



This is the print version of the [Skeptical Science](http://sks.to/iceisntmelting) article '[Ice isn't melting](http://sks.to/iceisntmelting)', which can be found at <http://sks.to/iceisntmelting>.

Global ice melt is accelerating

What The Science Says:

Arctic summer sea ice has shrunk by an area equal to Western Australia, and might be all gone in a decade.

Climate Myth: Ice isn't melting

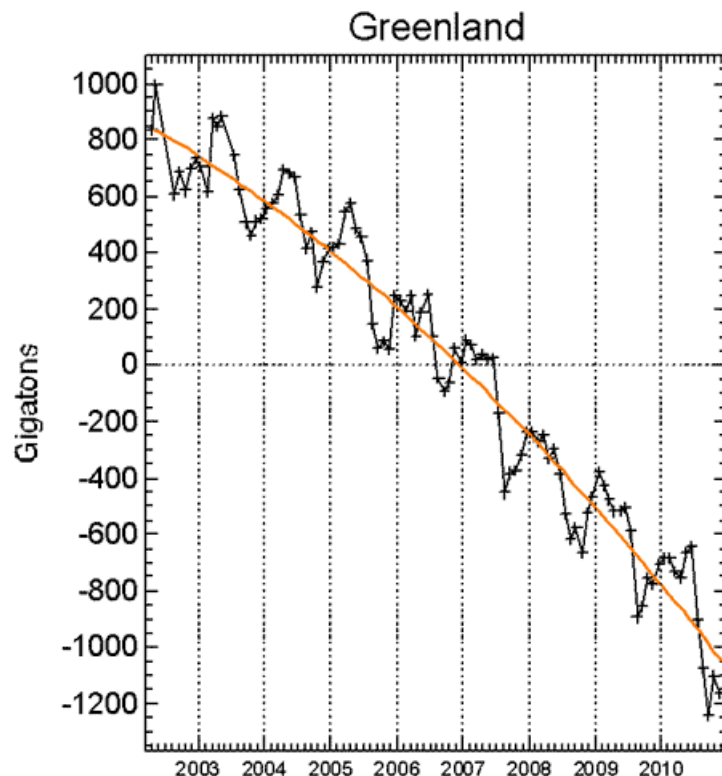
Thanks to a rapid rebound in recent months, global sea ice levels now equal those seen 29 years ago, when the year 1979 also drew to a close. In fact, the rate of increase from September onward is the fastest rate of change on record, either upwards or downwards. The data is being reported by the University of Illinois's Arctic Climate Research Center, and is derived from satellite observations of the Northern and Southern hemisphere polar regions ([Daily Tech](#)).

Ice is melting at accelerating rates in the Arctic, Antarctica, Greenland, and glaciers all over the world.

Ice sheets are beginning to shrink

An ice sheet is a huge layer of land ice. The only ice sheets are in Antarctica and Greenland.

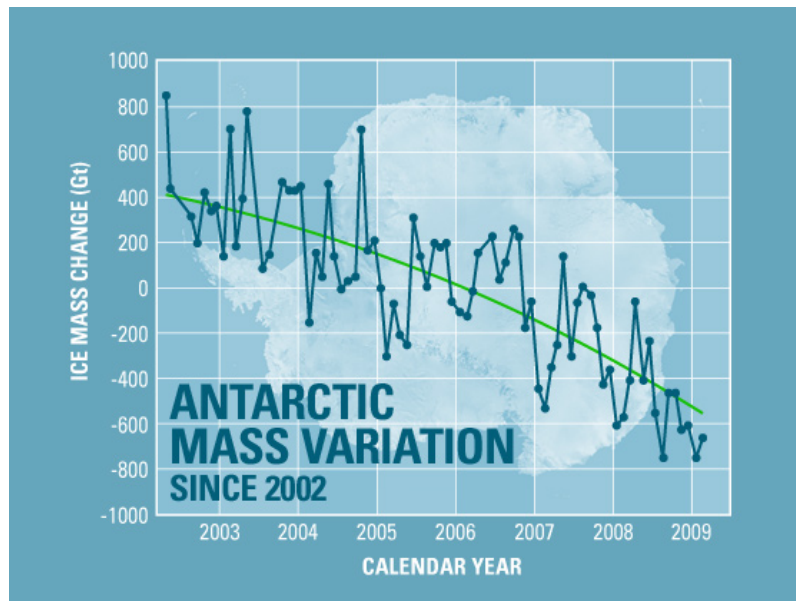
The [Greenland ice sheet is losing mass at an accelerating rate](#). In recent years the ice loss has spread from the south coast around to the northwest.



(Image source: [Climate Signals](#).)

□

Similarly, [Antarctica is also losing ice at an accelerating rate](#). Antarctica is basically divided into two distinct ice sheets, the West Antarctic and East Antarctic. The East Antarctic ice sheet, which is much bigger than the West Antarctic one, was until recently considered stable, but has also begun losing ice.



(Image source: [NASA](#).)

Ice shelves are collapsing

Ice shelves are thick, floating platforms of ice formed when glaciers flow from the land onto the ocean surface.

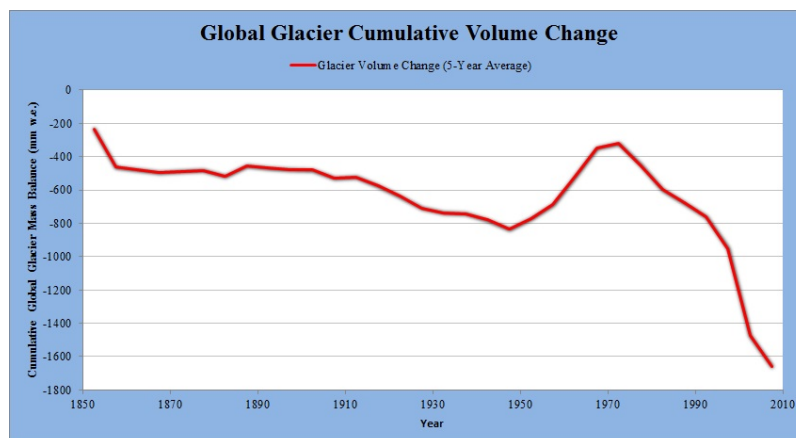
The Antarctic Peninsula is warming rapidly. [Several ice shelves have collapsed completely](#), including [one covering 3,250 km²](#), almost twice the area of urban Sydney.

□

(Image source: [National Snow and Ice Data Center](#).)

Glaciers are retreating

Glaciers are [retreating around the globe](#). Although one can point to particular glaciers that are growing, glaciologists look for trends in the total mass of glaciers worldwide. It turns out the world's glaciers are losing ice at an accelerating rate.



(Image data source: [Cogley 2009](#).)

And despite all the hype about a certain mistake in the 2007 IPCC report, [the Himalayan glaciers are in fact melting](#).

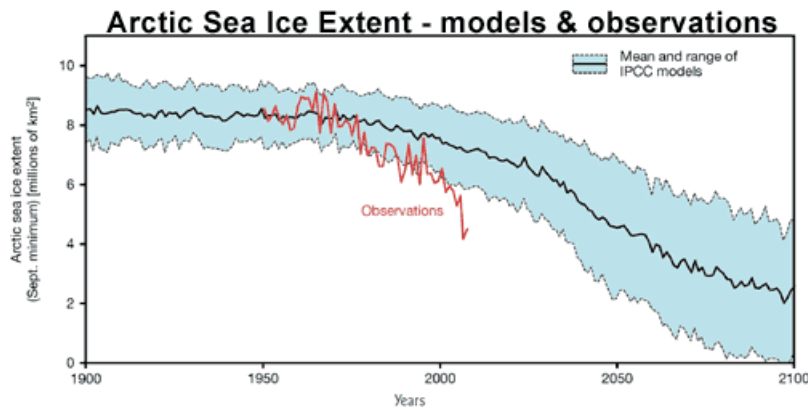
Southern sea ice not doing much

Sea ice floats on the ocean surface, and is not to be confused with ice sheets on land. Even though the Antarctic ice sheet is losing mass, the extent of sea ice around the coast of the continent has grown [slightly](#).

This is because of [a complex variety of factors](#), and despite the warming of the Southern Ocean. The trend is expected to reverse in coming decades as the Antarctic continues to warm.

Arctic sea ice in a death spiral?

Arctic sea ice grows and shrinks seasonally, with an annual minimum in September. In 1979, when satellites first measured it, September Arctic sea ice extent was roughly equivalent to the area of Australia. Since then it has declined by about a third, equivalent to losing Western Australia – outstripping all projections.

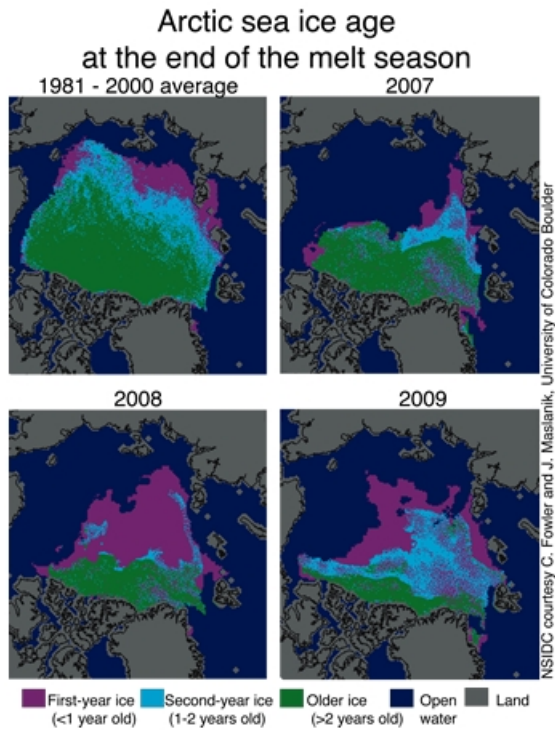


(Image source: [Copenhagen Diagnosis](#).)

[2010 had the third lowest minimum on record](#) (after 2007 and 2008). Two expeditions successfully circumnavigated the Arctic Ocean in a single summer, something that would have been impossible just a few years earlier or any time in recorded history.

Contrarians claim Arctic sea ice has “recovered” since the record low extent of 2007. But [sea ice exists in three dimensions](#), and it has continued to thin rapidly. [Ice volume data](#) paints a picture even more dire: the Arctic has actually lost not one third but *two* thirds of September sea ice. What’s more, the volume reached a record low in 2010 – not an encouraging sign of recovery.

2010 set the stage for continued melting. At the end of the summer, [a record-breaking 86% of ice cover](#) was less than two years old; ice older than five years has all but disappeared. The remaining new ice is thinner and much easier to melt than older ice.



(Image source: National Snow and Ice Data Center.)

Ice-free summers are now probably inevitable, but it's not clear how soon because the Arctic is melting much faster than any model predicted. Mark Serreze, Director of the US National Snow and Ice Data Center, says we're "[looking at a seasonally ice-free Arctic in twenty to thirty years](#)." [A few scientists argue](#) that September sea ice could be essentially gone within the next decade.

Basic rebuttal written by James Wight

Update July 2015:

Here is a related lecture-video from [Denial101x - Making Sense of Climate Science Denial](#)

[see video at [this link](#).]



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