



Climate Tipping Points

For Prelims: Climate Tipping Points, Greenland Ice, Coral Reef, Amazon Forest

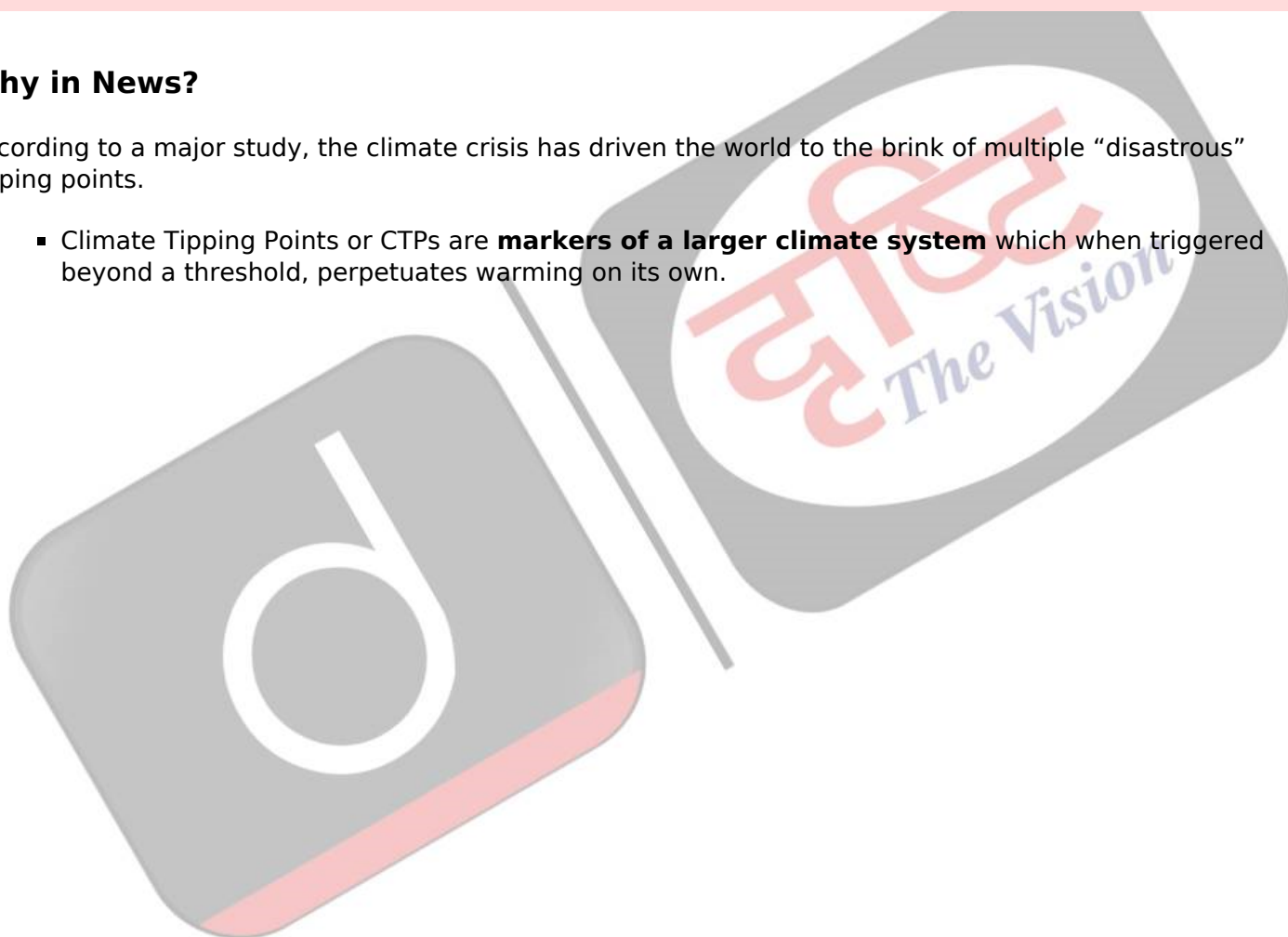
For Mains: Government Policies & Interventions, Environmental Pollution & Degradation

Why in News?

According to a major study, the climate crisis has driven the world to the brink of multiple “disastrous” tipping points.

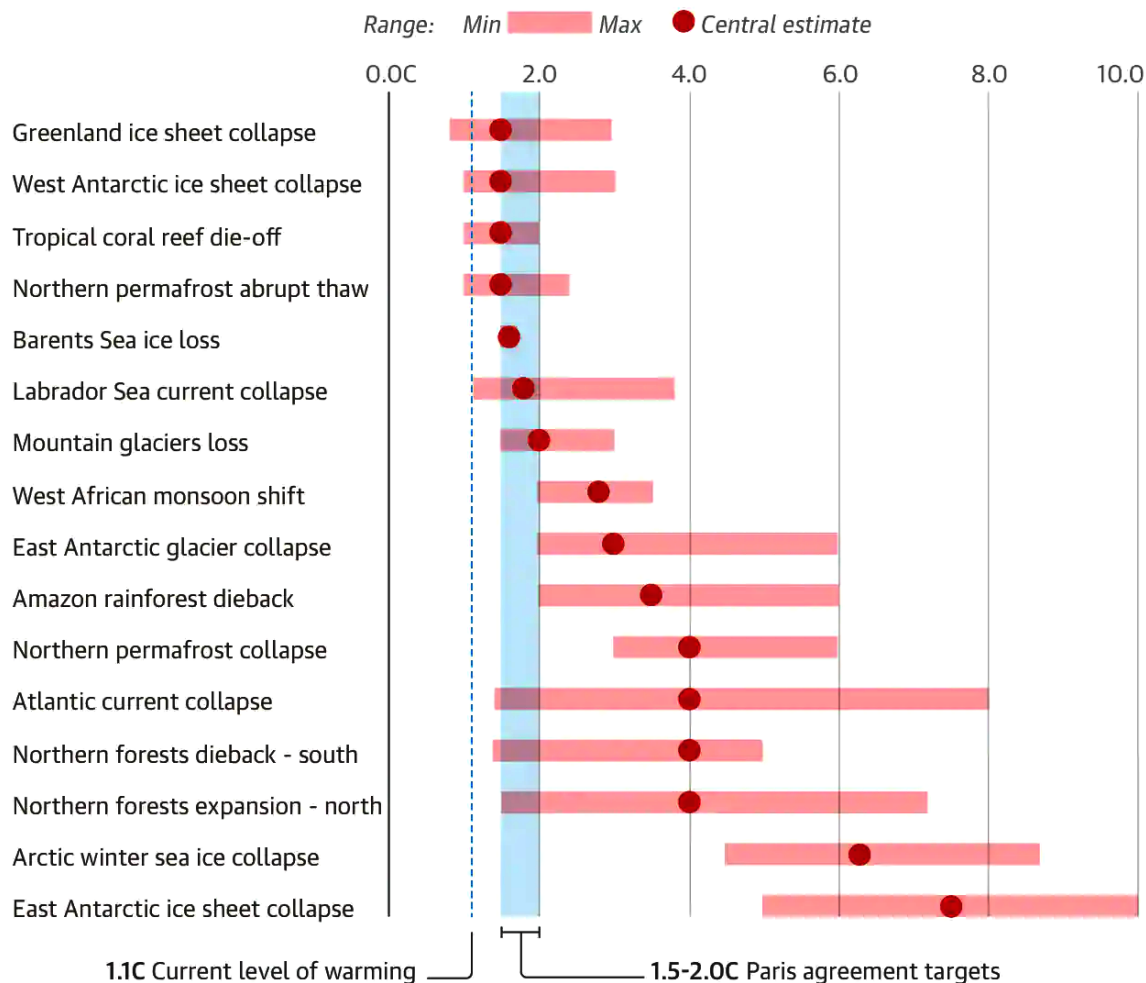
- Climate Tipping Points or CTPs are **markers of a larger climate system** which when triggered beyond a threshold, perpetuates warming on its own.

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The risk of climate tipping points is rising rapidly as the world heats up

Estimated range of global heating needed to pass tipping point temperature



What are the New Findings of the Study?

- According to the Study, five dangerous tipping points may already have been passed due to the 1.1° C of global heating caused by humanity to date.
 - These include the collapse of [Greenland's ice cap](#), eventually producing a huge [sea level rise](#), the collapse of a key current in the north Atlantic, disrupting rain upon which billions of people depend for food, and an abrupt melting of carbon-rich [permafrost](#).
- At 1.5° C, **five tipping points become possible**, including changes to vast northern forests and the loss of almost all mountain glaciers, the die-off of tropical [coral reefs](#) and changes to the west African monsoon.
- In total, the researchers found evidence for 16 tipping points, with the final six requiring global heating of at least 2° C to be triggered.
 - The tipping points would take effect on timescales varying from a few years to centuries.
- At more than 2° C, the **nine global tipping points identified** are the collapse of Greenland, West Antarctic, and two parts of the east Antarctic ice sheets, the partial and total collapse of [Atlantic Meridional Overturning Circulation \(AMOC\)](#), Amazon dieback, permafrost collapse and winter sea ice loss in the Arctic.
- Other potential tipping points still being studied include the loss of ocean oxygen and major shifts in the Indian summer monsoon.

Way Forward

- The assessment provides strong scientific evidence for urgent action to mitigate climate change.
- Currently the world is heading toward ~2 to 3°C of global warming, at best, if all net-zero pledges and nationally determined contributions are implemented it could reach just below 2°C.
 - This would lower tipping point risks somewhat but would still be dangerous as it could trigger multiple climate tipping points.

UPSC Civil Services Examination Previous Year Question (PYQ)

Q. Assess the impact of global warming on the coral life system with examples. **(2019)**

Source: [DTE](#)

PDF Reference URL: <https://www.drishtiias.com/printpdf/climate-tipping-points>

