Chichón Volcano

Prelims: *Current events of national and international importance | Geography*

Why in News?

Recent unusual activity at Chichón volcano, including crater lake changes and underground signals, points to an active hydrothermal system.

- **Name –** Derived from the local Chiapas term "Chichón," meaning little bump, reflecting the volcano's shape.
- **Location – *Southern Mexico.***
- **Type –** Stratovolcano. It is a tall, cone-shaped mountain made of layers of ash and lava. They are famous for **steep sides** and **powerful eruptions**, like Mount Fuji or Mount St. Helens.
- **Geological Setting –** Part of the ***Trans-Mexican Volcanic Belt.***
- *Lies above a subduction zone, where the Cocos Plate subducts beneath the North American Plate.*
- A stratovolcano with a crater lake formed after the 1982 eruption.
- **History –** One of Mexico's deadliest volcanoes. Its 1982 eruption killed over 2,000 people and buried towns under pyroclastic flows and ash.
- It caused a *global temperature dip from sulfur dioxide emissions* and reshaped the summit, forming the current crater and lake.
- It has remained mostly dormant but geochemically active since then.
- **Activity – Alert Level –** Yellow alert, phase 2 (abnormal but non-eruptive activity)
- **Crater Lake Observations –** High temperature (up to 118°C), with chemical changes (sulfates, chloride, H_2S and CO_2).
- **Seismic & Underground Activity –** Shallow, low-magnitude quakes indicate an active hydrothermal system beneath the crater, with the potential for sudden phreatic (steam-driven) explosions.
- **Hazards –** Possible phreatic (steam-driven) explosions.
- Toxic gas emissions (hydrogen sulfide H_2S and carbon dioxide CO_2).
- Localized hydrothermal hazards around the crater lake.
- **Monitoring –** The National Autonomous University of Mexico (UNAM) is deploying drones and remote sensing platforms for heat and gas monitoring.
- Limited real-time seismic, gas, and thermal surveillance.
- **Permanent danger zone –** The crater and immediate surroundings remain restricted due to residual hazards from the 1982 eruption and ongoing hydrothermal activity.



Reference

Indian Defence Review | Chichón Volcano

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