# NYU Study on Antarctic Glacier

## Why in News?

The New York University (NYU) study has pinned the cause of the melting of the Thwaites Glacier of Antarctica.

## Why is the glacier important?

- Thwaites or Doomsday Glacier is 120 km wide glacier at its broadest, fast-moving and melting fast over the years.
- Because of its size (1.9 lakh sq.km.), it contains enough water to raise the world sea level by more than half a metre.
- The amount of ice flowing out of this glacier has nearly doubled over the past three decades.
- Its melting contributes 4% to global sea level rise each year, which has been a cause of alarm for scientists.
- It is estimated that it would collapse into the sea in 200-900 years.
- Thwaites is important for Antarctica as it slows the ice behind it from freely flowing into the ocean.
- A 2019 study had discovered a fast-growing cavity in the glacier.

## What has the new study found?

- In 2020, researchers from NYU conducted a study that detected warm water at a vital point below the glacier.
- Warm waters in this part of the world, as remote as they may seem, should serve as a warning about the potential dire changes to the planet brought about by climate change.
- The study reported water at just two degrees above freezing point at Thwaites's "grounding zone" or "grounding line".
- This NYU study was funded by the International Thwaites Glacier Collaboration which has been studying the glacier since 2018.

## Why is that significant?

- **Grounding line** is the place below a glacier at which the ice transitions between resting fully on bedrock and floating on ocean as an ice shelf.
- The location of the line is a pointer to the rate of retreat of a glacier.
- When glaciers melt and lose weight, they float off the land where they used

to be situated.
- When this happens, the grounding line retreats.
- That exposes more of a glacier's underside to seawater, increasing the likelihood it will melt faster.
- This results in the glacier speeding up, stretching out, and thinning, causing the grounding line to retreat ever further.

## How was the warming water detected?

- Scientists dug a 600 m access hole and deployed an ocean-sensing device called Icefin to measure the waters moving below the glacier's surface.
- Such warm water along a section of Thwaites grounding zone where the glacier is melting suggests that it may be undergoing an unstoppable retreat that has huge implications for global sea-level rise.

**Source: The Indian Express**

