

**Calculate how much would the world's ocean would rise if all the ice in Greenland would melt:**

I searched the Internet to find the area of the ice in Greenland and the thickness of the ice.

The figures from different sources for the area in square miles are consistent.

The figures on the thickness varies by source and date:

Note, Only 80 percent of Greenland is covered by Ice.

One source, Curtis Neil & Michael Allaby, Planet Earth, New York, Klingenshield, 1993 estimates that average thickness as 1390 meters. I will use this one.

Density of Ice at 0 degrees C	0.9160	g/cubic cm.
Density of Water at 0 degrees C	0.9998	g/cubic cm.
Contraction when ice changes to water:	0.9160/0.9998 = 0.9162	

Numbers Used:

Convert meters to miles multiply by	0.000620	
Convert area of Greenland to area of ice, multiply by	0.8	
Convert Square Km to Square miles multiply by	0.386100	
Convert miles to feet multiply by	5280	
Contraction when ice changes to water, multiply by:	0.9162	Calculated above
Area of Greenland Square Miles	840000	
World's Ocean Area Square Km.	335258000	
Average thickness of Ice in Greenland in meters:	1390	

Average Ice Thickness Meters in Greenland		Convert meters to Miles		Miles Thick		Area of Greenland Square Miles		Only 80 % of Greenland has ice		Greenland's Cubic Miles of ice
1390	X	0.000620	=	0.861800	X	840000	X	0.8	=	579130
World's Ocean's Area Square Km		Convert Sq. meters to Sq. miles		World's Ocean's Area Square Miles						
335258000	X	0.386100	=	129443113.8						
Cubic Miles of ice		Convert Ice to water		Ocean's Area Square Miles		Miles thick of water		Convert miles to feet		Approximate rise of World's Ocean in feet:
579130	X	0.9162	/	129443113.8	=	0.004099	X	5280	=	<b>21.6</b>

Using 1390 meters as the thickness of the ice in Greenland, I calculate that the world's oceans will rise by approximately: **22** feet if all that ice melted.

Al Gore says that the world's oceans will rise by 18 to 20 feet if all the Ice in Greenland melted.

This comes from his book and movie: Inconvenient Truth.

I don't know what number for the amount of ice in Greenland was used for the calculations in Al Gore's book.

So, I could not expect to come up with the same number for the rise in the world's oceans.

If I came up with anything close to what was published in Al Gore's book,

I would have confidence that he isn't significantly wrong.

Here are my sources of information from the web:

<http://hypertextbook.com/facts/2000/EmmanuelleStJean.shtml>

[www.worldatlas.com/aatlas/infopage/oceans.htm](http://www.worldatlas.com/aatlas/infopage/oceans.htm)

[www.physics.utoronto.ca/research/planetary/geophysics/events](http://www.physics.utoronto.ca/research/planetary/geophysics/events)

[/thickness-of-greenland-s-crust-and-the-sea-ice-around-it/view](#)

[www.worldatlas.com/aatlas/infopage/oceans.htm](http://www.worldatlas.com/aatlas/infopage/oceans.htm)

<http://en.wikipedia.org/wiki/Ice>

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