

Evaporative Demand

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Evaporative Demand Latest News

The rising evaporative demand in India is exposing significant gaps in the country's climate data and research.

About Evaporative Demand

- Evaporative demand is a **measure of how thirsty the atmosphere is**.
- It determines the **near-maximum of how much water will evaporate from a given piece of land if sufficient water is available**.
- It does **not necessarily relate to actual evaporation rate**, as if there is little water supply there can only be a small evaporation rate, no matter how large the demand.
- It is **driven by atmospheric factors** including **temperature, wind speed, humidity and cloud cover**.
- Periods of **high evaporative demand** are connected to **droughts and increased fire danger**.
- Tracking extended periods with above normal evaporative demand can be a useful way to detect drought onset, drought intensification, and elevated fire danger.

- **Above normal temperatures, clear skies, and wind speed, and below normal humidity all drive evaporative demand up** and lead to quicker drying at the surface.
- **Soil moisture is reduced** which leads to less water available for plants and **vegetation becomes stressed and more flammable.**
- When extended periods of below normal precipitation overlap with extended periods of above normal evaporative demand fuels become critically dry favoring rapidly spreading wildfires.

What is a Thirstwave?

- It denotes **three or more contiguous days of intense evaporative demand.**
- While heat waves are caused by particular temperature and wind patterns, a thirstwave is the **product of temperature, humidity, solar radiation, and wind speed.**
- When temperatures rise, the consequences include more heat as well as the mechanics of water exchange between land and atmosphere, which in turn alters humidity, wind, and solar radiation.
- **In a warming world,** the researchers found that **thirstwaves have grown more intense,** are more frequent, and are lasting longer.

Source: **TH**

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