**Thwaites Glacier’s Achilles heel identified by the scientists.**

Thwaites Glacier, a part of the Antarctic glaciers, is expeditiously melting. This rapid transition is leading to a brisk rise in the sea levels globally with tonnes of ice getting discarded in the oceans.

Recently, a team of scientists from the US and UK surveyed the underwater channels near Thwaites Glacier. The surveyed channel might be the cause of the rapid melting by letting the warm water penetrate and target the inner area of the Glacier.

Additionally, the accessed details and information will be the crucial source in the analysis leading to the prediction of the future for streams of ice.

British Antarctic Survey’s Dr. Kelly Hogan explained the concerns and causes stating that “These channels had not been mapped before in this kind of detail, and what we’ve discovered is that they're much bigger than anyone thought - up to 600m deep. Think of six football pitches back to back”.

She concluded mentioning: “And because they are so deep and so wide - this allows a lot more water to get at, and melt, Thwaites’ floating front as well as its ice that rests on the seabed”.

**Importance of Thwaites Glaciers:**

Thwaites Glacier is towards the west of the Antarctic continent and is widely spread across a huge area, the same as Great Britain.

Thwaites is a grandiose Glacier with a floating front part. It spreads widely over the sea and kicks off several icebergs too. However, as revealed by the images from the satellites, this grand Glacier is rapidly melting and the rate is accelerating with each passing day.

Previously in 1990, reports revealed about around 10 billion tonnes of ice getting discarded in the oceans, and that is immensely rose to 80 billion tonnes. The causes of the wider melting might be the result of the channels giving way to warm water that strikes the bottom of the glacier. The warm water may have been carried in from the widely spread ocean.

As for the present day, Thwaites Glacier’s melting accounts for around 4% of the rise in global sea levels annually.

Furthermore, adding 65 more cm to the level, the whole of the Thwaites Glacier will collapse. However, the scenario is pretty far to occur, but the Glacier is still vulnerable to the growing global warming conditions. With this, Scientists from across the globe are keen towards knowing everything in-depth including how fast it might collapse.

**Latest Researches:**

For the investigations about the Thwaites Glacier, in 2019, the UK and US joined hands. And intending to trace the seabed’s shape, a team of the scientists from both the nations sailed towards the ice cliff of the glacier. The ship used was all equipped with multiple echo-sounders for detailed research.

To precisely measure even the slightest variations in gravity, a plane too flew back and forth. Checking and analyzing the deviations are crucial too as it has a major role in the reflection of the undulations of the seafloor.

Both the data are essential in analyzing the best record about Thwaite Glacier’s topography. They effectively trace the complete track of all the networks related to the deep channels that eventually join forming a huge cavity under the shelf.

BAS colleague Dr. Tom Jordan specified the information in detail stating that "The connected channels that we've mapped in detail for the first time are the potential pathways for deep-ocean warm water to get in and do damage at that point where the glacier is still grounded on the seabed, where it begins to lift and float, but also to melt the base of the ice shelf, which if you weaken will make the ice further upstream in the glacier flow faster."

**Usage of the recently collected information:**

Scientists need essential data collected from real-world surveys to confine the models in a manner such that realistic outcomes are eventually ensured while running simulations related to future actions.

Recently collected data and information clarify the volume of warm water’s entrance that might be accurately considered in several situations and scenarios. With the conducted survey and research, Scientists gained the right knowledge and better idea about the seafloor’s roughness.

Speed for reverse process of ice getting back with the Glacier and how much ice can be again attained back with its movement across sediments and rocks. The data collected via surveys is a sort of stickiness index that compels the computer-based models.

**Expectations in the coming future:**

The ice shelf’s eastern part, attached with a giant ridge, ensures the Glacier’s stability. However, the current data and statistics suggest that with the enhanced melting, the set stability might not last for a longer period now, as specified precisely by Dr. Robert Larter of BAS.

Dr. Robert also commented that "When the Eastern Ice Shelf becomes unpinned, the ice will spread out and thin, eventually breaking up, as we can see is happening right now on the (central) glacier tongue, Even before ice shelf break-up, the unpinning and thinning will reduce the buttressing effect of the ice shelf on the glacier upstream of it, resulting in increased ice flow velocity. This in turn will further accelerate thinning of the glacier and grounding line retreat."

However, with the ongoing Covid-19 pandemic and global crisis, the investigations and surveys got temporarily suspended by Scientists.

Earlier, the teams decided on heading back to the Glaciers for further research and studies in the summers of 2020, but since the location is remote and with an extreme climate, the situations for any member getting ill is higher, and this is a risky scenario with the pandemic. Hence, the Scientists of both the UK and the US plans on returning once the crisis is over and everything is under control.

Dr. Hogan also commented on the situation vocalizing that "It's amazing to go to a place like Thwaites to see the changes taking place right before your eyes, When we were there in 2019, we were able to get right up to the ice shelf cliffs, and the reason we could do that and make our observations was that the icebergs and sea-ice that have always been there historically are starting to disappear."