashtra, Bihar and Uttar Pradesh.
- As per the 2020-2021 annual report of the MoEFCC, Western Maharashtra, Southern Chhattisgarh and areas of Telangana and Andhra Pradesh, along with central Odisha, are turning into **‘extremely prone’ forest fire hotspots**.
- Areas under the **‘highly prone’ and ‘moderately prone’ categories make up about 26.2% of the total forest cover** — a whopping 1,72,374 sq km.



- **Cause of Forest Fires:**

- Forest fires can be caused by a number of natural causes, but **many major fires in India are triggered mainly by human activities.**
  - Emerging studies **link climate change to rising instances of fires globally**, especially the massive **fires of the Amazon forests in Brazil and in Australia** in the last two years.
  - Fires of longer duration, increasing intensity, higher frequency and highly inflammable nature are all being linked to climate change.
- In India, forest fires are most commonly reported during **March and April**, when the ground has large quantities of **dry wood, logs, dead leaves, stumps, dry grass and weeds** that can make forests easily go up in flames if there is a trigger.
- In **Uttarakhand**, the **lack of soil moisture** too is being seen as a key factor. In two consecutive monsoon seasons (2019 and 2020), rainfall has been deficient by 18% and 20% of the seasonal average, respectively.
- Most fires are **man-made**, sometimes even **deliberately caused**. For example, in Odisha, which saw a major fire last month in Simlipal forest, villagers are known to set dry leaves to fire in order to collect mahua flowers, which go into preparation of a local drink.

- **Impact of Forest Fire:**

- Forest fires can have **multiple adverse effects on the forest cover, soil, tree growth, vegetation, and the overall flora and fauna.**
- Fires render several hectares of forest useless and leave behind ash, making it unfit for any vegetation growth.
- Heat generated during the fire **destroys animal habitats.**
  - Soil quality decreases with the alteration in their compositions.
  - Soil moisture and fertility, too, is affected.
  - Forests can shrink in size.
  - The trees that survive fire often remain stunted and growth is severely affected.

- **Importance of Forests:**

- Forests play an important role in **mitigation and adaptation to climate change.**
- They act as **a sink, reservoir and source of carbon.**
  - A healthy forest stores and sequesters more carbon than any other terrestrial ecosystem.
- In India, with 1.70 lakh villages in close proximity to forests (Census 2011), the **livelihood of several crores of people is dependent** on fuelwood, bamboo, fodder, and small timber.

- **Efforts to Mitigate Forest Fires:**

- Since 2004, the **FSI (Forest Survey of India)** developed the **Forest Fire Alert System** to monitor forest fires in real time.

In its advanced version launched in January 2019, the system now uses satellite information gathered from **NASA** and **ISRO**.

- **National Action Plan on Forest Fires (NAPFF) 2018** and **Forest Fire Prevention and Management Scheme**.

**Source: IE**