



Risk Posed by 13 Glacial Lakes During Monsoon

Why in News?

The [Uttarakhand State Disaster Management Department \(USDMA\)](#) is going to do a vulnerability study of the **13 glacial lakes**, **five of them in “high risk zone”**.

- The study aims to provide **data to help avoid calamities** such as [lake outbursts](#).

Key Points

- According to the officials, the [Himalayan glaciers](#) are in danger due to [climate change](#), and that this requires continued checks to ensure nothing untoward happens.
 - **13 high-risk lakes** are located in **Darma, Lasaryanghati, and Kutiya ngti valley in Pithoragarh district, and Vasudhara Tal lake in Chamoli district**.
 - They range from 0.02 to 0.50 sq. km in size and are situated at elevations above 4,000 meters above sea level.
- In March 2024, the State government had formed two expert teams to assess the risks associated with these glacial lakes.
- The teams were composed of experts from the **Indian Institute of Remote Sensing**, the [Geological Survey of India](#), the **National Institute of Hydrology, Roorkee**, the **Centre for Development of Advanced Computing**, and the [Wadia Institute of Himalayan Geology](#).

Glacial Lake Outburst Flood (GLOF)

- **About:**
 - A [glacial lake outburst flood \(GLOF\)](#) is a type of catastrophic flood that occurs when the **dam containing a glacial lake fails**, releasing a large volume of water.
 - This type of flood is **typically caused by rapid melting of glaciers or the buildup of water** in the lake due to heavy precipitation or the inflow of meltwater.
 - In February 2021, [Chamoli district in Uttarakhand witnessed flash floods](#) which are **suspected to have been caused by GLOFs**.
- **Causes:**
 - These floods can be triggered by a number of factors, including **changes in the volume of the glacier**, changes in the **water level of the lake**, and [earthquakes](#).
 - According to [NDMA \(National Disaster Management Authority\)](#), **glacial retreat due to climate change** occurring in most parts of the [Hindu Kush Himalayas](#) has given rise to the formation of numerous new glacial lakes, which are the major cause of GLOFs.