

Sheet1

Rough calc of sea level rise if all ice above sea level melts entirely.

Earths surface area 510,072,000 sq km
<http://en.wikipedia.org/wiki/Earth>

Ice cap thickness 1.60 km

Ice coverage at one pole
<http://www.doc.ic.ac.uk/~kpt/terraquest/va/science/snow/snow.html>
<http://en.wikipedia.org/wiki/Antarctica>

14,200,000

Multiply this by 2 to include south pole 28,400,000

Spread the ice over the earths surface of water

water surface 361,132,000

Divide water surface by ice cap surface 25

Divide ice cap thickness by this 0.063

multiply by 1000 to get in metres **63** metres sea rise if the ice caps totally melted.

But this is an over estimate because there is a lot of land below 63 metres above sea level .
So if you take that into account it would be less than 63 metres.

Allow for thermal expansion of water

<http://physics.info/expansion/>

At 4 degrees celcius water is at it's most dense.

According to the chart on the web site above water would become larger by 2% at 60 degrees celcius

Volume of water on earth 1,260,000,000,000,000,000 litres

Expansion 2.00%

total volume expansion at 60 degrees C 25,200,000,000,000,000 litres

1 litre is a 100mm x 100mm x 100mm block
So 1000 of these makes a cubic metre.

Number of cubic metres per square kilometre 1,000,000

Divide expanded amount by this 25,200,000,000,000

Divide this by the earths water surface area 69,781

I think I am out by 3 digits - maybe it's 69metres.