

Pine Island Glacier

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In news

According to a study by Washington University and British Antarctic Survey, the ice shelves of Pine Island Glacier are breaking apart rapidly and may collapse faster than previously projected

What does the study say?

- In this study, researchers analysed satellite images from January 2015 to March 2020
- The researchers found that recent changes in the ice shelf were not caused by processes directly related to ocean melting.
- The study revealed that from 2017 to 2020, a large iceberg on the edge of the ice shelf collapsed and glaciers accelerated
- The ice shelf lost about one-fifth of its area in this period, as captured by the Copernicus Sentinel-1 satellites, operated by the European Space Agency on behalf of the European Union.
- The glacier's surface also sped up by 12 per cent in this time.
- The researchers used an ice flow model to confirm that the loss of the ice shelf caused the observed speedup
- High-resolution videos of glaciers stitched together from satellite data showed the sides of the ice shelf were gridded with respect to the coastline.
- But a large crack in the centre of the ice shelf caused a sudden snap.

Pine Island Glacier

- It is one of the largest ice streams in Antarctica.
- This glacier contains approximately 180 trillion tonnes

of ice, melting of which could result in 0.5 meters or 1.6 feet of global sea level rise.



- It flows, together with Thwaites Ice Stream, into the Amundsen Sea embayment in West Antarctica, and the two ice streams together drain ~5% of the Antarctic Ice Sheet
- It is Antarctica's largest contributor to sea-level rise, causing about one-sixth of a millimeter increase to the sea-level each year or about two-thirds of an inch per century.
- Pine Island Glacier has a large ice shelf, which supports the glacier.
- Recent speedups due to edge weakening may shorten the timeline for the Pine Island Glacier to finally collapse into the ocean.