

4/2/14

Energy White Paper Task Force  
Department of Industry  
Canberra, ACT

To Whom It May Concern:

I hereby present some information that is relevant to the preparation of the forthcoming Energy White Paper - especially the presupposed need to lessen global emissions. The information given in the attachment below was obtained from the Wikipedia article on "Sea Level".

As can be seen from the figure the sea level has been rising since the end of the last ice-age some 20,000 years ago. Since that time the sea has risen approximately 130m - a phenomenon that many people do not realise - and consequently are prone to accept that most sea level rises have been caused by human activities.

Moreover, the Wikipedia article says that "For at least the last 100 years the sea level has been rising at an average rate of about 1.8mm per year. The majority of this rise can be attributed to the increase in the temperature of the sea and the slight thermal expansion of the upper 500m of sea water. Additional contributions such as one-fourth of the total, come from water sources on land, such as melting snow and glaciers and extraction of ground water for irrigation and other agricultural and human needs."

The bottom line here is that the major factor that causes sea-level variations is not human activity but the changes in the amount of ice lying on the surface of the earth - which, in turn, is determined by the heating and cooling of the earth caused by variations in solar activity - which science cannot predict accurately.

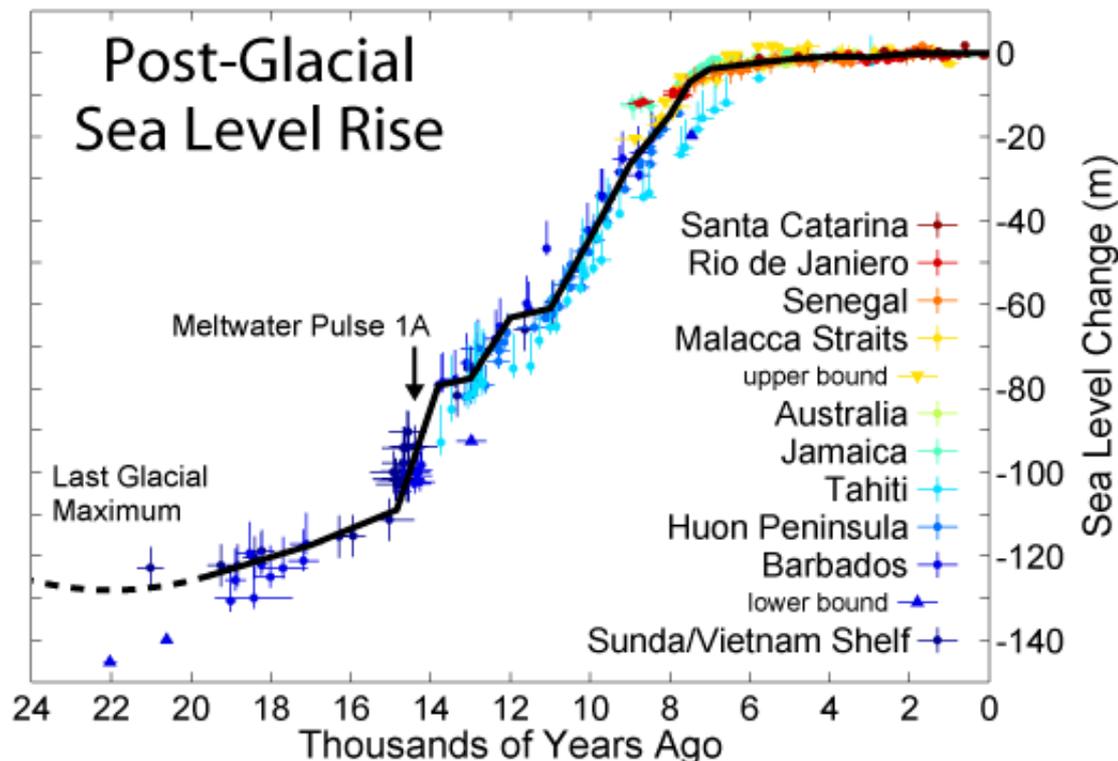
I trust this information will be of interest.

Regards,

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# File:Post-Glacial Sea Level.png

From Wikipedia, the free encyclopedia



No higher resolution available.

Post-Glacial\_Sea\_Level.png (526 × 359 pixels, file size: 23 KB, MIME type: image/png)



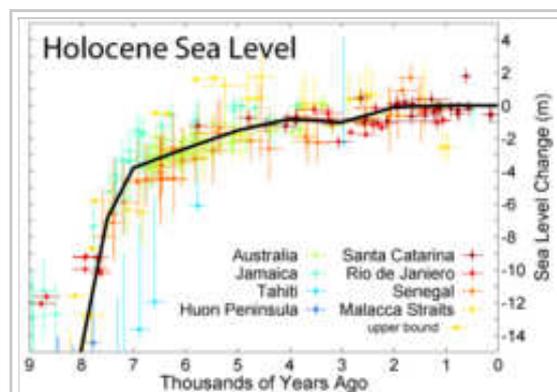
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**Note:** Rio de Janiero actually is Rio de Janeiro

## Summary

This figure shows sea level rise since the end of the last glacial episode based on data from Fleming et al. 1998, Fleming 2000, & Milne et al. 2005. These papers collected data from various reports and adjusted them for subsequent vertical geologic motions, primarily those associated with post-glacial continental and hydroisostatic rebound. The first refers to deformations caused by the weight of continental ice sheets pressing down on the land, the latter refers to uplift in coastal areas resulting from the increased weight of water associated with rising sea levels. It should be noted that because of the latter effect and associated uplift, many islands, especially in the Pacific, exhibited higher local sea levels in the mid Holocene than they do today. Uncertainty about the magnitude of these corrections is the dominant uncertainty in many measurements of sea level change.



Expansion of the most recent 9 kyr

The black curve is based on minimizing the sum of squares error weighted distance between this curve and the plotted data. It was constructed by adjusting a number of specified tie points, typically placed every 1 kyr but at times adjusted for sparse or rapidly varying data. A small number of extreme outliers were dropped. It should

be noted that some authors propose the existence of significant short-term fluctuations in sea level such that the sea level curve might oscillate up and down about this  $\sim 1$  kyr mean state. Others dispute this and argue that sea level change has largely been a smooth and gradual process. However, at least one episode of rapid deglaciation, known as meltwater pulse 1A, is agreed upon and indicated on the plot. A variety of other accelerated periods of deglaciation have been proposed (i.e. MWP-1B, 2, 3, 4), but it is unclear if these actually occurred or merely reflect misinterpretation of difficult measurements. No other events are evident in the data presented above.

The lowest point of sea level during the last glaciation is not well constrained by observations (shown here as a dashed curve), but is generally argued to be approximately  $130 \pm 10$  m below present sea level and to have occurred at approximately  $22 \pm 3$  thousand years ago. The time of lowest sea level is more or less equivalent to the last glacial maximum. Prior to this time, ice sheets were still increasing in size so that sea level was decreasing almost continuously over a period of approximately 100,000 years.

## Copyright

This figure was prepared by Robert A. Rohde from published data, and is incorporated into the Global Warming Art project.

### Image from Global Warming Art

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## References[[edit](#)]

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- Fleming, Kevin, Paul Johnston, Dan Zwartz, Yusuke Yokoyama, Kurt Lambeck and John Chappell (1998). "Refining the eustatic sea-level curve since the Last Glacial Maximum using far- and intermediate-field sites". *Earth and Planetary Science Letters* **163** (1-4): 327-342. doi:[10.1016/S0012-821X\(98\)00198-8](https://doi.org/10.1016/S0012-821X(98)00198-8)
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- Milne, Glenn A., Antony J. Long and Sophie E. Bassett (2005). "Modelling Holocene relative sea-level observations from the Caribbean and South America". *Quaternary Science Reviews* **24** (10-11): 1183-1202. doi:[10.1016/j.quascirev.2004.10.005](https://doi.org/10.1016/j.quascirev.2004.10.005)