Increased Ocean Evaporation mitigates ocean rise due to melting glaciers

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Abstract

In January 2017 a Global and Regional Sea Level Rise Scenarios for the United States paper was published [1]. It spectulated 4 senerios of ocean level rise. In this report we show the correct ocean rise data to determine which one is most correct. Ocean Evaporation is a flux from ocean to air. It has been described mathematically many times. In this report I will show the increased evaporation from warming oceans and dilution of salt content is mitigating most if not all of Ocean rise due to melting glaciers. We worked with the NOAA Satellite Altimetry group to make graphs every 10 degrees latitude. They clearly show no increase of ocean rise any faster than 1870 when ocean measurements begun by human input.

Method

We contacted Dr. Laury Miller, Chief of NOAA's Laboratory for Satellite Altimetry in Washington, to make graphs by every 10 degrees for ocean rise. We also install NOAA RADS software to make the graphs [2]. The NOAA group provided direction for making a script to create the graphs below.

Results & Discussion

Since 1880 we have had global sea rise of 354 mm. This is over 137 years. The yearly rate is 2.6 mm per year. The Global satellite measurement data since 1993 matches with the previous data and shows a 2.5 mm/year increase. The Northern latitudes are increasing in rate while the southern latitudes are increasing at a smaller rate.

Additionally, "Latent heat of evaporation" cools the oceans down.

Figure 1. Global Average Absolute Sea Level Change, 1880–2015

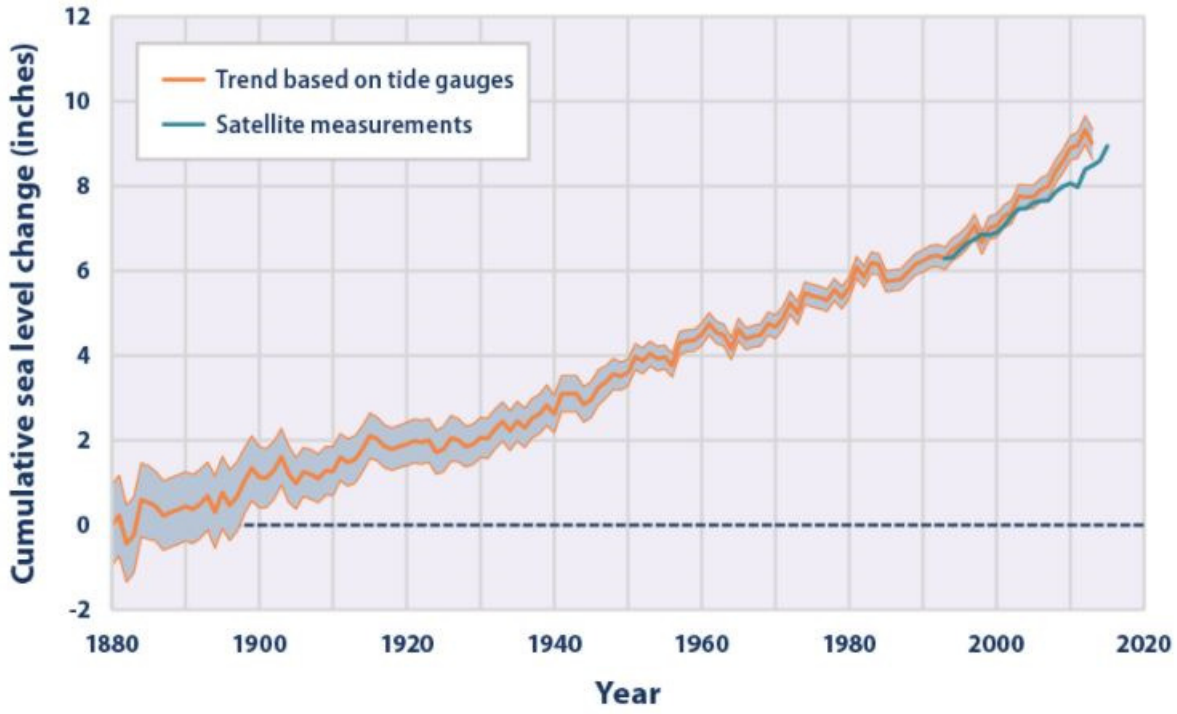

Figure 1 Global Ocean rise since 1880. 2.6 mm/year

The first graph, Figure 1 is for the entire ocean rise set. This data is the familiar ocean graph from NOAA. [3]. The ocean rise is 2.6 mm/year historically. Figure 2 is global ocean data from Satellite altimetry. Figures 3 through 13 are every 10 ° latitude ocean rise measurement graphs. Figure 14 is a summary graph. This data clearly shows no increase of ocean rise worldwide due to melting glaciers from a

warming earth. The northern latitudes are rising slightly. This is due to a warmer earth in the northern hemisphere. The only thing that can keep the oceans from rising faster is increased evaporation from 2 causes. First, we have warmer oceans from a warmer earth. Second, we have diluted salt concentration from melting glaciers which also increases evaporation. Clausius-Clapeyron equation, which defines the slope of the vapor pressure curve describes ocean evaporation. The rate of water vapor pressure change by temperature is defined by the heat of vaporization divided by the flux. The flux is the temperature times the quantity of Vg-Vf . Water vapor concentration varies from trace amounts in Polar Regions to nearly 4 percent in the tropics [4]. As the troposphere Temperature increases the vapor pressure of water in the atmosphere decreases and the ocean evaporation increases until equilibrium. Therefore, the increased evaporation is mitigating all ocean rise due to melting glaciers. The troposphere is only 4% clouds and has a great amount of increased evaporation capability.

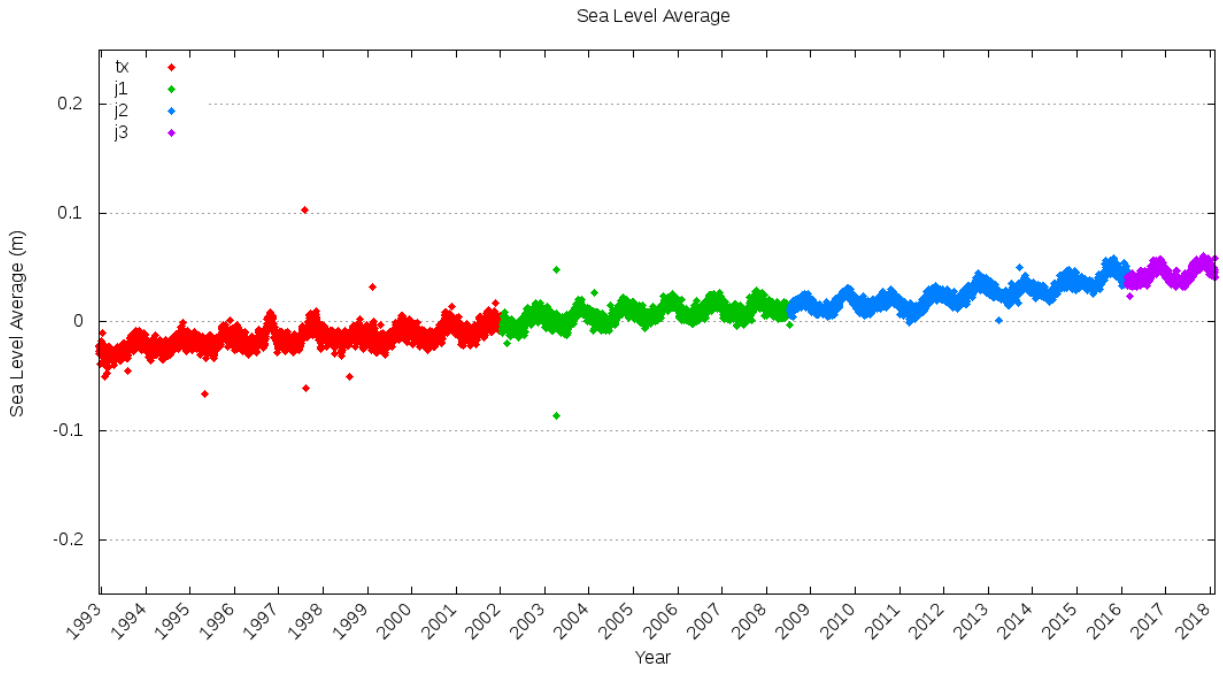

Figure 2 Global ocean rise 2.5 mm/year

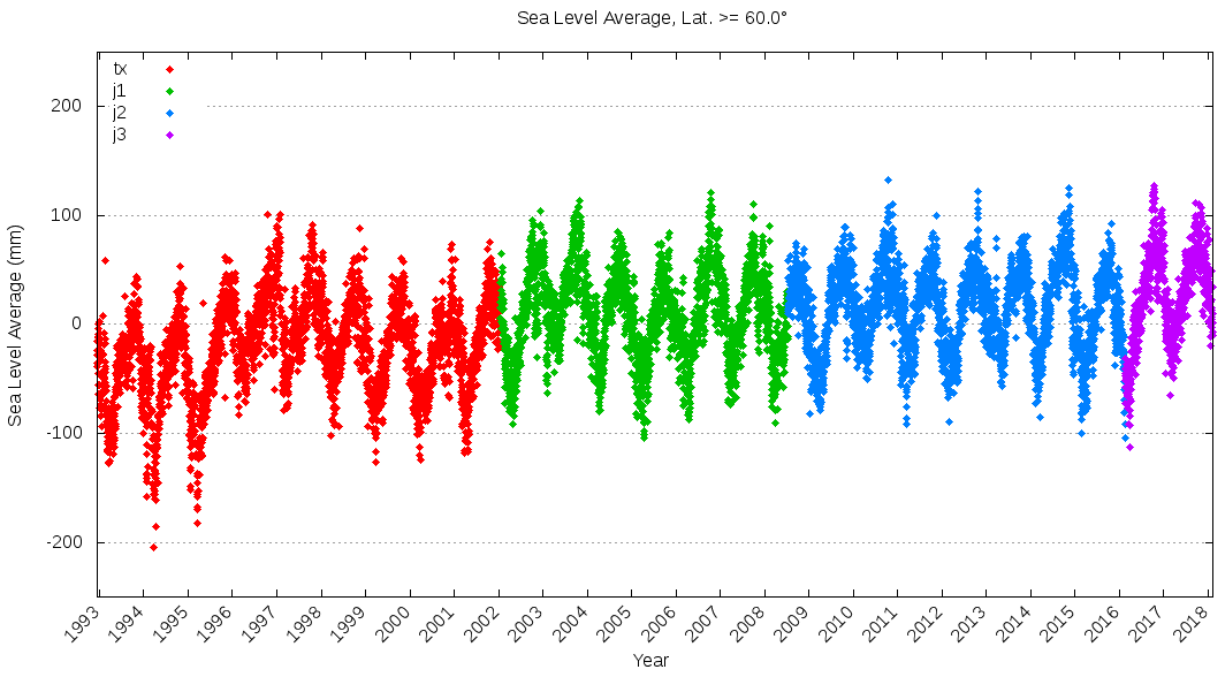

Figure 3 60° North Ocean rise 80mm 3.2 mm/year

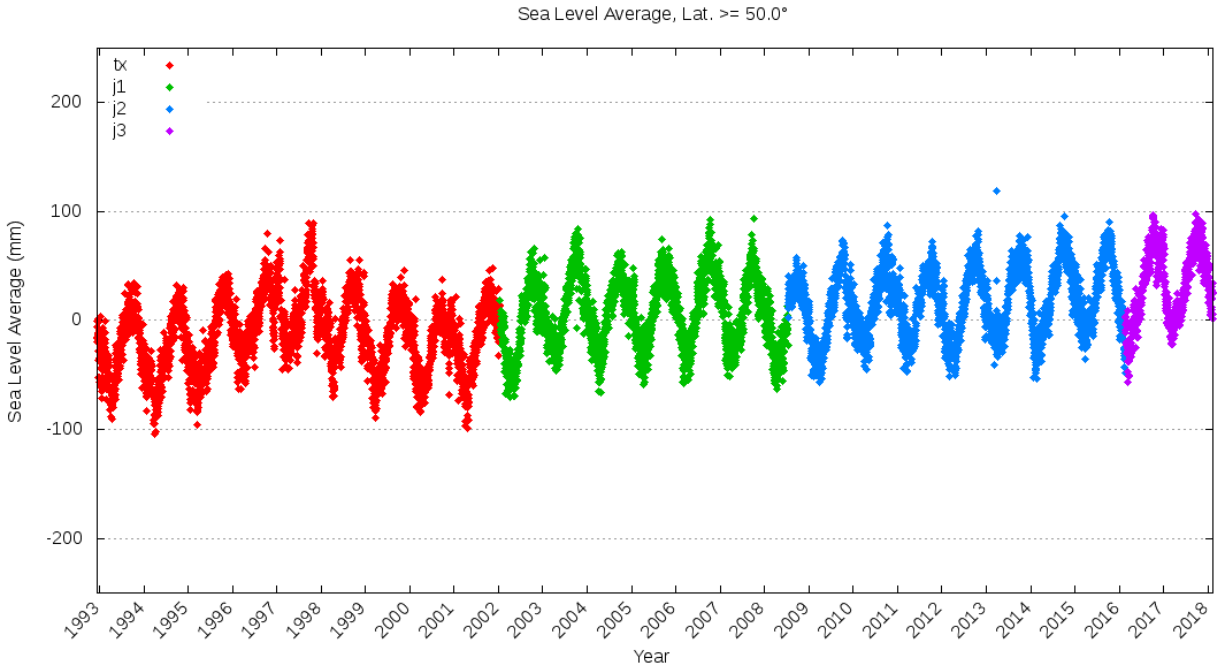

Figure 4 50° North Ocean rise 80mm 3.2 mm/year

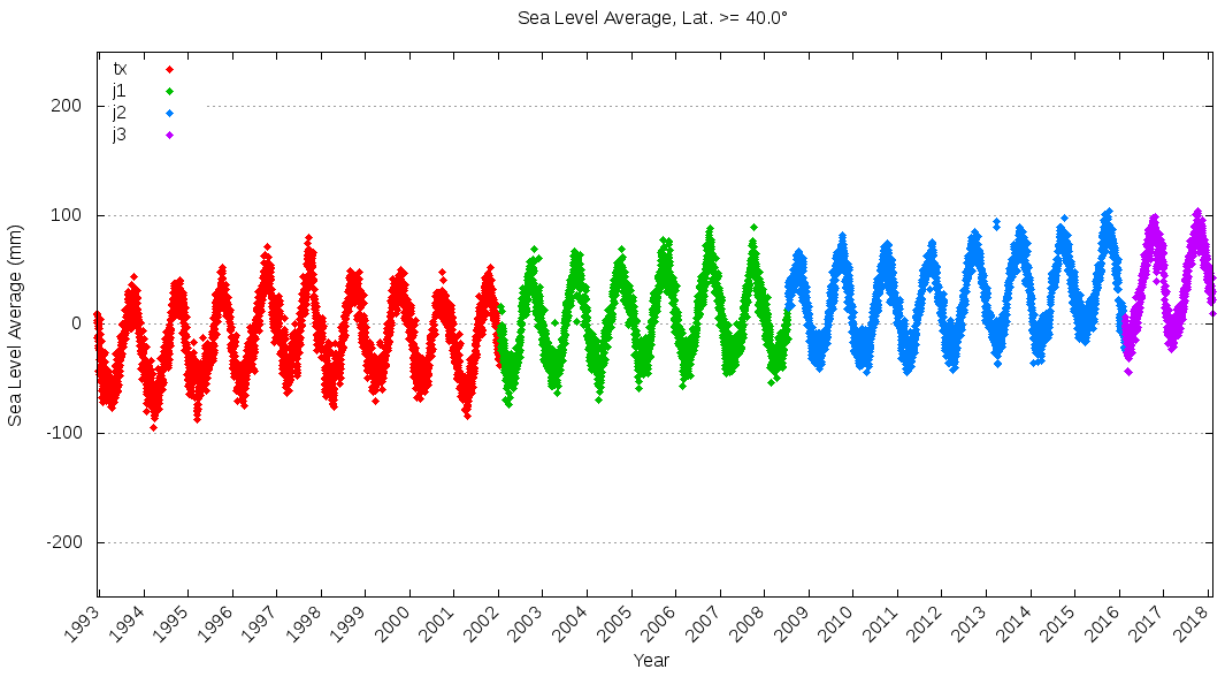

Figure 5 40° North Ocean rise 70mm 2.8 mm/year

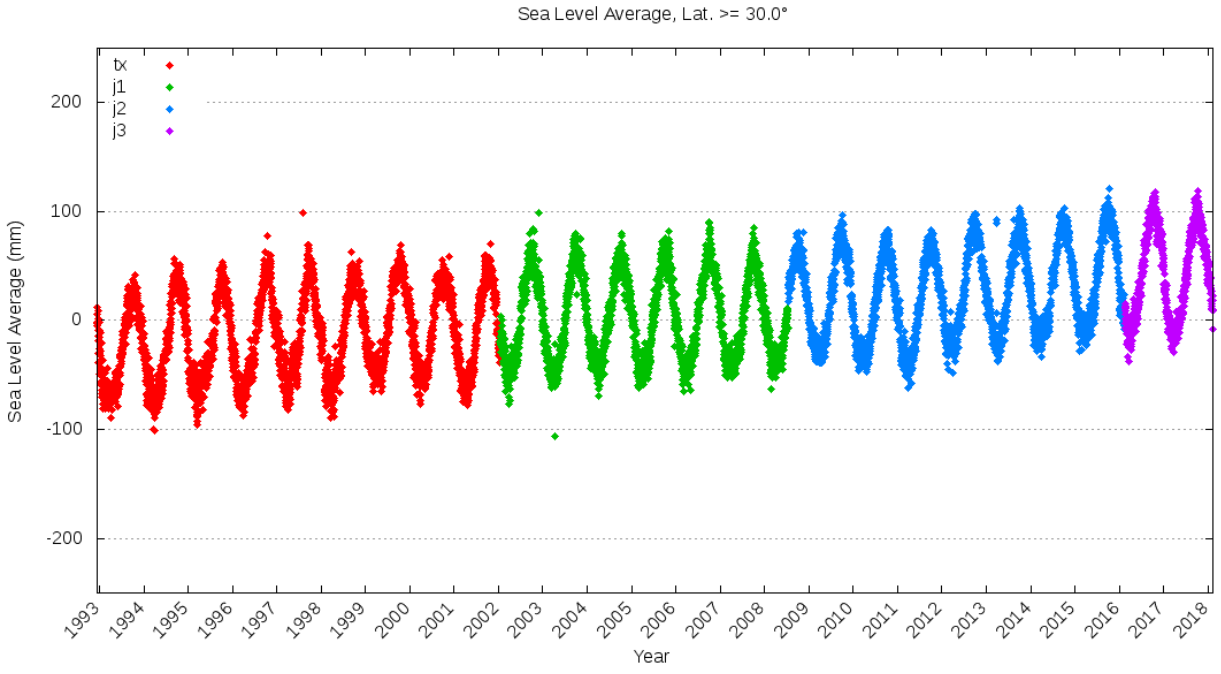

Figure 6 30° North Ocean rise 70mm 2.8 mm/year

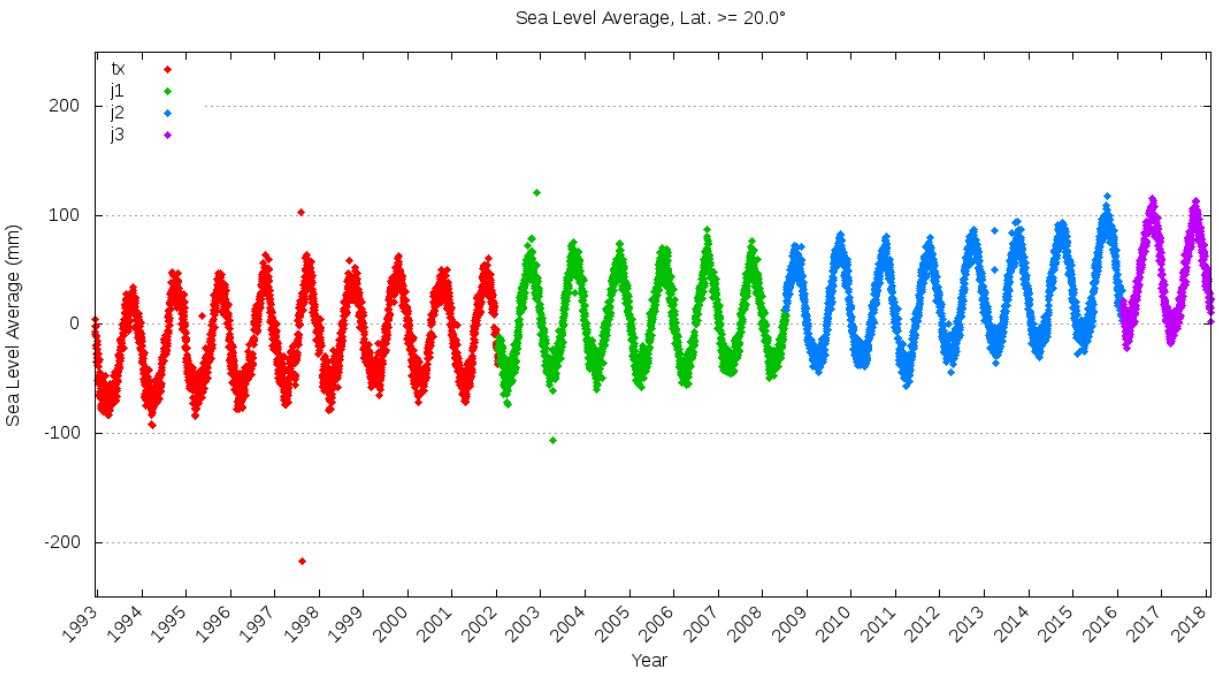

Figure 7 20° North Ocean rise 60mm 2.4 mm/year

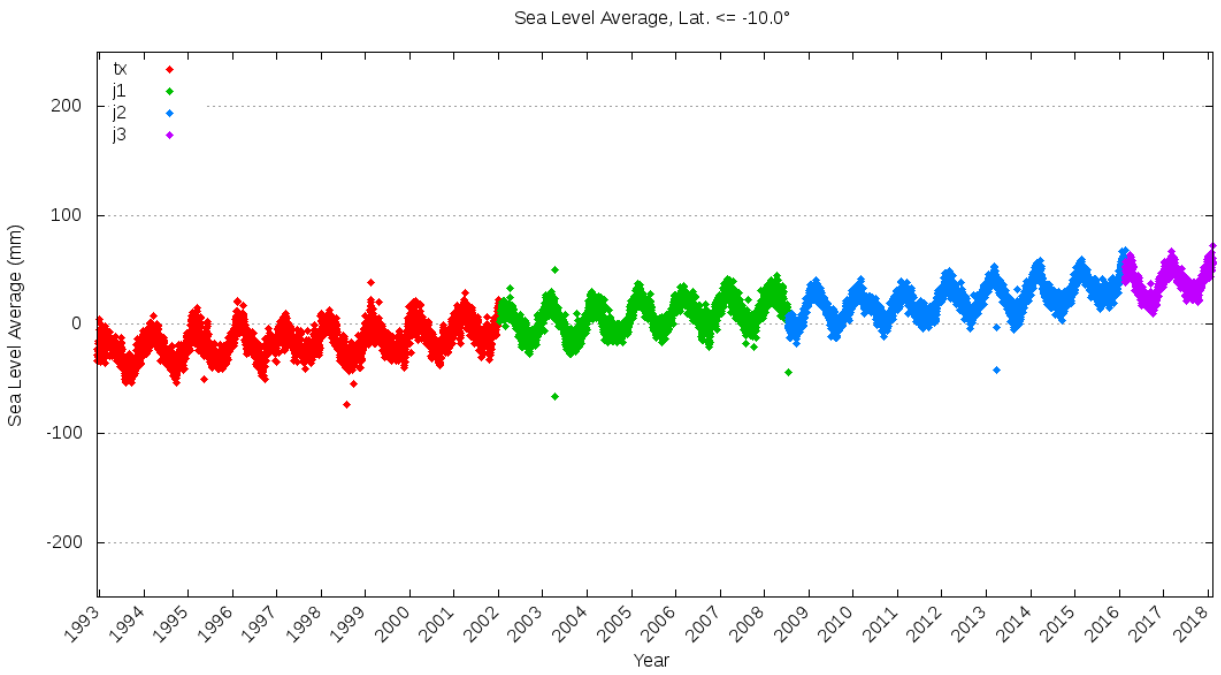

Figure 8 10° North Ocean rise 70mm 2.8 mm/year

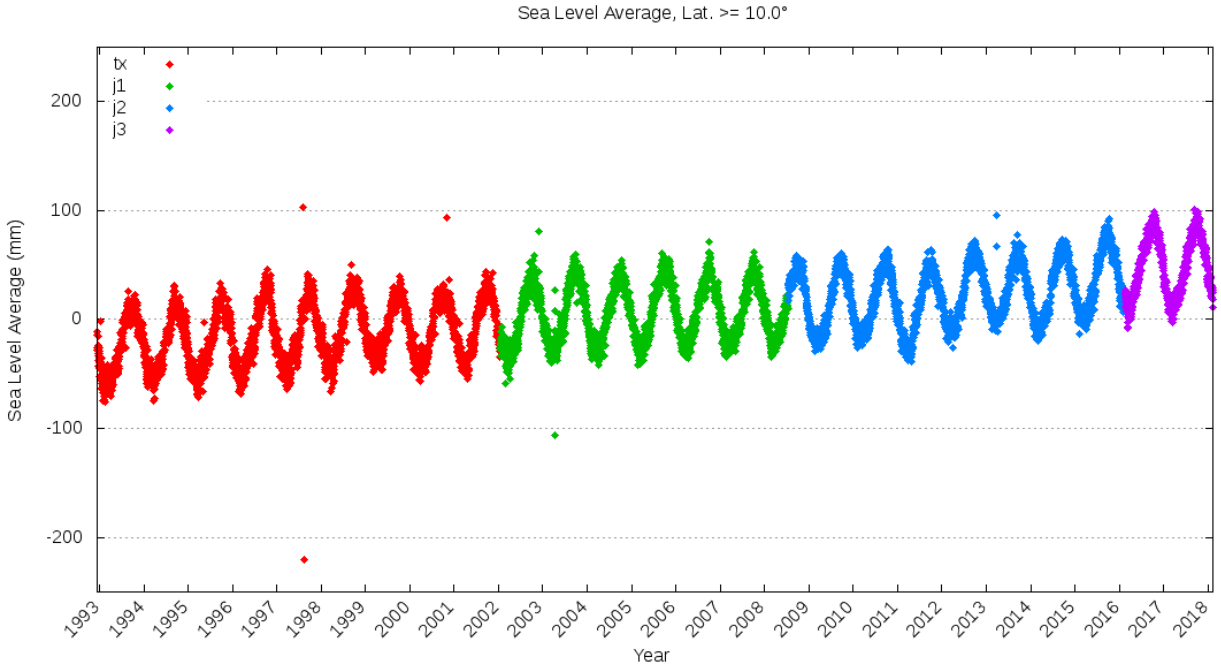

Figure 9 10° South Ocean rise 60mm 2.4 mm/year

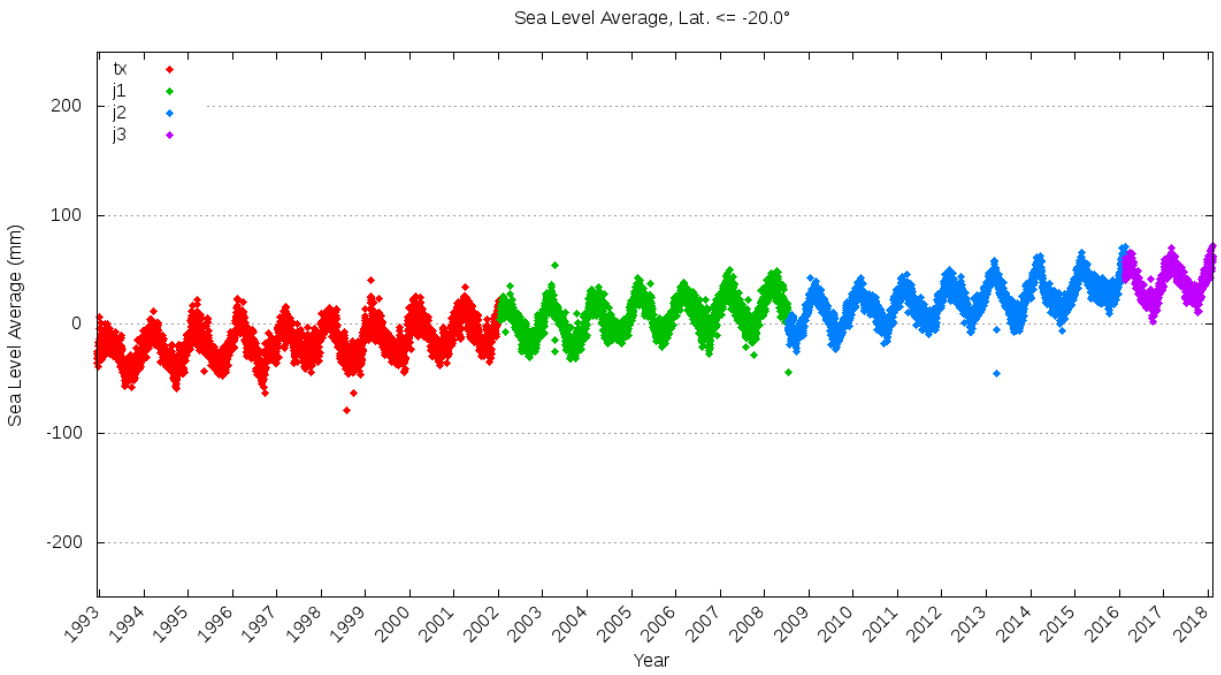

Figure 10 20° South Ocean rise 60mm 2.4 mm/year

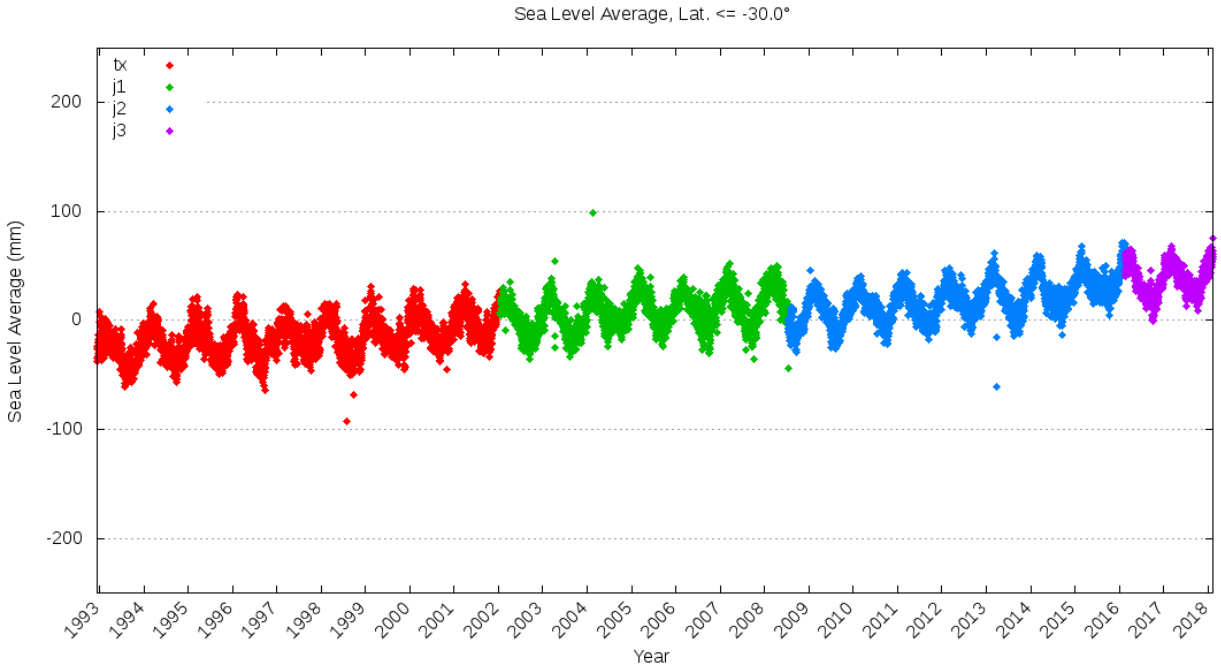

Figure 10 30° South Ocean rise 60mm 2.4 mm/year

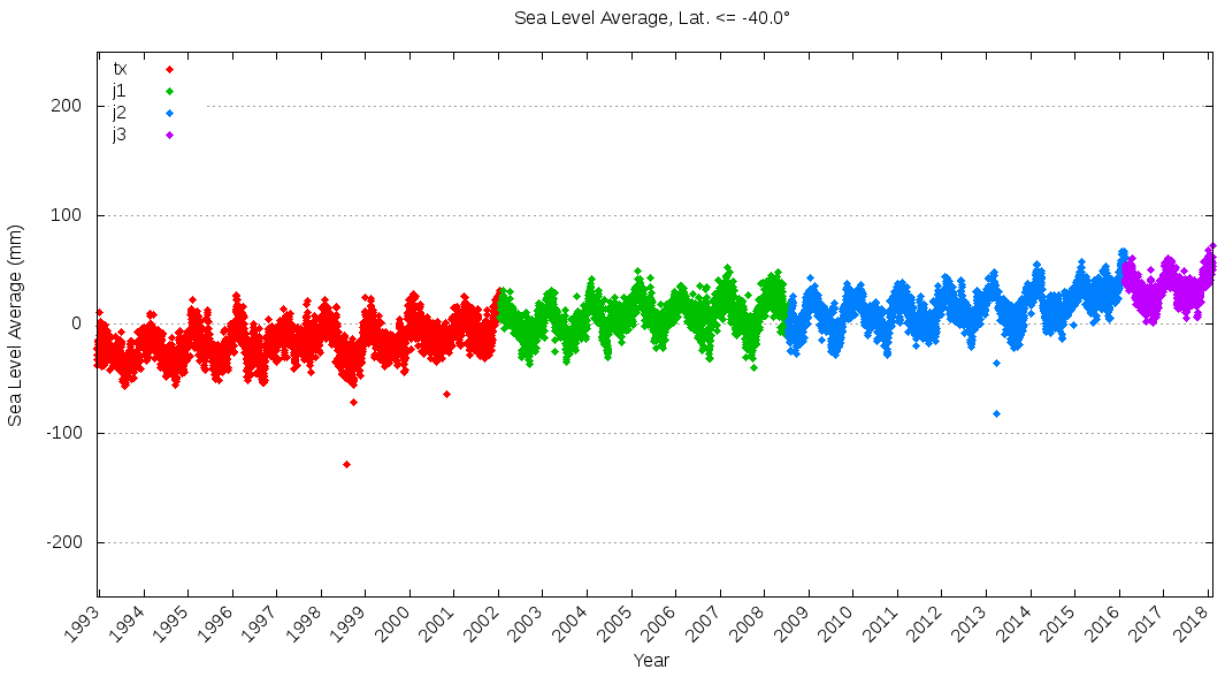

Figure 11 40° South Ocean rise 40mm 2.4 mm/year

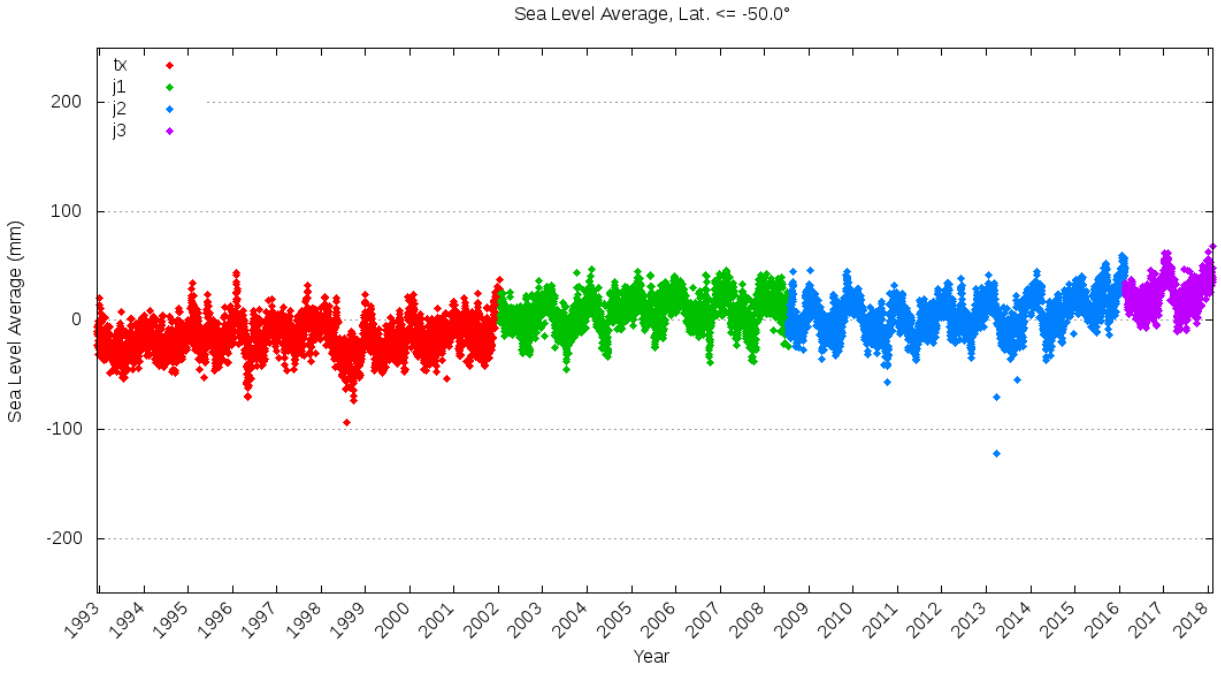

Figure 12 50° South Ocean rise 50mm 2.0 mm/year

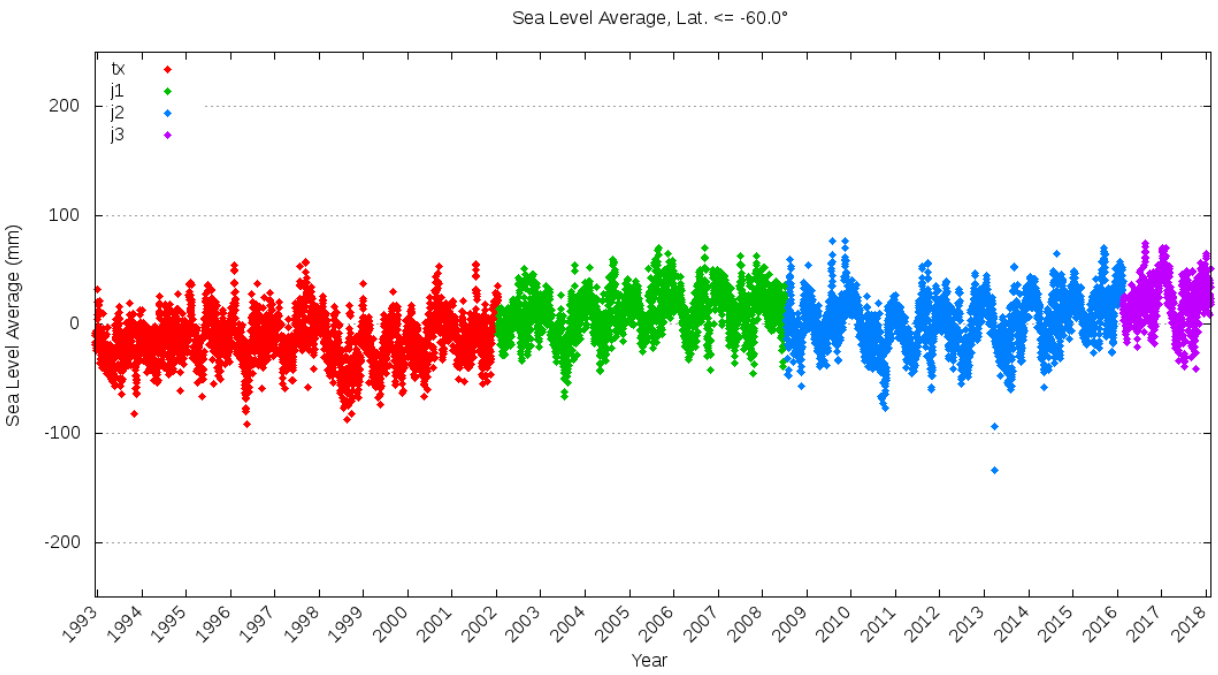

Figure 13 60° South Ocean rise 50mm 2.0 mm/year

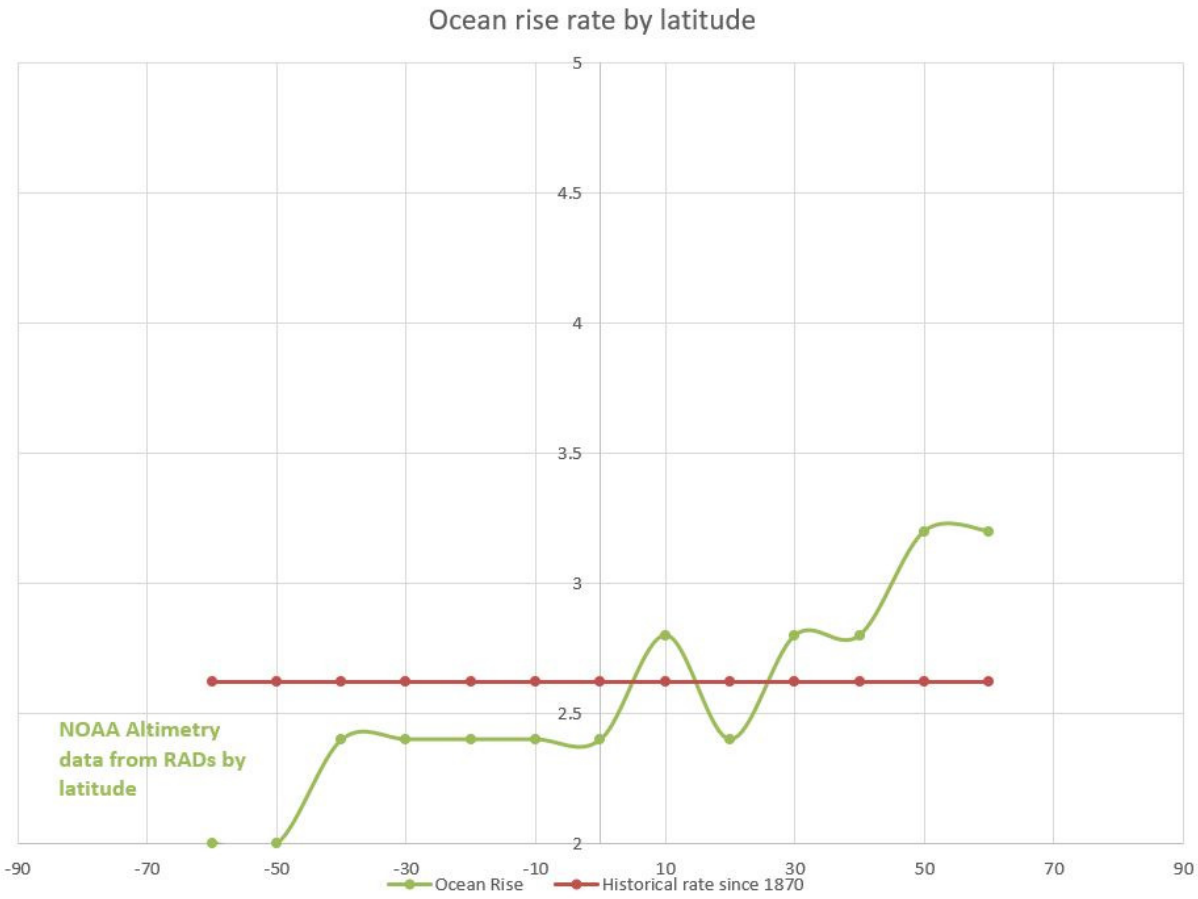

Figure 14 Summary graph of RADS data

Conclusion

In 100 years the oceans will rise 260 mm. Even at the 3.3 mm rate the rise would be 0.26 meters. Increased evaporation is mitigating the ocean rise due to melting glaciers. Increased evaporation also cools the oceans down. The scenario from the Global Ocean rise paper that shows everything stays the

same is the correct scenario. We will make a script to keep these graphs up to date on our site at

cctruth.org

References

1. NOAA Technical Report NOS CO-OPS 083 Global and Regional Sea Level Rise Scenarios for the United States. William V. Sweet et al. https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf
2. Altimetry data are provided by the NOAA Laboratory for Satellite Altimetry.
3. https://www.epa.gov/climate-indicators/climate-change-indicators-sea-level.
4. https://web.physics.ucsb.edu/~lgrace/chem123/troposphere.htm

Conflict of Interest section:

I have no known conflict of interest in production of this paper.