# Antarctic ice gain masks long-term climate warming, scientists warn



# Antarctica's Ice Reversal: A Temporary Delight for Climate Skeptics

Recent findings from researchers at Tongji University in Shanghai have sparked a flurry of excitement among climate change deniers, claiming evidence that contradicts established climate science. Over the past three years, Antarctica has reportedly experienced a monumental shift from a long-standing trend of ice loss to significant ice gain, prompting assertions that global warming may be a myth.

Between 2002 and 2020, Antarctica's ice sheet had been losing approximately 120 billion tonnes of ice annually. However, a study has revealed that from 2021 to 2023, the continent gained around 108 billion tonnes of ice each year. This remarkable turnaround is attributed to "unusually intense snowfall," which helped bolster the ice layers, effectively slowing sea level rise by nearly 15%. Sea levels continue to pose a serious risk to coastal cities, with experts noting the potential for catastrophic flooding owing to rising ocean temperatures and glacier melt.

Despite the impressive figures, scientists caution against interpreting this data as a sign of long-term recovery. The study’s authors emphasised that this mounting ice is likely a temporary phenomenon, influenced by abnormal weather patterns bringing increased moisture—particularly in East Antarctica. These developments could be related to ongoing shifts in atmospheric conditions that are inherently tied to global warming.

While some observers rushed to label climate change as a "hoax," prominent voices in the scientific community have voiced concerns regarding such misinterpretations. For instance, Mike Hulme, a professor of human geography at the University of Cambridge, stated that alarmists within the climate debate have fostered distrust among the public, asserting an overly simplistic view of complex global issues. He noted, "Climate change is cited as the sole explanation for everything going wrong in the world," which may lead to backlash against legitimate concerns.

Indeed, the complexities of climate science cannot be overstated. While the recent gains in ice are notable, they come in stark contrast to a long-term trend of significant losses. The Antarctic Ice Sheet has suffered a net loss of approximately 1.848 trillion tonnes over the last two decades, contributing approximately 5.99 millimetres to global sea-level rise by February 2020. Subsequent evidence indicates a worsening scenario, particularly in West Antarctica, where changes in ocean temperature have continued to exacerbate the melting of glaciers from below.

Adding to this narrative, reports indicate that in recent years, more moisture in the atmospheric system—partially caused by sea ice loss—has led to heavier snowfall over parts of the Antarctic ice sheet. However, researchers emphasise the need for improved climate models to consider these intricate interdependencies, as well as the unpredictability of snowfall patterns.

Furthermore, a chilling perspective comes from a 2023 report indicating that rising sea levels linked to Antarctic ice loss have left over two dozen cities at elevated risk of sinking within the next three decades. As climate patterns become increasingly erratic, the necessity for urgent and targeted action becomes more pronounced.

One might wonder how all this leads to a coherent understanding of climate change. The interplay of natural variability and anthropogenic influence shapes an intricate tapestry of Earth's climate. While fluctuations such as the recent ice gain in Antarctica may provide fodder for sceptics, they do not diminish the underlying trends indicating a warming planet.

Thus, while the phenomenon of increased snowfall and ice gain offers a momentary respite in the troubling narrative of global warming, it does not negate the overarching reality that the planet's climate is changing, often to dangerous extremes. This multifaceted issue requires a balanced discourse, acknowledging both short-term variations and long-term patterns driven by human activity, if any meaningful progress in addressing the climate crisis is to be achieved.

## Reference Map:

* Paragraph 1 – [[1]](https://www.dailymail.co.uk/sciencetech/article-14684443/Shocking-Antarctica-discovery-sends-climate-change-deniers-mass-celebration.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[5]](https://science.nasa.gov/earth/antarctic-ice-mass-loss-2002-2023/)
* Paragraph 2 – [[1]](https://www.dailymail.co.uk/sciencetech/article-14684443/Shocking-Antarctica-discovery-sends-climate-change-deniers-mass-celebration.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[3]](https://www.sciencedaily.com/releases/2023/11/231114215706.htm)
* Paragraph 3 – [[6]](https://www.reuters.com/business/environment/scientists-chile-question-if-antarctica-has-hit-point-no-return-2024-08-28/), [[3]](https://www.sciencedaily.com/releases/2023/11/231114215706.htm)
* Paragraph 4 – [[1]](https://www.dailymail.co.uk/sciencetech/article-14684443/Shocking-Antarctica-discovery-sends-climate-change-deniers-mass-celebration.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[2]](https://www.nature.com/articles/s41558-018-0356-x)
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## Bibliography

1. <https://www.dailymail.co.uk/sciencetech/article-14684443/Shocking-Antarctica-discovery-sends-climate-change-deniers-mass-celebration.html?ns_mchannel=rss&ns_campaign=1490&ito=1490> - Please view link - unable to able to access data
2. <https://www.nature.com/articles/s41558-018-0356-x> - This study reconstructs 200 years of Antarctic-wide snow accumulation by synthesizing ice core records. The findings reveal that increased snow accumulation mitigated twentieth-century sea-level rise by approximately 10 mm since 1901, with rates increasing from 1.1 mm per decade between 1901 and 2000 to 2.5 mm per decade after 1979. The study also links these trends to the Southern Annular Mode and suggests that stratospheric ozone depletion may have influenced the observed increase in snowfall.
3. <https://www.sciencedaily.com/releases/2023/11/231114215706.htm> - Researchers from Penn State University have found that the loss of sea ice in the Amundsen Sea in West Antarctica leads to more moisture in the atmosphere, resulting in heavier snowfall over the ice sheet. This increased snowfall partially offsets contributions to sea-level rise. The study emphasizes the need to refine climate models to improve predictions of sea-level changes, considering the complex interactions between sea ice loss, atmospheric moisture, and precipitation patterns.
4. <https://nsidc.org/news-analyses/news-stories/antarctic-sea-ice-hits-record-low-maximum-extent-2023> - Scientists at the National Snow and Ice Data Center (NSIDC) reported that Antarctic sea ice reached its maximum extent for the year on September 10, 2023, at 16.96 million square kilometers. This marked the lowest maximum in the 45-year satellite record, being more than one million square kilometers below the previous record low set in 1986. The NSIDC emphasized that this preliminary data could change with continued winter conditions and planned further analysis to understand the causes behind this year's ice conditions.
5. <https://science.nasa.gov/earth/antarctic-ice-mass-loss-2002-2023/> - Between 2002 and 2023, Antarctica lost an average of 150 billion metric tons of ice per year, contributing to global sea-level rise. Satellite data indicates that areas in East Antarctica experienced modest mass gain due to increased snow accumulation. However, the overall trend shows a significant net loss of ice, highlighting the impact of climate change on the Antarctic ice sheet and its contribution to rising sea levels.
6. <https://www.reuters.com/business/environment/scientists-chile-question-if-antarctica-has-hit-point-no-return-2024-08-28/> - Nearly 1,500 scientists gathered in Chile for the 11th Scientific Committee on Antarctic Research conference to discuss rapid and unprecedented changes in Antarctica. Extreme weather events, such as heavy rainfall, heat waves, and strong winds, have led to mass melting and glacier break-offs, raising concerns about whether the continent has reached a tipping point for irreversible sea ice loss. Researchers emphasized the importance of reducing fossil fuel emissions to prevent the worst-case scenarios and highlighted the need for further research to understand these changes.
7. <https://www.climate.gov/news-features/event-tracker/2023-antarctic-sea-ice-winter-maximum-lowest-record-wide-margin> - On September 10, 2023, Antarctic sea ice reached its annual maximum extent of 16.96 million square kilometers, setting a record low in the satellite record that began in 1979. This maximum was 1.03 million square kilometers below the previous record low set in 1986 and 1.75 million square kilometers below the 1981 to 2010 average Antarctic maximum extent. The early timing of this maximum, occurring 13 days earlier than the median date of September 23, further underscores the significant decline in sea ice extent.