

The New York Times

DOT EARTH

Nine Billion People. One Planet.

FEBRUARY 27, 2009, 11:32 AM

Scientists: Flaw in Will's Ice Assertions

By **ANDREW C. REVKIN**

Andrew C. Revkin/ The New York Times [Sea ice near the North Pole](#), April 2003. The water is 14,000 feet deep.

The office of former Vice President Al Gore complained about my story on climate exaggeration the other day and now George Will, the other (very different) example in that piece, has weighed in as well with a column, "[Climate Science in a Tornado](#)," defending his accuracy and questioning my competence. I'll leave the competence judgment to readers. See what he says in the column and comment away below. [UPDATE, 9 p.m.: Andy Alexander, the ombudsman for the Washington Post, has weighed in anew and criticizes Mr. Will's editors on a couple of fronts, concurring that [the columnist's sea-ice defense does not hold up sufficiently](#).] [UPDATE, 2/28: John Fleck posted a potent [defense of the NYT's departed Walter Sullivan](#) against Mr. Will's assertions that he was a "megaphone for the alarmed."]

On Mr. Will's defense of his accuracy, particularly on [trends in sea ice at both poles](#) as they related to global warming, it's worth pointing out a few things. I spoke last night with Bill Chapman, the researcher at the University of Illinois, Urbana-Champaign, who maintains their [Cryosphere Today archive](#) of sea-ice data.

He said he felt a little battle-worn from all the inquiries since the original column ran two weeks ago, but maintained that, for what it's worth, Mr. Will's statement that "global sea ice levels now equal those of 1979," referring to the university's data, does not square with the data or updates issued by the school.

The total area of sea ice in both hemispheres, by the ice center's accounting, was "near or slightly lower than" area observed at a similar time of year in 1979, not equal to it.

But he and a host of other ice experts, in e-mail exchanges and calls over the past week examining Mr. Will's assertions, noted the irrelevance of this parsing.

Mr. Will's overarching premise about sea ice and messages it holds related to human-caused climate change, was wrong, they say.

Here is what he wrote: "As global levels of sea ice declined last year, many experts said this was evidence of man-made global warming."

The flaws? The first is timescale. No single year marks a trend or holds evidence of long-term climate change. In fact, as I wrote in October 2007, the extraordinary [retreat of the ice that summer](#) raised as many questions about scientific understanding of sea ice as it answered, but confidence in a long-term retreat in a warming world was unswayed. The slight recovery in 2008 was no different.

The second flaw in that sentence, many experts told me, is geographic scale. (Note that Mr. Will questioned my use of that "many experts" shorthand, but used it himself; down below I'll later list some of the many experts I've consulted on sea ice over the last decade.) The Arctic is the bellwether. Antarctica is a fundamentally different, and more stable, system. Up north, there is an ocean mostly surrounded by continents. Down south there is a largely frigid continent surrounded by ocean.

There are hypotheses for why sea ice around Antarctica might expand in a warming world, but they are beside the point. Arctic trends alone have been one of many focal points for scientists seeking a signal of human influence on the climate (along with the tropics, the stratosphere, etc.).

Mr. Will asserted that "many experts" said the ice retreat in a single year was "evidence of global warming." In that instance, I'd like to have some names.

From my days [camped on the sea ice around the North Pole](#) to my time in the country's leading labs tracking polar trends with satellites, I've not met a single scientist focused on sea ice who would point to a single year's changes as evidence of anything except the extraordinary complexity and variability up north on year-to-year time scales.

The [Arctic Climate Impact Assessment](#), the [Intergovernmental Panel on Climate Change](#) (whose reports are conservative by nature), and a range of other assessments all conclude with high confidence that – for better or worse – the [long-term Arctic trend for summer sea ice is down](#), given the projected buildup of greenhouse gases and tendency of the Arctic to amplify warming.

But even with that trend, "many scientists" still caution that sea ice could expand again periodically even as the [system heads toward mainly open water in summers](#) later this century under the building long-term influence of the greenhouse blanket.

Here's some input from one ice specialist, [Jennifer Francis at Rutgers University](#), reacting to Mr. Will's comparison of current ice with 1979 and other assertions:

Her general point:

This battle never ceases to amaze me. People seem to be much more inclined to believe what they hear from non-experts because it's what they'd rather hear.

Her reaction to the speed of ice recovery from last summer and the extent of polar ice now:

This is pretty easy to explain. At the end of summer each year, the sea ice refreezes and continues to do so until late spring. Thin ice and open water generate new ice faster than thick ice, as the heat from the ocean below is able to escape more easily to the atmosphere. In the autumns of 2007 and 2008, the rate of ice production was very large because there was so much open water and thin ice — the rapid growth is completely expected.

The other relevant piece of information is that winter ice can only extend so far in the Arctic because the ocean is surrounded almost completely by coast. Once it reaches the coast, it can't extend any farther. There are only two limited areas where the winter ice edge can vary substantially — the North Atlantic and Bering Sea. In the North Atlantic the ice runs into a branch of the warm Gulf Stream. A significant northward trend (reduction of ice) in the winter-maximum ice edge is apparent, however, and appears to be caused by the gradual warming of sea-surface temperatures in the region (paper available on this if you want it). In the Bering Sea the winter ice edge varies hugely year to year and shows no significant trend.

Dr. Francis's reaction to Mr. Will's assertion that many scientists saw the global ice changes in a single year as a sign of global warming:

Yes, I would agree these are both incorrect. The changes in sea ice in the southern hemisphere (small increase) have been attributed to anthropogenic causes, but in a very different way from what's happening in the Arctic. The Antarctic ice increase is occurring in a limited region near the Ross Sea, and is related to the ozone hole through a fairly complicated change in atmospheric dynamics. See this brief article in Eos Transactions for a comparison: <http://www.agu.org/pubs/crossref/2008/2008EO190001.shtml>

Any change in a single year — no matter what the variable — cannot generally be linked to climate change, although the ice losses in 2007 and 2008 would not have happened without the long-term warming and thinning of the ice cover.

The other assertions made by Mr. Will about [past faulty ice-age predictions](#) and [other climate issues](#) have been addressed at length in many places over the last two weeks. The focus here is inferences from ice.

For more on the distinction between inference and evidence, see "[The George Will Affair](#)," Curtis Brainard's column in the online edition of the Columbia Journalism Review. I'll explore the limits of conventional journalism that can sometimes lead to flawed coverage, mine included, anon.

P.S.: In his column defending his climate claims, Mr. Will says a flaw reported in sea-ice data at the [National Snow and Ice Data Center](#) in Boulder, Colo., justifies his statements about the Illinois group's ice trends. Both Mr. Chapman in Illinois and Mark Serreze of the Boulder center reject this. Here's Dr. Serreze's view of the incident and that particular assertion:

Regarding the sensor problem, see our latest post where [we discuss the issue in detail](#). The sensor problem on the F15 has no bearing on the Univ. IL numbers, which are based on the earlier F13 satellite (which we have temporarily gone back to). I got a call from George Will's fact checker regarding his latest piece. I was a bit terse with the gentleman but of course gave him the info he was looking for. My response was something like "Well, I certainly would not want Mr. Will to be speaking from a viewpoint of ignorance."

Regarding the "global ice at 1980 levels", here is the canned response we wrote in rebuttal to the astonishingly twisted piece in Daily Tech: What the graph shows is that the global sea ice area for early January 2009 is on the long term average (zero anomaly). The author tries to read some relevance into the fact that the anomaly at the end of 1979 is also about zero. Given that there are many periods throughout the time series with a zero anomaly for the global total, it is puzzling why the end of 1979 was singled out.

Presumably the point is to somehow cast doubt on global warming. However, if so, the author could have instead made an equally silly case for global cooling by contrasting the near zero anomaly of early January 2009 with the strong negative anomalies characterizing the later part of 2008.

The key point is that looking at the global total area is not relevant. All climate models tell us that it is the Arctic sea ice cover that declines first, and that Antarctic ice extent falls only later, and may even (as observed) temporarily increase in response to changing patterns of atmospheric circulation. In other words, events are unfolding pretty much as expected. Finally, the statement that there was "substantial recovery" this year in the Arctic is simply rubbish. Ice extent at the end of the melt season in the Arctic was second lowest on record and ice extent is still (as of early January) well below normal.

Simply put, this article is a masterpiece of cherry picking, misinterpretation and misrepresentation.

Also, I worked very closely with a woman from Slate Magazine, who wrote a pretty decent piece on the issue: