Forest Fires in India

What is the issue?

- Uttarakhand has witnessed over 1,000 incidents of forest fire over a six months period.
- With increasing frequency of forest fires in India, here is a look at the various aspects of it.

What is the recent flare?

- Since the start of 2021, there has been a series of forest fires in HP, Nagaland-Manipur border, Odisha, MP, and Gujarat.
- These include the forest fires in wildlife sanctuaries.
- January 2021 saw prolonged fires in Uttarakhand, Himachal Pradesh (Kullu Valley) and Nagaland-Manipur border (Dzukou Valley).
- The recent one in Nainital began in March-end.
- 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.

Why is this unusual?

- April-May is the season when forest fires take place in various parts of the country.
- But forest fires have been more frequent than usual in Uttarakhand and have also taken place during winter.
- Dry soil caused by a weak monsoon is being seen as one of the causes.

How fire prone are India's forests?

- As of 2019, about 21.67% (7,12,249 sq km) of the country's geographical area is identified as forest.
- This is 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 recorded events, the 2020-2021 annual report of the MoEFCC makes the following categorisations:

- Forests of the Northeast and central India regions - most vulnerable areas to forest fires
- Forests in Assam, Mizoram and Tripura - 'extremely prone' to forest fire
- States with large forest areas including Andhra Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Maharashtra, Bihar and UP - 'very highly prone' category
- Western Maharashtra, Southern Chhattisgarh and areas of Telangana and Andhra Pradesh, along with central Odisha are also 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.

- **Uttarakhand and Himachal Pradesh** are the two states that witness the most frequent forest fires annually.
- In Uttarakhand, over 45% of the geographical area (24,303 sq km) is under forest cover.
- The FSI has identified forests along the south, west and southwest regions of Uttarakhand as being prone to varying intensities of forest fires.
- These comprise Dehradun, Hardwar, Garhwal, Almora, Nainital, Udham Singh Nagar, and Champawat districts.

What are the key causes of forest fires?

- Forest fires can be caused by a number of natural causes.
- But, reportedly, many major fires in India are triggered mainly by human activities.
- Emerging studies link climate change to rising instances of fires globally.
- This is especially true in the case of the massive fires of the Amazon forests in Brazil and in Australia in the recent 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.
- This is when the ground has large quantities of dry wood, logs, dead leaves, stumps, dry grass and weeds.
- These can make forests easily go up in flames if there is a trigger.
- Under natural circumstances, extreme heat and dryness, friction created by rubbing of branches with each other also likely initiate fire.
- 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.
- But, forest officials say most fires are man-made, sometimes even deliberately caused.
- Even a small spark from a cigarette butt, or a carelessly discarded lit

matchstick can set the fire going.
- E.g. in the recent major fire in Simlipal forest in Odisha, villagers are known to set dry leaves to fire in order to collect mahua flowers, which go into preparation of a local drink

What are the challenges to control measures?

- The locality of the forest and access to it pose hurdles in initiating fire-fighting efforts.
- During peak season, shortage of staff is another challenge in dispatching fire-fighting teams.
- Timely mobilisation of forest staff, fuel and equipment, depending on the type of fire, through the thick forests remains challenging.
- This is because it is impossible to transport heavy vehicles loaded with water into the thick forests.
- So, a majority of fire dousing is initiated manually, using blowers and similar devices.
- But there have been incidents when forest fires were brought under control using helicopter services too.
- Wind speed and direction also play a critical role in bringing forest fire under control.
- The fire often spreads in the direction of the winds and towards higher elevations.

What are the associated concerns?

- 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, notably, 1.70 lakh villages are in close proximity to forests (Census 2011).
- So, the livelihood of several crores of people is dependent on fuelwood, bamboo, fodder, and small timber.
- 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 also decreases with the alteration in their compositions. Soil moisture and fertility, too, is affected.
- Thus, forests can shrink in size.
- The trees that survive fire often remain stunted and growth is severely

affected.

What are the measures taken in this regard?

- Since 2004, the FSI 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.
- Real-time fire information from identified fire hotspots is gathered using MODIS (Moderate Resolution Imaging Spectroradiometer) sensors (1km by 1km grid) and electronically transmitted to FSI.
- This information is then relayed via email at state, district, circle, division, range, beat levels.
- Users of this system in the locality are issued SMS alerts. Notably, the FSI system in January 2019 had over 66,000 users.

Source: The Indian Express

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