

Recent study about Himalayan Glaciers

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Why in News?

*A recent study has identified **219 unstable hanging glaciers** in the Alaknanda basin of Uttarakhand, warning of avalanche and downstream disaster risks.*

The Alaknanda Basin

- **Location** - Primary headstream of the Ganga in Uttarakhand.
- **Elevation Range** - 400 m to 7,800 m.
- **Key Settlements at Risk** - Mana (last Indian village), Badrinath, Hanuman Chatti.
- **Critical Infrastructure** - National Highway 7 (NH7), hydropower projects, pilgrimage routes.
- **Concentration** - 30% of hanging mass volume in Upper Alaknanda basin.
- **Seismicity** - The Alaknanda basin is characterized by high seismic activity, which acts as a secondary trigger for glacial instability.
- **Exposure Growth** - Built-up area expanded from 8,000 sq. m (2000) to projected 150,000 sq. m (2030); population from <400 to >8,500.

The Four-Step Life Cycle



The 2021 Chamoli disaster showed glacier collapses evolving into debris flows.

- **Key Analysis**

- **Monitoring Gap** - Unlike the Alps (radar, time-lapse cameras,

- early-warning systems), the Himalayas lack systematic monitoring.
- **Climate Trends** - Himalayan warming in the past two decades has exceeded the global average, accelerating glacier retreat.
 - **Suggested Measures** - Targeted monitoring of high-risk glaciers, prioritizing resources for the most perilous zones.

Reference

[The Hindu | Hanging Glaciers](#)

