

DT: August 20, 2014
TO: The North Carolina Coastal Resources Commission
CC: Braxton Davis Braxton.Davis@NCDENR.Gov
Tancred Miller tancred.miller@ncdenr.gov
FR: Bill Price 336-214-2676 USLandAlliance.US
RE: Revision and Extension of Extemporaneous
Comments to the Coastal Resources Commission
Bill Price Thursday July 31, 2014
Regarding: Studies of the Acceleration of the Rise of Sea Level

Ladies and Gentlemen,

Thank you for the opportunity to Comment before the Commission.

It was good to hear Commissioner Baldwin's Comments assuring the opportunity to submit Scientific and Real World Data and Information for consideration by the Science Panel. The following is presented for inclusion in the deliberations of the Commission and the Science Panel.

Perhaps it would be beneficial to the Public for this data to be posted on the DCM Web site?

Regarding the Science Panel, Dr. Alexander Glass, Nicholas School of the Environment, Duke University, speaking for "NC Citizens For Science" warned the CRC not to appoint Scientists or Technicians to the Science panel that are not approved by the Science Panel, saying,

"Scientific Contrarians must first convince the scientific community, the only body of individuals who has the training and expertise to judge the merits of their science, before they should be allowed to serve as representatives of the scientific community."

(CRC Minutes - November 2013)

Dr. Glass's comments are disturbing.

As you will see in the attached papers, the Science Panel's reaffirmed assertions of the historical and current rate of Sea Level Rise are refuted by data presented by government agencies.

Considering the importance of Valid Scientific Analysis regarding the Acceleration of Sea Level Rise, it would appear that an accurate perspective is necessary.

After all, how can we trust Fore-Casts for the Acceleration of Sea Level Rise by Dr. Glass's self-approved Scientists, when their Hind-Sight is opposite of Real World Data?

Thank you for careful analysis of the facts.

Bill Price
336-214-2676
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Revision and Extension of Extemporaneous Comments to the Coastal Resources Commission

Bill Price

Thursday July 31, 2014

It seems that the critical focus for the Science Panel in meeting the Charge of the Commission would be to include and verify Scientific and Real World information from here in North Carolina regarding historical and potential change in Sea Level.

The following information is submitted to the CRC for inclusion in the deliberations of the Commission and the Science Panel. Perhaps it would be helpful to the Public for this data to be posted on the DCM Web site. (NOTE: Most of these comments are based on simple logical evaluations of Real World Observations. We believe them to be accurate. We have been presenting the comments widely, and, although many people object to them, no one has refuted them.)

We hope this helps.

Bill Price USLandAlliance.US

I - STUDIES BY PEOPLE IN NORTH CAROLINA :

- Statistical analysis of International Tide Gauge data

Dave Burton, U.N. IPCC AR5 WG1 Expert Reviewer,
Burton Software Systems - Cary, NC .

(Mr. Burton was successful in getting the National Science Foundation to correct its website which inaccurately stated that, "Melting of Float Ice would Raise Sea Levels.")

WebSite <http://www.sealevel.info>

NOAA's 2013 list of 285 Long Term Trend (LTT) tide stations

http://www.sealevel.info /MSL_global_trendtable4.html

- Statistical analysis of Solar and Planetary Cycles affecting Global Temperature trends.

Dr. Nicoli Scafetta. Active Cavity Radiometer Solar Irradiance Monitor Lab. Duke University, Durham NC.

(Dr Scafetta's research indicates Influence of Solar and Planetary Cycles more Closely match Global Temperatures than Computer models of CO2 or other so-called green house gasses.

2014. Multi-scale dynamical analysis (MSDA) of sea level records versus PDO, AMO, and NAO indexes.

Climate Dynamics 43(1-2), 175-192.

http://people.duke.edu/~ns2002/pdf/10.1007_s00382-013-1771-3.pdf

2013. Discussion on climate oscillations: CMIP5 general circulation models versus a semi-empirical harmonic model based on astronomical cycles. Earth-Science Reviews 126, 321-357.

http://people.duke.edu/~ns2002/pdf/EARTH_1890.pdf

2013. Discussion on common errors in analyzing sea level accelerations, solar trends and global warming.

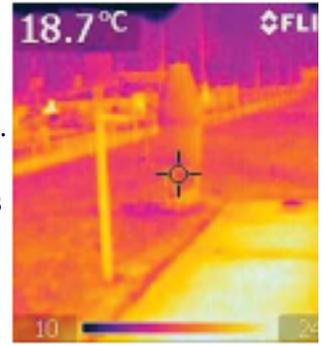
Pattern Recognition in Physics, 1, 37-57. DOI: 10.5194/prp-1-37-2013

<http://www.pattern-recogn-phys.net/1/37/2013/prp-1-37-2013.pdf>

II - VERIFICATION OF NOAA DATA To VALIDATE or REVISE the TEMPERATURE RECORD :

The Charge to the Science Panel is made more difficult due to need to verify the validity of Data.
For Example:

The Hypotheses of Acceleration of Global Warming Trends are based on Computer Models of (so called) greenhouse gasses, forcing increased temperatures. The NOAA temperature record confirmed such warming. NOAA is cited by the UN as having the best temperature record in the world. However, an infrared photo record showed over 70% of NOAA Temperature Gauges were influenced by artificial urban heat sources, such as Air Conditioning Exhausts, Parking Lots, Water Treatment Plants, etc. (Is the US Temperature Record Reliable . A. Watts, Heartland 2009 https://wattsupwiththat.files.wordpress.com/2009/05/surfacestationsreport_spring09.pdf) NOAA began relocating the stations.



Figures 13 and 14. Fayetteville, North Carolina

2010 Gov. Accounting Office reported NOAA had no way to track proper siting of the stations, and \approx 42% of NOAA stations were still improperly located.¹ NOAA responded that their Computer Models corrected data for the Artificial Heat sources. (One may wonder, if NOAA doesn't know which stations are improperly located, how do they know which gauge records to adjust or by how much?) Many people believe that NASA temperature records confirm NOAA data; however NASA documents state (in effect) the NASA Atmospheric Temperature Reports are indexed to NOAA Ground Temperature Stations², indicating that inaccurate NOAA Ground Based Data would make NASA Atmospheric Maps and Data inaccurate.

Question: Do we have an independent reliable unmodified temperature record in NC uninfluenced by urban heat sources that can be used to verify or adjust the NOAA Temperature Record?

¹ GAO Report - NOAA Temperature Gauges .

Percentage Improperly Located (Second Cover Page - Paragraph 2 .)

“ According to GAO ‘s survey of weather forecast offices, about 42 percent of the active stations in 2010 did not meet one or more of the siting standards.”

Inadequate Controls- (Page 22.)

“ NWS Does Not Centrally Track Whether USHNN Stations Meet Siting Standards or Have a Policy for Addressing Stations That Do Not Meet Standards... (or) ... Have... Information to Access USHCN Performance.”

<http://www.gao.gov/products/GAO-11-800> <http://www.gao.gov/assets/70/68744.pdf>

² NASA atmospheric temperature maps are based on questionable NOAA Ground Station surface temperature data.

(NOTE : NASA has been criticized for not releasing upper atmospheric temperature readings base data.)

Land Alliance investigations found NASA GISS Surface Temp Analysis information (<http://data.giss.nasa.gov/gistemp/>)

HISTORY states in part:

“Some improvements in the (temperature) analysis were made several years ago (Hansen et al. 1999; Hansen et al. 2001), including use of satellite- observed night lights to determine which stations in the United States are located in urban and peri-urban areas, the long-term trends of those stations being adjusted to agree with long-term trends of nearby rural stations.” (Note: We are unaware if this has been updated.)

This says, in effect, that NASA creates computer models of satellite observations of street and building light patterns at night located around ground based (NOAA ??) temperature gauges to determine density of urban vs. peri-urban vs. rural areas and adjusts it all by computer to agree with rural (surface based) stations, for Atmospheric Temperature Mapping .

The only reason to do this is to facilitate indexing Computer Modeling of upper atmospheric temp data based on surface based (NOAA) data, and thereby to distribute the temperature readings across the atmosphere above an area of a land mass based on Street Light counts (sic). This indicates that the NASA temperature data is not a confirmation of the NOAA temp data, rather, NASA interpolates Atmospheric Temperature data from questionable NOAA surface level data.

The issue is, how can a Computer Model adjust temperatures for urban and peri-urban to rural areas without using NOAA computer modified urban and peri-urban data, which, according to Watts and GAO reports , appears to be fundamentally unreliable?

III - VERIFICATION OF ACOE DATA :

The Science Panel based its observations of Historical Net Sea Level Rise hind-casts of 15" / 100 y on ACOE Tide Gauge Data at Duck, NC . While a cursory visual overview does not show inundation of tidelands in comparison with 1850's US Coast Survey charts does not seem to support the 15" / 100 hind-cast; nonetheless there is wide acceptance that Sea Level has been rising very slowly since the last Glaciation. However, 2012 DCM data indicates Accretion of NC Shore Line was been increasing and Erosion has been decreasing (with most Accretion having occurred before the large renourishment projects.)³.

This is opposite to the Science Panel's assertions that Land Subsidence plus Rising of Sea Levels forced by Global Warming has been causing Sea Levels to Rise, causing Beach Erosion.

³ DCM Email . DCM Email Ken Richardson April 21, 2014 Erosion and Accretion Tables .

Notes: Table 1 presents Accretion and Erosion totaling 130 % of Coastline surveilled. Impossible to have 130% of Coastline. Table 2 (Final Revised Document) Totally omits Accretion. This presents the Impression of 100% Erosion . (See FootNote 7 for Analysis of this data by USLand Alliance for a comprehensive presentation of Coastal Trends.)

Table 1: Setback Factor summary as it appeared in the draft report. Because the minimum setback factor is 2, accreting values are also included within the "Erosion =<2 ft/yr" summary. To show the reader how much of that (190.2 miles / 61.9%) is actual accretion, the "Accreting" summary (103.7 miles / 33.7%) was included in the table. To sum the totals (excluding Maximum and Mean) you would need to subtract the accretion summary first, otherwise it is accounted for twice resulting in "133% of the total shoreline." Instead of 133%=(33.7%+61.9%+20.2%+10.2%+6.8%), you must subtract 33.7% because it is also included in the 61.9%.

Statewide Totals Summary	2009 Miles (% of total)	1998 Miles (% of total)	1992 Miles (% of total)	1986* Miles (% of total)	1980* Miles (% of total)
Miles (total)	307.4	312	300	237	245
Accretion	103.7 (33.7%)	99 (32%)	79 (26%)	63 (27%)	54 (22%)
Erosion =< 2 ft/yr	190.2 (61.9%)	193 (62%)	165 (59%)	144 (61%)	149 (61%)
Erosion 2.1 to 5 ft/yr	62.1 (20.2%)	64 (20%)	54 (19%)	43 (18%)	52 (21%)
Erosion 5.1 to 8 ft/yr	31.5 (10.2%)	28 (9%)	30 (11%)	20 (8%)	22 (9%)
Erosion >8.1 ft/yr	20.8 (6.8%)	27 (9%)	32 (11%)	22 (9%)	22 (9%)
Maximum Erosion (ft/yr)	28	30	16	17	19
Mean (ft/yr) ***	3.4	4.3	3.8	3.7	3.9

Table 2: The revised Setback Factor table as it appears in the final report. The intent was to summarize shoreline length and percentages based on range of Setback Factors. Accretion was initially included to simply illustrate how much of the "Setback Factor (2 ft)" was actually accretion. Since the minimum setback factor equals 2, accretion is still included in the "Setback Factor (2 ft)" summary (61.9+20.2+10.2+6.8=99.1%). Also, you'll notice that total length of shoreline varies from study to study. It's not that the shoreline length is changing, it just that the total that was analyzed varied based on available data.

Statewide Totals Summary	2009 Miles (% of total)	1998 Miles (% of total)	1992 Miles (% of total)	1986* Miles (% of total)	1980* Miles (% of total)
Miles of Shoreline Mapped/Analyzed	307.4	312	300	237	245
Setback Factor (2 ft)	190.2 (61.9%)	193 (62%)	165 (59%)	144 (61%)	149 (61%)
Setback Factor (2.5 to 5.0 ft)	62.1 (20.2%)	64 (20%)	54 (19%)	43 (18%)	52 (21%)
Setback Factor (5.5 to 8.0 ft)	31.5 (10.2%)	28 (9%)	30 (11%)	20 (8%)	22 (9%)
Setback Factor (>8.0 ft)	20.8 (6.8%)	27 (9%)	32 (11%)	22 (9%)	22 (9%)

Ken Richardson Senior Environmental Specialist
N.C. Dept. of Environment & Natural Resources - Division of Coastal Management

In fact, DCM data indicates Coastal Erosion is being reduced. Does this mean Sea Level is Falling ⁴?

⁴ Analysis of DCM Erosion & Accretion Tables. USLandAlliance.US



DT: 11/18/13
 FR: Bill Price 336-214-2676 USLandAlliance.US
 POB 2112, Morehead City, NC 28557
 RE: Proposed REFORMAT SPREADSHEET // 2011 DCM A&E Report
 DCM Data shows 11.3% increase in Accretion and 13.1 % reduction in Erosion for NC Coast.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	COMPARISON OF NC OCEAN BEACH SHORELINE ACCRETION AND EROSION (1980 - 2011)												9/2013
2	All data is from * 2011 Long Term Average Annual Oceanfront Erosion Rate Update Study*												
3	NC Division of Coastal Management June 1, 2012												
5	SUMMARY of END POINT CHANGE FOR YEARS			2011	2003	1992	1986	1980					
6	Miles of Shoreline Analyzed (See Note 1)			307.4 Miles	312 Miles	300 Miles	237 Miles	245 Miles					
9	ACCRETION (See Note 2)			33.3 %	32.0 %	26.0 %	27.0 %	22.0 %					
10	0<2	Subsets of Accretion not shown by DCM											
11	2<5	Subsets of Accretion not shown by DCM											
12	5<8	Subsets of Accretion not shown by DCM											
13	>8	Subsets of Accretion not shown by DCM											
14	Total Percentage Accretion of Shoreline			33.3 %	32.0 %	26.0 %	27.0 %	22.0 %					
15	Long Term Trend of Accretion +/- (See Note 3)			11.3 %	10.0 %	4.0 %	5.0 %	0.0 %					
17	EROSION												
18	<2			28.6 %	29.9 %	35.9 %	34.9 %	39.9 %					
19	2<5			20.2 %	20.0 %	19.0 %	18.0 %	21.0 %					
20	5<8			10.2 %	9.0 %	11.0 %	8.0 %	9.0 %					
21	>8			6.8 %	9.0 %	11.0 %	9.0 %	9.0 %					
22	Total Percentage Erosion of Shoreline Stated Ab			65.8 %	67.9 %	76.9 %	69.9 %	78.9 %					
23	Long Term Trend of Erosion +/- (See Note 4)			-13.1 %	-11.0 %	-2.0 %	-9.0 %	0.0 %					
25	Max Setback Factor			28 ft	30 ft	16 ft	17 ft	19 ft					
26	Mean Setback Factor			3.4 ft	4.3 ft	3.8 ft	3.7 ft	3.9 ft					
28	NOTES												
29	1 62 Mile increase in Ocean Shoreline between 1980 and 2011 is due to addition of National Park Shoreline												
30	(Aerial photography for NPS Beach excluded from 1980- 1986 reports exists, and could be												
31	analyzed for an updated comprehensive report.)												
32	End Point Change means, the change from the first year (1980) through to the later year.												
33	2 Percentages of A&E relate to Shoreline stated, not the Increase of Shoreline surveyed.												
34	3 Long term Trends 1980 to 2011 show 11 % increase of Accreting Beach Front.												
35	4 Long term Trends 1980 to 2011 show 13 % decrease of Eroding Beach Front.												
36	5 Location of Accreting and Eroding Beach Front is not shown by DCM .												
37	(It would be helpful to know where volume of A& E are occurring to determine cause of Erosion.)												
38	6 Base for pre 1980 trend not shown by DCM .												
39	7 Quantification of Subsets of Accreting Shoreline not shown by DCM .												
40	(If DCM can quantify Subsets of Erosion , they should be able to quantify Subsets of Accretion.)												
41	8 It is unknown if effects of Beach Renourishment are observed or adjusted or not;												
42	notwithstanding, the large increase in Accretion is prior to 2003, before most large renourishment projects .												
43	9 No indication of the Volume of Erosion or Accretion.												
44	Application of nominal angle of repose of materials to off- shore water depths should allow												
45	computational estimates of volume of A&E to help determine cause of A&E.												
46	10 This Spreadsheet was Reformatted due to DCM deletion of designation of Accretion in Revised 2011 Report.												
47	Deletion of all Accretion would seem to support hyperbole of erosion forced by Sea Level Rise .												
48	Surprisingly the DCM data shows 11% increase of Accretion and 13% decrease in Erosion from 1980 to 2011.												
49	DCM and the CRC equate Erosion with Sea Level Rise, but as the report shows increasing Accretion												
50	this would seem to Refute the notion of SLR forcing Erosion of NC Coastline.												
51	This information should be widely publicized by DCM and the CRC Board .												



Then, most mystifying, the NOAA funded, highly accurate LiDAR surveys, by NC Dept. Crime and Public Safety, Flood Mapping Division report indicates that 65% of structures in Dare County are being removed from AE Zones due to falling Base Flood Elevations^{5 6}. This implies either (a) a tremendous fall of Sea Levels, or (b) that USGS Elevation Monuments were inaccurate, (c) or the Benchmarks for the ACOE Tide Gauge at Duck were inaccurate, or (d) perhaps wave induced vibration to pier pilings caused the Tide Gauge to sink (which would indicate sloppy Benchmark control).

(NOTE 1 : We are not sure if the Commission has seen an analysis of the Flood Mapping Table Page 14 presented to you in March. The USLA Table at Footnote 6 may be very interesting, as it shows SL falling where it's supposed to be rising the most.)

⁵ NC Dep. Crime & Public Safety Div Flood Mapping Page 14 Power Point Presented to CRC March 2014. (Data Updated)

County	Buildings In County	Buildings in VE Now	Buildings in VE NEW	Buildings in AE Now	Buildings in AE NEW
Beaufort	29,121	0	13	9,643	4,697
Bertie	27,455	0	0	85	62
Brunswick	70,252	6,232	1,510	7,551	10,064
Camden	6,334	0	0	1,649	626
Carteret	50,328	3,700	1,102	16,163	15,564
Chowan	9,771	0	3	745	398
Craven	47,567	0	78	6,113	6,718
Currituck	20,774	1,075	127	7,928	2,657
Dare	40,217	4,872	862	28,252	9,773
Hyde	7,178	0	26	6,460	5,266
New Hanover	90,710	2,854	1,425	6,428	8,134
Onslow	108,603	3,409	2,038	2,614	5,609
Pamlico	12,454	16	23	4,691	3,516
Pasquotank	20,466	0	14	5,260	2,262
Pender	37,104	1,773	1,684	3,018	3,549
Perquimans	8,246	0	0	1,044	451
Tyrrell	3,629	0	0	2,722	2,253
Washington	10,035	0	1	1,050	395

⁶ Spreadsheet Analysis of NC Dept. C&PS Div. Flood Mapping Page 14 Power Point (By USLandAlliance.US)

Note: Nearly 70% reduction of structures in Flood Zones in Dare County implies falling Sea Levels, even though Dare County is the area the CRC Science Panel reaffirmed had the highest historical rate of Sea Level Rise in NC.

	A	B	C	D	E	F	G	H	I	J	L	M	N	O
1	ANALYSIS of CHANGE of NUMBER of STRUCTURES LOCATED in VE and AE ZONES for OCEAN FRONT COUNTIES													
2	COUNTY	VE ZONES				AE ZONES				COMBINED VE & AE ZONES				
3		VE Now	VE New	Increase	% Change	AE Now	AE New	Increase	% Change	Now	New	Increase	% Change	
4				<-Decrease>				<-Decrease>				<-Decrease>		
5	Dare	4,872	862	-4,010	-0.82	28,252	9,773	-18,479	-0.65	33,124	10,635	-22,489	-0.68	
6	Carteret	3,700	1,102	-2,598	-0.70	16,163	15,564	-599	-0.04	19,863	16,666	-3,197	-0.16	
7	Onslow	3,409	2,038	-1,371	-0.40	2,614	5,609	2,995	1.15	6,023	7,647	1,624	0.27	
8	New Hanover	2,854	1,425	-1,429	-0.50	6,428	8,134	1,706	0.27	9,282	9,559	277	0.03	
9	Brunswick	6,232	1,510	-4,722	-0.76	7,551	10,064	2,513	0.33	13,783	11,574	-2,209	-0.16	
10														
11	SOURCE : DATA by Division of FLOOD MAPPING - NC DEPT of CRIME and PUBLIC SAFETY.													
12	* Source data does not indicate if Property in VE transferred to AE, or Vis a versa. VE +AE was Added in this Analysis.													
13														
14	Analysis done by US LandAlliance.US Bill Price 6/21/2014													
15														

IV - WHAT'S IMPORTANT :

Comments were made in July CRC Meeting regarding numerous projects managed by the DCM Staff.

For many Coastal Taxpayers and local Governments, Beach Erosion affects billions of dollars of tax base and requiring millions of tax dollars for Beach Renourishment; consequently dealing with beach erosion is a predominant concern, yet DCM Staff says DCM has no Studies to determine the cause of Beach Erosion. (See [Richardson](#) comments below.)

Several Theories of the Cause of Erosion and Accretion are:

- A) Dredging starves down drift beach of sand. ACOE has removed 50 to 60 Mil. Cy of Sand from Beaufort Inlet. (That's a pile of Sand 4' to 6' deep, x 200' wide from Beaufort to Bald Head, all of Onslow Bay.)
- B) Reduction of Natural Supply of Material from Riverine Sediment Transport due to Dams, Suppression of Natural Forest Fires, Storm Water Run-Off policy, starving the Coastal System?
- C) Reconfiguration of the Coast may cause changes of Material Transport by Along-Shore Currents, causing unnatural effects?
- D) The Rise of Sea Level may force inundation of tidelands and cause increased erosion by storms?

DCM Staff says they have no studies of any of these issues. ⁷

" With regard to volumetric changes, the Division of Coastal Management does not currently collect or analyze volumetric sediment data, nor do we have monitoring stations established for the purpose of measuring statewide volumetric changes (erosion or accretion), or sediment transport. There are many academic institutions and government agencies (DCM included) that would benefit from a statewide comprehensive sediment volume and transport database, but it is currently not available; however, both Carteret and New Hanover Counties do collect these data.

(Note : Carteret Co. Topographic Transect Data does not evaluate Direction or Volume of Sediment Transport. ⁸ USLA.US)

" While you have suggested ideas that could serve as the basis for future studies in an attempt to quantify *causes* of shoreline change, the intention of this report is to document shoreline change rates for the purpose of establishing development setbacks." DCM Email - [Ken Richardson](#) April 21, 2014

How can we deal with a Problem if we don't know what's causing it?

(If we find out what's causing Beach Erosion, we may be able to find a more cost effective solution.)

Considering the critical importance of these issues, wouldn't it be good to study these possible causes? ⁹

V - FEMA IS REQUIRED BY BW-12 TO IMPOSE ASLR PLANNING (TMAC agreed to 39"/ 2100 .)

A FEMA email to Representative Coble's office states that BW12 requires FEMA to implement ASLR Planning in NFIP 100 Yr. Flood mapping. The Authorities on the TMAC all agreed to 39" ASLR in the 2009 EPA report on Sea Levels for the Mid Atlantic Region. (Source: Carteret County Shore Protection Officer.)

http://training.fws.gov/courses/csp/csp3112/resources/Climate_Change/Coastal_Sensitivity_to_Sea_Level_Rise.pdf

It would be interesting to know if the data of the ACOE Duck, NC Tide Gauge was used in the EPA Report?

Again, thank you for seeking Real Science, not Political Science.

(In 2008 605 Storm Water hearings at the General Assembly, it was shown that the State's Storm Water Science was inaccurate.

We were told by the Hearing Moderator, that we were dealing with Political Science, NOT Real Science.

It was observed that, "The people on NC deserve better.")

Bill Price 336-214-2676 BillPrice2112@centurylink.net USLandAlliance.US

⁷ An analysis of Material Transport by Along-Shore Currents using the State's Acoustic Doppler Current Profiler equipment (ADCPs) was proposed in the late 90's (arising from Bogue Banks Beach Preservation Task Force considerations). Initially, personnel at NC State were very enthusiastic about the proposed Study. Suddenly, they would no longer communicate.

Since then, No State, Federal, or Local, Agency or Educational Institution will act to do the studies needed.

⁸ A Littoral Topographic Survey at Transects does not evaluate Direction or Volume of sediment transport. i.e. A volume of material may move out of the profile, while an equal volume of material moves into the profile. The profile remains the same with no indication of volume or direction of material flow. Change to a collective group of transects may imply short term direction and net flow, with no indication of predominate background direction or volume of material transport by along-shore currents. DCM Officials say we have no studies of any of this. (See [Richardson](#) above.)

9/30/14

Mr. Gorham:

We politely ask that the three questions brought up several weeks ago (below) be fully answered.

Regarding question #2, despite assurances made to the legislators in your recent meeting, the CRC Advisory Panel continues to **not** be doing all of its important business in public.

For example, there were three presentations just given at last week's Panel meeting — and **none** of these talks were discussed in the prior month's meeting.

Further, the Panel continued this trend and last week did **not** discuss the October meeting's content. To have each meeting's presentations discussed and decided in private, is not consistent with conducting the Panel's business in public.

The three presentations given at the last Panel meeting were:

1-*Tom Jarrett's* discussed how to utilize tide gauge results that don't have 50 year records (the minimum time recommended).

2-*Spencer Rodgers' talk* discussed the impact of dredging on some NC tidal gauges.

3-*Rudi Rudolph* further reviewed IPCC material. He seemed to support the IPCC, but then appeared to conclude that most of their conclusions would not be applicable.

Our general assessment of these three talks is that they were worthwhile.

In the open discussion, Dr. Riggs complained about overuse of tidal gauges in determining SLR. He appears to prefer using salt marsh peat cores... We find this position to be untenable... Fortunately, co-chairperson Dr. Overton pushed back against it.

Sincerely,

john droz, jr.

physicist

Morehead City, NC

On Sep 3, 2014, at 10:01 AM, John Droz, jr. wrote:

Frank:

There were three (3) major revelations at last week's CRC Science Panel meeting —

1 - Rob Young resigned his position on the Panel. It's to his credit that he acknowledged that he does not have the time to attend once-a-month meetings, etc. (The Science Panel list of members has already been updated to remove his name.)

This means that there are now four (4) open positions on the Science Panel. We again respectfully ask that you act in the best interest of NC citizens, and immediately fill these openings with qualified personnel: Dr. Stan Young, Dr. Robert Brown, Dr. Nicola Scafetta, and Mr. Dave Burton. You have the CVs of each of these good people.

2 - It was quite surprising to see that very significant parts of this meeting, were **not** planned or agreed to during the prior meeting! Per the minutes of the July Meeting, there was **no discussion at all** as to what would transpire in the August meeting — yet somehow two members showed up last week and gave prepared detailed presentations. *How did that come about?*

The inescapable impression given is that the real decisions about this Panel (and its 2015 Report) are being made behind-the-scenes, and **not** at the public meetings. So far, almost every indicator says that the content of the 2015 Report has been already predetermined, and that it will simply be a puffed-up version of the failed 2010 Report.

Since transparency is a fundamental Scientific ingredient, we appeal to you to direct the Science Panel to conduct ALL of its business, in public. For any rare exceptions that have to occur between meetings, there should be full disclosure about those developments at the beginning of the next meeting. Along with this, a web-posted detailed agenda should be published (along with a copy of any presentations) at least one week prior to the meeting.

[On the same topic, we commend the CRC for posting online the Science Panel meeting minutes, and public comments.]

3 - In the presentation of Beth Sciaudone (who apparently works for Margery Overton, the chairperson), she made it clear that the Science Panel's 2015 Report would mimic the opinions of the IPCC and only other like-minded sources. *During the subsequent discussion, not a single Science Panel member objected to this direction.*

This is **extremely** disturbing, as genuine Science is **not** about deciding on a result — and then working backwards to find people who agree with you. Rather it is doing a **comprehensive, objective, transparent** and **empirical** investigation into the issue.

She attempted to justify the Science Panel's unscientific approach to their assignment, by saying this was the "consensus" view of many scientists. Whether that is true or not, is irrelevant. Science is **not** based on popularity contests, but empirical facts.

Put another way, in Science (and accounting), we want the absolutely most honest answers we can get. Although this is anathema to those promoting pet projects, or themselves (think Bernie Madoff), such integrity greatly benefits humanity — and in this case, NC citizens.

As the great Nobel Laureate in Physics Richard Feynman said, scientists must adhere to:

"Utter honesty... Details that could throw doubt on your interpretation must be given... The idea is to try to give all of the information to help others to judge the value of your contribution; not just the information that leads to judgment in one particular direction or another."

—*Scientific Work and Creativity: Advice from the Masters*

Note that **none** of Dr. Feynman's directives happened with the 2010 Science Panel SLR Report — *and that is why the report was outlawed by the legislature*. As was noted in an earlier email (in response to your commentary), H819 had absolutely nothing to do with "real estate developers," and was **not** about a dispute concerning the amount of future NC sea level rise!

To many, Dr. Feynman's words sound quaint and archaic by today's self-serving standards, where renown academics justify Confirmation Bias (the polar opposite of genuine Science) as being acceptable, because "the end justifies the means." That appears to be the mentality on the Science Panel.

The bottom line is that the Science Panel is completely abdicating its responsibility by going down this unscientific path. This will effectively replicate what happened in 2010 — which is no surprise, as the same unrepentant people are doing both SLR Reports.

So this has now officially morphed into a *political science* exercise — and no amount of good intentions, or hand waving , or secondary reviews, will change that fundamental failing.

We are asking you to immediately stop this pretense. Please redirect the Science Panel to get back on course, and this time: do a Genuine Scientific Assessment of the NC SLR situation over the next thirty years. That means doing a **comprehensive, objective, transparent** and **empirical** investigation into the NC SLR issue.

Any existing members who find that an unreasonable assignment, should hand in their resignation (which will be accepted).

Let me know any questions on this.

Sincerely,

john droz, jr.
physicist
Morehead City, NC

PS — Kudos to Dr. Stan Riggs' for his presentation regarding coastal geology. It was informative and worthwhile.

Good afternoon: my name is John Droz. I'm glad to have been able to attend your monthly meeting. I've been paying close attention to the NC SLR situation for several years now. Since I only have 3 minutes, my comments will have to be extremely brief. I'll elaborate on any if you'd like.

On the positive side:

#1 - I commend the Panel for focusing on Tidal Gauges rather than relying on speculative computer projections.

#2 - Frank Gorham's decision to reduce the time period to a thirty year examination window was a wise move.

#3 - Mr. Gorham's adding a peer-review of sorts is also an excellent improvement from the first go-around.

#4 - His choice of Dr. Dean and Dr. Houston to do this review, were appropriate selections.

On the negative side:

#1 - In my review of the minutes and transcripts of the Panel meetings to date, I saw nothing consequential about what the Panel said they learned, from their rejected 2010 SLR report. It would seem to me that this should have been thoroughly discussed at the very beginning. The point would be for the Panel to arrive at conclusions as to how the procedures and methodology for generating the 2015 SLR report would be **significantly different** from before, so that an H819 type legislation would not be necessary again.

#2 - The Panel should go on record stating that their 2015 SLR Report will be a true Scientific assessment, i.e. **comprehensive, objective, transparent**, and based strictly on **empirical** data. This is **not** something to just assume.

#3 - It would also seem that the Panel would have had a thorough initial discussion, as to what their expectations were for how their 2015 SLR report would be **used** by state agencies, counties, municipalities, etc. For example, is the Panel expecting their report to be the basis for rules and regulations? I didn't see this clearly addressed.

#4 - Despite assurances to the contrary, the Panel has **not** conducted **all** their important business before the public. For example, every meeting should have a detailed discussion as to what will transpire in the following meeting. That has rarely happened. At every meeting certain Panel members show up to put on a presentation — but the public has no idea as to why that particular presentation was decided on, how the presenter was selected, etc.

#5 - As an adjunct to that transparency, all presentations and reports for upcoming meeting should be available online several days in advance of said meeting.

#6 - Lastly, the repeated endorsement of the IPCC and their cohorts, to the exclusion of all other SLR research, is an unbalanced representation of the scientific situation.

Thank you for your efforts on behalf of NC citizens.

John Droz, jr. Physicist aaprjohn@northnet.org Morehead City 11/19/14

http://www.sealevel.info/Burton_CRC_Science_Panel_comments_2014-11-19.html

Remarks of David A. Burton at the Nov. 19, 2014 meeting of the NC CRC Science Panel, in Morehead City, NC.

1. I would like to be added to the email list to receive these drafts and other materials that are circulating, when they're sent out. The reason for these open meetings is so that the process is transparent. The unavailability of these materials impedes that goal.

Also, I'm available for reviewing drafts. [I also raised my hand when Prof. Sciaudone asked for volunteers to help with the writing.]

2. I'm glad you did not decide to use two different numbers for eustatic sea-level rise (SLR). It's a global quantity, and for predictive purposes it doesn't matter which number you use. The number you choose just changes how local SLR is divided between eustatic (global) sea-level change and local factors like subsidence. However, 1.4 mm/yr would be a better number than 1.7; I'll get to that.

3. It's very important that the new report explicitly correct the errors in the previous Report, or at least the major ones, such as the false statement that SLR has accelerated in response to global warming. The lack of that was a defect in the Addendum to the previous Report.

Willingness to admit and correct errors enhances credibility.

4. The Union of Concerned Scientists is not a credible source. Please don't open yourselves to ridicule by citing them! They're even worse than the IPCC (which has severe credibility issues, too). [[1](#)][[2](#)][[3](#)][[4](#)][[5](#)][[6](#)]



UCS member Kenji Watts

The NC Legislature wants you to seek balance. You can't balance the IPCC with sources like that. You need sources like the [Nongovernmental International Panel on Climate Change](#) (NIPCC).

5. The [literature indicates that a 60+ year record is needed](#) to measure a robust sea-level trend from a tide gauge. However, I think Tom Jarrett's method of matching short tide gauge records like Duck's to longer records from nearby gauges, to deduce local subsidence differences, and hence trend differences, is innovative, practical and robust. I encourage you to use it.

6. Church & White add a 0.3 mm/yr adjustment from Richard Peltier, to offset hypothesized sinking of the ocean floor. That is useful for mass balance calculations, but wrong for calculating sea-level.

Sinking of the ocean floor lowers sea-level at the coasts, so even if that model-derived 0.3 mm/yr number is accurate, if you add it as a "correction" to measured sea-level rise, the result is not the rate of change of the level of the ocean's surface.

[Martin Vermeer explained it like this: "The ocean floor is still subsiding... as a plastic response to the increased ocean water load after deglaciation. This effect has been studied extensively by Richard Peltier of Toronto. What it means is that, if the total ocean volume were not to change at all, we would still see the ocean surface subside. Conversely, if we want to obtain a measure for the change in total ocean water volume... we have to add 0.3 mm/year to the 'raw' observed change in mean position of the sea surface... This [adjustment] is nowadays routinely made."]

If you subtract that 0.3 mm/yr from C&W's 1.7 you get 1.4 mm/yr, which is about what you really see from globally averaged tide gauges. [The median rate of SLR measured by NOAA's list of 285 analyzed U.S. and PSMSL tide gauges is 1.410 mm/yr.](#)

C&W also do some other strange things. For instance, they use a lot of low-quality, short term records, which I think degrades the quality of their result.

Also, here's a quote from C&W 2006. "*An additional spatially uniform field is included in the reconstruction to represent changes in GMSL. Omitting this field results in a much smaller rate of GMSL rise...*"

In other words, they added a fudge factor!

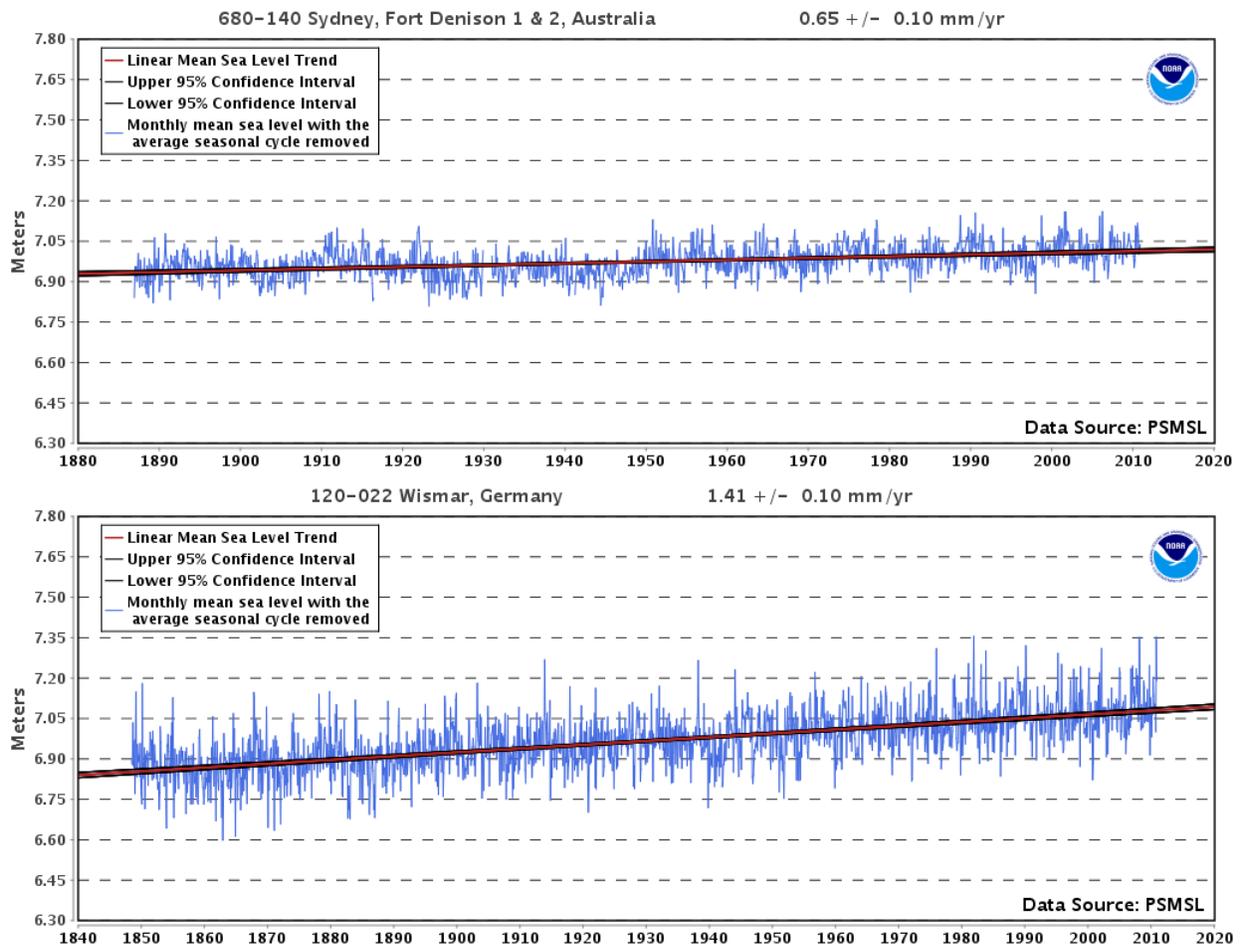
I wrote to them and asked why they used the adjective "spatial." Surely the "field" they added was at least temporally uniform,

right? Wrong! To my astonishment, Dr. Church wrote back and said it was not temporally uniform!

Nevertheless, despite all that, if you just subtract the 0.3 Peltier adjustment from their 1.7 mm/yr number, the result is about right.

7. I'm disturbed that not everyone has accepted the fact that overwhelming measured evidence indicates that **anthropogenic GHGs are not causing accelerated sea-level rise.**

Mankind has been driving up GHG levels dramatically for 2/3 century, yet there's been no acceleration at all in SLR in that time. E.g.:



What's more, the physics of greenhouse warming means that additional CO2 has a logarithmically diminishing effect on warming. The NCAR radiation code says just 40 ppm of CO2 would produce fully half the warming of the current 400 ppm. [MODTRAN Tropical Atmosphere](#) says [just 20 ppm CO2 would do it](#). Either way, we're well into the area of diminishing returns w/r/t warming from CO2.

That means the next 100 ppm of CO2 will have much less effect than the last 100 ppm, and we'll probably have less than 80 ppm added in the next 30 years.

I'm an IPCC AR5 WGI ("The Physical Science Basis") Expert Reviewer, and I'm here to tell you that the IPCC's acceleration scenarios are not credible. They're ideologically driven, not evidence driven.

8. Also, there's no reasonable possibility of a sudden "lurch" event from Greenland and Antarctic ice sheet melt.

Over 100 cubic miles of meltwater from grounded ice are added to the oceans in an average year, but it takes about that much (95 cubic miles of ice) to increase sea-level by 1mm.

Greenland is the greater meltwater contributor, but we know that Greenland was warmer than now for hundreds of years during [the MWP](#), centered around 900 years ago, yet there's no evidence that that warm period was accompanied by any lurch of accelerated sea-level rise.

9. Don't confuse thermal expansion with meltwater. Meltwater affects SLR everywhere. Thermal expansion (steric change) in the upper ocean (which is where most thermal expansion occurs) is a strictly local effect.

Thermal expansion in the upper layer of the ocean (due to warming or freezing) causes a "bump" in the ocean, but it doesn't change sea-level elsewhere. It changes average sea surface heights measured by satellites, but it doesn't affect the coasts, and isn't registered on tide gauges. The displacement of the measured water is unaffected; it simply rises up in place, like this:



Locally elevated
sea-level due to
thermosteric sea-
level rise

So I'm glad you aren't making the too-common mistake of using satellite altimetry data for coastal sea-level projections.

Dave Burton

Cary, NC

www.sealevel.info

M: 919-244-3316

12/16/14

Mr. Gorham:

FYI we have still not received answers to the questions raised in my 9/30/14 email. Additionally, please consider and answer my following comments...

I attended yesterday's (12/15/14) meeting of the [CRC advisory Panel](#). They primarily discussed the [second draft](#) of their 2015 SLR Report.

The meeting again was punctual, and professionally run. A few of us who have been following this more closely submitted [written comments](#) to the Panel regarding this draft version. Dave Burton ended the meeting with some [excellent observations](#). Please *carefully* read what he said. His perspective is what is missing from the current Panel.

On Thursday (December 18th) the Panel committed to have an updated draft version of their 2015 SLR Report ready for more public review. The next Panel meeting is tentatively scheduled for January 26th.

There is one major over-riding problematic issue here, so let me try again to make this clear...

I found the draft of the SLR Report to be organized and well-written. I think it did a good job of making a technical matter understandable to the public.

On the other hand, a well-established principle in the construction industry is that *a structure's functionality is limited by the quality of its foundation*.

The same applies to Science: **the accuracy of any Scientific Assessment is directly dependent on the validity of the assumptions made.**

In the case of the CRC's advisory Panel 2015 SLR Report, the underlying assumption made is that the IPCC is the gold standard for SLR information. Their draft Report is gushingly giddy about the IPCC, all but asserting that it is an unimpeachable source. In fact the Panel is so enamored by the IPCC's irrefutability that they don't bother to seriously discuss a single differing source.

This one-sidedness was a fatal flaw in the original (2010) SLR report, and it seems that the Panel has yet to appreciate the significance of that failing.

Deference to a single source is also contrary to the instructions the Panel was given regarding their SLR report: “to conduct a **comprehensive** review of scientific literature”. Hopefully the Panel is not abdicating it’s charge by saying that someone else has done it for them.

The uncritical endorsement of the IPCC also has another major problem: **it runs contrary to the Panel’s own prior position!**

When the Panel considered the IPCC’s earlier AR1, AR2, and AR3 reports on SLR, they evidently felt that the IPCC and their legion of experts were inadequate — as none of those works warranted even a single mention in either of the Panel’s reports.

And in 2010, when the first NC SLR Report was being written, the Panel looked at the IPCC’s latest report (AR4), and summarily **dismissed** the conclusions of all the “thousands of scientists from all over the world” as too “conservative.” According to the Panel, these “scientifically vetted” SLR submissions went through “multiple stages of review” supposedly insuring a “comprehensive, objective and transparent SLR assessment.” Yet the fruit of all this work was unappealing to the Panel!

In response to the IPCC’s unsatisfactory effort, the Panel promoted radical researcher Rahmstorf — because they found his unsubstantiated speculations to be “more plausible” than those of the now idolized IPCC SLR wizards.

AR4 and AR5 were written by the same pool of experts, using basically the same procedure — so how is it that one is **unacceptable** and the other **unquestionably right**???. One does not have to have a degree in oceanography or climatology to see the contradiction here.

The solution to this self-created conundrum is for the Panel to identify the IPCC as **one of several sources** of useful information that should be considered. Any *genuine* Scientific Assessment includes an *open-minded mentality*, that is anxious to *comprehensively* and *objectively* present **all perspectives** of the matter at hand. That scientificness was missing from the 2010 Report, and the 2015 Report unfortunately seems headed in the same direction.

As far as the numbers go, it seems that a more reasonable range for NC SLR over the next 30 years would be the linear extrapolation of tidal gauges on one end, with the IPCC's 2.6 scenario on the other.

The fundamental point is that pre-deciding that the IPCC is infallible is **not** Scientific, is **not** in the interest of NC citizens, is in **conflict** with the instructions the Panel was given, and is **contrary** to the Panel's own prior position.

Frank, you can fix this matter almost immediately, so please let us know what you are willing to do in that regard. As we've written before, the CRC Technical Advisory Panel has been on the wrong trajectory for five years now, and it needs to be nudged back to acting scientifically. You are in a position to correct this week.

Thank you for your interest in the welfare of NC citizens.

John Droz, jr
physicist
Morehead City

PRE-RELEASE DRAFT 12/10/2014

Executive Summary: 2015 Science Panel Update to 2014 Report

The subject report, received on December 11, while quite readable is simultaneously perplexing in view of the Coastal Resources Commission (CRC) charge to the Science Panel: "...to conduct a comprehensive review of scientific literature..."

Specifically, the Science Panel appears to be heavily invested in the sophisticated speculation of the Intergovernmental Panel on Climate Change (IPCC), a political United Nations entity that annually herds thousands of "climate tourists" to exotic places around the globe to perpetuate man-made global warming alarmism. Surely at least one Science Panel member must know that IPCC's primary climate policy is redistributing the world's wealth and to facilitate such, IPCC claims that carbon dioxide emissions are causing unprecedented and dangerous global warming even though neither the IPCC (nor anyone else) can provide compelling physical evidence to support such false claims.

Furthermore, any unbiased observer can see that for nearly two decades, global temperatures have not risen as expected, predicted, or projected by seriously flawed non-validated IPCC models that unfortunately have not been designed to discover natural influences on temperature. Consequently, it makes little sense to expect IPCC climate scenarios and models that continually "overcook" the atmosphere, that have failed to predict current 21st century temperatures, to be capable of predicting future 21st century temperatures, or any other climate condition such as sea level rise for the next 30 years.

Similarly, references to the National Climate Assessment (NCA) further detract from Science Panel credibility since the NCA neither provides independent review of IPCC's work nor independent testing of IPCC models but rather promotes the most alarmist views of the IPCC. In fact, credible accomplished scientists have characterized the NCA as: "...a slick document of limited scientific value and should not be the basis for any governmental policies". Thus, using the NCA to support 30- year sea level rise predictions is silly.

In contrast to the IPCC mindset, no mention is made of the excellent and far more credible scientific work of the Nongovernmental International Panel on Climate Change, a non-political international team of scientists that has recently published a second, nearly-1,000-page, report entitled: "Climate Change Reconsidered II: Physical Science". Consequently, as IPCC's consensus-of-experts, computer-model-based notion of sea level rise and acceleration is expounded, the NIPCC, simultaneously, reports that: "...there is very little evidence to support the CO2 greenhouse gas hypothesis" and that "...no evidence (as opposed to computer model speculation) shows the human component of atmospheric carbon dioxide levels is materially influencing sea level to behave outside its usual natural envelope of change".

Fortunately, from national polls, we see that the public has become skeptical of global warming alarmism (variously and successively termed climate change; global weirding; climate disruption; climate collapse; and lately, empirically unsupported extreme weather) much as the public ignored global cooling mythology during the 1970s, another fictitious fear manufactured by environmental predators, some of whom opportunistically switched from global cooling to global warming in the 1980s.

I suggest that before the Science Panel report is released to the public for comment, it be cleansed of deeply flawed IPCC-manufactured anxiety. In other words, this being a charitable season, I strongly suggest that IPCC scary scenarios and peer-reviewed computer model outputs and resulting alarmism be charitably ignored.

Finally, reflecting on the global warming/climate change hysteria of the day, it is somewhat amusing to note that an entire class of teenagers has graduated high school having experienced no global warming during their lifetimes. I suspect that, over the next 30 years, these graduates will similarly have little reason to expect sea level rise beyond natural levels as we continue to recover from the Little Ice Age.

M. S. Medeiros, Jr.

December 24, 2014

NC Coastal Resources Commission Science Panel,

In this Sea Level Rise (SLR) evaluation the NC CRC Science Panel had to address three basic issues:

- the spatial and temporal variations in the NC tidal gauge data
- an estimate of the impact of global SLR on the NC local SLR for the past and present
- predictions of the future changes in local and global SLR for the next thirty years

I believe the panel did a reasonable job on the first and third issues, but it made a fundamental error or inconsistency with the second issue.

The Panel presented convincing geological data to explain the pattern of increasing SLR rates from tidal gauges as one moves from southern to northern sites. Tom Jarrett presented a comparison of the time variations in the tidal gauge data from the various NC sites which showed these variations were closely correlated. This analysis showed that the time variations were not due to instrument errors or local effects but rather resulted from regional variations in SLR. These regional variations are most likely due to medium term water current and atmospheric variations but not to global SLR variations.

The panel presented three potential projections of future global SLR rates. One projection assumes the local SLR rates at each tidal gauge would remain linear at the local total measured rate. This rate was divided into two linear components, a truly local rate depending on local subsidence rates and the constant global SLR rate of 1.7mm/y documented in Church and White (2011)¹ as the 1900-2009 average rate. Under this technique it really doesn't matter what the assumed global rate is since the local rates will just be changed so that the total gives the measured total rates.

The other two cases were taken from the IPCC 2013 assessment, cases RCP2.6 and RPC8.5 . Case 2.6 showed almost no acceleration in the SLR rate in the next thirty years which should look close to the linear projection of the Church rate. While I may differ with the IPCC analysis in case RPC8.5, it does represent a fair characterization of the IPCC analysis for a pessimistic case.

The real problem with the Panel's analysis is in its characterization of the current global SLR rate. In both the IPCC cases the current global SLR rate is stated to be 4.0 mm/y. The panel chose to accept the conclusions from Church(2011) that the global SLR rates had changed little during the last century and that the average rate for 1900-2009 had been 1.7mm/y. There is no indication in the NC tidal gauge data nor in tidal gauge data from around the world that there has been any drastic change in the SLR rate in the last decade. This lead the panel to accept the current global SLR rate to be approximately 1.7mm/y. However, in using cases RCP 2.6 and 8.5 they have incorporated the assumption of a current rate of 4.0mm/y while adding to that figure the local rates calculated on the assumption of 1.7mm/y.

If the Panel wishes to use the IPCC estimates for the change in SLR rate during the next thirty years, then it should replace the IPCC assumption of the current rate of 4.0mm/y with a value of 1.7mm/y. Alternatively it could recalculate the "local rates" based on the 4.0mm/y global rates and add the results to get the new total local rates.

In the case RCP2.6 the result would be only a 0.35 inch increase over the thirty year linear projection. I believe this difference is so trivial that they should just use the linear projection as the low SLR case. The RCP 8.5 case would give a 1.65 inch increase over the linear projection case.

If the panel chooses to keep the cases as presented, then it should present a basis for the dramatic change in the current global SLR rate. The important thing to remember is that the NC tidal gauges give no evidence of a major change in their rates in the last decade.

Dr. James T. Early

Kitty Hawk, NC

james.t.early@gmail.com

January 14, 2015

1. Church, J.A., and N.J. White, 2011. Sea-level rise from the late 19th to early 21st century, *Surveys in Geophysics*, 32(4-5), 585-602.

2015 NC SLR Report - Draft #4 (12/31/14): **Comments***

Page i (*first bullet point*): This is the first time (of many) that the phrase “relative sea level rise” appears in this Report. It does not seem that this phrase is ever actually defined. [Note that it becomes “RSLR” on page 18.]

Page i (*sixth bullet point*): “Inclusion of scenario based global SLR predictions from the most recent IPCC Report (AR5).”

Insert the word "hypothetical". The linear fits in Figure 7 of the Report show no evidence of curvature/acceleration.

Page i: Recommend adding a bullet item to the report, material on Charleston (SC) and Sewells Point (VA) to provide context for the NC SLR locations.

Page i (*in Summary*): “(2) effects of water movement in the oceans (including the shifting position and changing speed of the Gulf Stream).”

Suggest adding: "neither of which humans have any control over.”

Page ii (*in 3rd paragraph*): Our position is that the 1.7 mm/yr global number should be less, e.g.: **a)** 1.4 mm/year (per comments submitted by D. Burton), and **b)** 1.0 mm/year (per [detailed calculations](#) by Dr. Nils-Axel Mörner).

Page iii (*first paragraph*): “The IPCC’s most recent ...”

As the Report’s Figure 7 does not show acceleration, we recommend omitting the IPCC scenarios — or to use RCP 2.6 as the high end case. IPCC thinking is largely driven by models of temperature, and those models have failed to predict 18 years of no temperature rise, while CO2 has increased by 10%. As the NC SLR issue will be revisited periodically, scenarios based on IPCC can wait for more data. Where IPCC scenarios are referenced, they should be labeled "hypothetical". Any estimates of acceleration should be based on quadratic terms of fits to NC data.

Page iii (*first paragraph*): “Table 1” should be “Table ES1”

Page iii (*second paragraph*): “sustainability”.

We are not aware of any fixed state of nature. Clearly on a geologic time scale, Figures 1 and 2, the earth is a very dynamic place. We would replace "sustainability" with something like "human well-being".

Page iv (*third bullet point*): Suggest replacing “rapidly changing” w "current".

Page vi & vii: The lists of Figures and Tables are hard to read. Second (and subsequent) lines should be indented.

Page 1 (*first paragraph*): “~15 inches”. Where does this number come from (as the max table ES3 increase is 12.1 inches)?

Page 1 (*second paragraph*): The Science Panel was asked to do a “Scientific” assessment of future sea levels for NC. Please insert that key word.

Page 1 (*third paragraph*): “Since ... after fielding 50,000 comments.”

Recommend omitting this paragraph. Science is not based on votes, and an appeal to authority is not a method of argument that should be used.

Appeal to "peer reviewed" papers is also not a good argument. In the first place, IPCC often cites non-peer reviewed literature. More importantly, *peer review* is no guarantee of **validity**. Note:

“The peer review process, however, provides assurance only that an act of research complies with accepted methods in a field of investigation. The process provides no assurance about the methods themselves, particularly if the reviewing experts also establish and maintain the very methods that they are asked to approve.” [Feinstein, AR. (1988) [Scientific standards in epidemiologic studies of the menace of daily life](#). *Science* 242, 1257-1263.]

Page 1 (*last paragraph*): [NYSERDA](#) exists to eliminate fossil fuels. Their belief is the IPCC is not an objective endorsement of the IPCC’s accuracy.

Page 2: “3)” The wording has been improved from the prior version. We are repeating the three projections that make sense to us:

1. Linear projection for each NC tidal gauge.
2. Quadratic projections for each NC tidal gauge, if the quadratic regression coefficient is statistically justified.
3. If a projection is based on a IPCC scenario then it should be labeled "hypothetical" in that it is model-based, not empirical data based.

Page 2: “4) Provide guidance as to how to interpret and make use of these values” comes across as policy, so suggest omitting this part.

Page 2: “2. Sea Level Change: What influences ocean water levels?

The sea level ... is known at the Relative Sea Level or RSL, which is...”

In the Report, the phrase “Relative Sea Level” is defined in three (3) places [see also page 5 ¶2.3, and page 12 ¶4] — and somewhat differently each time. For example “VLM” is defined as “Vertical Land Movement” in one place, and “Vertical Land Motion” in another. The recommended solution is to define RSL only once, and early on in the Report.

Page 2: “RSL = GSL + VLM + OE”. Add words [also in section 3.2] to the effect that Oceanographic Effects (OE) are generally transitory.

Page 2: (*last paragraph*) It’s unclear what the “CO2 concentration in ice cores” readings have to do with past SLR. The Report should explain the connection.

Page 3: A reference to Kemp is in the Figure 3 description. The text statement “Figures 2 and 3; Kemp, et al.” is confusing as Kemp only applies to Figure 3.

Page 3: Figure 2. The 45 mm/yr slope period does not look as steep as the previous time interval of 40 mm/yr. Is the graph correctly labelled?

Note: Figure 2 might give the impression of "always upward," whereas Figure 1 shows some very dramatic decreases in sea level.

Page 4: Per previous comment (*Page i*), suggest adding Charleston (SC) and Sewells Point (VA) to tables and figures as reference points for the reader.

Page 4: Table 1: This table is suspect. Contrary to the impression given in the Report: **a)** this is not independent data, but rather [IPCC material](#) (see page 1151), and **b)** this is not just empirical data, but models [with up to 95% uncertainty], and **c)** parts of this chart do not even appear in the original work that is referenced. The bottom line is that this is wild, self-serving conjecture.

Page 7: It’s not clear how the Report authors determined that there is “no evidence” of subsidence due to fresh-water extraction “even ... where high levels of fresh-water aquifer pumping occurs.” Please explain in the Report.

Page 11: It’s not clear how the information in Figure 5 relates to the rest of the report — especially the NC conclusions. Please explain in the Report.

Page 11: Figure 5(b) SLR acceleration is small for locations south of Hatteras.

Page 13: Table 3, etc: Per earlier comments, suggest adding Charleston (SC) and Sewells Point (VA) to tables and figures as reference points for the reader.

Page 15: Figure 7. These graphs strongly imply that there is no NC SLR acceleration. Therefore the IPCC scenarios do not seem reasonable — and certainly should not be highlighted. Church and White claim acceleration elsewhere, but the degree of acceleration is very small.

Page 16: This lists all “adjustments” that were done to the data. The suspicion is that the data was massaged to bring about a desired result... Having “Pers Comm” in both the title *and* Table 4 is a duplication. There are some major discrepancies between Table 4 and the information on Page 7. Why?

Page 18: Table 6. This is the first time that the acronym "RSLR" appears in the report, so it needs to be defined before that.

Page 19: (*first paragraph*) The Panel “researched the possibility” of SLR deceleration, and says they could find “few” reports. A brief search came up with [this study](#), and [this](#), and [this](#), and [this](#), and [this](#), and [this](#). Although we are not supporting a deceleration position, the topic deserves more than one dismissive paragraph in an objective Scientific Assessment Report, and the conclusions of those “few” studies should be revealed.

Page 19: (*second paragraph*) In our view this section is the most egregious of the entire Report. Strong exception is taken to blind adherence to the IPCC's opinions.

All the fawning over the IPCC is in stark contrast with the [2010 Report](#) (*from the same authors!*) which dismissed the IPCC's SLR findings as unsatisfactory. If their answer is that “a lot has been learned since AR4,” then the response to that is: “such significant changes, in so short a time period, are testimony to how little we actually know on this topic.” That needs to be acknowledged.

There have been numerous critiques of the IPCC that have concluded that it is more of a political body, actively trying to deceive the public by representing itself as a scientific one. See **Appendix A**, which discusses this and lists sample studies about the IPCC (and its SLR projections) by qualified experts.

As a minimum, the Panel should reference dissenting sources, like the studies identified in **Appendix A** — *and* acknowledge that there is significant scientific uncertainty in this field.

It would appear that a more Science-based 30 NC SLR year projection would have a linear extrapolation of longer-term NC tide gauges as the likely expectation, with the IPCC 2.6 scenario as the worst-case high end. The IPCC 8.5 scenario is wildly speculative and is unworthy of mention.

Page 23: “6. Making Sense of the Predictions” This section appears to go into policy. Is it necessary? If anything, the report should state something to the effect that “This Report should not be the basis for coastal policies”.

Page 24: (*first paragraph*) The statement “...which more rapid climate change is expected” is a political and unscientific opinion that is injected here. A more acceptable substitution is “...which more rapid climate change is possible”.

Page 24: (*first paragraph*) The term “ice shelves” is used, which refers to floating ice. When floating ice melts, SLR is not changed, so not sure the correct term is being used.

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Dr. James Early
John Droz, jr.

12/15/14; revised: 1/23/15

* This is a resubmission of the comments made for Version 2 of the draft (12/10/14), as most of the items remain the same. (See Appendix B for the few comments that were incorporated.)

Appendix A

The intention of this Commentary is to achieve two objectives:

- a) a timely response to the NC 2015 SLR Report that is technically significant & accurate, *as well as*
- b) a response to the NC SLR Report that is understandable by the public, and our NC legislators.

To simultaneously achieve both goals, is a substantial challenge. *Appendix A* was setup to separate out some of the more technical parts of this complex subject — which the casual reader can just peruse, and still hopefully get the point. [BTW: here is a good [layman's overview](#) of SLR measurements.]

The key issue with this Report is the authors' adulation with the IPCC (Intergovernmental Panel on Climate Change). Yes, on the surface the IPCC seems like a credible, objective source — *but is it really?*

Let's start with this [insightful synopsis](#) that's a good overview of IPCC issues. Here's [another](#). As mentioned in those analyses, there is a significant and fundamental problem with the IPCC that needs to be clearly understood:

Many people believe that the IPCC objectively and scientifically looked at the whole climate situation — and then concluded that human factors were dominant. Subsequent to that presumed scientific assessment, the IPCC focused on the human related climate change elements.

However, that is **not the case**. Read what their [charter](#) said:

“The role of the IPCC is to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk **of human-induced climate change**, its potential impacts and options for adaptation and mitigation. **The IPCC does not carry out research, nor does it monitor climate related data or other relevant parameters.**”

I've put the key parts in red. What this says is that the IPCC, by *statute*, is forced to **ONLY** consider human related climate changes. No other climate related changes — *no matter how important* — are seriously analyzed.

Science is a **Process** that involves a *comprehensive, objective, transparent and empirical* analysis of a technical issue. Understanding the IPCC's directive makes it clear why their reports focus on human related climate change: *not that it's necessarily so important, but rather that this is what their charter had mandated them to do*. So, no matter how many scientists work with the IPCC, or how much “peer-review” there is, or how polished their methodology seems, the IPCC's charter **is fundamentally contrary to how real Science works!**

On January 2nd, 2015, a request was sent to several SLR experts — asking that they review the Version 4 draft of the CRC advisory Panel SLR Report. Below is a brief summary of some of the more applicable studies received to date, in response:

1 - There was a well-known Australian Report ("South Coast Regional Sea Level Rise Policy and Planning Framework": summary [here](#)) that basically regurgitated the IPCC conclusions. That is of interest, as this is essentially the same position taken by the NC CRC's technical advisory Panel. There were two detailed critiques of the Australian Report, and arguments against the IPCC very much apply to the NC situation:

a - NIPCC [Commentary](#) (authored by 11 scientists). There is **considerable** information here about the veracity of the IPCC and satellite SLR data.

b - Dr. John Happs [Commentary](#) (sent by the author)

2 - [US Congressional testimony](#) (2/26/14) by Dr. Patrick Michaels and Dr. Paul Knappenberger. They have a section in that worthwhile document that deals with SLR, and the IPCC's models. Their point appears to be: if the IPCC can't get the temperatures right, how can they accurately forecast SLR?

3 - [US Congressional testimony](#) (2/26/14) by Dr. Randy Randol. He pointedly objects to the IPCC scenarios — noting that none of them have been calibrated. He has a particularly worthwhile section ("VI") on SLR.

4 - [US Congressional testimony](#) (5/29/14) by Dr. Daniel Botkin. His very reasoned discussion is about the accuracy of IPCC models, which is a key matter here.

5 - [State of the Climate Debate](#) (9/16/14) by Dr. Judith Curry. She likewise discusses the IPCC process and the accuracy of its assumptions.

6 - [Understanding The IPCC AR5 Climate Assessment](#) (10/13) by Dr. Richard Lindzen. He writes that "the IPCC report ... is a political document, and as George Orwell noted, 'is designed to make lies sound truthful.'"

7 - [The IPCC AR5 Report: Facts -vs- Fictions](#) (10/13) by [Dr. Don Easterbrook](#), concludes that: "the IPCC report must be considered the grossest misrepresentation of data ever published." See also this [critique](#).

8 - [Sea Level Changes in the 19, 20th and 21st Centuries](#) (10/14) by Dr. Nils-Axel Mörner. He cites considerable empirical records, concluding that: "This data set is in deep conflict with the high rates proposed by the IPCC."

9 - [German Review: Sea Level Rise Way Below Projections – No Hard Basis For Claims Of Accelerating Rise](#) (1/23/14) by Dr. Sebastian Lüning. This very detailed analysis concludes that the IPCC projections are "unscientific."

10-[IPCC AR5: Unprecedented Uncertainty](#) (10/13) by Dr. Euan Mearns. He concludes that “The IPCC has become confused... The consensus is broken.”

11-A [strong critique](#) (7/16/14) by Larry Hamlin concludes: “IPCC AR5 claims of increasing rates of sea level rise from 1971 to 2010 are unsupported.” That, in turn, undermines the veracity of their proposed scenarios.

12-[Multi-scale dynamical analysis \(MSDA\) of sea level records versus PDO, AMO, and NAO indexes](#) (5/14) by Dr. Nicola Scafetta. He concludes that SLR predictions (like IPCC's) are inaccurate as their basic methodology is flawed.

13-[Ethics and Climate Change Policy](#) (12/15/14) by Dr. Peter Lee. Although a bit more general, he analyzes the IPCC and its methodology. There is a subsequent discussion of this insightful paper on Dr. Curry's [site](#).

14-[Regional Climate Downscaling: What's the Point?](#) (1/31/12) by Dr. Roger Pielke. This well-researched paper discusses the differences and limitations between short term weather predictions, and long term climate predictions.

15-[Twentieth-Century Global-Mean Sea Level Rise](#) (6/13) by Gregory, et al. “Semi-empirical methods for projecting GMSLR depend on the existence of a relationship between global climate change and the rate of GMSLR, but the implication of the authors' closure of the budget is that such a relationship is weak or absent during the twentieth century.”

16-[Secular and Current Sea Level Rise](#) (2014) by Dr. Klaus-Eckart Puls is mostly about how satellite readings have diverged from tidal gauges. However, he strongly criticizes the IPCC saying: “IPCC forecasts do not have much to do with objective science any more.”

17-[Evidence for Long-term Memory in Sea Level](#) (8/5/14) by Dangendorf, et al observes that “natural variations could be playing a large role in regional and global sea level rise than previously thought.”

18-[Stop Climate Fear Mongering](#) (12/23/14) by Dr. William Gray. His conclusion about the IPCC scenarios: “The science behind these CO₂ induced warming projections is very badly flawed and needs to be exposed.”

19-[Video Link to Sea-Level Rise Reality](#) by Dr. Tom Wismuller. He wrote me: “the NC SLR report treats the Glacial Isostatic Adjustment rather poorly (as does the University of Colorado and the IPCC).” [Ref page 7 of the Report.]

20-[Statistical analysis of global surface air temperature and sea level using cointegration methods](#) (2012) by Dr. Torben Schmith, et. al. They conclude that “the number of years of data needed to build statistical models that have the relationship expected from physics, exceeds what is currently available by a factor of almost ten.”

Appendix B

Much of this document was [submitted earlier](#) in response to Version 2 of the report (12/10/14). The items below were the only ones incorporated. No response has been received as to why 27 out of the original 32 comments (85%±) didn't make it.

Page ii: Table ES1 is in a different format than the following two tables. To be consistent, the third column of ES1 should be the **total**.

Page iii: "Agency groups involved in planning ...through ES3."

We would omit these sentences. They come across as "preachy". Presumably, government agencies know their duties.

Page 12: "The 2010 SLR Assessment Report based its projections on the Duck gauge, the only ocean gauge with a long term record." This sentence appears to be a walk back from the original Report, without adequate explanation.

Page 23: The website ClimateCentral.org comes across as scare mongering. This report indicates that Wilmington will experience little or no sea level rise, yet a report on this site talks of floods of 4 to 7 feet over the next century. Maybe so, but they needlessly combine SLR with storms.

Page 26: On Page 9 the report references a "Houston &Dean 2013 Report" — yet it is not listed in the references.