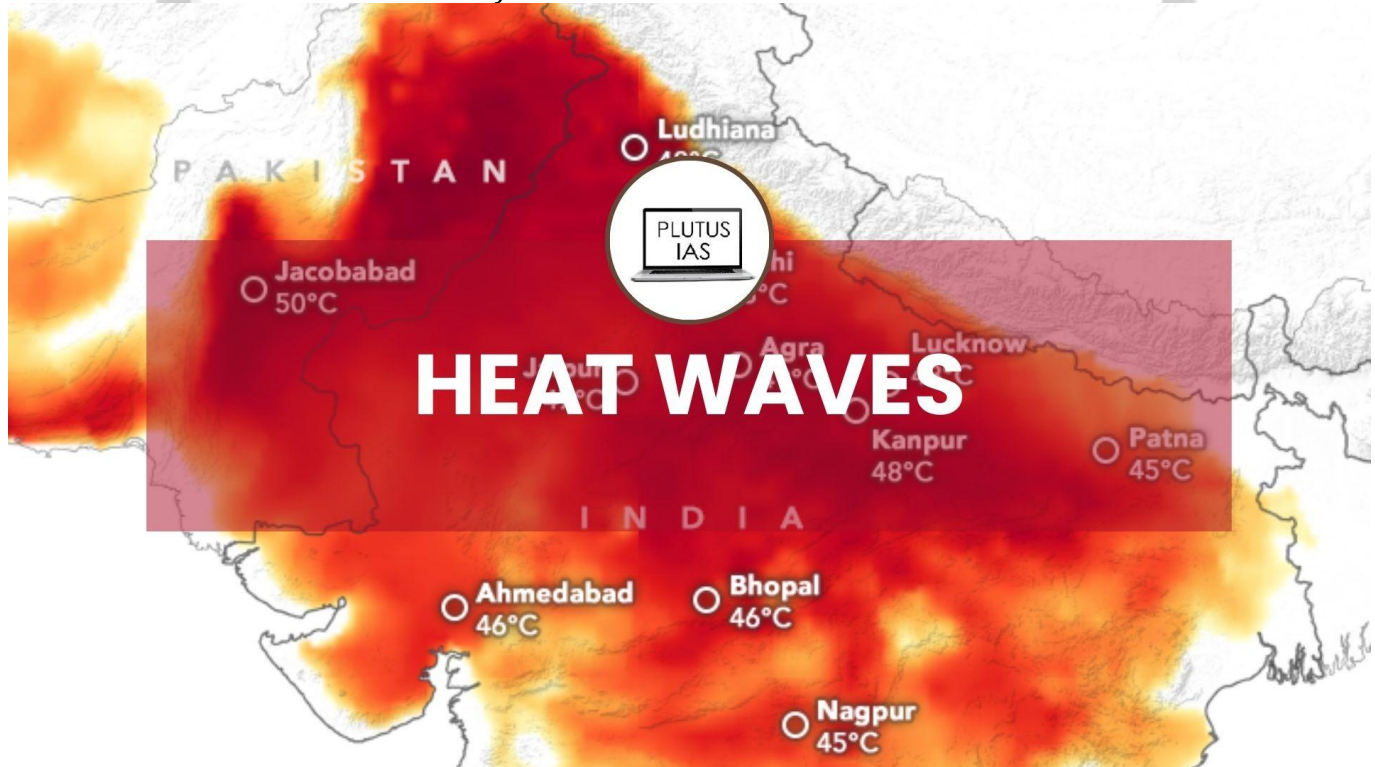




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HEAT WAVES

This article covers "Daily Current Affairs" and the topic details "Heat Waves". The topic "Heat Waves" has relevance in the "Environment" section for the UPSC CSE exam.



Heat Waves

For Prelims:

What are Heat Waves?

What are the criteria for categorising Heat Waves?

For Mains:

GS 3: Environment

What is the cause of Heat Waves?

What is the impact of Heat Waves?

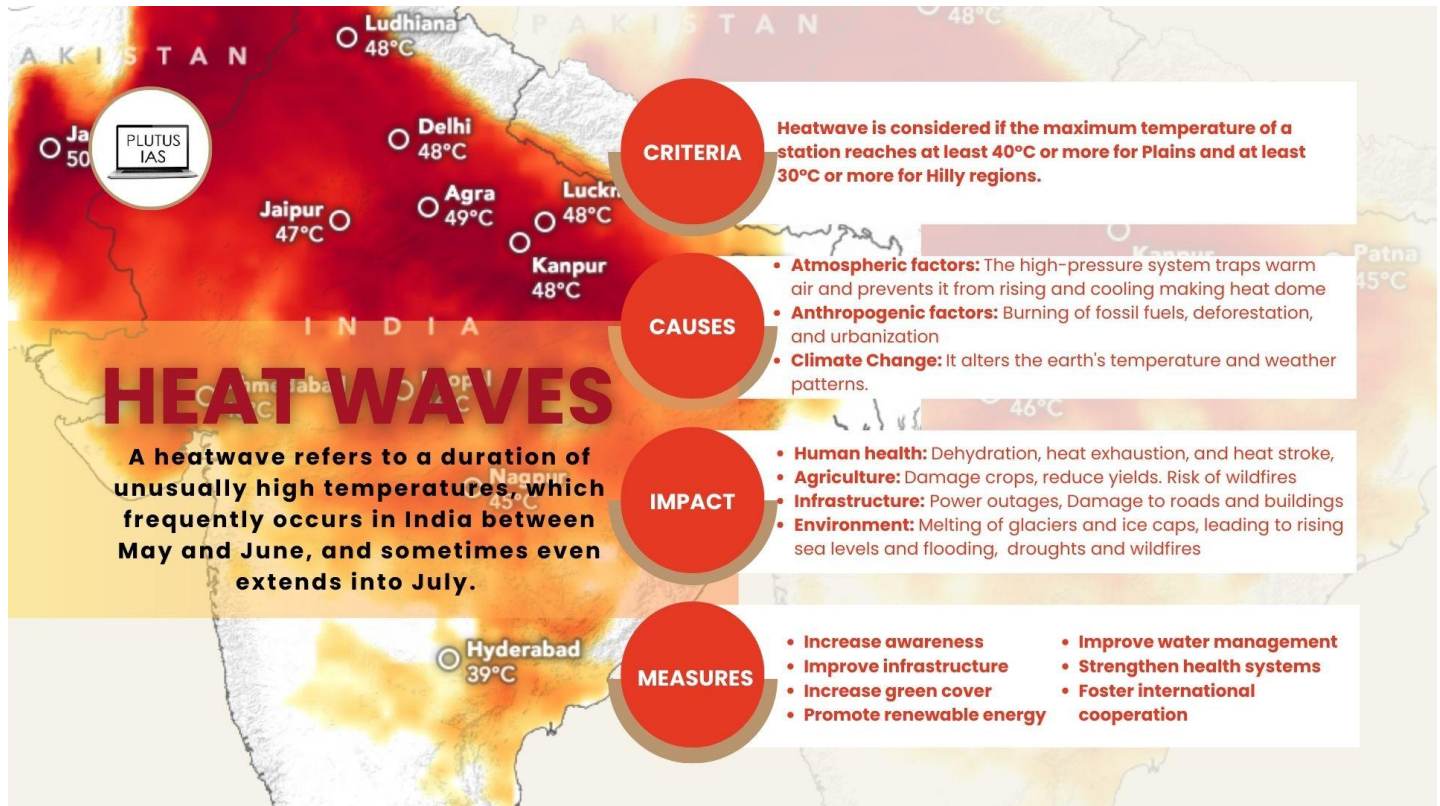
What can be done to reduce the effect of Heat Waves?

Way Forward

Why in the news?

In a political event in Navi Mumbai Maharashtra, many people succumbed to Heat Waves. 13 people died and 18 others were hospitalised after the harsh heat waves.

What is Heat Wave?



A heatwave refers to a duration of unusually high temperatures, which frequently occurs in India between May and June, and sometimes even extends into July.

What is the criterion for declaring heat waves in India?

Heatwave is considered if the maximum temperature of a station reaches at least **40°C or more for Plains** and **at least 30°C or more for Hilly regions**.

- Based on Departure from Normal Heat Wave:** Departure from normal is 4.50°C to 6.40°C Severe Heat Wave: Departure from normal is >6.40degree C
- Based on Actual Maximum Temperature Heat Wave:** When actual maximum temperature $\geq 45^{\circ}\text{C}$ Severe Heat Wave: When actual maximum temperature ≥ 47
- If the above criteria are met at least in 2 stations in a Meteorological subdivision for at least two consecutive days and it is declared on the second day.

What is the cause of Heat Waves?

Heat waves are primarily caused by a combination of atmospheric conditions and human activities.

- **Atmospheric factors:** The high-pressure system in the atmosphere traps warm air and prevents it from rising and cooling, leading to a build-up of heat.
- **Anthropogenic factors:** Human activities such as the burning of fossil fuels, deforestation, and urbanisation have contributed to the increase in temperature, resulting in a rise in the number and intensity of heat waves.
- **Climate Change:** Climate change is also considered a significant factor in the occurrence of heat waves as it alters the earth's temperature and weather patterns.

What is the impact of Heat Waves?

Heat waves can have a significant impact on various aspects of life, including human health, agriculture, infrastructure, and the environment. Here are some of the impacts of heat waves:

- **Human health:** Heat waves can cause dehydration, heat exhaustion, and heat stroke, which can be fatal. They can also exacerbate existing health conditions such as cardiovascular and respiratory diseases.
- **Agriculture:** Heat waves can damage crops and reduce yields. They can also increase the risk of wildfires, which can further impact agriculture and the environment.
- **Infrastructure:** Heat waves can cause power outages due to increased demand for air conditioning. They can also damage roads and buildings, especially if they are not designed to withstand extreme heat.
- **Environment:** Heat waves can accelerate the melting of glaciers and ice caps, leading to rising sea levels and flooding. They can also increase the frequency and intensity of droughts and wildfires, which can have long-term impacts on ecosystems.

What can be done to reduce the effect of Heat Waves?

India can adopt several long-term strategies to mitigate the impacts of heat waves. Here are some of them:

- **Increase awareness:** The government can create public awareness campaigns to educate people about the dangers of heat waves and how to protect themselves.
- **Improve infrastructure:** Infrastructure should be designed to withstand extreme heat, including the construction of heat-resistant buildings and the installation of cooling systems in public places.
- **Increase green cover:** Planting trees and increasing green cover in urban areas can help reduce the urban heat island effect and provide shade.
- **Promote renewable energy:** Promoting renewable energy sources such as solar and wind power can help reduce greenhouse gas emissions and mitigate climate change.
- **Improve water management:** Improving water management practices can help reduce water stress during heat waves and ensure an adequate water supply for agriculture and other needs.
- **Strengthen health systems:** Health systems should be strengthened to prepare for and respond to the increased demand for health services during heat waves.
- **Foster international cooperation:** International cooperation can help share knowledge and resources to mitigate the impacts of heat waves and address climate change.

Way Forward

Overall, a way forward for heat waves involves a combination of these measures and requires collaboration among governments, civil society, the private sector, and individuals to promote a more sustainable future.

Sources:

<https://ndma.gov.in/Natural-Hazards/Heat-Wave>

<https://www.who.int/india/heat-waves>

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