

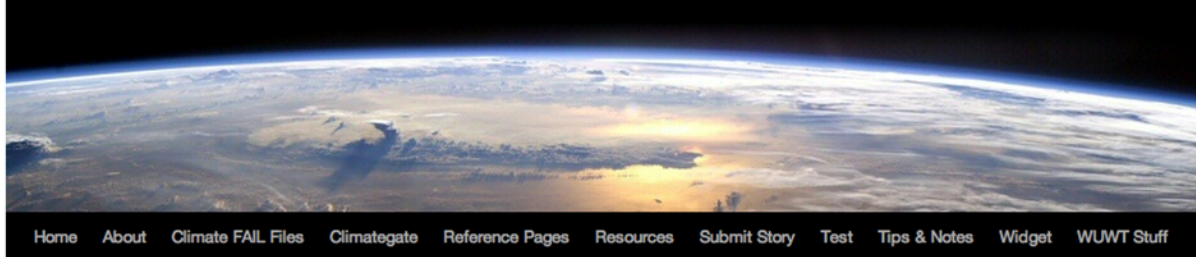
# Experiences with Informing the ~~Public~~ About Sea Level Science    Skeptics

R. S. Nerem and D. Masters  
University of Colorado



## Watts Up With That?

Commentary on puzzling things in life, nature, science, weather, climate change, technology, and recent news by Anthony Watts



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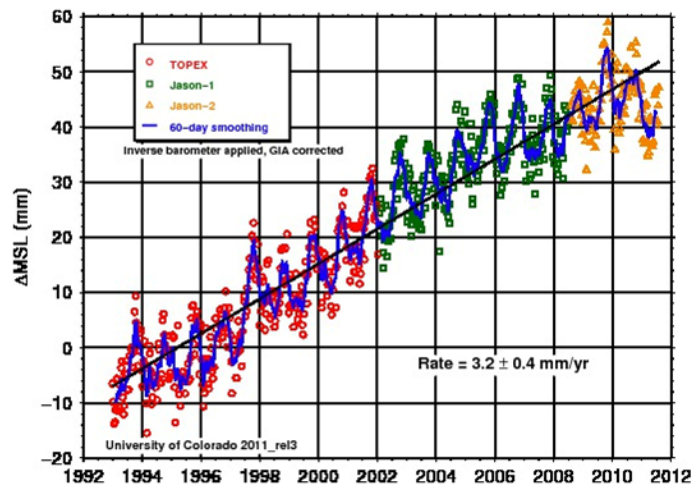
← The Nuclear Winter of our Discontent

Solar warming and ocean equilibrium, Part 3: Solanki and Schuessler respond →

### What's delaying UC sea level data from being updated?

Posted on April 6, 2011 by Anthony Watts

The University of Colorado at Boulder releases [satellite based altimetry of sea level change](#) several times a year. This graph below is dated December 15th according to the image timestamp.



If the [previous schedule](#) is any indication, they are now almost two months overdue. I'm not involving any nefarious motives whatsoever, but I'm wondering why it is overdue.

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"...the world's most viewed climate website"

- Fred Pearce *The Climate Files: The Battle for the Truth about Global Warming*

#### Blog Stats

■ 91,118,003 views

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The controversy starts because we delayed our data release in order to update our web page.

# CU Sea Level Research Group

University of Colorado

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## GMSL Rates

CU:  $3.2 \pm 0.4$  mm/yr  
 AVISO:  $3.2 \pm 0.6$  mm/yr  
 CSIRO:  $3.1 \pm 0.4$  mm/yr  
 NOAA:  $3.2 \pm 0.4$  mm/yr (w/ GIA)

## Frequent Questions

- What determines the x-intercept (i.e., "zero-crossing" or "base year") of the GMSL plots?
- Why is the GMSL different than local tide gauge measurements?
- What is the definition of global mean sea level (GMSL) and its rate?
- What is glacial isostatic adjustment (GIA), and why do you correct for it?
- Can I subscribe to the mean sea level estimates?

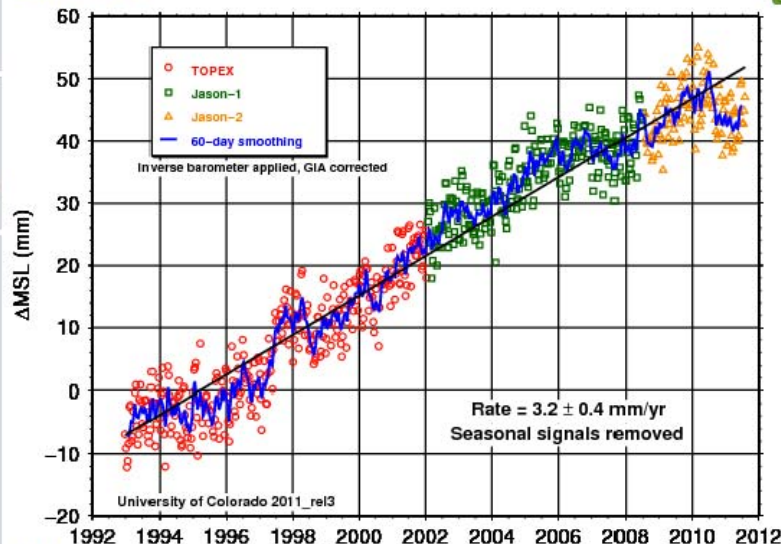
[All FAQs](#)

## Sea Level Links

Since 1993, measurements from the TOPEX and Jason series of satellite radar altimeters have allowed estimates of global mean sea level. These measurements are continuously calibrated against a network of tide gauges. When seasonal and other variations are subtracted, they allow estimation of the global mean sea level rate. As new data, models and corrections become available, we continuously revise these estimates (about every two months) to improve their quality.

## 2011\_rel3: Global Mean Sea Level Time Series (seasonal signals removed)

Edited: 2011-09-19



### Data

[Raw data \(ASCII\)](#) | [PDF](#) | [EPS](#)

### Similar plots

[Global Mean Sea Level Time Series \(seasonal signals retained\)](#)

## CU Sea Level Blog

- NASA Satellites Detect Pothole on Road to Higher Seas
- GMSL Updated and Compared to MEI
- GIA FAQ Updated with Peltier Reference


[more](#)

## Our Publications

- Evaluation of high-frequency oceanographic signal in GRACE data: Implications for de-aliasing
- Recent changes in the Earth's oblateness driven by Greenland and Antarctic ice mass loss
- ENSO-correlated fluctuations in ocean bottom pressure and wind-stress curl in the North Pacific
- The Effect of Signal-to-Noise Ratio on the Study of Sea Level Trends

[more](#)

## Recent Sea Level Articles

- On the robustness of predictions of sea level fingerprints
- Greenland's contribution to global sea-level rise by the end of the 21st century
- Relationship between glacial isostatic adjustment and gravity perturbations observed by GRACE
- Acceleration debate

When we finally released our new data and web page, we noted prominently that a new GIA correction had been applied.

<http://sealevel.colorado.edu>

# CU Sea Level Research Group

University of Colorado

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 NOAA:  $3.2 \pm 0.4$  mm/yr (w/ GIA)

## New web site - new sea level release

Edited: 2011-05-05 [Steve Nerem's blog](#)



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Welcome to the new webpages from the University of Colorado sea level group! We apologize for the delay in updating our sea level releases, but the transition to these new web pages took longer than we thought. In addition, we have made many improvements to our data (new orbits, new tide model, new corrections) which ultimately had little effect on global mean sea level, but brought us up to date with the latest advances in the field.

One important change in these releases is that we are now adding a correction of 0.3 mm/year due to Glacial Isostatic Adjustment (GIA), so you may notice that the rate of sea level rise is now 0.3 mm/year higher than earlier releases. This is a correction to account for the fact that the global ocean basins are getting slightly larger over time as mantle material moves from under the oceans into previously glaciated regions on land. Simply subtract 0.3 mm/year if you prefer to not include the GIA correction.

You may also note that rate of sea level rise over recent years has been less than the long-term average. This is believed to be due to the recent La Nina's we have been experiencing, though research on this is continuing. We will soon add a plot to the web site illustrating this effect.

Let us know if you spot any bugs in the new web pages. Thanks for your interest!

## CU Sea Level Blog

- [NASA Satellites Detect Pothole on Road to Higher Seas](#)
- [GMSL Updated and Compared to MEI](#)
- [GIA FAQ Updated with Peltier Reference](#)

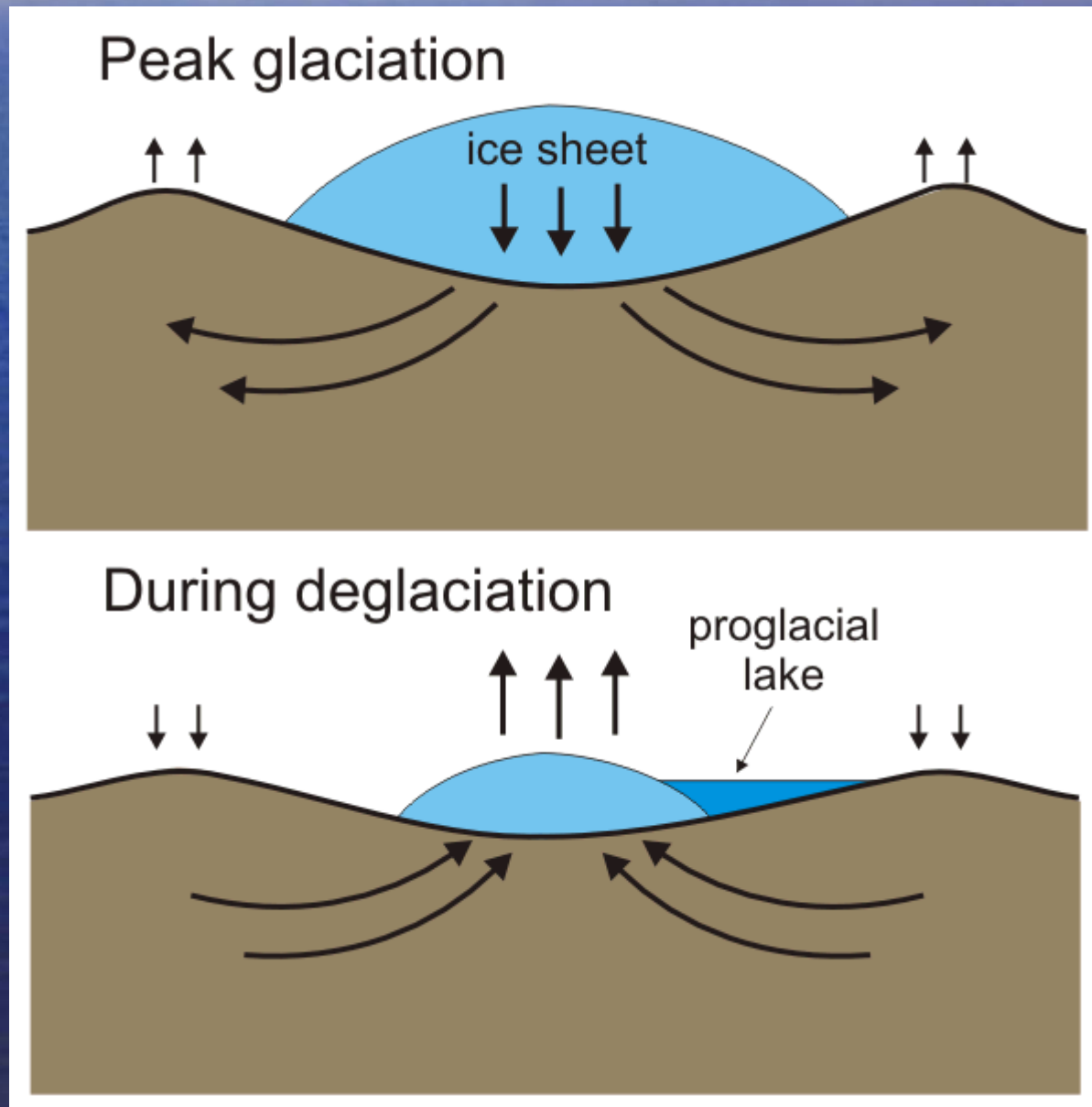


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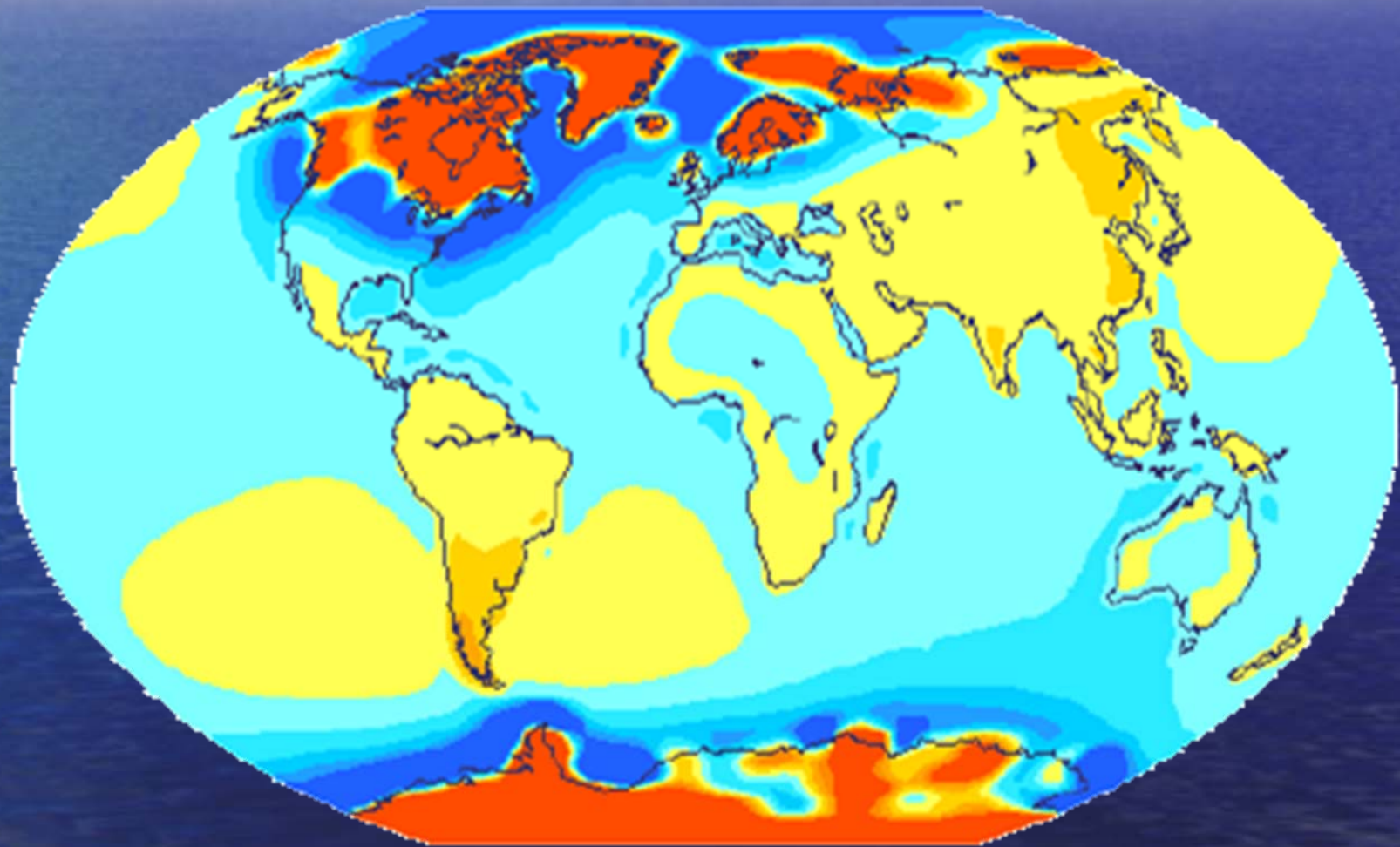
## Our Publications

- [Evaluation of high-frequency oceanographic signal in GRACE data: Implications for de-aliasing](#)
- [Recent changes in the Earth's oblateness driven by Greenland and Antarctic ice mass loss](#)
- [ENSO-correlated fluctuations](#)

# Glacial Isostatic Adjustment (GIA)



# Glacial Isostatic Adjustment (GIA)



[Milne, 2005]

# Watts Up With That?

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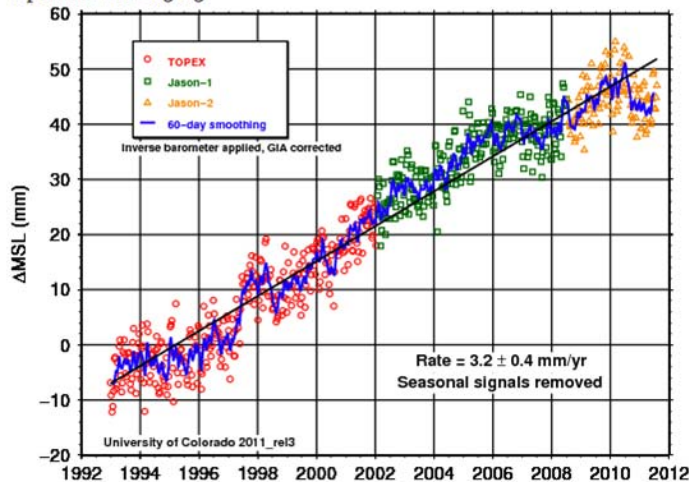
A Modest Proposal for Nuclear Waste Disposal →

## New sea level page from University of Colorado now up

Posted on May 5, 2011 by Anthony Watts

As we surmised in earlier posts, the crozon.colorado.edu website was a test run. Here's the newest graph from the revised <http://sealevel.colorado.edu/>

Updated: 2011-05-05



They [write about the update](#):

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"...the world's most viewed climate website"

- Fred Pearce *The Climate File: The Battle for the Truth about Global Warming*

### Blog Stats

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Immediately the skeptical blogosphere accused us of inflating the sea level rate by including the GIA correction

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James Taylor, Contributor

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5/11/2011 @ 1:02PM | 9,781 views

# NASA-Funded Group Doctors Sea Level Data



56 comments, 2 called-out

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Catastrophic sea level rise is one of the most valued hole cards played by alarmists in the global warming debate. In *An Inconvenient Truth*, Al Gore showed computer generated images of what Manhattan would look like if sea level rose 20 feet. Building on this theme, elevation charts of coastal cities have become a staple in global warming presentations by Al Gore wannabes. But what happens when sea level in the real world does not rise nearly as much as alarmists predict? If you are a NASA-funded gatekeeper of sea level data, you merely doctor the data.



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James Taylor

The narrative of the blogosphere got more press when a conservative Heartland Institute blogger, James Taylor, regurgitated and exaggerated further the previous skeptical blogger claims on [Forbes.com](http://Forbes.com)

"Gatekeepers of our sea level data are manufacturing a fictitious sea level rise that is not occurring," said James M. Taylor, a lawyer who focuses on environmental issues for the Heartland Institute.

NASA HQ sees the Forbes blog and wonders if we need to address the false claims (we decide not to at that time)

# Insulting Emails Begin Arriving

"Doctor... Venkman. The purpose of science is to serve mankind. You seem to regard science as some kind of dodge... or hustle. Your theories are the worst kind of popular tripe, your methods are sloppy, and your conclusions are highly questionable! You are a poor scientist, Dr. Venkman!"



# Insulting Emails Begin Arriving

“I was reading how your environmentalist group has been manipulating the data regarding the level sea rise. I am an analyst myself and I know just how easy and tempting it is to fudge data in order to get the statistics to say what you want it to say. I guess that shows the spurious nature of the public education system in the United States to have not thrown your lying asses out on the street for your dishonest activities in order to push a political agenda. But hey I guess academia is like congressman weiner in that neither weiner nor academia have any ethical standards. I guess your mindset is that any means to an end is permissible.”

“LMAO. You global alarmist lying mother f\*\*\*\*\*s have been caught again. Sea level and global water volume are two separate and distinct things. You a\*\*\*\*\*s have been caught lying again. Did The Goron recommend this obvious manipulation of data? Or did you j\*\*\*\*\*offs dream it up yourselves. You alarmist fudgepackers are caught again and again manipulating the data. And even if global warming were a real event, which it isn't, most wouldn't believe you. HA HA HA...screwed yourselves again...Now F\*\*\* OFF!”

“You guys suck! Global warming, climate change, manipulation of data so you libs can suck more money out of the taxpayer's pockets and so Al Gore can get richer. What a bunch of BS!”

“A bunch of frauds. If I had done this in my dissertation I would have been kicked out of my graduate school program. You should be ashamed! No statistical addition to raw data is insignificant. Your group is simply biased with your political agenda!”

“Why can't you just let data be data!?”

# Insulting Emails Begin Arriving

“Stop adding to the sea level measurements. You call yourselves scientists. You're a bunch of frauds pushing a political agenda. I heard in May you added 0.3 millimeters -- or about the thickness of a fingernail -- every year to your actual measurements of sea levels. What are you clowns doing. If you did that at a real University like NYU, you'd be thrown out as a fraud.”

“As one who believes the assertions of climate change to be agenda-driven nonsense, I just wanted to thank you for your gift of doctored data. Keep up the fine work. You're doing a helluva good job!!!”

“I read where your research has been stretching the water one might say as reporting false info. on the sea level. It appears as though you who follow Al Gore and his Global Warming theory will do anything to keep the lie going, even filing false reports on the Sea Level. Anyone with half a brain knows that what is happening is just another Cycle in the Earths' History. It has nothing or very little to do with what man does or does not do. It has been going on for Millions of Years and all of this Bull Shit about Global Warming or Chnge is only making Al GORE RICHER AND GETTING UNIVERSITIES MORE OF THE TAX PAYERS MONEY TO FUND THIS FOOLISHNESS. Get a real Job and do something other than live off of the Tax Payers.”

“I cannot comprehend how scientists like you can present false data to the world. I would think that common sense, a good upbringing by caring parents and professional ethics would keep you from becoming premeditated liars. Do you now feel great remorse? Will you now acknowlege your fault and purge your work of all un-scientific numbers? Or will you stonewall? I recommend that you all do the right thing. You know what that is, as do all of us across the country. Face the music and change the tune.”

# FoxNews Comes Calling

- We were contacted by Maxim Lott of FoxNews about the Forbes blogger's claims; we explained the GIA correction in a detailed email.
- Maxim Lott publishes an article on FoxNews on June 17 which basically parrots James Taylor's claims; the new article does not include the explanations we provided; the article also solicits the opinion of John Christy, a skeptical climate scientist at U. Alabama, but not a sea level expert.
- The FoxNews article is replayed on Fox affiliates and picked and carried around the world by conservative/skeptical news and bloggers, including the Drudge Report.

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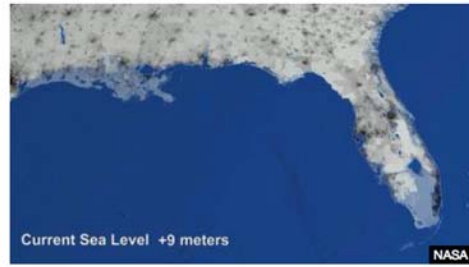
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## Changing Tides: Research Center Under Fire for 'Adjusted' Sea-Level Data

By Maxim Lott  
Published June 17, 2011 | FoxNews.com

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In a NASA "what-if" animation, light-blue areas in southern Florida and Louisiana indicate regions that may be underwater should sea levels rise dramatically.

Is climate change raising sea levels, as Al Gore has argued -- or are climate scientists doctoring the data?

The University of Colorado's [Sea Level Research Group](#) decided in May to add 0.3 millimeters -- or about the thickness of a [fingernail](#) -- every year to its actual measurements of sea levels, sparking criticism from experts who called it an attempt to exaggerate the effects of global warming.

"Gatekeepers of our sea level data are manufacturing a fictitious sea level rise

that is not occurring," said James M. Taylor, a lawyer who focuses on [environmental issues](#) for the Heartland Institute.

### RELATED STORIES

- NASA to Measure Saltiness of Sea -- From Space
- Dutch Point Out New Mistakes in U.N. Climate Report
- Scientists Retract Paper on Rising Sea Levels Due to Errors
- What Alarming Sea Level Rise? Observational Data Reveals No Change, Scientist Says
- Despite Rising Seas, Pacific Islands Are Growing

Steve Nerem, the director of the widely relied-upon research center, told FoxNews.com that [his group added the 0.3 millimeters per year](#) to the actual sea level measurements because land masses, still rebounding from the ice age, are rising and increasing the amount of water that [oceans](#) can hold.

"We have to account for the fact that the ocean basins are actually getting slightly bigger... water volume is expanding," he said, a phenomenon they call [glacial isostatic adjustment \(GIA\)](#).

Taylor calls it tomfoolery.

"There really is no reason to do this other than to advance a political agenda," he said.

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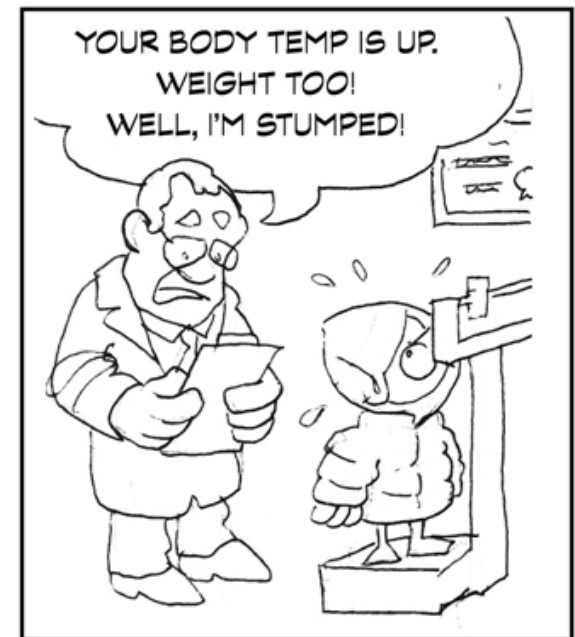
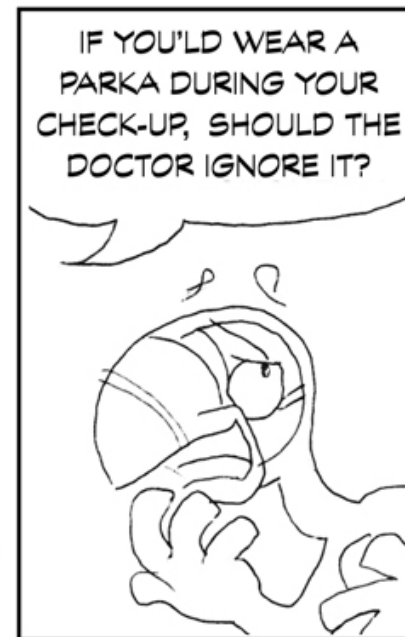
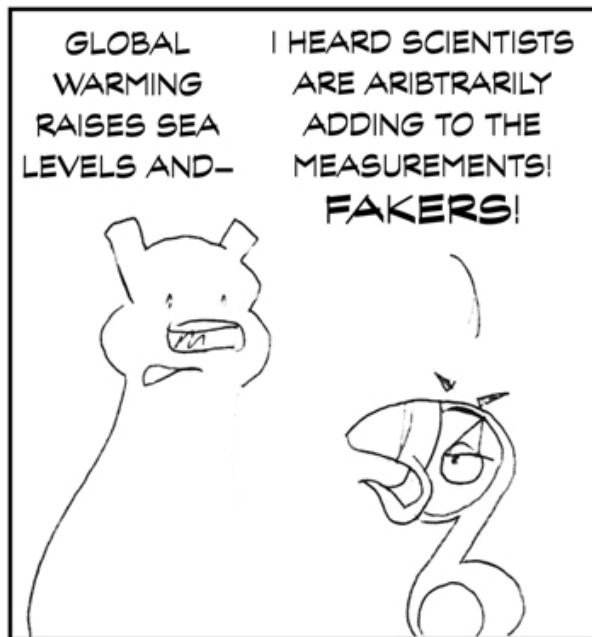
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## Fox News Report

# NPR Science Friday



Fox News Maligms Scientists With Baseless Accusation Of "Doctoring" Sea Level Data

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## Fox News Maligms Scientists With Baseless Accusation Of "Doctoring" Sea Level Data

June 20, 2011 12:07 pm ET — 81 Comments

Following the lead of the Heartland Institute, Fox News trumpeted the utterly baseless claim that scientists at the University of Colorado are "doctoring" sea level data to "exaggerate the effects of global warming." In reality, the scientists used a standard and transparent procedure performed by other research groups around the world, and even the climate skeptic cited by Fox News objects to the implication that the group engaged in scientific wrongdoing.

### Fox News Trumpets Claim That Scientists "Doctor[ed]" Data To "Exaggerate" Climate Change

Last Month Heartland's James Taylor Claimed Research Group "Doctors Sea Level Data" To Exaggerate Climate Change. In May, Taylor published a Forbes.com op-ed accusing the University of Colorado's Sea Level Research Group of "doctor[ing]" sea level data." The post was spurred by [news](#) that the group adjusted its global mean sea level estimate to account for the fact that ocean basins have deepened, which causes estimates that lack the correction to show less ocean expansion than has actually occurred. From the post:

The NASA-funded group claims glacial melt is removing weight that had been pressing down on land masses, which in turn is causing land mass to rise. This welcome news mitigates sea-level rise from melting glacial ice, meaning sea level will rise less than previously thought. However, it is very inconvenient for alarmist sea level predictions. Therefore, instead of reporting the amount by which sea level is rising in the real world, the Sea Level Research Group has begun adding 0.3 millimeters per year of fictitious sea level rise to "compensate" for rising land mass. [Forbes.com, [5/11/11](#)]

**Media Matters contacted the reference we provided, Prof. Dick Peltier, and he responds that the GIA correction is relevant and a non-issue**

**Media Matters runs a synopsis of the episode outlining how the story came about and how it was failed journalism**

# Don't Lose Your Temper

**“Back off, man. I'm a scientist.”**

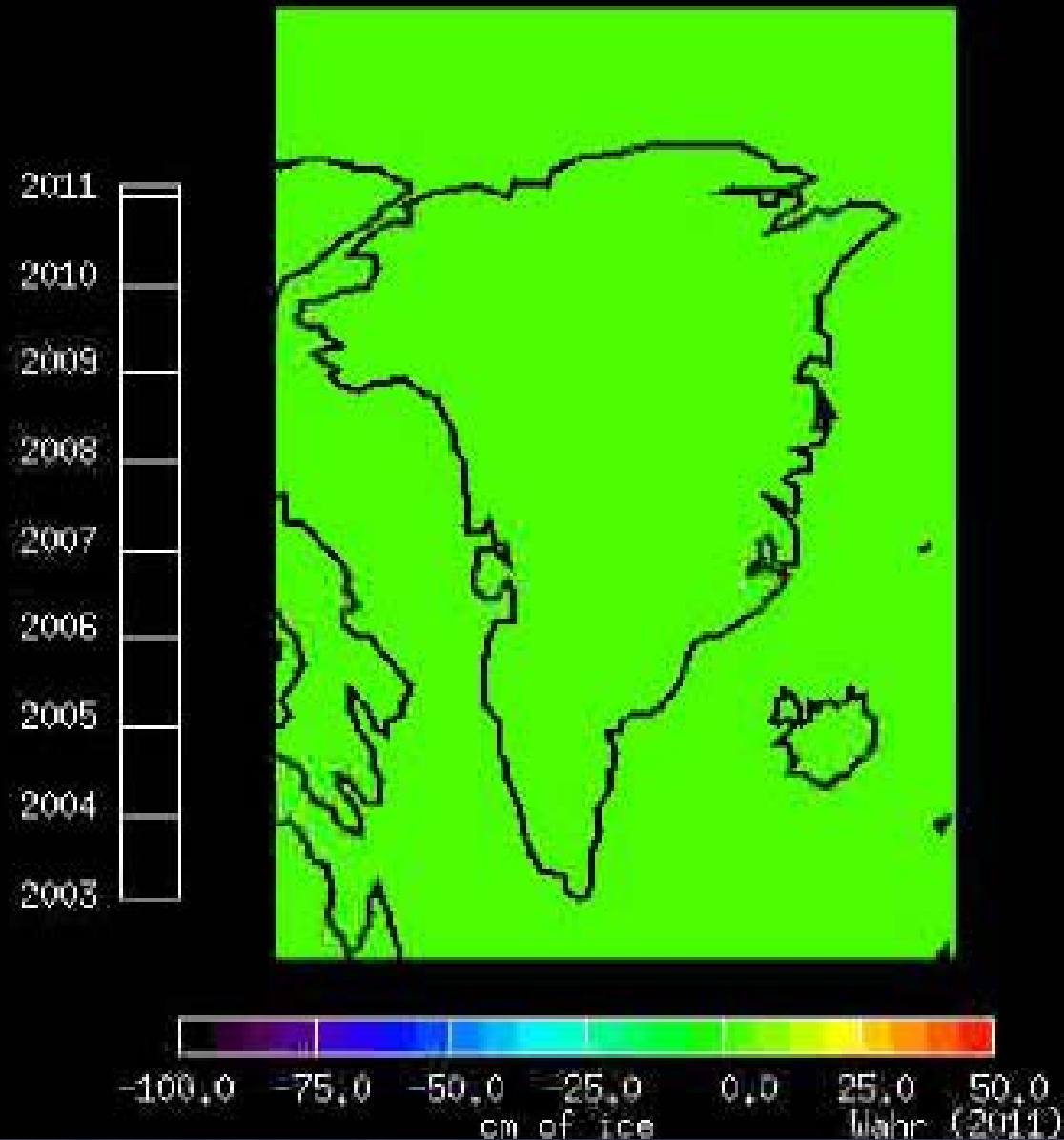


# Some Observations

- Many more people were tracking our website than we previously thought – and many of those were climate skeptics.
- This community will go to extraordinary means to try to discredit your science.
- The nature of the internet today is that it is very easy to distribute false information that nevertheless appears to be legitimate.
- In this case, the GIA correction was smaller than the error bar on our sea level rise estimates.
- They ignored a much bigger target – that sea level rise has actually slowed over the last decade!
- Bottom Line: Everyone is watching what we are doing, so we need to be very clear in our science and our science communication.

**"We're seeing mounting evidence now that the scientific community, rather than overstating the claim or being alarmist, is the opposite," said Naomi Oreskes, a science historian with the University of California, San Diego. "Scientists have been quite conservative ... in a lot of important and different areas." – Climate Daily**

# Greenland Ice Melt from GRACE



## Sea level dispute could end in class action

ENVIRONMENT 28 SEP 11 @ 01:02AM BY TERRY COLLINS



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Barrie Frost with Pat Aiken showing predicted water level at Point Frederick .

GOSFORD Council could soon be facing a class action by waterfront home owners.

The Coastal Residents group, outraged at notifications placed on S149 certificates regarding possible sea level rises, is seeking legal advice on its options.

President Pat Aiken said the group would then approach a litigation funding company.

The council incensed residents in May 2010 when notifications were attached to section 149 planning certificates on waterfront homes saying the property could be affected by sea level rises of up to a metre over the next 90 years.

Mr Aiken said there was no consultation on the move, which could see property values plummet. "The council clearly didn't think through the impacts when it placed the notifications," he said.

"It didn't want to be liable for not warning people of the supposed sea rise threat but only a fool would think these notices won't affect property values.

"People don't have money to challenge council individually and the council will not discuss the matter. When people stop talking that's when legal action starts. If it means we have to break this council we will do it."

BARRIE Frost, of Pt Frederick, says Gosford Council has adopted an "alarmist" attitude to possible sea-level rises over the next 90 years.