

Claim: Global warming is resulting in rising sea levels as seen in both tide gauge and satellite technology

NOAA Ocean Service: 2022 [The Next 30 Years of Sea Level Rise](#) “Sea level along the U.S. coastline is projected to rise, on average, 10 - 12 inches (0.25 - 0.30 meters) in the next 30 years (2020 - 2050), which will be as much as the rise measured over the last 100 years (1920 - 2020). Sea level rise will vary regionally along U.S. coasts because of changes in both land and ocean height.

REBUTTAL

This claim is demonstrably false. It really hinges on this statement: “Tide gauges and satellites agree with the model projections.” The models project a rapid acceleration of sea level rise over the next 30 to 70 years. However, while the models may project acceleration, the tide gauges clearly do not. All data from tide gauges in areas where land is not rising or sinking show instead a steady linear and unchanging sea level rate of rise near 4 inches/century, with variations due to gravitational factors. It is true that where the land is sinking as it is in the Tidewater area of Virginia and the Mississippi Delta region, sea levels will appear to rise faster but no changes in CO₂ emissions would change that.

The implication that measured, validated, and verified Tide Gauge data support this conclusion remains simply false. All such references rely on “semi-empirical” information, which merges, concatenates, combines, and joins, actual tide gauge data with various models of the reference author’s choosing. Nowhere on this planet can a tide gauge be found, that shows even half of the claimed 3.3 mm/yr sea level rise rate in “Tectonically Inert” coastal zones. These are areas that lie between regions of geological uplift and subsidence. They are essentially neutral with respect to vertical land motion, and tide gauges located therein show between 1 mm/yr (3.9 inches/century) and 1.5 mm/yr (6 inches/century rise). The great Swedish Oceanographer, Nils-Axel Mörner, has commented on this extensively, and his latest papers confirm this ‘inconvenient truth’.

Furthermore, alarmist claims that “Satellites agree with the model projection” are false. Satellite technology was introduced to provide more objective measurement of the sea level rise because properly adjusted tide gauge data was not fitting Alarmists’ claims. However, the new satellite and radar altimeter data lacked the resolution to accurately measure sea levels down to the mm level. Moreover, the raw data from this technology also conflicted with Alarmists’ claims.

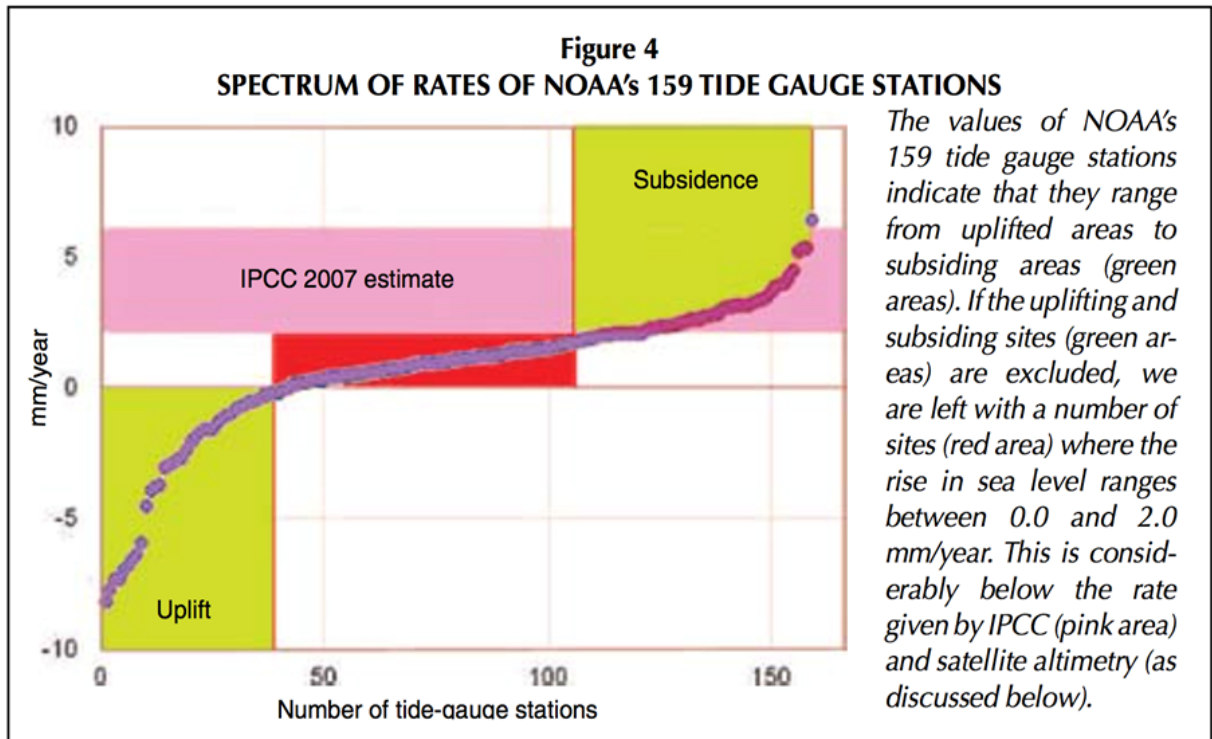
As a result, adjustments to this data were also made – most notably a Glacial Isostatic Adjustment (GIA). GIA assumes that basically all land is rebounding from long ago glaciations and oceanic basins are deepening. The assumption is that this rebounding is masking the true sea level rise. Alarmists continue to proclaim that their models project a rapid acceleration of sea level rise over the next 30 to 70 years, when those same models have failed to even come close to accurately predicting the past 25 years.

[A new study](#) affirms what satellite data have been telling us for years: 'the global coastline is prograding.' This isn't the first time shoreline expansion in the era of global warming and allegedly rapid sea level rise has been documented.

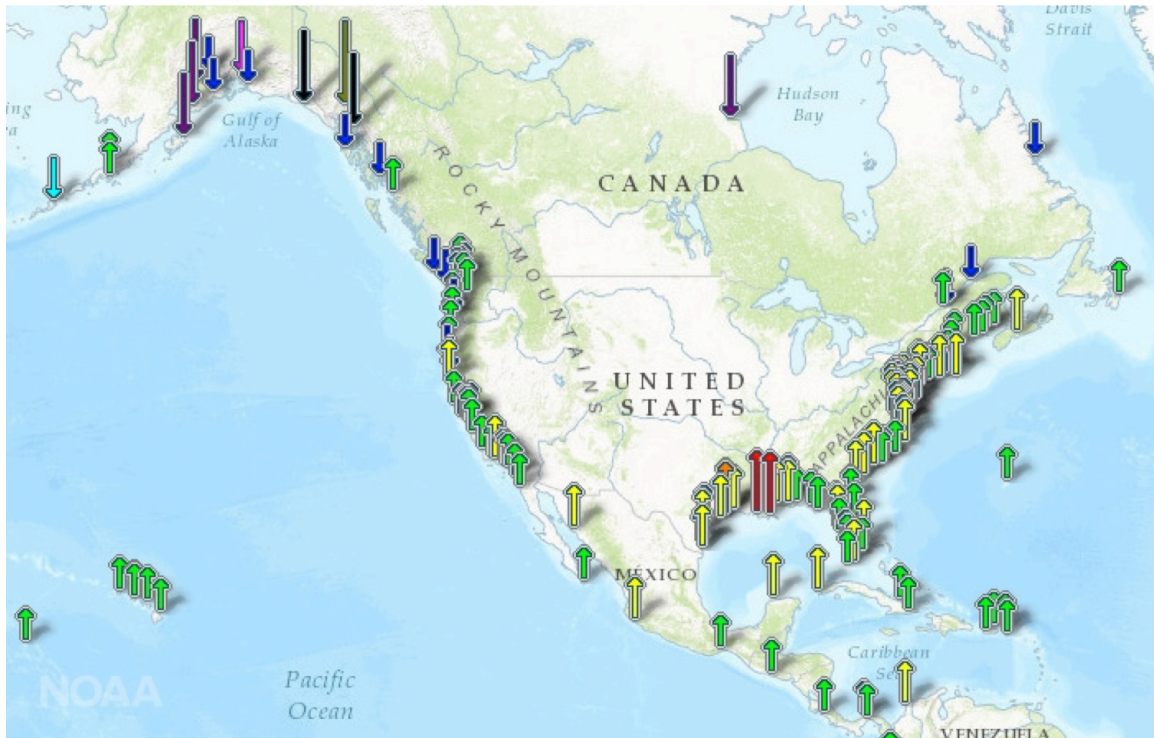
A 2019 global-scale analysis of 709 islands in the Pacific and Indian Oceans revealed **89% were either stable or growing in size**, and that *no* island larger than 10 ha (and only 1.2% of islands larger than 5 ha) had decreased in size since the 1980s.

Likewise, the globe's beaches been growing by 0.33 m/year since 1984. In a press release for a 2016 paper on coastal land area changes from 1985 to 2015, scientists acknowledged this: '*We expected that the coast would start to retreat due to sea level rise, but the most surprising thing is that **the coasts are growing all over the world***' – BBC. Today there are high resolution satellite images available from Google Earth clearly demarcating global-scale decadal shoreline change since the 1980s.

Claims of dangerously accelerating sea level rise posing an imminent global threat to coasts have once again been challenged by real-world observational evidence." Indeed, global warming is not resulting in rising sea levels.



Nils-Axel Mörner has shown areas where the land is rising, show an apparent decline in sea levels (Alaska and Canada) and areas where the land is subsiding measure higher sea level increases (Gulf coast or Mid Atlantic). The most accurate measure of true sea level changes come from locations that are tectonically stable.



Note sea levels appear to be declining in much of Alaska and Canada but rising in the Gulf and Mid-Atlantic coast.

Nils-Axel Mörner has studied sea level and its effects on coastal areas for some 45 years. Recently retired as director of the Paleogeophysics and Geodynamics Department at Stockholm University, Mörner is past president (1999-2003) of the INQUA Commission on Sea Level Changes and Coastal Evolution, and leader of the Maldives Sea Level Project. In a [2010 paper](#) in *21st Century Science and Technology* Mörner said:

“While the IPCC and its boy scouts present wilder and wilder sea level predictions for the near future, the real observational facts demonstrate that sea level has remained virtually stable for the last 40-50 years.”

This is in sharp contrast with the model projections, similar to the way temperatures are defying the models.

[Holgate \(2007\)](#) showed a slowing began in the late 20th century.

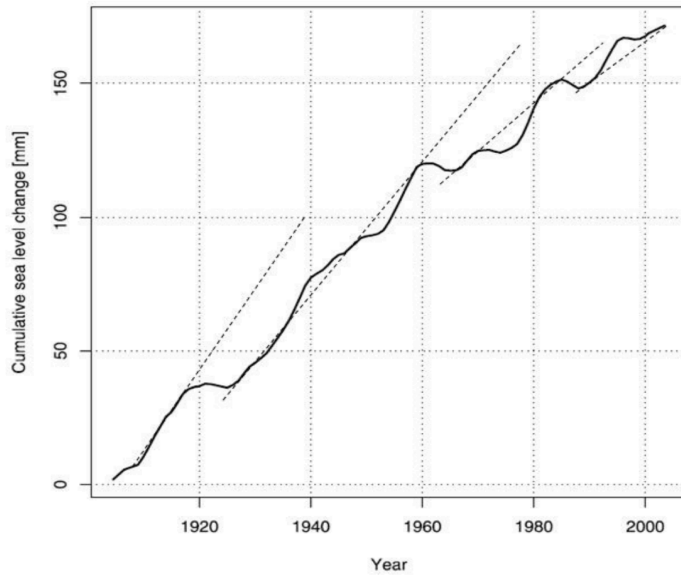


Figure 4. The mean sea level record from the nine tide gauges over the period 1904–2003 based on the decadal trend values for 1907–1999. The sea level curve here is the integral of the rates presented in Figure 2.

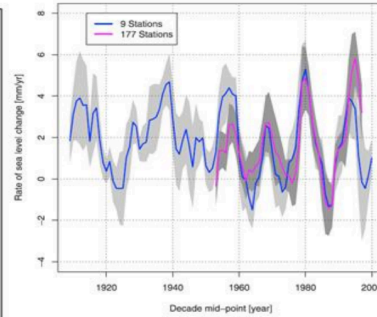


Figure 2. Comparison of the global mean decadal rates of sea level change based on the nine records with the rates from the 177 stations used in HW04. All rates are corrected for glacial isostatic adjustment and inverse barometer effects. The shaded region indicates ± 1 standard error.

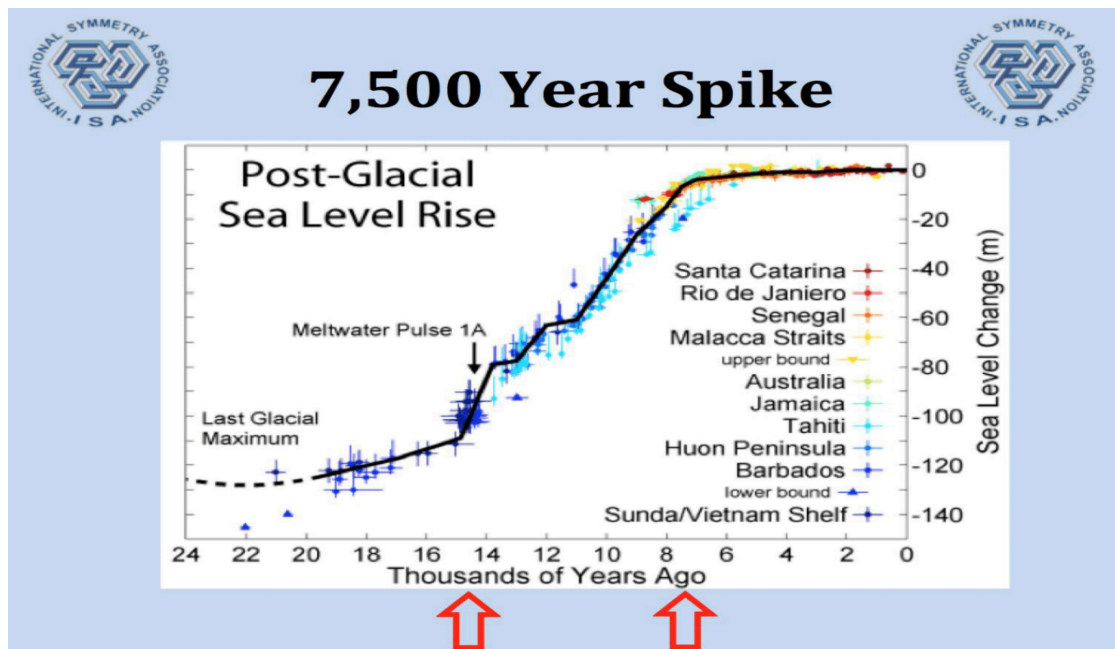
20th Century Sea Level Rise

**174 mm
(6.85 inches)**

SJ Holgate (2007)

Source: <https://www.jbartlett.org/wp-content/uploads/2017/01/NHCRHC-Assessment.pdf>

But the current trend slope pales in comparison to the long-term trends. Note the slower rises beginning 7,000 years ago!



TECHNOLOGY TO THE RESCUE – BUT DISAPPOINTS – SO ADJUSTMENTS WERE MADE

Because of local factors affecting gauges, technology was introduced to provide more objective measurement of sea level rise. In all cases the new satellite and radar altimeter data showed flat or even decreasing sea levels. Since these results conflicted with previous alarmist model forecasts and claims, adjustments to this data were made - including a Glacial Isostatic Adjustment (GIA). GIA assumes that land is rebounding from long ago glaciations and thus is masking the true sea level rise.

GRACE satellite data suggest a contribution of melted ice-mass of $+1.9 \text{ mm yr}^{-1}$ BUT note the large adjustments to the raw data!

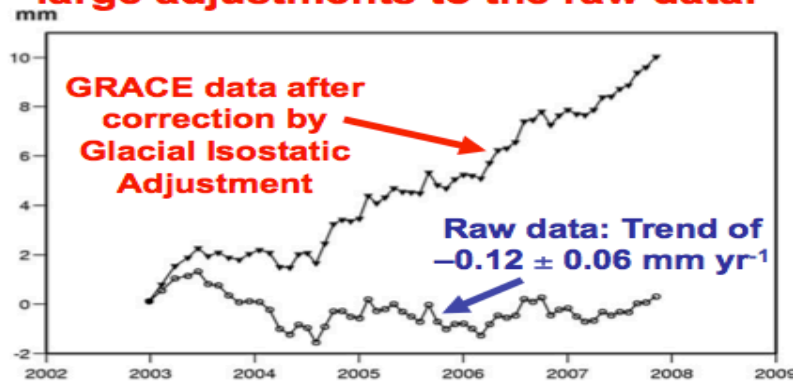
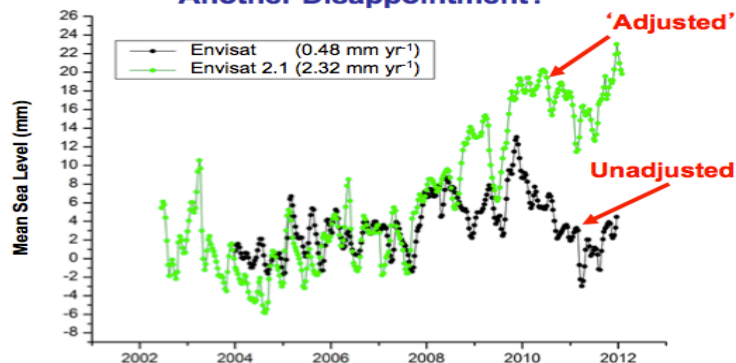


Fig. 1. Ocean mass change from GRACE over 2003–2008. The open circled curve is the raw time series. The black triangles curve corresponds to the GIA corrected time series.

Cazenave et al. (2009) Global and Planetary Change, vol. 65, 83-88

“Environmental Satellite”/Envisat’s Radar Altimeter 2: Another Disappointment?



Source: Rudolf Kipp – April 13, 2012

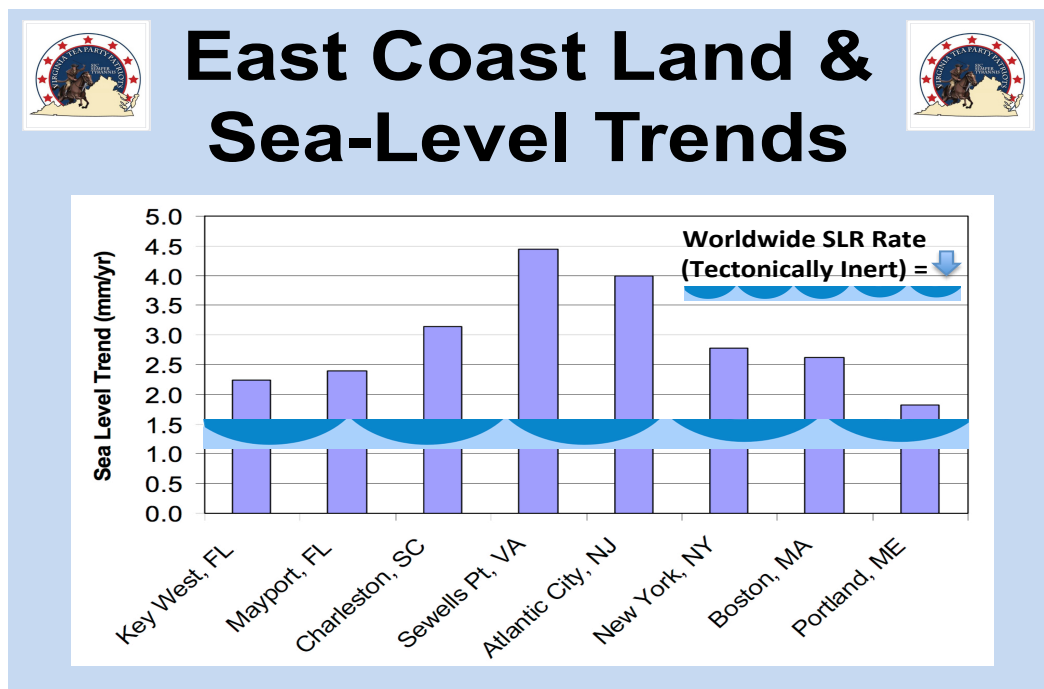
<http://www.science-skeptical.de/blog/vas-nicht-gaest-wird-passend-gemacht-asa-korigiert-daten-zum-meeresspiegel/007386/>

[http://www.ijesi.org/papers/Vol\(6\)8/Version-1/G0608014851.pdf](http://www.ijesi.org/papers/Vol(6)8/Version-1/G0608014851.pdf)

BAD DATA LEADS TO BAD POLICY

The US East Coast has one, and only one, ocean. The entire East Coast is subsiding (exhibiting what might be called a regional eustasy as the global eustasy has diminished after 1976). However not all locations are sinking at the same rate. The hinge point between uplift and subsidence is not yet well defined. You have to get to Nova Scotia, Canada, before you reach a definitive tectonically inert area that neither rises nor subsides. Besides this isostatic warping factor, there are strong local factors, especially from local (or site-specific) sediment compaction.

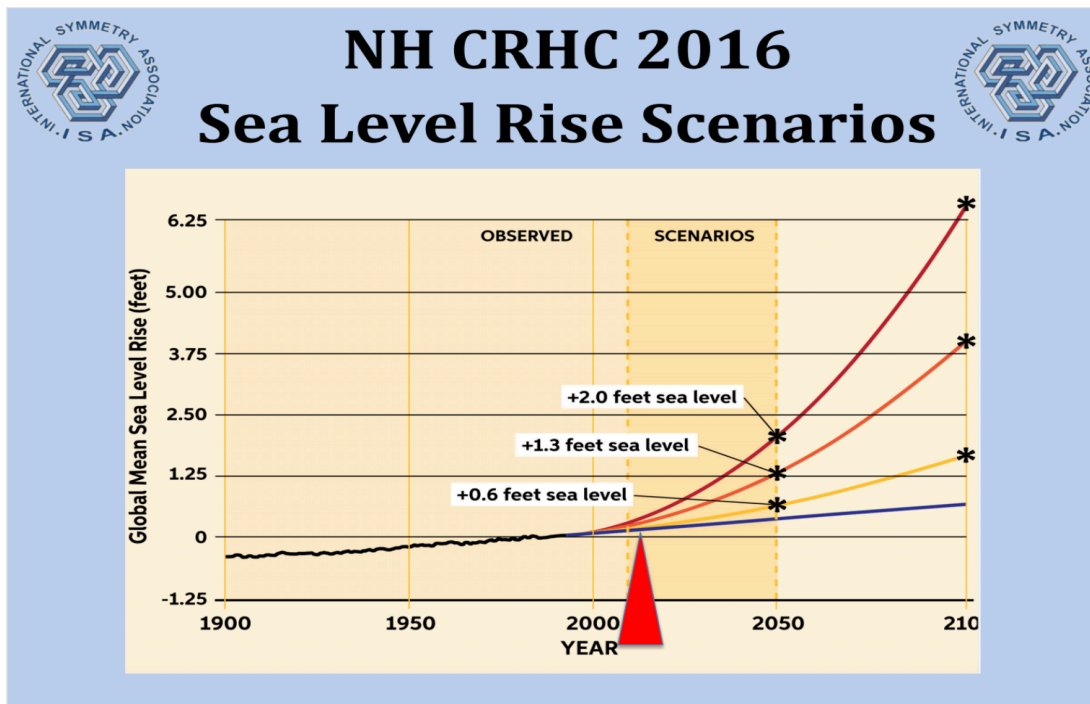
Virginia is sinking faster than other places due to a meteor hit about 35 million years ago that busted up the bedrock, making it “frangible,” and extracting groundwater from that structure just makes it sink faster.



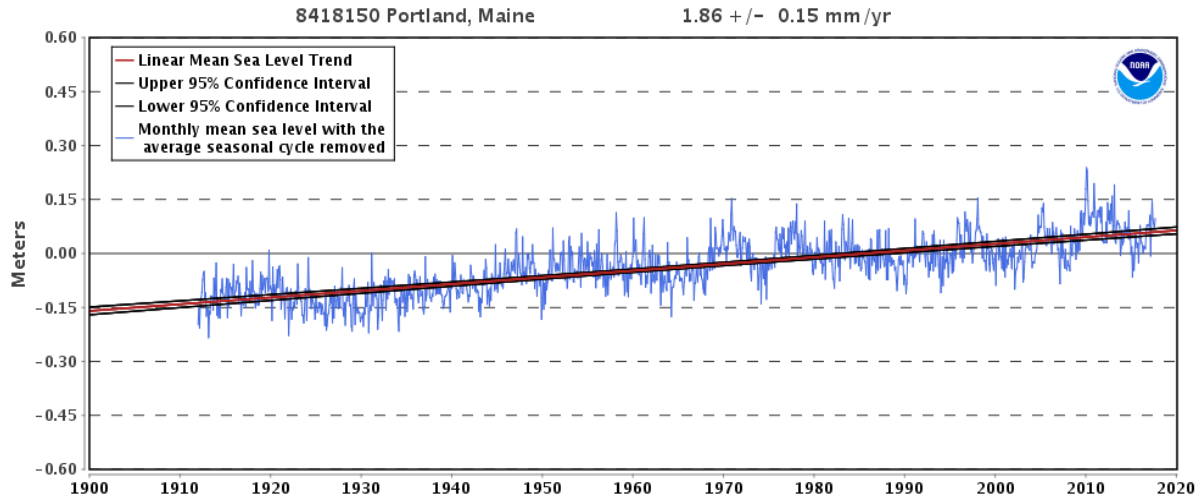
Further north, the NH Coastal Risk and Hazards Commission is using models and projecting 1 to over 6 feet sea level rises by 2100.

According to actual data in this [detailed reanalysis](#), the current rate is 7 inches/century, which is below any scenario line.

NEW HAMPSHIRE COASTAL RISK AND HAZARDS COMMISSION



The scenarios are based upon CO2 emission reductions ranging from no change (highest projected sea level) to draconian CO2 reduction involving no power generation emissions and only electric autos, etc. The projections start in 1992 and actual (remaining linear) measured sea level is just half of the “draconian” projection!

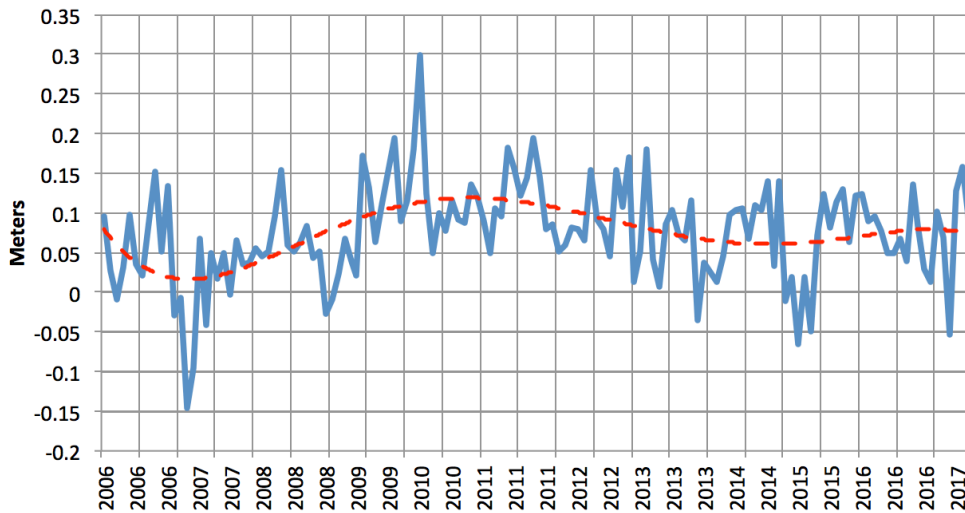


Many other projections had major flooding already occurring in New York City by now. James Hansen projected that the West Side Highway would be underwater by 2040, implying a 10-foot rise by then. So far we've added one inch. For his projection to come true we need another 9 feet, 11 inches by 2040. A steady series of inflammatory reports say the rises are exceeding expectation but data shows otherwise.

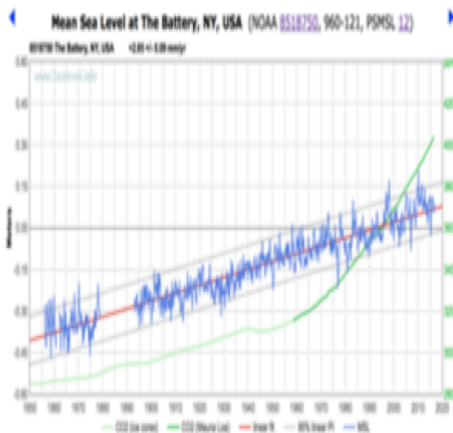
Headline: "Manhattan could be underwater sooner than expected"



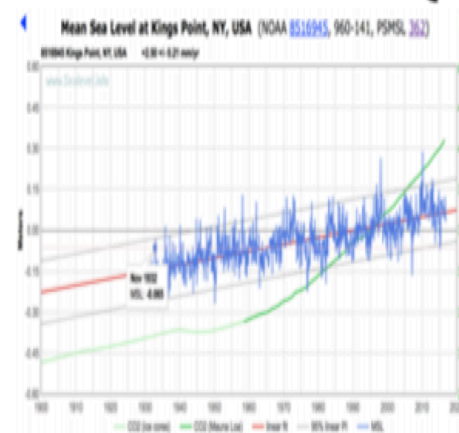
NOAA Sea Level Gauge Monthly - The Battery, NYC



NYC'S BATTERY



KINGS POINT, LI (NY)



Massive Acceleration of CO₂

(38% Upward Since 1880 to 400ppm), Yet

Sea-Level Remains Straight Line Linear -- **Not Accelerating.**

National Geographic, once a reliable reference, went all out and showed the Statue of Liberty wading in the Atlantic water. The level of the water depicted was 214 feet.



At the current rate of 4 inches/century, it would take 36,000 years to reach that level. We are 10,000 years into the current interglacial. Interglacials historically have lasted 10-20,000 years. Long before Lady Liberty would be swimming, she is more likely to be as depicted in the scene from Day after Tomorrow encased in ice and snow.

In the Mississippi Delta, Louisiana tides are rising at 10 times the global average and 5 times faster than the rest of the Gulf of Mexico. Grand Isle sea level is rising at a rate of 41 inches/century. Just to the east in Biloxi, Mississippi, the rise is just 6 inches/century. The rapid rates of sea level rise are due to compaction subsidence in the Mississippi Delta Plain (estimated to cause 80% of the rise). Also influencing the rise is the Army Corp dredging of the channel to maintain a nine-foot navigation channel to permit ship and barge traffic.

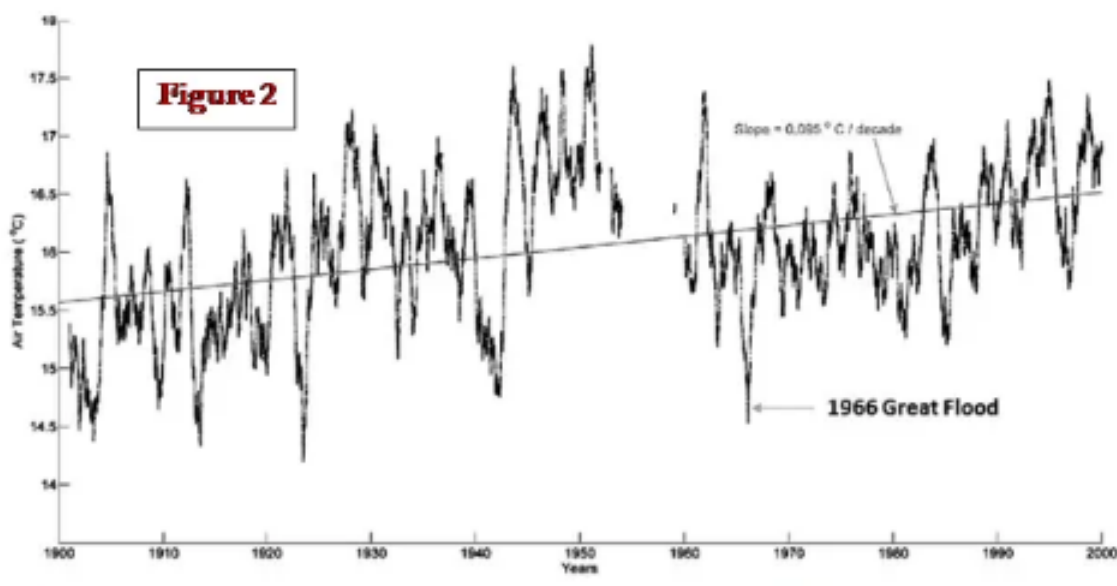
When Flooding occurred this year in heavy rains in Venice, Italy, Global warming was blamed. If climate change had really played a significant role, then we would expect the flooding to be worse in 2019 when compared to the more “natural flooding” in 1966. But a comparison of floodwaters inundating Doge’s Palace (see below) suggests the flooding was slightly worse in 1966.



FIGURE 4. (a) The Doge's Palace in San Marco square partially underwater

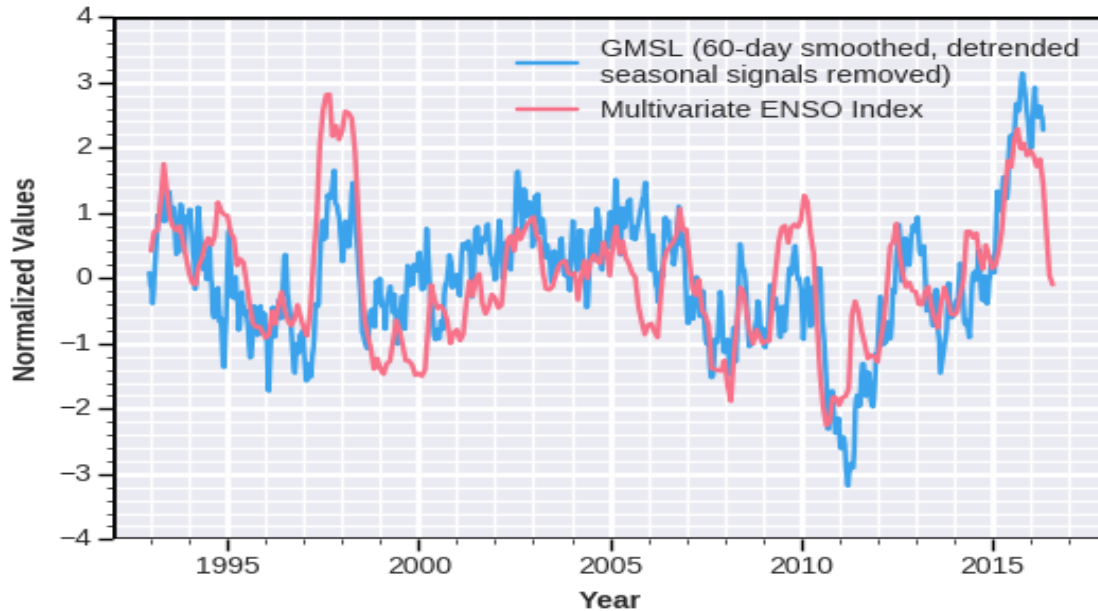


Official measurements likewise determined flood levels in Venice Lagoon peaked at 74 inches, shy of the 1966 record of 76 inches. The climate change argument is weakened further when it is understood that the 1966 flood happened during a low tide, in contrast to the 2019 flood that happened during an extreme high tide. Furthermore, there is no correlation with global warming as the November 1966 flood happened when Venice experienced its coldest temperatures since 1924. Recent Venice temperatures are slightly less than the 1950s (H/T Jim Steele, Director emeritus of San Francisco State's Sierra Nevada Field Campus)



Natural factors

Sea level rises are influenced by factors like El Niño and La Niña. El Niño's produce warming and ocean expansion, increasing sea levels rises. La Niña's produce cooling and ocean contraction and slower rises.



Source: [UCO GMSL and the MEI](#)

However Dr Morner points out that, in parts of the western Pacific (e.g. Tuvalu, Vanuatu), the ENSO events see diminishing sea levels from changing winds and a resulting water redistribution. In El Ninos, the water, which was piled up in the west by the equatorial low-level east winds in prior La Nina states, sloshes to the east as the easterlies diminish.

A 2020 study, done by Dr. Virginie Duvat of the University of La Rochelle in France, showed that 97 percent of the Maldives islands either grew (59 percent) or have not changed (38 percent) since 2005. The study would seem to confirm Duvat's own findings from 2018 when she concluded:

“Over the past decades, atoll islands exhibited no widespread sign of physical destabilization in the face of sea level rise.”

Despite the rise in atmospheric CO₂ concentration, the rate of sea level increases has been unchanged or even declined in recent decades. There is a large variance in tide gauge findings related to the rising or sinking of land areas. The arbiter of the discrepancies was supposed to be the satellites but they disappointed the community by showing an apparent slowing of sea level rises or even declines. As they did with surface temperature observation data, warmists invented adjustments to disguise the inconvenient facts. Thus, at this point, there is no

evidence that Global Warming has impacted the rate of increase in sea levels.

AUTHORS:

Tom Wismuller

Thomas Wismuller who did his college work in meteorology at NYU and Stanford, worked throughout NASA during Apollo's Moon Landings and still lectures at NASA Field Centers. He was highlighted in Horizons, the American Institute for Aeronautics & Astronautics' special NASA's 50th anniversary issue, and was the meteorologist member of 2012's NASA 49 and NASA 41.

In Nov 2016, Tom chaired the Oceanographic Section at the massive "World Congress of Oceans" in Qingdao, China, as the featured Sea-Level presenter. He keynoted at 2017's Rome Climate Conference.

Nils-Axel (Niklas) Mörner

Nils-Axel ("Niklas") Mörner took his Ph.D. in Quaternary Geology at Stockholm University in 1969. Head of the institute of Paleogeophysics & Geodynamics (P&G) at Stockholm University from 1991 up to his retirement in 2005.

He has written many hundreds of research papers and several books. He has presented more than 500 papers at major international conferences. He has undertaken field studies in 59 different countries. The P&G institute became an international center for global sea level change, paleoclimate, paleoseismics, neotectonics, paleomagnetism, Earth rotation, planetary-solar-terrestrial interaction, etc.

Among his books; Earth Rheology, Isostasy and Eustasy (Wiley, 1984), Climate Change on a Yearly to Millennial Basis (Reidel, 1984), Paleoseismicity of Sweden: a novel paradigm (P&G-print, 2003), The Greatest Lie Ever Told (P&G-print, 2007), The Tsunami Threat: Research & Technology (InTech, 2011), Geochronology:

Methods and Case Studies (InTech, 2014), Planetary Influence on the Sun and the Earth, and a Modern Book-Burning (Nova, 2015).

Joseph D'Aleo

BS, MS degrees in Meteorology, University of Wisconsin

ABD Air Resources NYU

Certified Consultant Meteorologist, Fellow of the AMS, Councilor at the AMS, Chair of the AMS Committee on Weather Analysis and Forecasting

College Professor and Meteorology Department Chair, Lyndon State College

Co- founder and Chief Meteorologist at The Weather Channel, Chief

Meteorologist at WSI, Hudson 7, LLC, WeatherBell Analytics, LLC

Authored a Resource Guide on El Nino and La Nina for Greenwood Publishing.

Joe has authored many articles and peer reviewed papers and co-authored other books and made numerous presentations how understanding how sun and ocean cycles have made seasonal climate forecasting skillful and explain changing regimes in climate and associated extremes.