North Carolina Division of Coastal Management
Sea Level Rise Scoping Survey

Final Report

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Introduction

The North Carolina Division of Coastal Management (DCM) conducted a non-scientific sea level rise perception and scoping survey in the summer of 2009. The survey represented one of the beginning steps in the Division's and Coastal Resources Commission's (CRC) work on sea level rise as a discrete subject. The survey was intended to serve multiple purposes. The CRC and DCM are interested in the public's perception of the reality and magnitude of sea level rise, and their perceived vulnerability to its effects. The survey also presented respondents with a number of potential response actions, and asked respondents to indicate which ones they would support and to what degree. Respondents were given, and took, the opportunity to add their own ideas through a series of open ended questions. Respondents were asked who, if anyone, they thought should be taking action on sea level rise, either in a lead or supporting role.

Another purpose of the survey was to communicate to the public that the CRC and DCM have begun to approach sea level rise as a distinct subject, and are actively seeking to engage the public in the process.

The Division and CRC will use the results of this survey as a tool to help understand public perception of sea level rise, to design public education and outreach efforts, and to foster collaborations with interested respondents. Open ended responses will be particularly useful for gaining insights, gathering new information, and networking with potential collaborators across the state.

Methodology

Staff at DCM drafted the survey instrument using the SurveyMonkey website. The instrument contained ten questions of various types, including rating scale and open ended questions. The instrument was tested and refined with the assistance of the CRC, the Coastal Resources Advisory Council, the CRC Science Panel on Coastal Hazards, and staff at DCM, the N.C. Coastal Reserves, and the Department of Environment and Natural Resources. The survey was intended to be non-scientific.

The survey was administered online through SurveyMonkey from July 21 – August 31, 2009. Respondents were solicited through direct email, DCM's website, and various listservs. The survey also received significant coverage in the print, television and radio media during the administration phase. Respondents were ultimately self selected, and because of the broadcast nature of the solicitation, it is impossible to know how many individuals were invited to complete the survey.

A copy of the survey instrument is included with this report.

1. Total number of clean responses

North Carolina: 1076, 620 of whom own NC coastal property
Non-NC: 100, 53 of whom own NC coastal property
NC Counties: 77 out of 100
CAMA Counties: 18 out of 20
U.S. States: 26 out of 50
Total clean responses: 1176, 673 of whom own NC coastal property

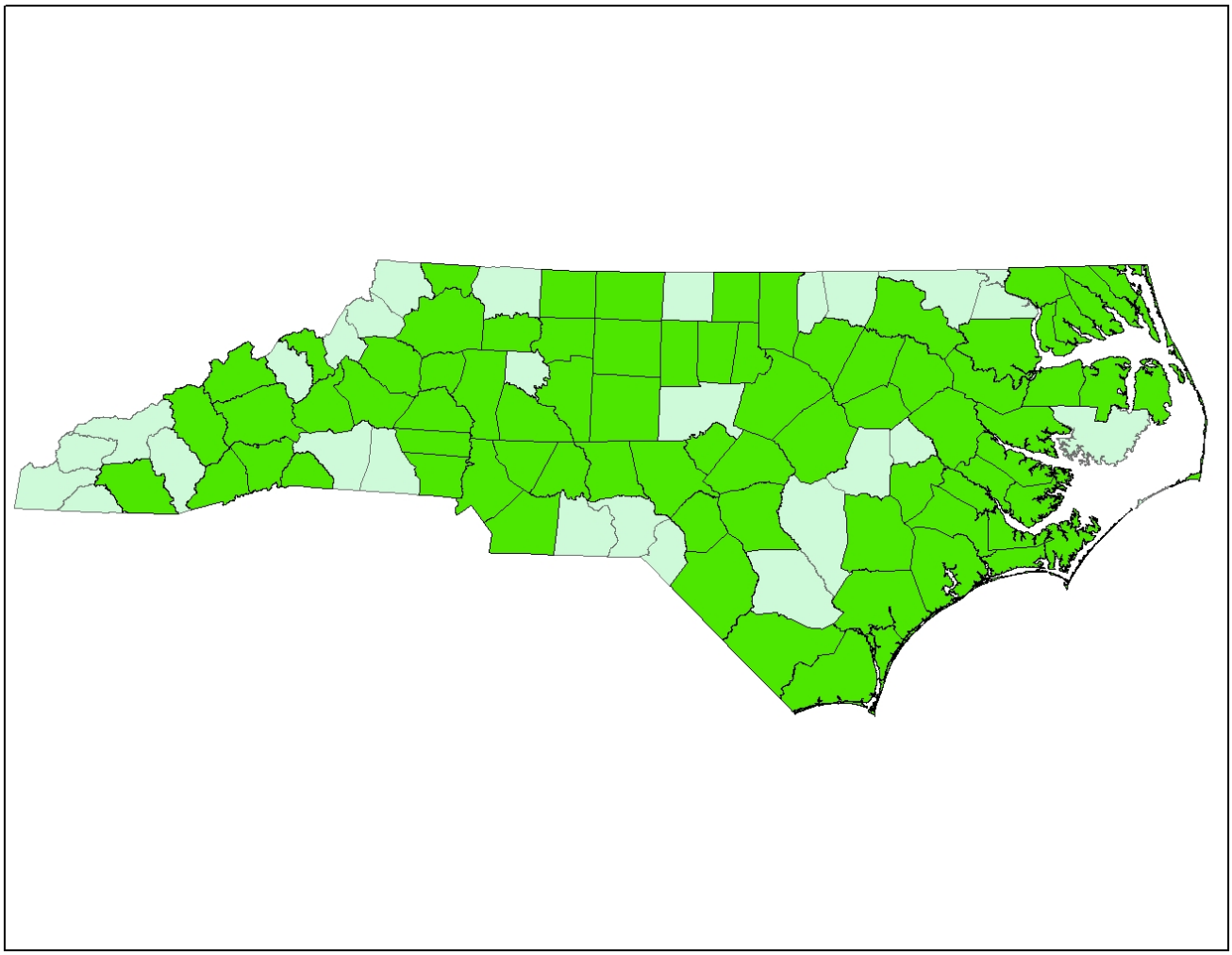
2. Number of NC responses by county

Clean responses were received from 77 of the 100 counties in North Carolina. Wake County had the highest number of responses with 204. The average number of responses per county was 14.

COUNTY	RESPONSES #
Alamance	7
Alexander	2
Alleghany	1
Beaufort	39
Bertie	3
Brunswick	63
Buncombe	27
Burke	1
Cabarrus	2
Caldwell	2
Camden	2
Carteret	92
Catawba	3
Chatham	9
Chowan	7
Columbus	2
Craven	25
Cumberland	16
Currituck	7
Dare	73
Davidson	5
Duplin	3
Durham	33
Edgecombe	4
Forsyth	20
Franklin	2

COUNTY	RESPONSES #
Gaston	9
Gates	1
Granville	3
Guilford	22
Halifax	1
Harnett	6
Haywood	5
Henderson	3
Hoke	1
Iredell	6
Johnston	10
Jones	1
Lee	2
Lenoir	5
Lincoln	1
Macon	1
Madison	1
Martin	1
McDowell	1
Mecklenburg	19
Mitchell	1
Montgomery	1
Moore	6
Nash	6
New Hanover	114
Onslow	26

COUNTY	RESPONSES #
Orange	57
Other	1
Pamlico	13
Pasquotank	7
Pender	18
Perquimans	2
Person	1
Pitt	24
Polk	1
Randolph	5
Robeson	1
Rockingham	3
Rowan	2
Stanly	4
Stokes	1
Transylvania	1
Tyrrell	1
Union	4
Wake	204
Warren	1
Washington	3
Watauga	7
Wayne	3
Wilkes	3
Wilson	5
Yadkin	1



3. Number of responses by CAMA county

Clean responses were received from 18 of the 20 CAMA counties in North Carolina. New Hanover County had the highest number of responses with 114. The average number of responses per county was 28.

COUNTY	RESPONSES #
Beaufort	39
Bertie	3
Brunswick	63
Camden	2
Carteret	92
Chowan	7
Craven	25

COUNTY	RESPONSES #
Currituck	7
Dare	73
Gates	1
Hertford	0
Hyde	0
New Hanover	114
Onslow	26

COUNTY	RESPONSES #
Pamlico	13
Pasquotank	7
Pender	18
Perquimans	2
Tyrrell	1
Washington	3

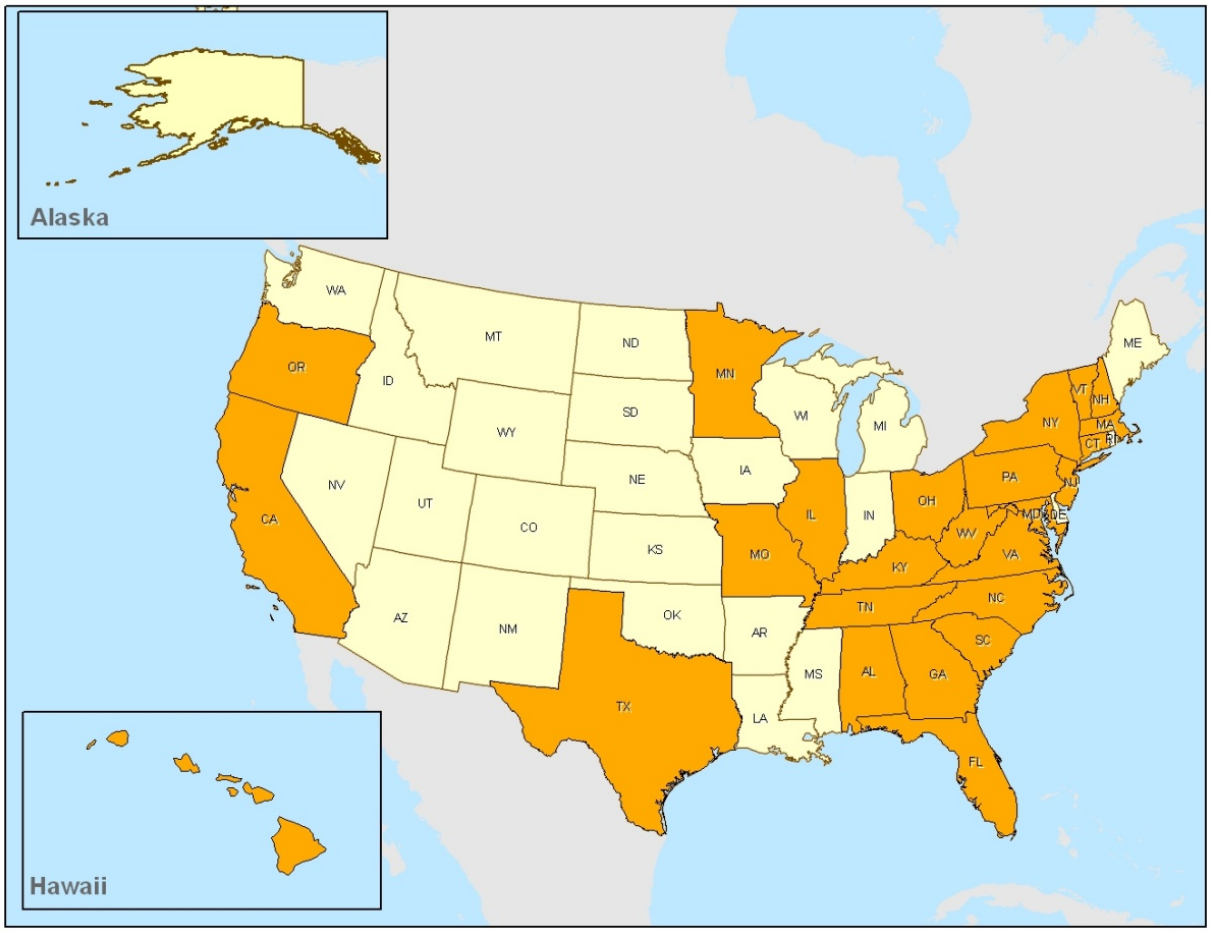
4. Number of responses by state

Clean responses were received from 26 of the 50 states in the U.S., including Hawaii. After North Carolina, Virginia had the highest number of responses with 28.

STATE	RESPONSES #
Alabama	1
California	2
Connecticut	1
Washington DC	1
Florida	3
Georgia	2
Hawaii	2
Illinois	1
Kentucky	1

STATE	RESPONSES #
Maryland	3
Massachusetts	1
Minnesota	1
Missouri	1
New Hampshire	1
New Jersey	1
New York	3
North Carolina	1076
Ohio	4

STATE	RESPONSES #
Oregon	1
Pennsylvania	8
South Carolina	23
Tennessee	4
Texas	5
Vermont	1
Virginia	28
West Virginia	1



5. NC Respondents who believe that sea level rise is occurring, by county

805 of 1076 NC respondents, or 75 percent, believe that sea level rise is occurring. Among CAMA counties, 346 of 496 respondents, or 70 percent, believe that sea level rise is occurring.

COUNTY	BELIEVE	TOTAL RESP.
Alamance	6	7
Alexander	2	2
Alleghany	1	1
Beaufort	28	39
Bertie	3	3
Brunswick	43	63
Buncombe	21	27
Burke	1	1
Cabarrus	2	2
Caldwell	2	2
Camden	1	2
Carteret	63	92
Catawba	2	3
Chatham	8	9
Chowan	4	7
Columbus	2	2
Craven	17	25
Cumberland	9	16
Currituck	3	7
Dare	46	73
Davidson	2	5
Duplin	2	3
Durham	30	33
Edgecombe	3	4
Forsyth	11	20
Franklin	2	2

COUNTY	BELIEVE	TOTAL RESP.
Gaston	4	9
Gates	1	1
Granville	3	3
Guilford	11	22
Halifax	1	1
Harnett	4	6
Haywood	5	5
Henderson	2	3
Hoke	1	1
Iredell	2	6
Johnston	8	10
Jones	1	1
Lee	2	2
Lenoir	3	5
Lincoln	1	1
Macon	1	1
Madison	1	1
Martin	1	1
McDowell	1	1
Mecklenburg	11	19
Mitchell	1	1
Montgomery	1	1
Moore	5	6
Nash	6	6
N. Hanover	84	114
Onslow	20	26

COUNTY	BELIEVE	TOTAL RESP.
Orange	52	57
Other	0	1
Pamlico	7	13
Pasquotank	5	7
Pender	15	18
Perquimans	2	2
Person	1	1
Pitt	20	24
Polk	0	1
Randolph	4	5
Robeson	1	1
Rockingham	1	3
Rowan	2	2
Stanly	3	4
Stokes	1	1
Transylvania	1	1
Tyrrell	1	1
Union	2	4
Wake	172	204
Warren	1	1
Washington	3	3
Watauga	6	7
Wayne	2	3
Wilkes	3	3
Wilson	4	5
Yadkin	1	1

6. NC Respondents who do not believe that sea level rise is occurring, by county

127 of 1076 NC respondents, or 12 percent, do not believe that sea level rise is occurring. Among CAMA counties, 84 of 496 respondents, or 17 percent, do not believe that sea level rise is occurring.

COUNTY	DON'T BELIEVE	TOTAL RESP.
Alamance	1	7
Alexander		2
Alleghany		1
Beaufort	6	39
Bertie		3
Brunswick	9	63
Buncombe	2	27
Burke		1
Cabarrus		2
Caldwell		2
Camden	1	2
Carteret	22	92
Catawba		3
Chatham		9
Chowan	3	7
Columbus		2
Craven	7	25
Cumberland	4	16
Currituck	2	7
Dare	16	73
Davidson	1	5
Duplin	1	3
Durham	2	33
Edgecombe		4
Forsyth	4	20
Franklin		2

COUNTY	DON'T BELIEVE	TOTAL RESP.
Gaston	1	9
Gates		1
Granville		3
Guilford	5	22
Halifax		1
Harnett	1	6
Haywood		5
Henderson		3
Hoke		1
Iredell		6
Johnston		10
Jones		1
Lee		2
Lenoir	1	5
Lincoln		1
Macon		1
Madison		1
Martin		1
McDowell		1
Mecklenburg	5	19
Mitchell		1
Montgomery		1
Moore		6
Nash		6
N. Hanover	9	114
Onslow	3	26

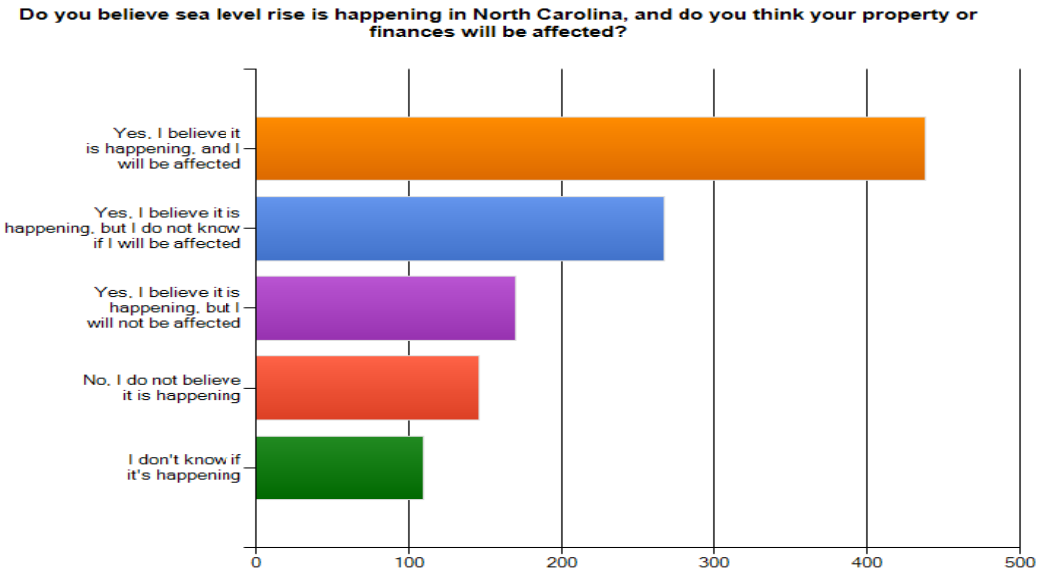
COUNTY	DON'T BELIEVE	TOTAL RESP.
Orange		57
Other		1
Pamlico	4	13
Pasquotank		7
Pender	2	18
Perquimans		2
Person		1
Pitt		24
Polk		1
Randolph	1	5
Robeson		1
Rockingham		3
Rowan		2
Stanly	1	4
Stokes		1
Transylvania		1
Tyrrell		1
Union	2	4
Wake	9	204
Warren		1
Washington		3
Watauga	1	7
Wayne		3
Wilkes		3
Wilson	1	5
Yadkin		1

7. Number of NC Respondents who believe they will be affected by sea level rise, by county

407 of 1076 NC respondents, or 38 percent, believe that they will be affected by sea level rise. Among CAMA counties, 169 of 496 respondents, or 34 percent, believe that they will be affected.

158 of 1076 NC respondents, or 15 percent, believe that sea level rise is occurring, but do not believe that they will be affected. Among CAMA counties, 63 of 496 respondents, or 13 percent, believe that sea level rise is occurring, but do not believe that they will be affected.

240 of 1076 NC respondents, or 22 percent, believe that sea level rise is occurring, but do not know if they will be affected. Among CAMA counties, 114 of 496 respondents, or 23 percent, believe that sea level rise is occurring, but do not know if they will be affected.



COUNTY	BELIEVE AFFECT	TOTAL RESP.
Alamance	4	7
Alexander		2
Alleghany		1
Beaufort	14	39
Bertie		3
Brunswick	20	63
Buncombe	11	27
Burke	1	1
Cabarrus	1	2
Caldwell	1	2
Camden		2
Carteret	34	92
Catawba		3
Chatham	4	9
Chowan	2	7
Columbus	1	2
Craven	8	25
Cumberland	3	16
Currituck	2	7
Dare	28	73
Davidson	2	5
Duplin	1	3
Durham	13	33
Edgecombe	1	4
Forsyth	5	20
Franklin	1	2

COUNTY	BELIEVE AFFECT	TOTAL RESP.
Gaston	3	9
Gates		1
Granville		3
Guilford	8	22
Halifax		1
Harnett	1	6
Haywood	2	5
Henderson		3
Hoke		1
Iredell	1	6
Johnston	5	10
Jones		1
Lee	1	2
Lenoir	1	5
Lincoln	1	1
Macon	1	1
Madison		1
Martin	1	1
McDowell		1
Mecklenburg	7	19
Mitchell		1
Montgomery		1
Moore	1	6
Nash	2	6
N. Hanover	40	114
Onslow	6	26

COUNTY	BELIEVE AFFECT	TOTAL RESP.
Orange	32	57
Other		1
Pamlico	4	13
Pasquotank	2	7
Pender	6	18
Perquimans		2
Person		1
Pitt	16	24
Polk		1
Randolph	1	5
Robeson		1
Rockingham		3
Rowan	1	2
Stanly	2	4
Stokes	1	1
Transylvania		1
Tyrrell	1	1
Union		4
Wake	95	204
Warren		1
Washington	2	3
Watauga	3	7
Wayne		3
Wilkes		3
Wilson	3	5
Yadkin		1

8. Perceptions of risk among resident NC coastal property owner respondents who believe that sea level rise is occurring, by county

COUNTY	BELIEVE AFFECTED	DON'T BELIEVE AFFECTED	DON'T KNOW
Alamance	2	0	0
Alexander	0	0	1
Alleghany	0	0	0
Beaufort	11	2	11
Bertie	0	1	1
Brunswick	18	9	14
Buncombe	1	0	1
Burke	0	0	0
Cabarrus	1	0	1
Caldwell	1	0	0
Camden	0	0	1
Carteret	29	7	18
Catawba	0	0	1
Chatham	1	0	0
Chowan	1	2	0
Columbus	1	0	1
Craven	5	3	6
Cumberland	2	1	3
Currituck	2	0	1
Dare	24	4	12
Davidson	2	0	0
Duplin	0	0	0
Durham	2	0	2
Edgecombe	1	0	1
Forsyth	1	0	3
Franklin	0	0	1
Gaston	2	0	1
Gates	0	1	0
Granville	0	1	0
Guilford	6	1	2
Halifax	0	0	0
Harnett	0	0	1
Haywood	1	0	0
Henderson	0	0	0
Hoke	0	0	0
Iredell	1	0	0
Johnston	1	0	0
Jones	0	1	0
Lee	1	0	0

COUNTY	BELIEVE AFFECTED	DON'T BELIEVE AFFECTED	DON'T KNOW
Lenoir	1	0	0
Lincoln	0	0	0
Macon	0	0	0
Madison	0	0	0
Martin	0	0	0
McDowell	0	0	0
Mecklenburg	3	0	2
Mitchell	0	0	0
Montgomery	0	0	1
Moore	0	0	0
Nash	1	0	1
N. Hanover	35	18	21
Onslow	6	4	8
Orange	8	0	0
Other	-	-	-
Pamlico	4	2	1
Pasquotank	2	1	1
Pender	6	3	6
Perquimans	0	1	1
Person	0	0	1
Pitt	6	0	0
Polk	0	0	0
Randolph	1	1	1
Robeson	0	0	1
Rockingham	0	0	0
Rowan	0	0	1
Stanly	0	0	0
Stokes	0	0	0
Transylvania	0	0	0
Tyrrell	1	0	0
Union	0	0	1
Wake	21	5	10
Warren	0	0	0
Washington	2	1	0
Watauga	1	0	0
Wayne	0	0	1
Wilkes	0	0	0
Wilson	1	0	0
Yadkin	0	0	0

216 of 426 NC coastal property owner respondents, or 51 percent, believe that they will be affected by sea level rise. Among CAMA counties, 146 of 307 coastal property owner respondents, or 48 percent, believe that they will be affected. 69 of 426 NC coastal property owner respondents, or 16 percent, believe that sea level rise is occurring, but do not believe that they will be affected. Among CAMA counties, 59 of 307 coastal property owner respondents, or 19 percent, believe that sea level rise is occurring, but do not believe that they will be affected. 141 of 426 NC coastal property owner respondents, or 33 percent, believe that sea level rise is occurring, but do not know if they will be affected. Among CAMA counties, 102 of 307 coastal property owner respondents, or 46 percent, believe that sea level rise is occurring, but do not know if they will be affected.

9. Comparison of risk perception between all NC respondents and NC resident coastal property owner respondents who believe that sea level rise is occurring

407 of 1076 respondents, or 38 percent, believe that sea level rise is occurring and that they will be affected, compared to 216 of 426 NC coastal property owner respondents, or 51 percent. 158 of 1076 respondents, or 15 percent, believe it is occurring and that they will not be affected, compared to 69 of 426 NC coastal property owner respondents, or 16 percent. 240 of 1076 respondents, or 22 percent, believe it is occurring but do not know if they will be affected, compared to 141 of 426 NC coastal property owner respondents, or 33 percent.

RISK PERCEPTION CATEGORY	ALL NC RESPONDENTS %	NC RESIDENT PROPERTY OWNERS %
Will be affected	38	51
Will not be affected	15	16
Don't know if they will be affected	22	33

10. Number of nonresident NC coastal property owner respondents who believe that sea level rise is occurring and their perceptions of risk, by state

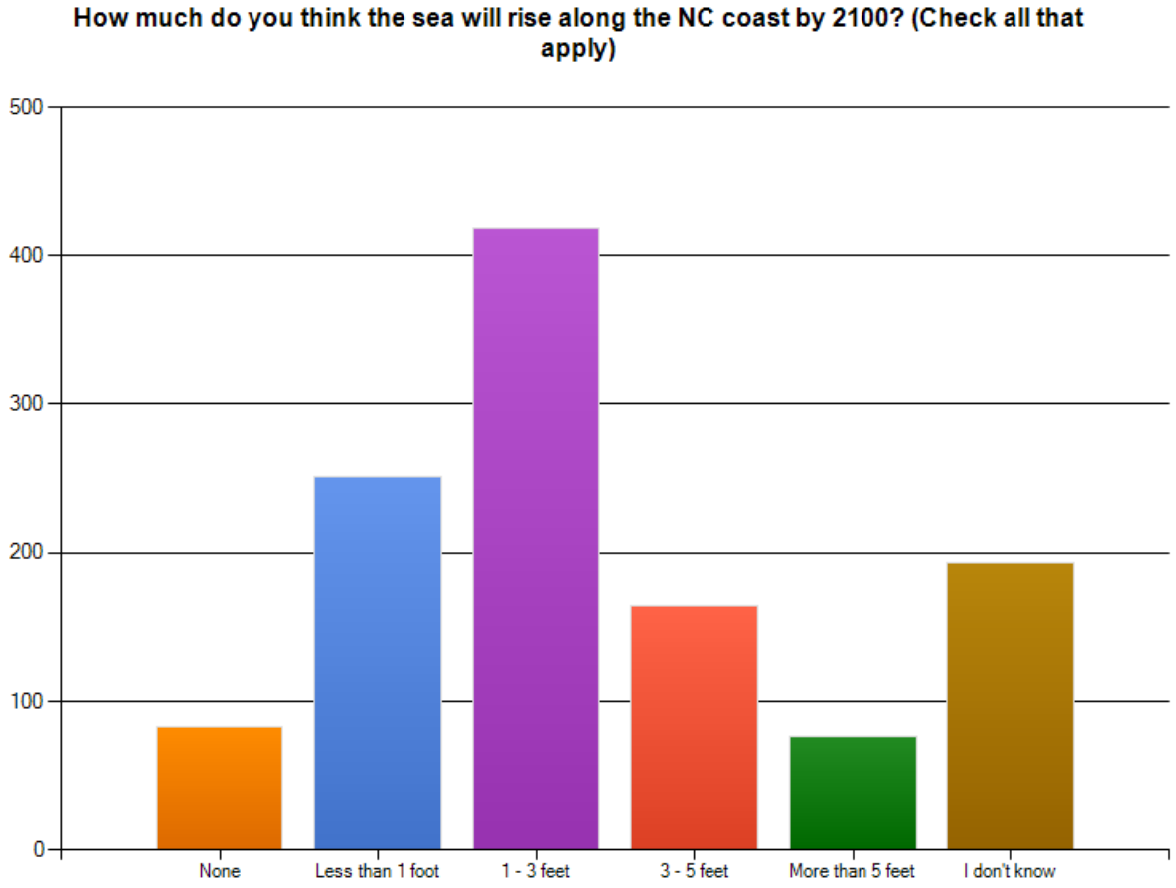
225 respondents who live outside of the 20 CAMA counties, but own property within the 20 CAMA counties, believe that they will be affected by sea level rise. 71 respondents in this category do not believe that they will be affected, and 301 respondents do not know if they will be affected.

STATE	BELIEVE AFFECTED	DON'T BELIEVE AFFECTED	DON'T KNOW
Alabama	-	-	-
California	1	0	0
Connecticut	1	0	0
Washington DC	0	0	0
Florida	0	0	0
Georgia	0	0	0
Hawaii	0	0	0
Illinois	0	0	0
Kentucky	0	0	0
Maryland	0	0	1
Mass.	0	0	1
Minnesota	0	0	0
Missouri	0	0	0

STATE	BELIEVE AFFECTED	DON'T BELIEVE AFFECTED	DON'T KNOW
N. Hampshire	0	0	0
New Jersey	0	0	0
New York	0	0	1
North Carolina	216	69	285
Ohio	0	0	0
Oregon	0	0	0
Pennsylvania	0	0	2
South Carolina	2	1	3
Tennessee	3	0	1
Texas	0	0	2
Vermont	0	0	0
Virginia	2	1	5
W. Virginia	0	0	0

11. How much rise by level

Respondents were asked to indicate how much sea level rise they thought most likely to occur by the year 2100. Respondents were not led in answering this question, but the most frequent response was 1-3 feet, which coincides with the 2007 projections contained within the Intergovernmental Panel on Climate Change's 2007 4th Assessment Report.



AMOUNT OF RISE	NUMBER OF RESPONDENTS	PERCENTAGE OF RESPONDENTS
Zero rise	74	7
Less than one foot	223	21
One to three feet	388	36
Three to five feet	151	14
More than five feet	66	6
Don't know/no opinion	178	16

12. Perception of risk by rise

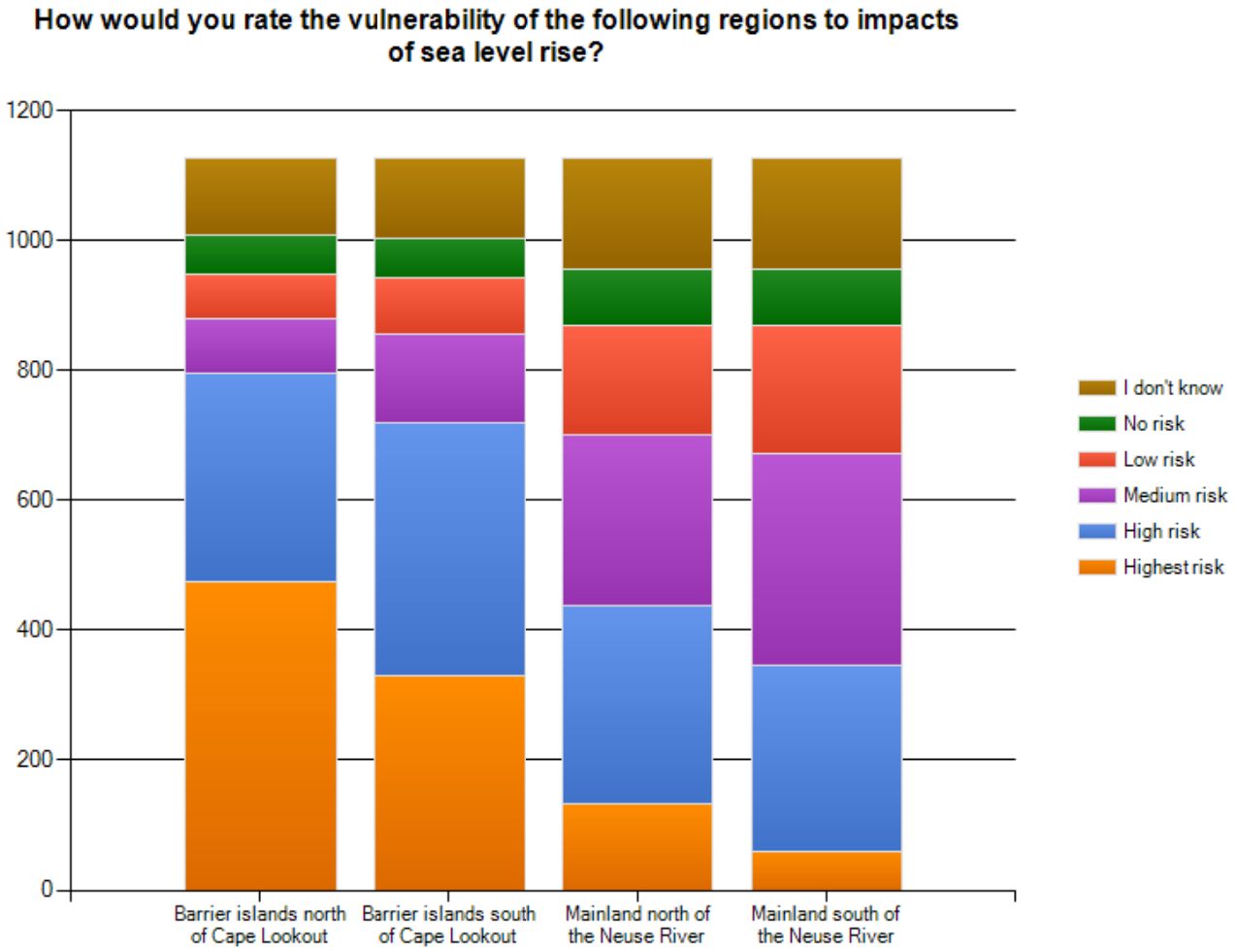
Respondents' perception of their risk of being affected by sea level rise, compared to the amount of rise they believe could occur by 2100. As the expected level of rise increases, the percentage of respondents who believe they will be affected also rises.

AMOUNT OF RISE	NUMBER OF RESPONDENTS	BELIEVE AFFECTED (%)	BELIEVE NOT AFFECTED (%)	DON'T KNOW IF AFFECTED (%)
Zero rise	74	3	1	0
Less than one foot	223	23	22	22
One to three feet	388	49	18	30
Three to five feet	151	60	15	23
More than five feet	66	74	12	12
Don't know/no opinion	178	26	9	25

13. Perception of the regions of the NC coast most vulnerable to the impacts of sea level rise

Respondents were asked to rate which areas of the coast they perceived to be most vulnerable to the effects of sea level rise. For the purpose of the question the coast was divided into four regions: barrier islands north of Cape Lookout, barrier islands south of Cape Lookout, mainland north of the Neuse River, and mainland south of the Neuse River.

719 of 1076 people, or 67 percent, consider the NC barrier islands north of Cape Lookout to be at high or highest risk. 660 of 1076 people, or 61 percent, consider the NC barrier islands south of Cape Lookout to be at high or highest risk. 411 of 1076 people, or 38 percent, consider the NC mainland north of the Neuse River to be at high or highest risk. 322 of 1076 people, or 30 percent, consider the NC mainland south of the Neuse River to be at high or highest risk.



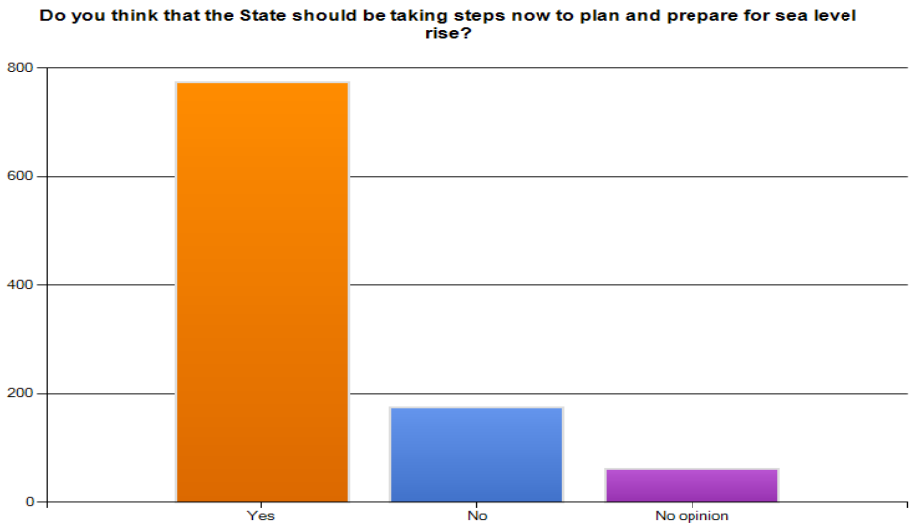
14. Percentage of respondents who believe the State should begin to plan now to address sea level rise, by county

66 percent of all NC respondents, and 59 percent of all CAMA county residents, believe that the State should start planning now to address sea level rise.

14 percent of all NC respondents, and 21 percent of all CAMA county residents, believe that the State should not start planning now to address sea level rise.

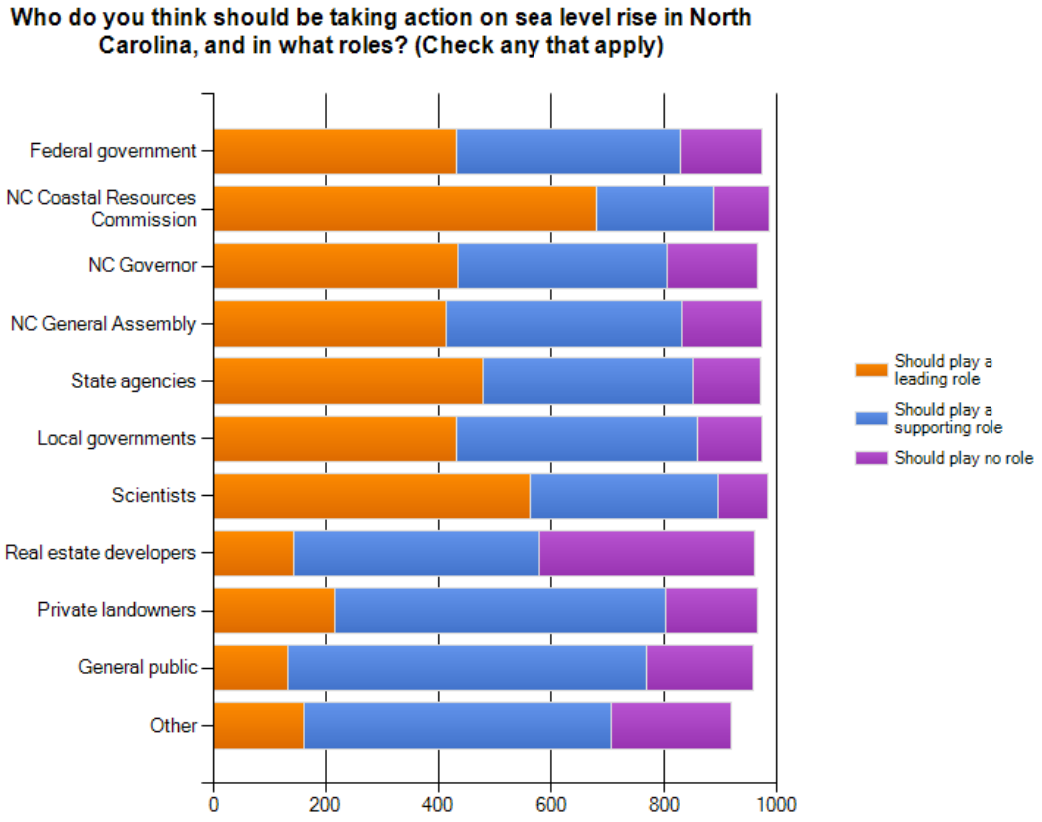
COUNTY	START NOW (%)	DON'T START NOW	NO OPINION %
Alamance	86	0	14
Alexander	100	0	0
Alleghany	100	0	0
Beaufort	69	15	3
Bertie	67	33	0
Brunswick	67	16	5
Buncombe	78	4	0
Burke	100	0	0
Cabarrus	50	0	0
Caldwell	100	0	0
Camden	50	50	0
Carteret	60	23	2
Catawba	33	0	0
Chatham	67	0	11
Chowan	43	57	0
Columbus	100	0	0
Craven	52	36	12
Cumberland	44	6	25
Currituck	43	14	29
Dare	47	26	12
Davidson	40	0	20
Duplin	33	67	0
Durham	94	6	0
Edgecombe	75	0	25
Forsyth	55	20	10
Franklin	50	0	0
Gaston	56	22	0
Gates	0	100	0
Granville	100	0	0
Guilford	45	32	9
Halifax	100	0	0
Harnett	50	17	0
Haywood	100	0	0
Henderson	67	0	33
Hoke	0	0	0
Iredell	17	17	0
Johnston	70	10	10
Jones	100	0	0
Lee	100	0	0

COUNTY	START NOW %	DON'T START NOW	NO OPINION %
Lenoir	20	60	0
Lincoln	0	0	0
Macon	100	0	0
Madison	100	0	0
Martin	0	0	0
McDowell	100	0	0
Mecklenburg	47	26	0
Mitchell	0	0	100
Montgomery	100	0	0
Moore	50	0	0
Nash	100	0	0
N. Hanover	64	13	5
Onslow	62	12	12
Orange	86	0	0
Other	0	100	0
Pamlico	46	38	0
Pasquotank	57	29	0
Pender	67	22	6
Perquimans	50	0	0
Person	100	0	0
Pitt	79	13	0
Polk	100	0	0
Randolph	40	20	0
Robeson	100	0	0
Rockingham	33	0	67
Rowan	100	0	0
Stanly	50	0	25
Stokes	100	0	0
Transylvania	100	0	0
Tyrrell	100	0	0
Union	50	25	0
Wake	75	7	4
Warren	100	0	0
Washington	67	33	0
Watauga	57	29	0
Wayne	67	0	0
Wilkes	100	0	0
Wilson	80	0	0
Yadkin	100	0	0



15. Who to lead by county

Respondents were asked whether they thought that any of the groups listed in the question should play a role in the state's response to sea level rise, and in what capacity. 626 of 1076 respondents, or 58 percent, think that the NC Coastal Resources Commission should play a leading role in the state's action on sea level rise. The CRC was the most frequent response to play a leading role. Respondents named real estate developers most frequently as the group that should play no role, with 354 people, or 33 percent, selecting this option.



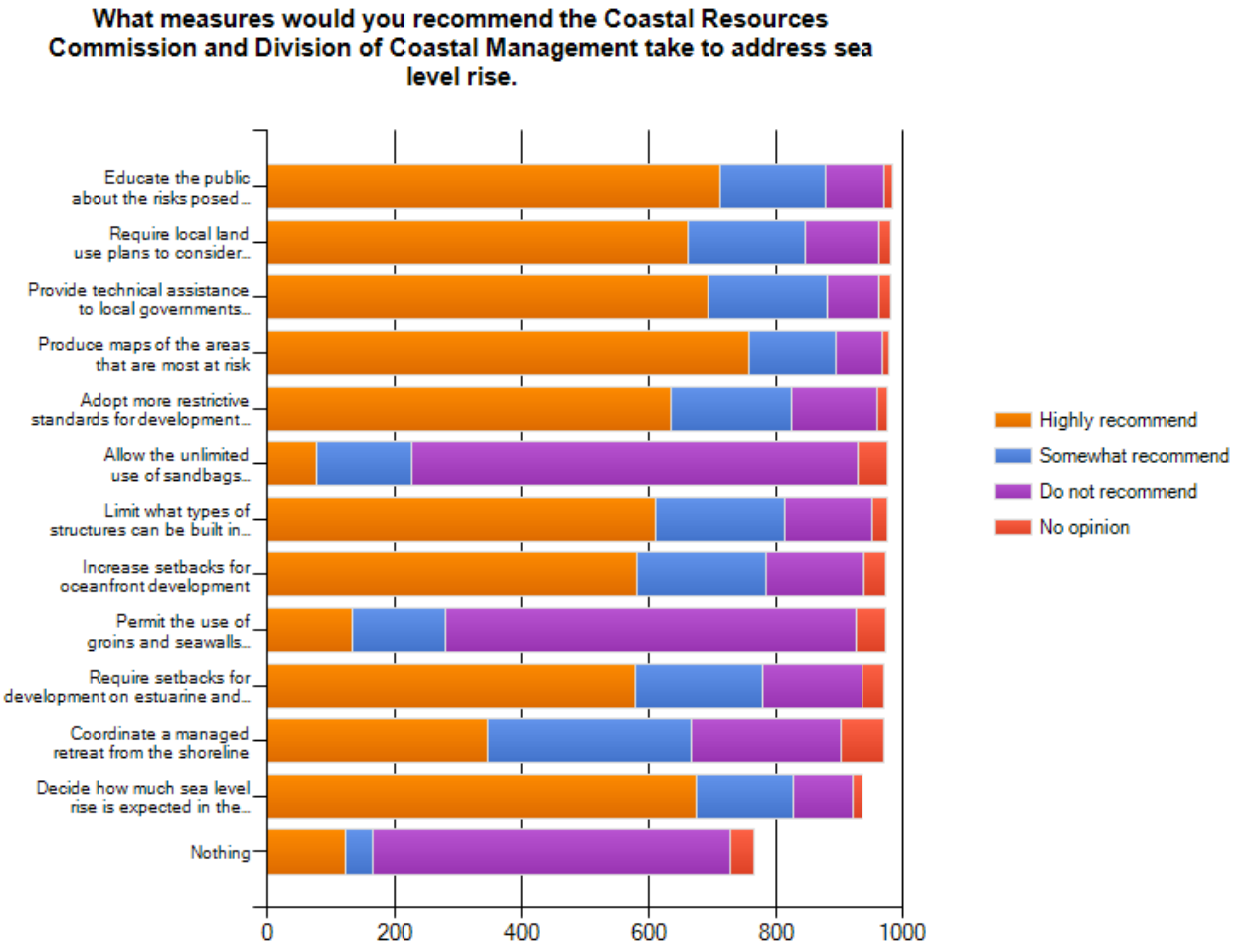
16. Recommended CRC actions

Respondents were asked what actions they thought the Coastal Resources Commission and Division of Coastal Management should take to address sea level rise. Respondents were asked to give their responses on a four-point scale from highly recommend, somewhat recommend, do not recommend, and no opinion.

The most frequently selected highly recommended action was to produce maps of the areas most at risk, selected by 704 of 1076 people, or 65 percent of respondents.

Other highly recommended actions for the CRC and DCM included public education with 660 respondents (61%), using a projected amount of sea level rise for planning purposes with 625 respondents (58%), and requiring local land use plans to consider sea level rise with 619 respondents (58%).

The options that respondents selected most frequently as not recommended were allowing the unlimited use of sandbags by 651 people (61%), allowing the use hard structures on the oceanfront by 605 people (56%), and doing nothing by 525 people (49%).



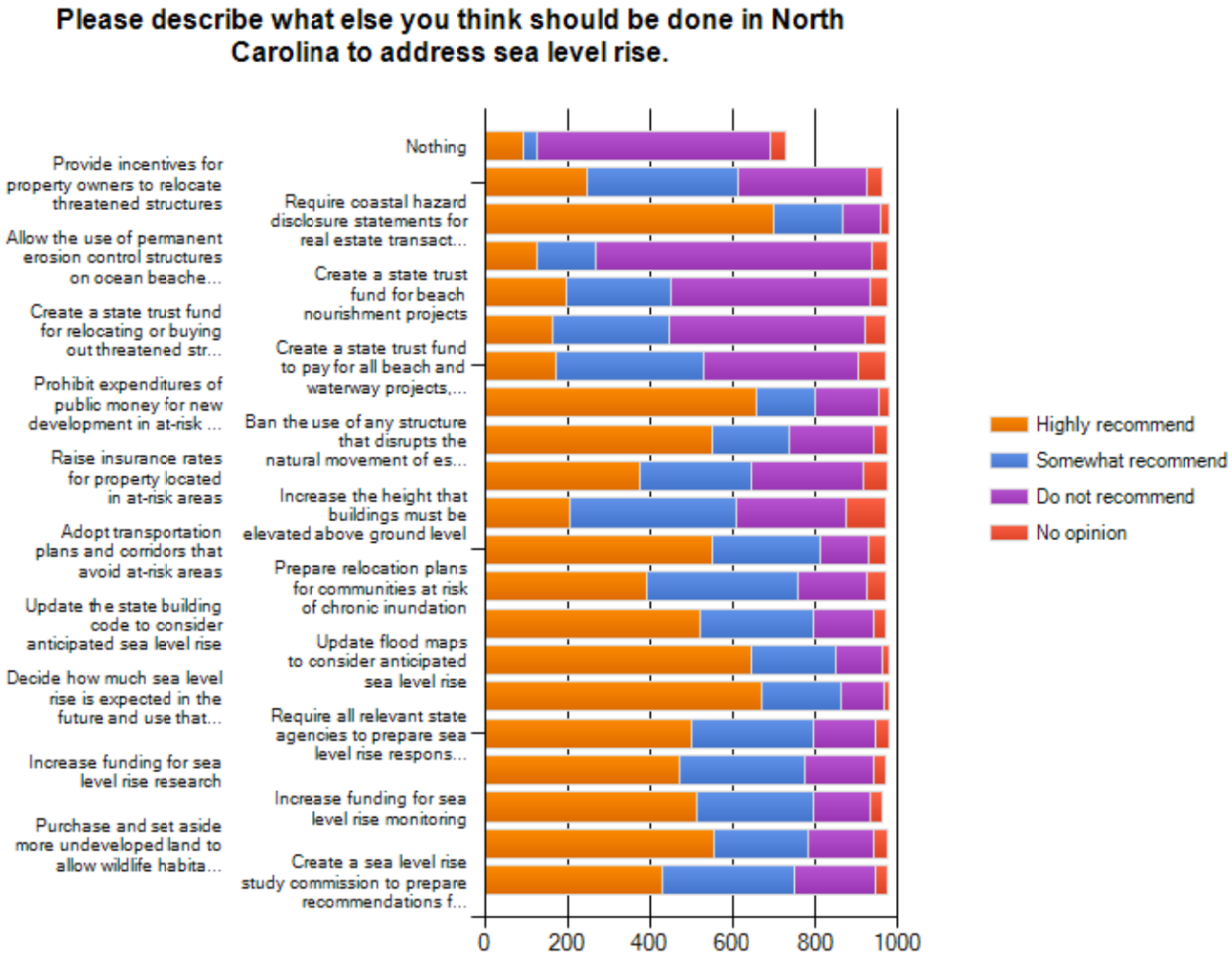
17. Recommended State actions

Respondents were asked what other actions they thought the State should take to address sea level rise. Respondents were asked to give their responses on a four-point scale from highly recommend, somewhat recommend, do not recommend, and no opinion.

The most frequently selected highly recommended action was to require the use of coastal hazard disclosure statements for real estate transactions, by 654 people (61%).

Other highly recommended actions for the State included using a projected amount of sea level rise for planning purposes with 623 respondents (58%), prohibiting the expenditure of public money for new development in at-risk areas with 607 respondents (56%), and updating State flood maps to account for sea level rise with 601 respondents (56%).

The options that respondents selected most frequently as not recommended were allowing the use hard structures on the oceanfront by 623 people (58%), and doing nothing by 523 people (49%).



18. Summary

Public response to this survey exceeded DCM's expectations, even though a strong response was anticipated. Further, the strong interest on this issue by many respondents, no matter what their perception of sea level rise, is readily apparent. The vast majority of respondents took care to complete the entire survey, and to provide thoughtful and passionate comments. In meeting the goals of this project of scoping public perceptions and opinions, gathering new information and contacts, and communicating outwardly with a broad spectrum of the public, DCM considers the survey a definite success. One caveat—readers should keep in mind that this survey was not scientific, and should not be used as such.

Many respondents offered to share their work, and importantly, their time to work with us going forward. DCM is very appreciative and will follow up with them. We offer our sincere gratitude to everyone who helped with any part of this survey, and to the 1000+ people who completed it.

Responses to open ended questions

Q3. How much do you think the sea will rise along the NC coast by 2100?

- ~ 1m
- Admittedly, I am not well versed on the subject, but wish to know more.
- Although actually I am clueless. Things are not going to remain the same so why would I evern guess. The answer should be 1 - ? ft.
- Although I believe that Sea Level Rise is happening, I do not believe science has progressed to the point that an accurate estimation is possible at this point.
- Areas where there are problems, the problems are caused by mankind. Example: New River Inlet was dredged by the Federal Gov, and rerouted during the 1940s to it's present location. The homes that are in trouble lie where New River Inlet was originally, before it was moved. man made problems. Who allowed the building here?
- Asking lay persons such a question is useless except to gauge the extent to which morons such as Al Gore have succeeded in whipping up fear and panic. His movie, for example (which is crap) envisions sea level elevations in the realm of 15 to 20 feet, which is absurd and utterly unfounded based upon scientific assessment of the situation. Sea level increases are estimated to be in the range of a millimeter or less per year under scientific and objective assessment. Please see IPCC - Intergovernmental Panel on Climate Change
- assuming that someone in your organization is monitoring this and can provide good data to show what is happening it anything.
- between 2 and 4 feet
- but I know that estimates/predictions are very hard to make at this moment. It appears that each revision projects things worse, not better. So 3 ft may end up a minimum.
- By 2100 it could fall. It all depends on the climate.
- Climate is cyclic and we are now going into a cooling phase which may result in lowering of sea level.
- Consistent with historical trends.
- couple of inches max
- Data is so varied and the margin of error great enough that I am not sure we can know with too much certainty yet the exact levels
- Depends on how much arctic land ice melts between now and then -- could be much more than 1-3 feet!
- depends on the glaciers. if they melt substantially, 3-5 feet is more likely.
- depends on what action we take in the meantime. I'm optimistic we will take action after it rises a foot.
- don't know, but I believe the science projections. I understand that the IPCC underestimates the problem.
- During Feb. 2009, the tide was the lowest I've seen in 40 years. From my perception, the level is falling.
- Global warming is a hoax
- Global Warming is a hoax with one purpose--for the current administration to gain total power by robbing us of our money and our freedom of choice in our consumption patterns. This is a bloodless coup.
- Global warming will shrink the polar ice caps resulting in the rise of sea levels.
- Guessing
- Have a dock on Futch Creek. Been here six years. Each year have more episodes of water level covering dock itself.
- History indicates that these processes are cyclical. Although there may be some sea level rise experienced in the short term, there will likely be a subsequent seal level drop in the future.
- http://wattsupwiththat.com/2009/07/18/global-sea-level-updated-at-uc-still-flattening/
- I am a professional geologist and understand the issue. Sea level has been rising (most recently) for the last approximately 30,000 years, and that rise is more a function of the temperature of the water (which expands when warmed) than the melting of global ice. The rate of rise has decreased over the last 4000 years, and may be slightly increasing now. I do not, however, believe that there is a significant link between the industrial revolution, carbon emissions, sea surface temperature increases and increased sea level rise. Cloud cover actually produces the most significant greenhouse gas effect to our climate. Science, not "hockey stick" computer models will reveal the truth. Unfortunately, politics exercises no moral restraint in it's endeavor to control the minds of people.

- I am not a scientist, but witness rise on creek upon which we live, and summer property in Carteret County, NC on ocean front property.
- I am not sure of the specific amount but I know the barrier island topography will be greatly affected by even a small increase.
- I believe it will happen, but I won't be around to see it!
- I believe this will be primarily by erosion due to the fluctuation of the inlets. I think they need to be controlled with terminal groins.
- I definitely believe its rising, but am unsure of the rate.
- I do know that the sea level on the SE NC coast has been both much higher and much lower than it is now and the geologic record is clear that it is always changing and is likely currently in a rising phase.
- I do not believe in Global Warmiong or a rising Sea Level
- I don't have any facts and have not seen any studies
- I don't know and no one else does either!!! There are too many varriables as we emerge from our current ice age.
- I had my property surveyed by Dr. Gray's company at the Univ. of Arizona(?) and they indicate a 3' rise by 2100. My personal property is 9' above sealevel, and my property is projected to be an island, with surrounding areas, like the road under about 1' of water.
- I have already answered the questionaire earlier but left out an answer to the question wether nay of the organizations I am affilaited with has a program/position on sea-level rise. In order to finish this survey form I have to re-answer all questions. Please disregard any duplications. The Sierre Club's "Cool Cities" program offers good guidelines'solutions with world-wide effects originated and implemented at the local level. Please note.
- I have been conducting FEMA flood certificates since the onset of the same. I have been montoring mean sea level elevations since 1962. Bench Marks at or near sea level have not changed. Their has been adjustments in the government datum networks, but not the water elevation has not notable change.
- I have lived on Wrightsville beach for more than 50 years. During these years, I have spent countless time on the water and in the marsh and estuaries. having owned a boat since age 12. I can confidently say that during all these years, sea level rise in the places I've spent time has NOT been discernable. Natural ocean-front erosion -landward migration of barrier islands is a separate issue.
- I have not reviewed any of the most recent predictions for sea level rise on the nc coast, but I have read several papers indicating several feet of seal level rise within the next 10-50 years, so I would guess that by 2100, more than 5 feet is not impossible.
- I have owned property on the coast for over 25 years and have seen no increase in sea level. While some areas lose sand others have gained.
- I have questions regarding the sea rise - polar ice is melting - the majority of it is below the water's surface, so the additional dispacement from the melting caps should not be so great in quantity. The question is how much permafrost is melting and being released into the system? As temperature increase volume increases, so what is the status with worldwide water temperatures? Also ice has a less compact molecular structure than liquid water.
- I have yet to see any "good" science on the degree of water rise. We've lost a significant portion of our ice cover and seen little in the way of sea level rise yet so I am not sure I believe the dire predictions. However, the salt intrusion into estuaries is clear and will most likely worsen. This will impact the survival of coastal flora and fauna regardless of any sea level rise.
- I live on the water. I have not seen evidence the sea level has risen. By 2100 the level may rise, but it also may drop.
- I strongly objective to the use of the term "belief" in the first question. For too long, this issue has been clouded by reliance on belief. The question is really one of scientific knowledge and its limits. We know that global climate change occurs, but we are limitied in our knowledge of the result.
- I think 1 - 3 feet is a best guess. Natural feedback loops that may alter projections are largely unknown. Plan for the worst, hope for the best, and hope Mother Nature forgives us.
- I think a lot more data needs to be collected (ten to fifteen years worth) before any conclusions can be drawn about a long term sea level rise rate. Measurement techniques have changed so much in recent years, and we simply do not have enough information to draw any conclusions.
- I think a survey of this type, wherein tpeople are asked for an opinion on events that they have no way of knowing the validity of the answer, is valueless.
- I think if there is a rise it won't be more than 3 inches

- I think that the rise and fall of the oceans is part of one of the Earth's natural cycles.
- I think the "so called" sea level rise as you clowns call it is nothing more than displacement, much like when someone sits down in a tub full of water. The water level goes up.
- I understand that any attempt to quantify sea level rise is difficult and that projecting future sea level rise is viritually impossible, due to a complex array of numerous variables that the scientific community does not as yet sufficiently understand. Thus, attempt to project a quantifiable rise or fall in sea level rise risks not being credible. I have lived on the ocean front for almost 8 years and have frequently visited it. I note changes up and down.
- I was a CAMA officer for Currituck County and I also work for Dare County in Buxton. The water rises every year, there are erotion rates from 6'to 18' a year along the different areas of the coast. There is no question that the water level is rising, the only question is how fast. The beach is an ever changing enviornment, you will lose parts of the beach and you will gain in certain areas.
- I was involved in a Duke Univ climate study and the hydrologic cycle we observed was about 65,000 years. Ice ages and global warming are long term events--not media events.
- I'm guessing about 3 ft because I'm still holding out hope that folks will take action to reduce greenhouse gases.
- I'm not sure how I could make an educated guess about the level of sea rise in 100 years.
- In addition ot the normal eustatic rise in sea level
- It depends on the rate of melt of the land-based glaciers - it could be 1-3 or it could be greater than 5, depending on what happens. But, it will happen.
- It may be temporary and could reverse as well. It is not a definate by any means and we must find to tools to manage.
- It may depend on how successful we are in addressing global climate change.
- It seems this is not a subjective question, but an objective question. Instead of asking for opinions, maybe you should have hired surveyors to measure whether it is or isn't.
- It truly depends on what efforts we make to control our bad carbon habits.
- It will rise, but there is uncertainty.
- I've read with the melting of the ice caps that the seas will rise. I only know what I read. I don't know personally that it's rising.
- Kind of crazy question. We are not scientists able to do a 100 year forecast. I have been coming to Holden Beach since the 1950 when I was a kid. My grandmother lost her house to beach erosion in the 1970's because it was built too close to the ocean. If I had to guess I would guess the high tide mark at Holden has changed 30' or a little more in 40 years. What that equates to in sea level rise I have no idea but I know I am close with this number because I have a house at Holden and the lot beside my grandmothers was never built on and there was a well head that was on it - in the middle and now it is on the beach just above the high tide mark. It was in the middle of the lot in the 1960's
- Liars figure and figures lie....how does anyone truly know....but I believe insurance companies will continue to take advantge of certain areas even if claims are limited.
- Maybe barely over a foot
- Models are too uncertain to have confidence in predictions. Something as high or higher than the historical rate appears certain. Higher is quite possible.
- most likely 3 - 5 feet. But that depends on ice caps not melting.
- My Grandfather layed a wooden walkway directly on his canal bank along his access canal in the 1930s. At nornal low tide you can still see some of the planks
- My understanding is that models predict 1 - 3 feet, but I do not have information regarding the confidence limits surrounding those predictions
- No one can predict the future I don't think that anyone really knows this answer
- No one seems to be evaluating whether coastal areas are sloughing off or even sinking, giving the appearance of SLR.
- no wilder guess than most
- NOAA estiamtes sea level rise to be 180-550 mm by 2095.
- northern portions will experience greater rise
- Nothing more than normal fluctuations
- Other (please specify)
- Possibly more in certain areas. The NC coastline is very flat, so even a rise of 1ft will move the shoreline inland more than along other coastal areas.

- reference #2, we will all be affected, if not directly, then indirectly
- Sea Level has dropped since the end of the ICE AGE 140,000. years ago over 400 feet. The Outer Banks became exposed out of sea 4.800 years ago.
- Sea levels may go up or down. Man has no control over the world's climate.
- Several variables to consider: glaciers, the polar ice caps, and Greenland. If Global Warming and rapid industrialization are not curbed, then water levels rise. However, if industrialization leads to deforestation, then oxygen producers (trees) disappear, and weather patterns alter. Difficult to tell. Let's go with 3-5 feet.
- Submergence of old roads, gribble marks on old piles, and submergenge of USGS survey markers observed in the Pamlico area suggest 1 - 2 foot rise since late 1800's.
- The assumptions for the various models seem to be challenged with the fast pace data is being collected. Last I read I'd guess that anywhere from 1-2 feet would not be a surprise with much of the effect traveling well inland of the actual sea level rise. Let's hope a big ice sheet does not slide in to the ocean or else the more than 5 feet scenario may be more realistic.
- The earth is dynamic and continues to change as it always has and will. [My T-shirt says: "Adapt or Die"]. I am not confident that good science is behind the current predictions of global warming but regardless, there will always be areas that change faster than others (ie. barrier islands, volcanic islands, San Andreas fault, cliffs of Malibu, etc.). Knowing this, people who build in these areas should accept the risk and build what they can afford to lose and not expect people who choose not to build in these areas to pay for their gamble.
- The published average is 19 inches. One to three feet is the published range but is heavily dependent on linear extrapolation. The observable history by long term coastal residents is a negligable (impreceptible) rise over the last 50 years. The measured sea level rise at the upper outer banks apears to be one foot over the last 100 years but this is not observed by coastal residents in the areas of the Pungo and Pamlico Rivers. the last 50 year
- The vast majority of the sea level rise is purely cyclical and has occurred mny times before human industrialization. Most ot the hype is by misguided people who don't know any better and pressuring of scientist who are don't support the theory. Just like the "crazies" that were saying that there would be global winter due to Saddam Hussein setting all of the oil wells on fire at the end of the first Gulf War.
- there is so much polar melting that has already taken place, the amount of rise can only be mitigated by our current and future actions
- There is too much conflicting information about climate change and sea level rise.
- There needs to be more opposing scientific debate on global warming in order to make an educated guess. So far the science is biased only in one direction. It appears now that we have been in a cooling period for the last 10 years. The sea level may actually decrease by year 2100.
- These questions are based on the assumption that the level is rising. therefore, this question aire is a waste of time.
- This is a question for scientists, not laymen like myself.
- this is based on the warming of the climate projections which are at least not being realized considering the very rapid melting of the north cap.
- This response is based on what science tell us today. With climate change, the only constant is change including non-linear change; the most difficult part of our calculations.
- Tides are higher each year on the moon tides,
- Very little, except for the normal changes due to storms, etc.
- Very skewed choices, need choice for "less than 6", or negligible amount if any.
- Wthout changes in our greenhouse gas emmissions.

Q4. How would you rate the vulnerability of the following regions to the impacts of sea level rise?

- A century is too small a period of time to measure significant trends in sea levels.
- A change in sea level either up or down will affect all of the above listed areas. So far I see no link to CO2 and global warming. If that were the case why wouldn't we have experienced a runaway increase in temperature? Instead the global temperatures have been decreasing the last 10 years!!
- a lot of erosion will occur but not due to sea level rise.
- Actually, this is another question for scientists, not laymen.

- Additional areas of high risk are coastal / tidal areas, esp. overdeveloped areas w/ paved over wetlands
- Albemarle-Pamlico Peninsula is at particular risk
- All - if sea rises, sea rises . Lowest Barrier islands obviously affected the most.
- All coastal areas will be affected
- All estuaries are threatened by a rising sea level.
- all low lying areas are at equal risk, its not like a hurricane that strikes only certain areas, the water will fill basins equally as it rises
- All of our coast is at risk. The barrier islands will eventually be under water totally. Mother nature always takes back her own. People can build on the coast and she will take it back. The gated communities are a joke because they will be destroyed along with the rest of the coast.
- All will be affected equally and most of Beaufort County will be under water should the seas rise six feet.
- Although a 90 min drive to Ft. Macon State Park, my home is 25 ft above sea level and the creek that is the border of my property works its way into the Neuse River. The people who built expensive homes and businesses on sandbars, barrier islands, are looking to me to cover the cost when their property is inevitably washed away. My personal opinion is that if you build on a temporary sandbar, you and whoever financed you accept the risk and the knowledge that the day will come when you are gone.
- Any sea level rise is the result of natural climate cycles and not human industrial global warming impacts.
- As sea levels rise, clearly the water will impact property all along the estuaries and shorelines. The extent of the impact is dependent on a wide variety of factors. It should be remembered that ecosystems, water systems, and ariable land will transition through the changing sea levels and the impacts will vary with the systems affected.
- As stated in #3, there may be some temporal effect to some of these areas, but there will not likely be a long term effect.
- Barrier Islands are a natural feature that shift and move - they will continue to do so. Consequently, the islands themselves will most likely be minimally impacted through the slow rise in sea levels caused by melting ice packs. The structures on those islands are another matter as are the coastal lowlands.
- Barrier islands face possible collapse over time. Mainland facing high risk is associated with sound-side property.
- Barrier islands will become decimated over time, but over an even longer time they will re-emerge as the sandy bars that have existed on the coast for thousands of years. Some Mainland areas will be affected equally, however the land that is flooded will remain flooded.
- Basically I'd classify everywhere along the coast with an elevation less than 1m above current sea level and no 'dams' of higher ground between it and the sea as potentially highest risk areas, assuming the ~1m sea level rise by 2100 is an accurate estimate. I have seen it discussed on a number of sites doing science-based climate change investigations, but I don't think there is a clear consensus yet. I would not want to guess, I'd want to see what the elevations in these areas are using the digital elevation from floodplain mapping lidar and some of the other coastal lidar datasets. That's not the only parameter to consider, obviously, but if you want a very quick way of doing a preliminary assessment, that is one way to do it. You could load the lidar dems into HAZUS and set it to run a coastal flooding model using the estimated sea level rise too.
- Between now and 2100, if my expectation is right, we will see between a 1-3 foot rise. This is not enough, even at spring tides, to flood anybody's house in SE NC. However, a regular risk of high tide combined with a big wind tide up downeast could cause some areas to become less habitable. A high tide combined with significant rain could cause increased flooding in many coastal areas, and obvi tropical storm surge will be enhanced significantly. I think the barrier islands will be okay because the dunes will adjust. The barrier islands may be lower and skinnier, and there may be more intermittent inlets like Corncake, Drum, etc. Of course, that would not be entirely caused by the rising sea levels...the current trend of maintaining some inlets while allowing others to shoal up is creating more intermittent inlets and increasing the chance of yet others opening or re-opening during a major storm. I will say this: we need windmills on the coast and better fishery management. I think that on the 89-year time frame, coastal urban sprawl and associated non-point-source pollution is a bigger threat than sea level rise, at least in NC.
- But how is 'risk' defined. Is this just about the likelihood of sea level rise, or the probability (risk) of harmful impacts to the natural environment (e.g., saltwater intrustion into freshwater systems) and/or to human populations in coastal communities (e.g., increased flooding, contaminated water supply wells)...? Defining terms is critical in a survey like this.

- By "mainland north of the Neuse River", I am referring mainly to the areas adjacent to the sounds, i.e. Pamlico County, Hyde County, Tyrrell County, Dare County, etc. By "mainland south of the Neuse River", I am speaking generally--i.e. I think there is a high risk to eastern Carteret County.
- By mainland, I am primarily thinking of riparian areas along rivers and tributaries.
- Cedar Island/Carteret County peninsula likely higher risk than south of Carteret County due to mainland elevation.
- Change is inevitable. The world is not static. We will adapt.
- Changes in coastal areas are due to storm effects and erosion, not rising sea level.
- Complete overwash of Cape Lookout Nat. Seashore in Isabelle (Codds Creek, is one spot that completely overwashed all the way to the sound) and permanent new Core Banks inlet created in Hurricane Ophelia (Ophelia Inlet)
- Developed land along the barrier islands is most vulnerable. Land along inland sounds and rives above Neuse River also vulnerable due to low relief. I believe sea level rise can be managed if we work to remove developed structures closest to ocean and allow natural development, movement, and renourishment of barrier islands to protect inland areas.
- difficult to say how barrier islands will respond given beach nourishment and rehabilitation done by DOT.
- Due to coastal geomorphology, USGS estimates impacts from sea level rise will be worse north of Cape Lookout and slightly less south of Cape Lookout to the Cape Fear region (due to the mid-Carolina Platfrom High associated with Cape fear region).
- elovation will be the main concideration.
- Everywhere where the ocean is connected to inlets will be impacted. Just not 100% sure of the rate of increasing levels, which are directly related to the rate of ice sheet and glaciers melt due to increasing global temps.
- First you must note the word "Barrier" these island have been moving and changing for years and will not be any different in the future. The only reason you are concerned with sea level rise is the affect on man. Why don't we quit building on these areas and let them do there thing that they have been doing for years. Why are we so concerned about the future thing when we have things to worry about now.
- Holden Beach is the only NC beach I've ever repeatedly visited... and have been going to this beach since my birth... actually, I was conceived there... I've watched as homes were taken by the sea (The Blue View and The Newman Apartments along with the road between). My dream is to one day own a retirement home on the Island.. While I'm not knowledgeable about sea level rise and it's impacts, I do know that it exists and would want to know more...
- I am 81 years old and have lived on Wrightsville Beach most of my life My Dad built a pier into Banks Channel in 1935 and it still exists. The water level at high tide on the pier has not increased one bit in the past 75years The tide level remains the same at high and low tide
- I am guessing un-developed barrier islands would move and adjust naturally. Mainland areas or highly developed beachfront and waterway-front businesses and homeowners will push for walls and berms and structures to try and fight it. I think they should ban most all building and rebuilding on beaches and near waterways.
- I am more familiar with Holden Beach. The sand is continually washing away even after many renourishment projects. We need a Terminal groin to be studied and implemented at the Lockwoods Folly Inlet.
- I am not an expert in this field. This is just an educated guess.
- I am not sure if this question is based on a presumption of sea level rise or wheter the poll respondent is supposed to factor in the probability and degree of future sea level rise. Assuming for the question presupposes significant sea level rise is a given, I would rate the Barrier Islands north of Cape Lookout and the mainland behind them at being at greater risk, since I understand there is some evidence those areas are sinking. If that is the case, I presume those areas would be most vulnerable. As for the remainder, I have no opinion.
- I believe that tropical storms and hurricanes effect our coast line more than your so called (global warming)
- I believe the area between north of the Neuse River and south of the northernmost counties will be the most impacted, mostly due to wide, extended floodplains along the Albemarle and Pamlico basins. Many areas I've seen over the last 10 years have become wetter. Due exclusively to sea level rise? Hard to say, but certainly its a factor.
- I do not have the expertise to determine which and/or how geographies will affected.
- I do not pretend to be an ocean geologist, but if the rising effect is occurring, it seems that it would be uniform throughout the regions that you mention. Why would it not?
- I don't know enough about coastal NC, but believe there is clear risk to my dwelling in SC in this time scale
- I don't really know how to assign risk based on sea level in this area but my risk assignments would take into consideration the human population and structure that will likley be impacted as well as the ecological risk. The risk

assignment is complicated and will have both ecological and societal impacts. I anticipate the greatest risk will be the risk we all take for not being more proactive in our land use as it relates to the both of these factors.

- I don't really know. I've heard that for every 1 foot level rise in sea level, the inundated area can extend 100-1000 feet inland.
- I don't think that Hwy 12 is going to (or necessarily should) last very long.
- I don't think the barrier islands themselves are risk (due to their natural ability to "roll over" with the higher sea level), however the development thereon is certainly at risk.
- I feel sure there's some risk.
- I feel there is far more of a chance that major damage from hurricanes, ie: cutting new inlets due to wash over of the Barrier Islands .
- I found this recent Master's project and will be revieweing: http://dukespace.lib.duke.edu/dspace/bitstream/10161/958/1/mcpherson_MP_FINAL.pdf. I am not familiar enough with the specific elevations of the areas above to be able to assess greater or lesser risk, although all would seem to be vulnerable to impacts, albeit of varying degrees.
- I had my property surveyed by Dr. Gray's company at the Univ. of Arizona(?) and they indicate a 3' rise by 2100. My personal property is 9' above sealevel, and my property is projected to be an island, with surrounding areas, like the road under about 1' of water.
- I have been working in the coastal/environmental field every week for the past 32 years and have seen the effects of gradual sea level rise on bulkhead placement, coastal wetland expansion, cypress tree die back and poor drainage of stormwater. In particular the farm drainage around "down east" counties like Carteret, Hyde, Pamlico, Tyrell, and the NE counties show signs that they are going tidal during even small wind tides and coastal vegetation extends inland under live oaks and pine trees in greater frequency when we perform wetland delineations.
- I have no scientific knowledge on which to base these responses; I can only judge by what's happening at our house on Topsail Sound.
- I suspect that parts of Cape Hatteras National Seashore and Ocracoke Isalnd will be inundaated befoore Fed gov't gets the message.
- I think a survey of this type, wherein tpeople are asked for an opinion on events that they have no way of knowing the validity of the answer, is valueless.
- i think natural barrier island migration and over development will have a much greater impact!
- I think the inland sections of the Albemarle/Pamlico basin will be most impacted, especially if storm activity increases or cycles high for a few years. It will also depend on the human response (berming and filling etc) forcing higher water further inland
- I think the sea level rise very much affects and puts the Outer Banks of NC at risk
- I think the whole global warning (or climate change as they call it now that we are cooling)is a big hoax with not enough real science behind it yet to know. These things run in natural cycles.
- I would think that all areas adjacent to large bodies of water would be impacted, islands and those coastal areas at or near sea level would be most affected first.
- If ice caps are, indeed, melting, I predict that all these areas might have sea level rise to some degree. But I haven't been interested in finding out more about this than what has been thrust upon me in the media.
- If the sea level rises then the lowest elevations will be affected. I really am not sure what I "think" has to do with the reality that is upon us all. GIS models have predicted the areas most vunerable.
- if there is a sea level rise, all areas would be affected
- if you define imapct of sea level rise to include normal shifting of channels caused by currents then all regions are subject to impacts
- Impacts are undefined as used above. The level of impacts will likely be greatest north of Cape Lookout, yet the entire coastal plain of NC are currently and will continue to be impacted by relative sea level rise (RSLR).
- In addition to sea level rise, it is understood that lands north of the Neuse are tending to subside and lands south of the Neuse are tending to uplift. These movements will tend to aggrevate and nullify the sea level rise effects.
- In conjunction with the effects of climate change I think sea level rise will have major economic and social effects for most of the people who live along the coast on NC.
- infiltration of saltwater into freshwater areas will dramatically affect wildlife habitat

- Inland areas have had more flooding since we moved here 30 years ago
- It's quite obvious that if there ever is a significant sea level rise, that the lowest elevations will experience negative effects first. But, any theoretical time frame is mere speculation.
- Just watching and measuring will not do us much good. It will enunciate fear and anxiety. It would be far wiser to take necessary, preventative action now than to wait and see. Pacify through action.
- Living close to tidal waters is risky be it low lying mainland, barrier island, along rivers and in areas of poor drainage. Sea level rise will come about due to more free water in the hydrologic cycle so rain amounts and run off could also be issues of concern far from the coasts. The Duke study was in Lake Turkana, Kenya, a Rift Valley lake. That lake once was an outflow lake to the Nile. Now it is an inflow lake with evaporation being the only outflow. Over 65,000 years the water level in that lake has dropped about 650 feet. Again, a long term event, not a media event.
- Looking at area maps over the last 100 years, It seems that the sea moves back and forth as nature moves through cycles. While I do believe in conservation and the need to decrease green house gasses, I am not sure that the coast is in any more danger than other areas.
- Low lying land and land adjacent to high energy waters (Outer Banks) face the highest risk.
- Low topograhic land areas adjacent to sounds, estuaries, ocean, are at highest risk.
- Lowlands near Hobucken are particularly vunerable. Lower shorelines along the Pungo River are highly vunerable. I marked the barrier islands as medium risk in the next 50 years because sealevel rise is slow enough to allow new sand accumulations as partial offset to the base sea level rise to the extent that it occurs.
- mainland areas only on the Coastal Plain
- Mainland south of Neuse below Suffolk scarp is vulnerable (e.g. eastern Carteret Co.)
- Most of the locations and property on or next to the water are already suceptale to tidal damage during high lunar tides already. The higher than normal tides have been 4 to 5 foot higher than normal in the Swansoro/Cedar Point, NC areas not long ago. The water was covering the yards of many close to the ICW and White Oak River. When I launched my boat at the wildlife ramp in Cedar Point, NC last month I was able to float the boat off the trailer before I got to the ramp. My boat was able to float over the docks and seawall that day. If the water level continues to increase the world will loose a bunch of real estate to say the least. I know everything happens in cycles on this planet. Hopefully this cycle will go easy on us all.
- My answers reflect both positive and negative impacts.
- My assumptions of risk to the mainland is based on my belief that the barrier islands will be substantially lost in coastal storms if sea level rises up to 3 feet, which will yield major storm surge damage.
- My understanding is that the barrier islands have only been around for a few thousand years. The sea level has been higher by several feet (Wake County used to be beach front property), and the sea level has been lower (the shore was also 100 miles further out to sea). So I guess my concern is we may try to stop the sea from changing, but we can never do it. if any thing, we should adapt to the changing sea and forget trying to control sea level.
- My understanding is that the sea level rise is temporary.
- No one can predict the future I don't think that anyone really knows how high the sea level will rise or how rapidly so how can anyone really answer this.
- Obviously lowest land affect most.
- Over what time period? Low risk from impact of sea level rise, high risk to all regions from perceived or portrayed threat of same being used to broaden regulatory oversight.
- Peoples' perceptions (however misinformed or stupid) seem to me to be a poor basis on which to make decisions.
- Please use this space to be more specific if you wish.
- Recent sea level change data appears to correllate well with global temperature data, which trended up through most of the 1900's and has been flat for the last decade or so. If solar activity picks back up to pre-1990 levels, I expect sea level will rise continue to rise by as much as 1/2 foot by 2100, presenting a low risk to coast North Carolina. If solar activity does not pick back up, sea level rise will likely not occur.
- Regions of the NC coastal plain will be impacted depending on elevation above sea level. Impacts to forest communities and associated soils will be greatest in floodplain areas as saltwater intrusion/drowning proceeds. Bottomland swamps are at high risk even 20 miles an more from the ocean.
- Risk is difficult to apply. The rise in sea level will impact the mainland north and west of the Neuse. Sea level rise is on one of the many impacts of global warming. Al areas will be impacted. My answers above are meant t only address the direct impact of salt water

- Sea Level rise does not exist. Perceived changes in sea level measurement are not usually corrected for Land Subsidence information. "The NC Division of Water Resources" 12/08/99 Land susidence data provided by Emery Balazs of the National Geodetic Survey indicates 0.1 to 0.25 Inches/Year land subsidence east of Raleigh since 1935. Also in many places such as South Louisiana/ North Carolina Coastal plain the rivers no longer deposit silt , which would build up the soil levels. Instead soil is simply being compressed by gravity.
- Sea level rise impacts all coastal areas not just specific geographic areas.
- Sea Level rise wil affect all parts of the Coast
- Sea level will fall due to a shift to a cooler climate.
- Sea levels are more affected by ocean temps than ice forming or melting. Oceans have been cooling for the past ten years as the earth cools. Cooler water has more density. This is not fiction. The Artic ice cap is as large as it has been in 30 years.
- See above
- See note above
- Since I do not know if this is happening and I would think any intelligent person would look at the data and be somewhat skeptical at best.....this would have to be studied for several hundreds of years or even thousands
- So, the assumption is that sea level IS rising. Why were we asked if we BELIEVE it is or not?
- South east NC should have minimal effect and can be managed if given the tools. It is time to refocus and find solutions and not chase regulatory issues.
- Storm Surge will reach much higher.
- The Albemarle-Pamlico region of NC, due to its geomorphology, is likely to be among the most impacted of coastal areas (in top 4) of the U.S. The Northern Outer Banks and inland areas will be radically reshaped by sea level rise and increased storm activity, especially if we don't allow natural processes to let the islands move.
- The barrier islands constantly change. Look at Holden Beach after the hurricane a few years ago. The east end was covered and the west end added land. Mother Nature will continue to shift things around regardless of man.
- The IPCC FAR estimates for sea level rise by 2099 range from 0.18 meters to 0.59 meters and note the "Magnitude of anthroprogenic contributions not assessed. Attribution for this phenomena based on expert judgment rather than formal attribution studies" These models are based on data from 1980-1999, a relatively warm period, rather than using historical data thus even the lowest level of rise of 0.18 meters is an excelerated "guess"
- The lower the elevation the higher the risk.
- The mainland North of the Albemarle Sound will suffer less impact than the mainland south of that sound. The effect on barrier islands is more nuanced than the simplicity of the choices.
- The Outer Banks (barrier islands) have always been a shifting, unstable situation. Every storm that comes by moves shoals and inlets. Everything within 10 miles of the coast line should be seen as temporary and disposable.
- The outer banks will be the most vulnerable due to salt water infiltration as well as sea level rise.
- The region of the coastal plain seaward of the last interglacial shoreline has the highest risk.
- The risk is relevant to human activity and endemic plant and animal communities. Otherwise the influence is more geophysical and there will be a quick rearrangement of human and native species as change occurs.
- These descriptions are far too broad. Effects will be much more localized based on elevation. This is not a regional occurrence but rather a local factor. There are barriers in NC that are directly adjacent to each other that have significantly different average elevations. Taking it a step further, I believe that effects to the beaches of barrier Islands can be mitigated in perpetuity as long as there is a sand supply for beach nourishment. The effects to property behind these beaches will be determined by the elevation of the property. If one could raise the elevation of their property they too could keep up with sea level rise. This however may not be economically feasible.
- These places are more vulnerable to erosion from hurricanes and nor'easters. The soils, no matter the vegetation level, can't hold up to the velocity of the waves during those types of events. I don't personally believe the sea level is rising or if it is, than the ocean floor is capable of changing to accomodate the rise.
- This is an odd question. Risk is a function of degree of rise versus terrain elevation. Given that for an area the size of coastal NC, sea level as a datum would be the same across the area's listed above therefore it comes down to what the terrain elevation is.
- This is the silliest idea I have ever seen. What, exactly, is the point here? Are you seriously basing your policy on what people "Think"? Man made global warming is a total scam and will have ZERO effect on the OBX, except for higher taxes, which will result in fewer tourists. There....aren't you happy now?

- This question is asked with a biased skew. If there WAS a significant sea level rise, then of course the Outer Banks would be at a greater risk than the mainland.
- This question would benefit from a map
- Tyrrell/Hyde
- Water seeks its on level and would pose the same risk along the coast and inland. The barrier islands woud face more severe wave action.
- We do a poor job of keeping our rivers and channels dredged and flowing properly. The Neuse river in goldsbor is filled with sand to the point you can walk across. Our inlets and intercoastal water to include the ICW constantly are filled with run off and sand that is not removed but sucked up and placed beside the dredged channel. Why don't you put this spoil back on the mainland or along the beaches where it comes from?
- We have a house on the east end of Holden Beach. Even though we have had several beach renourishments in the past 7 years the water still comes all the way up to our steps at high tide. It seems to have gotten worse in the past year.
- we have immediate and greater risk each year from storm events and the deterioration of our states dam system along the rivers as well as coastal huricanes and tropical storms
- what sort of survey is this?
- Whatever tax money is being spent here would be better used to reclaim the beaches of the Cape Hatteras National Seashore Recreation Area for the PEOPLE of the United States of America.
- Where/How would I find out about this issue?
- Why use the Neuse as a target? I believe areas inland from barrier islands in the Albemarle-Pamlico areas are of high risk, especially current lower areas along the rivers and sounds - Hyde and Tyrrell Counties, Washington County, southern Camden County, parts of Pasquotank and Perquimans counties along the sound to name a few locations.
- will only happen if we go into another Ice Age, which is probable, and change will take thousands of years
- Work by Stan Riggs and others suggest that much of the northern Outer Banks will be innundated. Pamlico Sound becomes Pamlico Bay. The Albermarle-Pamlico peninsula will also be hard hit, as will eastern Carteret County.
- You are assuming that sea level rise is occurring.

Q5. Do you think the State should be taking steps now to plan and prepare for sea level rise?

- 20 years ago global cooling the focus. Now it's global warming. Why waste tax payer money on something that may or may not happen. Why not focus on the possibility of sea level falling?
- A significant sea level rise by 2100 is highly unlikely.
- All committed socialist should spend a majority of their time worrying and convening meetings amongst themselves to wring their hands over this issue. Hopefully this will leave them very little time to engage in political efforts that seek further deterioration of our society.
- Any plans should focus on storm response and property insurance issues
- Appearantly we are putting our limited and fleeting state tax dollars into the wrong place. If you truely believe that sea level is going to rise, then take a glass of ice water, let it sit around for about an hour or so, and then make a note if the water level in the glass rose when the ice melted. I would bet every time that the level of the water actually dropped. Lets start simple - there is a simple density thesis that states water is more dense than ice. The state should put their efforts into protecting buffers and enforcing setbacks.
- As a survivor and a volunteer of Hurricane Floyd I well know what lack of preparadness can mean.
- As with the person who lives next to the volcano that is active - they need no reminder of the danger, they will ignore it anyway. When there is a direct economic impact on the wealthy who drive policy, we will see some action, but mainly to protect their investments. Actually, beyond the wry comments, without a clear understanding of the impacts of changng water systems and land use, any plans are not tenable. No additional support or planning for those areas should be required nor would be practicable in light of the data required to make reasonable projections to the impacts of rising seawater.
- At least get the facts and educate the public.
- at less than 7 inches per century of rise, we do not need new regulations.
- Ban rebuilding and new construction in areas deemed to be under eventual threat.

- Block redevelopment of barrier islands, do not allow groins or permanent structures along barrier islands. Rather allow barrier islands to return to natural state of flux, with natural erosion and beach renourishment allowed. Islands will naturally build as sea level rises, protecting inland areas.
- But I don't really think there's much to be done for what's already there. Groins and seawalls, etc. seem like more trouble than they're worth.
- But more effort is needed due to the quickly approaching adverse effects, and the need to act now.
- By allowing people to protect their own property if they want to do so, not spending tax money.
- CRC should develop an adaptation plan for the twenty coastal counties and should include new requirements in the local land use plans to adapt to sea level rise in the future.
- DO not spend any money until there is positive evidence that there is a problem!!
- Duh!
- Every method of erosion control should be employed. Homeowners who have the means to stop this erosion need greater freedom from unfair regulations developed by governmental regulators. Discussion should be free and open. For the government to not allow homeowners to protect their property is a violation of the U S Constitution. It is taking private property without compensation.
- Focus on adaptive approaches. Not trying to combat the process.
- For a State like NC it would seem idiotic to not be a leader in this type of planning. Just look at how much land and coastal area we have at risk. Then look at the actual sea level rise in Norfolk over the last 100 years. If only a small portion of the assumptions hold true related to the gobal climate predictions then we know change is coming and we should be well prepared to respond in a way that mitigates our losses and enables natural processes to unfold in a way that is least harmful to our natural areas.
- Given that sea level has changed significantly in earth's history and is the result of very long term climate changes, no I don't think NC should spend any tax payer funds on this issue!
- Government can educate coastal other waterway residents about the risks of living where they live. The state should not be expected to insure or re-locate people who build McMansions in harm's way. Set reasonable limits on insurable risk levels and let the individuals and their financers deal with the amounts over limits that are fair to all residents of the state.
- How will you beat Mother Nature? This is just a way to toss taxpayer money away.
- However there are an awful lot of variables that have yet to be determined so the State should be very cautious about making rigid rules that will most certainly have unforeseen consequences.
- I also believe there needs to be more attention paid to areas both private/public that have serious erosion issues that could be caused by both nature and man. The US Army Corp needs to step up and work with the state to minimize beach erosion and to keep vital waterway channels open.
- I am against the state taking on cheap home insurance for any area of the state. The state should take steps to stop development of high risk areas. Anyone that builds in a high risk area should take full risk for the loss of their home.
- I am not sure until the dangers are spelled out and a comprehensive study /documentation is brought forward.
- I believe that property owners should asses their situation based on reliable information available and start their planning.
- I believe that the state sould be taking action to prepare the coast for the potential impact of SLR. I think that any such preparations will still benefit the state and its citezens because I think those precautions will still help protect from hurricanes and flooding as well.
- I believe that there should be some degree of assessment made at least. However, I don't know where this falls among so many gov't priorities...often of it's own making...but nevertheless a full plate.
- I believe the state first needs to collect data and determine if rise in sea level is a real issue.
- I believe this has been overblown. I have also seen studies skewed with photos showing buildings and locations under water but when one uses the studies figures the water would never rise that much. The environmental community has damaged their credibility through the years with a sky is falling approach for just about everything. With every argument they have from global warming to pollution I can find other credible studies that reflect the situations show there are phases of global cooling and warming. The ice cap reportedly had clear water (not ice) in 1958, but today it is reportedly thicker than it was then. Many studies seem agenda oriented and as a result there is difficulty in determining what is truly accurate.
- i cannot believe this actually a question-OF COURSE!

- I feel an risk assessment should be done first. Probabilities of sea level rise and contingency plan for each probability.
- I have no clue as to what the plans and preparation would be
- I know research is being done, but the state should be involved in the conversation regarding what the science will mean for decision making in the event of sea level rise.
- I really can see nothing that the state can do but create panic and get in the way of reality.
- I started recommending this about 10 years ago, but was told there were not "approved" methods to do so. It would be helpful to develop "what if" scenarios, and examine the precautions that would be implied by these as well as how likely they are to occur.
- I support the efforts to construct a barrier like the one at Fort Fisher.
- I think NC should place greater restrictions on development in coastal areas and areas along waterways(ie. to control upstream runoff)
- I think that the state should engage the communities and local governments , share the sea level rise information and hear what the communities feel/want to do about the situation. Local governments may re-consider allowing building along the coastlines. The conversation should be expanded to include the impacted communities.
- I think the State needs some data for a few years to get a trend, then plan accordingly.
- I think the State should recognize that sea level rise is certain but not to the point that causes new land use regulations to be adopted. DCM should be more of an advisory arm and collect reasearch money via the AEC permitting process for infomaing folks about inevitable sea level rise. The regulatory big stick should stay in the CAMA bag since NOAA will inherently inherit this burden thru flood insurance enforcement and payout.
- I think we should address the root cause of the problem. Planning has to occur. How would we prepare? Are we going to move all the houses and other structures? As the levels rise the big storms will take the low areas out and also the beach front properties. Are we going to buy out all the rich folks houses? In light of all of mankinds and the Earth's problems, the rich folks beach houses are my last concern. Don't misunderstand me as I enjoy a beachfront place as much as anyone, but it is a luxury and the working folks need the assistance.
- I was born in Pender County, raised in Surf City/Holly Ridge. I can't afford to buy a home in the area I am born and raised. I don't care if someones multimillion dollar villa is in danger. Real Estate Devolopers, and agents are our real problem.
- If a structure on a waterfront lot is destroyed (exceptions - bridges and piers) then that structure should not be rebuilt. If a lot contains an historic inlet location, and the inlet reopens, no structure should be built or rebuilt there.
- If no one can definitely show how much sea level will rise or fall, any policy based on flawed data will be ineffective.
- If the state does not take precautions it will bite themin the backside rather quick and hard. Procrastination is kind of like masteration, you only end up screwing yourself.
- If there is definitive proof that the sea level is rising.
- If this is true NC should plan and prepare just like they should for anything else that may occur in this state. This include new roads for future traffic, road maintenance, drainage, rock slides in the mountains, sidewalks for pedestrians, bike paths, etc.
- If you buy in these areas you know that there is a risk of lossing your land.
- If your data shows that a rise is occuring then yes, someone should be looking at this an planning ahead as far as development, etc
- I'm sure that the State will eventually take steps for an unnecessary plan of action catering to the whims of a scientific minority sounding dire warnings about "global warming" causing sea level rise in order to find another way to tax it's citizens.
- Immediate actions need to be taken at state, county and local levels... critical issue.
- In a budget crisis, there is little the state can do politically. Many people in North Carolina, even if they believe in the fact of sea level rise are not going to want to do anything until the water is lapping at their door step.
- In what capacity? How would the state do that & what would the steps for preparation for sea level rise include?
- Infrastructure protection only.
- investigate the offshore structures now being tried in Florida, which modify the sand loss...
- It is a state and federal issue. Building on a frontal dune makes no sense and having the structure's flood insurance provided by the federal government is STUPID and a waste of tax revenue. DCM shares the blame for this idiosy with the Flood insurance program.

- It never hurts to plan for ALL contingencies, but it should be done within reason. Especally since there is an enormous amount of wide-ranging speculation about and misinformation regarding climate change as it has become greatly politicised.
- It would be a complete waste of time and accomplish nothing but a bureaucratic mess.
- It's not a mater of if sea levels will rise , but a matter of when the sea levels will rise.
- I've read both sides of this question and it merits deeper study by the state of North Carolina. I strongly believe that our beaches are a vital resource enjoyed by visitors from throughout our great state. The Beach Management Plan, including appropriate beach nourishment, keeping our inlets navigable and the ICW open and navigable are all important parts of managing this resource.
- Just make people aware of the possibility
- Let nature take it's course. If someone built in a high risk area, then so be it.
- Lets solve the now problems.
- much work is needed to control erosion. current bill in the legislature will help greatly. the speaker is
- My perception is that problem assessment and subsequent response planning by scientists have been ongoing for a period of time. The actual development and forward movement on developed/developing response strategies/corresponding actions will have to be implemented by agency managers. I am not certain if these agency managers are (a) fully aware of the problem and (b) ready to participate (commit) based on there lack of knowledge and perception of adverse pressure from the political/public sectors.
- Nature always wins
- new infrastructure and development should take this into account in the siting, palnning and design
- No State or government actions should be taken unless there is some proof that this is happening and is not temporary.
- No. Here again, I think this whole thing is a farce, just like global warning. Global warning happens every year during the summer. It gets warmer in the summer than the spring or fall or winter. If the reverse were true I would say you have a case.
- not if it involves state take over of private land
- Not sure. While I think sea level rise is happening, considering all the cost and lost revenue by preparing for sea level rise, makes the decision a difficult one. There will never be a perfect time to prepare (unless/until it is too late)
- Not through Global Warming legislation. That is nothing but a tax/power grab.
- Nothing will stop sea level rise. It has been proven that man-made barriers, sea walls, groins and sandbags do not keep the ocean back.
- Of COARSE!
- Only if Science proves the threat is real.
- Only if the facts show with no doubt that the sea is rising
- Other (please specify)
- Other states are significantly beyond where we are in evaluating adaptive strategies and planning. There is so much we could import from them (especially MD & RI) rather than reinventing the wheel. Much more detailed predictive data is needed for example to allow local governments to even begin evaluating their needs.
- Our elected officials should be consulting the scientific experts in our universities and govenrnmental agencies who can provide the necessary information for them to make the approptiate decisions.
- Planning and additional study needed, not regulatory action
- planning and mitigation efforts in advance of a known or reasonably well anticipated problem are always much less expensive and provide more satisfactory outcomes than doing nothing and waiting until the problem is here and then trying to do response and remediation in its aftermath
- Planning for sea level rise, assuming it is happening and can be documented, is fine. Making more regulations to impose on the local governments and the citizens without any financial assistance is MORE OF THE SAME.... DON't DO IT.
- Planning is cheap!!!! This doesn't mean they have to come up with an implementation plan or even commit to doing something, but the State should begin gathering a set of viable alternatives for response to the likely consequences of sea level rise. It could be initiated as part of the HLS required consequence management planning effort and might even qualify for HLS grant funding.
- Preparation for future sea level rise and/or climate change is a necessity in my mind.

- Prior to any planning effort there needs to be a major symposium for planners and boards to acquaint them with the science and updates of studies done by coastal municipalities around the world. This should not be action oriented but rather focus on becoming part of comprehensive evidence collecting and best management practices. on a global scale
- Pro-active in stead of re-active
- promote in state solutions and advocate nationally and internationally for a reduction in greenhouse-gas emmissions.
- Put limits on new construction
- quit developing areas that were never meant to be developed. Quit building back on areas that mother nature is trying to reclaim with beach erosion and hurricane damage and flooding.
- restrict building on the beach
- Save the money -- no wetlands - no seafood
- Sea level rise does not exist except for temp, sality changes in the ocean, which are natural changes outside HUMAN CONTROL As my 12 year old told his teacher "I am buying a Boat"
- Sea level rise is a very serious issue for NC. The state must take action immediately.
- Sea level rise is going to have a huge impact on NC. As rising waters innundate areas used for agriculture (many low areas are farmed), housing (think of the flooding of Kinston a few years back) and the tourist industry (beach front housing, coastal towns touring, beach vacationing) the amounts of monies recieved and its distribution over time will be significantly changed. It isn't just sea level that is changing, its also weather patterns.
- Set-backs (from any body of water, including wetlands) and building density restrictions should be changed and enforced within the construction industry. No special favors for politicians or wealthy business people and/or their friends and family. No last-minute permits for environmentally unsound development at the 12th hour of legislative changes should be issued. ALL remaining wetlands should be protected and preserved. That means no nationwide chainstores with cash to grease the wheel should be issued CAMA permits just because the building site contains a run-off ditch. Yes, development has ruined the environment, or will, without drastic changes.
- Simply use good judgement when storms do arise--note despite the hype of more frequent and more severe storms we have not had a major hurricane or any major claims since 2003, that's 6 years. Noentheless, NC is attempting to redistribute contributions to insurance funds by reducing inland rates and significantly raising coastal rates. My best guess is that there have been more claims for inland flooding than coastal damage during the last 6 years.
- Stop development in flood plains, low lying coastal regions, barrier islands and anywhere else nature has left land below sea level.
- Stop funding beach nourishment projects which reports I have read say are not effective in limiting effects of sea level rise. Start placing responsibility for oceanfront issues on the oceanfront property owners.
- The current CAMA specifications for oceanfront building should be reviewed and changed. Homes are being built way too close to the high tide line. In Rodanthe this past winter, a home was taken by the ocean that was built only 3 years ago! This is no anomaly. There are other homes being built ridiculously close to the ocean based on reference to a false vegetation line. On Dean Avenue in Rodanthe, lot owners were allowed to put in an irrigation system basically on the beach where there were no other plants, quickly plant some sea oats, and then declare this the line of vegetation on a lot that would not have been legally buildable otherwise. Only 3 months later they are sandbagging (I thought this was not legal) and dune pushing (stealing sand from the beach with a bulldozer) to keep this house from falling in the water.
- The devil is in the details. We don't need to rebuild the Oregon Inlet bridge in its current location, for example. And we don't need encourage living at the sea's edge through public policy initiatives such as Federal Flood Insurance. I think it is preferrable that each island property have affixed to the deed for that property a "one and done" provision. As of this date (fill in the blank) only one federally subsidized insurance payment for storm loss of 30% of the fair market value of the building will be paid for replacement of buildings on that property. If an owner makes the claim and sells the property, the next buyer will know before purchase that no Federally subsidized insurance payout will ever come to that property again.
- The first step should be to find out why it is happening and then determine a plan to attempt to stop or minimize it while having a backup plan to adjust to it.
- The Governor needs to create a climate change adaptation blue ribbon group -and charge them with creating a plan. In addition, the NC Legislative Commission on climate change needs to begin focusing on adaptation.
- The money being spent already on the supposed man-made global warming with resultant sea level rise is ridiculous. Any global warming/cooling cycles are natural and not the result of human's miniscule impacts.

- The people who have built and bought land on the coast should know that North Carolina's coast is not a fixed landform, but rather one that is constantly changing. They chose to invest in that property even though it has a high risk for damage through natural forces.
- The primary emphasis should be on a calm presentation of demonstrated scientific data and interpretation which allow for maximum understanding by the public. The evaluation of the problem should keep the public advised about optional measures which can be taken. The worst thing that could be done is to overcompensate by added more streams of regulation in Raleigh.
- The problem is one that no one seems to have an answer for, How much & when.
- The rising sea level will endanger all coastal development. The state can not afford to continue insuring expensive coastal properties.
- The State can't do much about it, but it can take steps to restrict development on the barrier islands ans other vulnerable areas, if nothing else than by not requiring people living inland to subsidize storm insurance for those who build in vulnerable aeas.
- The state should be taking steps and should be providing information to citizens, businesses, and local governments about risks and helping those most likely to be impacted with developing strategies to address the issues.
- The state should begin by not subsidizing homeowner insurance along the coast. By that means, there would be an economic incentive over time not to build along the coast.
- The state should confirm from actual sel level measurements the question being asked here: Is the sea level rising in coastal NC? Why are you asking me if I think the sea level is rising? Why not provide me with the actual measurment data and tell me if the data indicates that the sea level is changing up or down? Do you know?
- The state should only consider this with respect to ensuring the safety of residents and the providing of public services (roads, bridges, water/sewer, fire/police/emergency services). The state should NOT attempt to help private property owners in potentially affected areas.
- The state should take a firmer stance on proactive measures to combat global climate change.
- The State, Federal and World governments should study the issue more intensely so that meaningful policy and laws can be implemented, backed by scientific confidence. Once changes in sea level are better understood, then steps by the State are warranted.
- The supposed continuance of sea level rise should not be utilized as a tool for more government control over private property and/or more government confiscation of private property.
- The"STATE" can't balance a budget or build a [expletive deleted] bridge, much less stop rising sea waters.....sheeez!
- There is a need for a coordinated effort. Policy decsions should be based on best available science
- There is already too much state regulation, and much of the regulation is ineffective. More won't make it better.
- There should be legitimate planning to step back from the shoreline. Homes destroyed by hurricanes should not be rebuilt in the same location and should be required to be set back at a reasonable distance. If the property cannot meet the setbacks, that property should become unbuildable and be considered a loss. Real estate laws should be enacted to notify buyers of ocean front property of the risks inherent in building on the oceanfront including the state estimated shoreline erosion rates in front of their property. We can't nourish the entire oceanfront of North Carolina indefinitely. Attempting to defend homes from the ocean is a waste of money and resources.
- There should not be one dime spent of tax payers money in the areas where it is either a V zone flood zone or wetlands, Army Core, ext...
- They are already behind in my opinion.
- This cannot be stopped by any state goverment or federal ininity.
- This is a total waste of time and taxpayer money.
- This question depends upon what you're going to do. I've been surf fishing the outer banks since 1968 and have seen beach areas being closed and not allowed to fish. If this question deals with closing more beach access, then I will have to find some where else to spend the 2 to 4 thousand dollars annually.
- To do nothing will guarantee that the state will be playing catchup and will lose tourist revenues as well as stand by while there is significant damage to a very vulnerable ecosystem.
- To what effect? Buyout landowners and move them inland? Harden the coastline with groins or build dikes from Virginia to South Carolina? Are we looking at 6 inches of rise or 6 feet? There is not enough information to begin long range planning.
- Try to forcast effects on an area so people can make an informed decision

- Until there is SIGNIFICANT ACTUAL DOCUMENTED sea level rise, no action is necessary or desireable. A contingency plan is acceptable ONLY if it doesn't cost millions of tax dollars.
- Wait and see is a plan for disaster as history tells us from experiences leading up to war, weather events (hurricanes) cyclic fire seasons and earthquakes. Sea level is as real as the aforementioned calamities; it just does not happen as cataclysmically.
  wait and see. no need to create another buracracy.
- Waiting to be reactive is too costly to the residents and environment.
- We are at an urgent juncture for our coastal planning. Even though in the near term the waters and storms may not take places rapidly, our efforts to stop such processes could make the eventual rise and storm impacts much worse. We must plan for an orderly retreat in places and adaptation and mitigation for key natural and human communities.
- We can look to adapt, but only if warranted. Current sea level rise is about 3 mm per year. This is not an issue which needs millions of dollars spent because at the current pace, the sea level will rise less than 1 foot in 100 years. And, current research suggests that the rate of increase is slowing, and could possibly go the other way.
- We need to begin moving critcal infrastructure and later people out of the way of sea lvel rise now. No more state money should be spent building infrastructure in areas that will inundated by a rise of any less than 2 feet.
- We should continue with our policy of no hardened structures on the coast and allow mother nature take care of business so we can keep our desired natural resources.
- We should reduce the impact caused by humans. But we should stop endorsing projects (i.e. recreational beach renoursihment projects,....) which counter Mother Natures large scale plans.
- What could the State actually do?
- whree is the data??
- Why not. Is it better to burry your head in the sand - I don't agree with that position. I see that as being selfish, lazy and ignorant.
- Yes, but the planning horizon should only be the next 20 - 30 years, not 90 - 100 years. The reason for that is that the science, technology, population, and other factors may change or evolve such that sea level rise may not be the concern it is today.
- Yes, but without the "Al Gore" sense of doom.
- Yes, if it can be put into a realistic perspective. Retreat is NOT an option.
- Yes, we need water level stations. High priority areas are Pamlico sound, Albemarle Sound and Sunset beach NC. These are areas identified in previous surveys as priorities. They are also recognized as such by NOAA NOS. In addition, the state should identify land purchases to allow for coastal migration.
- You can plan for it, but you can't stop it.
- you have already taken these steps by the new set back rule which is currently going into effect
- Zoning, reconfigure incentives for coastal property. Invest in roads that will withstand inundation

Q6. Who do you think should be taking action on sea level rise in North Carolina, and in what roles?

- "Support" should be defined as support. They should not engage themselves in the regulatory capacity. It has become apparent that some groups have no knowledge or capability to be part of the solution process.
- A significant sea level rise by 2100 is highly unlikely. Property owners (including governmental property owners/managers) should evaluate their vulnerability to some (less than 1 foot) sea level change, either up or down. The scientific community and state agencies should play a supporting role to help coastal property owners assess their own vulnerability, but this should be done in order to manage the very real risk of catastrophic flooding from storm events, rather than the minimal risk from sea level rise.
- Again, definitions of terms is key here. What differentiates a 'leading' role from a 'supporting' role? Schools should also play at least a supporting role, in that educating kids of all ages about the science of climate change, natural vs manmade influences in sea level rise, etc. is critical to developing longterm policy solutions...
- All of DENR should be involved. WRC should be a leader too.
- All stakeholders listed above need to be involved at a high level to ensure proactive activities as well as public education.
- Any action must be based on a broad based consensus of stakeholders.
- Any actions taken should have a good scientific background and be focused at the local level.

- As a homeowner who took a risk and bought an "oceanfront" property, I don't feel it is anyone's responsibility but my own if the ocean decides to consume my property one day.
- At this time, the exposure needs to be studied and monitored. Action should be limited to observing. Nature has away of adjusting to our perceptions of environmental change. Twenty years age we were on the onset of an ice age, five years age we were about to experience the disasters of global warming, hurricane activity was predicted to increase and intensify. These predictions sell newpapers and keep TV talk shows busy. Earth has existed for time beyond man's ability to preceive and during it's existance it has gone through untold cycles and has always adjusted. The biggest environmental problem we face is man's need to control, particularly those elements that he can not.
- Changes in sea level - up or down - affect different parts of the entire planet differently. The studies therefore need to take in worldwide data and then analyzed. A study of just one area of the world could be deceptive and result in insufficiently informed government policy that could cause more harm than good.
- City councils were left out of this. ICLEI, formed in August 1989, is one of the most important actors on climate change, utilizing the power of city governments to take action when other players don't.
- Coastal resources are a tourist attraction that support local communities and feed some money into the State coffers. Unfortunately the State spend far more than that income preserving these resources for the industries that profit from tourism. Central NC doesn't ask for money to hold back the inevitable forces of nature, why should we contribute to resolving the issues of the coast. In fact there will always be a coast, just a little closer to us. I already feel that I am taxed unfairly to support the lifestyle of tourists, wealthy landowners, developers and real estate sales for the coastal communities. The State investments don't typically support the non-revenue communities, so the State should stay out of the issue. The NC general Assembly is run by business interest not science, so they are not fit to make rules about future use. The State Agencies should play a support role relying on scientists to gather and dispense information on the progress or the issue without political bias. Private landowners need to learn what everyone else in the State already knows - don't look to the government to bail you out anymore. This is a local problem and should be attended to by local people and agencies.
- Determine with CERTAINTY that sea level rise is really occuring, and if so, at what CERTAIN rate
- Do not think it is a problem.
- don't better things to do with our tax dollars that STUDY AFTER STUDY ... ask Al Gore (a.k.a. Chicken Little) to give you the money
- ECU RESEARCHERS AND GEOLOGISTS; NOAA (A PRINCIPAL STAKEHOLDER LEADER); AGRICULTURAL AND FORESTLAND INTEREST STAKEHOLDERS BASICALLY, ALL STAKEHOLDERS MUST BE REPRESENTED AT THE NEGOTIATION TABLE - IF NOT, FORWARD PROGRESS AND DELIVERABLES WILL NOT OCCUR.
- Educational institutions.
- educators, insurance guys
- Federal agencies, such as the Corps of Engineers, Fish & Wildlife Service, National Marine Services, etc.
- Federal government is being dictated to by the environmentalist, developers only have one goal , turning a dollar, Scientist are controled by facts which have not happened yet. Who do you trust to give a rational anwser, who will be affected the most? In my opionon these decsions should be left up to the local government who have the most expericence with dealing with the everyday erosion and dismantleing of the beach.
- Feds have to negotaite interantional treaties on Global Climate Change and thus have a lead role. The Gov. and Executive Cabinet level state offices will need to work with the Feds for compliance issues. Local governments will have to play a role in development of new zoning ordinacens that take into account Global Climate Change impacts
- fishermen
- General Public and land owners would only get involved in emergency situations.
- given the scale of the issue, local gov't involvement might be most effective through regional councils
- Government and individuals should take responsibility for acting responsibly to plan for the future.
- guess I don't understand question - for example - should scientists play a supporting role in sea level rise? how could they possibly play a role?! either they explain it well or they don't, we know that sea level rise will happen, they can't stop it or start it, it just is.
- Higher Education should also play a leading role
- I believe if any of the above should play a role it should be a minor one. I believe far too much money, especially tax money, has gone toward this sort of thing. If folks state the Federal Government or the State should play a leading role the next thing we'll see is more studies initiated and departments formed. I believe this issue has been far too

overblown and if the sea level is indeed rising, it won't be of any greater concern than what we're currently experiencing with storm erosion and subsequent replacement of the sand by natural forces or human intervention.

- I believe it should be scientifically proven first that there is a rise before any other action is undertaken.
- I believe the people most effected by sea level rising should be the primary role/stakeholders regarding this issue. The General Public needs to take the lead role, followed by business owners and real estate companies.
- I believe there is a role for real estate developers to take future projections of sea level rise and risk into consideration when looking for land to develop; furthermore these factors should play a role in the type of development (residential, commercial, etc.) being considered.
- I chose the fed for the lead role because this is an issue affecting all coastal states, not just North Carolina.
- I don't believe action is required.
- I don't think the Federal Gov't should play a role in this as they are not equiped to handle issues that are this variable from state to state, region to region, Island to Island, etc. I think basically the supporting role players should try to offer guidance to the general assemble and then if legislation is needed they will be informed of all sides of the issue. It goes without saying but it is important to realize that all of these role players have vested interests and preconcieved notions (even scientists) and everything should be evaluated considering these factors.
- I doubt that builders and real estate agents will take a role because their business interests often do not include assuming the risk from coastal storms and sea level rise: once a property is sold, their risk is near-zero.
- I haven't thought through this yet. My personal opinion is that the outerbanks, being the dynamic environment that it is, should never have been highly developed in the first place.
- I include developers as playing a leading role. I am sure they will, whether it is constructive or destructive. It is very important for it to be constructive, but the odds are not good.
- I see none of the above that can doing anything without screwing it up.
- I think for once we should let science tell us what is best long term not just government telling us how to save our real estate.
- I think the state should take leadership on this issue such that we don't have a potential Katrina/Floyd situation. Sea level rise is happening and as our hurricanes become more intense, it just speeds up the timeframe. We must be PROACTIVE and not REACTIVE. Planning will make all of the difference.
- If our society does not address the root causes that are indicated in this situation then what does it matter? We are wrecking the planet and it is easy to see if you are awake and have your senses. The science is pretty well documented and all but a few "paid off" voices are in agreement that if things do not change then we will see a different planet. I am disappointed that money is so much in control of most people/societies that we cannot see to do the right things in our lives. It seems to me that most folks simply do not want to think about it and so denial is rampant.
- if the dang real estate developers & home builders associations didn't practically 'own' all the city & county planning/zoning boards, and a large part of the legislature, it would be a heck of a lot easier to tighten the regulations an not allow any new development of anything resembling critical infrastructure in the most vulnerable areas
- If they need to start preparing for this then they need to be preparing for the next ice age because it too is coming and may happen at the same time as the sea level increase but there is nothing that we can do to stop it. What about an astroid from space that may wipe out man kind prior to either event. I am not saying that they aren't happening but can see nothing that anything that we can plan for. Legislation can be passed that will limit or slow global warming but planning for its occurrence is in my opinion stupid.
- If you allow the politicians take a significant role or follow the recommendations of non-profits with an axe to grind, the process will be a sham and thre public will recognize that.
- IMPACTS and response should be REGIONAL - not based on local government boundaries, nor will the same response be appropriate along the entire NC coast (state). NENC is in a completely different situation than central (coastal) or SENC.
- Impacts of sea level rise will reach across the state as communities are forced to push back from rising water, degraded soils, contaminated aquifers and compromised infrastructures. This is not a coastal issue alone. Developers and land owners will have to make decisions that may be difficult for their profit margins, but in the interest of taxpayers weary of funding stop-gap beach community restoration efforts that benefit relatively few stakeholders compared to the needs of near-coast and inland communities that struggle to cope with other economic and environmental matters, independent of direct impacts of sea level rise. It should be noted that near-coast communities will soon need to address how they will cope with population influx as coastal communities are forced inland. This is a matter for all people across North Carolina, our nation and the community of other nations across the globe.

- In the lead should be those with expertise and those who can maintain impartiality - scientists, non-profits with expertise in coastal processes especially.
- It depends on what you mean by "action". I think that the feds could make general recommendations and provide a source of funding, but personally, i think the states are better equipped to handle this as they have the local knowledge.
- It is already a real problem that is going to get worse. It has been past time to be proactive.
- It's all about funding and the intelligence and will to make a difference. It's difficult to estimate which of the above entities actually represent people who care deeply and which will make a serious commitment.
- Just please keep the Federal Gov't out of it
- Land-owners can choose to take what action they feel is appropriate for their private property (within the zoning regulations for that property of course). With respect to public property, see my previous answer for what should be concentrated on.
- Lead state agency should be DCM, with support from other agencies.
- Leadership should occur at all levels. We need to be open to creative solutions and as citizens be prepared for higher costs of living near or on the coast and realistic retreat plans.
- leading role means 'lead', provide leadership (information, seek input, develop policy) to the general public at large
- Leave the real estate people completely out of it as they are already a major problem Ie. many of them have bulldozed the primary dune in years past Ie. Marlowe Bostic. They should be forced to comply with all current and future coastal regs with a very heavy hand.
- Let education based on good science take control over the media frenzy. Educate the stake holders with reality. Let reality drive the financial and economic free market markets. Keep governments OUT of the equations and certainly do not have none involved tax payers put at risk for the pleasure of those who wish to dwell in unusual corcumstances within harm's way. Educate, not regulate.
- Let nature take its course, No man can engineer anything that will change nature!
- Look at the economics of maintaining that land. Determine whether it makes sense to dike areas. Change them from high-end beach communities.
- Maybe this needs to be left to nature. If you believe that you can find a way to change the amount of solar energy coming from the sun, then you should call God and tell him.
- Mother Nature will not be fooled.
- No action needs to be taken on sea level rise. The most recent climate change data actually indicates a slight lowering of temperatures worldwide.
- No comment. Save the taxpayers of NC some money and leave well enough alone.
- No one should be taking any action until the question of sea level change is answered with actual measurment data. Is it rising?
- Nobody, it is a natural phenomenom, and has happened many times in earth's history. No one in my generation or the next will be greatly affected.
- Non - profits addressing enviro issues should all be involved. I am member of about six such organizations - organization most addresses directly is Cape Fear Climate Action Network at www.capefearcan.com.
- Non-profit organization that "support" sea level rise actions are promoting an agenda and it is in their best interest to paint a "sky is falling" picture.
- not an immediate risk issue, should not absorb limited time and resources
- Of the state agencies, the NC Coastal Resources commission is the obvious candidate for a leading role. However, other agencies dealing with property insurance, hazard management, development policy, and construction also need to be involved throughout the process. I don't think that most General Assembly members or the governor understand enough about the effects of climate change to be useful as leaders on this issue. Politicians just do whatever they need to do to stay in power. I have more faith in the state's civil servants than I do in our elected officials.
- Other (please specify)
- Our religious leaders and institutions should take an active part in advocating that proper steps be taken to save our seashore environment and protect our citizens.
- People/groups that have the publics best interests in mind should set policy on these types of issues. Special interest groups, while a part of the decision makink process should not direct the course of the entire state on an issue that affects al of NC

- Politicians should not lead any science-based discussions.
- Private landowners and developers should play a role and take action but I fear they are uninformed at best and looking out only for self interests at worst when it comes to discussion and solutions.
- Private owners benefit from the ocean. they get the view, rental income, property increase, subsidized insurance rates, etc. they should be the ones to assume the risk of sea level rise. Every house and property on the shore is in constant danger of being hit by a hurricane. This is a real concern, not because of sea level rise, and they should accept the risk for hurricanes and sea level rise.
- Question 6 assumes there is a problem. What does the data indicate?
- Real Estate Developers have no incentive to build responsibly with consideration to sea-level rise. Profits are much higher for massive ocean front homes. Allowing Developers to influence policy is a terrible choice. Our retreat from the sea should be based on good science.
- real estate developers just want what will make them the most money
- Real estate developers should NOT be involved in any policy development associated with sea level rise. This would be a conflict of interest. Private property owners that might be displaced should have some say in the process, but should not be in the lead.
- Realistically, coastal states are the only ones effected by potential sea level rise. For that reason, coastal states are the ones who must prepare for the consequences while the federal government addresses the threat (global warming) itself (risk = threat X consequences) if that is even possible. All others must support the actions of thier government or the public good.
- Science should lead the way, rather than regulators who react without regard to unintended consequences.
- Scientists are probably the best source of all information regarding facts about sea level rise.
- Scientists should say what needs to happen, and the rest of us should follow their best advice.
- Should be a cooperative effort of all groups but that is likely wishful thinking rather that possible reality.
- Should be monitored; Green resources developed, less pavement/concrete; I think science shows that we will go through another cooling period which will eventually reverse the current trend of slight increases in ocean levels- this has been happening for thousands of years.
- should keep public aware of changes in sea level.
- Some should be playing more of a supporting role than others but we should all be playing some role for awareness if nothing else. If we are all involved, we can take action sooner.
- Sorry, I don't know the mission of the NC Coastal Resources Commission. It's title implies a leading role.
- Sound science and policy should dictate our response. This should be led largely at the state level in conjunction with input from scientists and managers at agencies and universities.
- State agencies should perhaps provide the frame work for orderly change and relocation, but should not be the finance company for the action.
- The Federal government should be addressing those issues non-specific to any state, but general to all. Rising water levels worldwide directly involve over half the states in the union, and the Feds should focus on the issues of global warming to help slow the process of rising oceans. The NC government's role should be to restrict development. This is an issue over which the environment should take precedence - NOT the economy. No one survives in a ruined environment - money or no money.
- The federal government should play a leading role in CO2 reduction, while the state should play a leading role in working on the ground
- The general public should get behind a push to stop the state from providing insurance for this area. The general assembly should stop any area of the state that does not allow the public beach a place at "their" beach to not receive any public support!
- The government should support because gasoline taxes and other monies such as income taxes go to them. Good luck getting our politicians to help the coast. They act like we take everyones money when in fact coastal areas, next to the mountains are our main tourist (outside state people) and state (property owners in state) attraction. All the supporting role people benefit from the coastal areas.
- The governor has as her voice the administrative staff who report to her and to the legislature her direct involvement would only bring political complications to solutions which should be research based.
- The impacts of climate change are happening now -we have lost a tremendous amount of time. Every citizen in their private and public roles needs to be a leader.

- The landowner can help themselves
- The NC Coastal Resources Commission should set a rational policy. The Governor should establish leadership to wean us from decades of folly; the NC General Assembly must legislate a rational policy; state agencies should advise; local governments are incapable of objectively acting--they are too vested in the status quo which funds them. The federal government should stop the flood insurance program--it's wasteful and flawed.
- The North Carolina Sea Grant with NOAA grants could lead the research needs and help establish long term tidal amplitude and normal water level monitoring.
- The question assumes that sea level rise is occurring, therefore the question is a leading question. If sea level rise is not occurring, then no action is required and any action that is taken is a waste of money and time.
- The sea has risen and retreated for centuries. Our trying to control this is comparable to leveling the Himalayas.
- There are many important roles and the question does not allow specific answers. Scientists and non-profits can provide the information that state and federal agencies (Gov, Gen Assem, CRC) should use to develop policies. Local governments will have lead in some implementation, as will landowners. The public should provide the urgency to drive this process.
- There are now 32 agencies supervising any changes to our property. It is too many. I also feel that the regulatory agencies operate without any supervision from the elected representatives. We should be using the most up to date scientific research available to support the choices and decisions that are made. For example, we should be listening to Dr. Cleary not Dr. Pilkey.
- There are so many aspects to the issue that it is difficult to parse the roles the way the question presented it.
- There is a need for an inclusive sea level rise task force with the authority of law and the funding needed to develop rigorous policies that confront these issues now. Funding should be provided to develop and implement a coordinated adaptation strategy, done in concert with the NC SLR study being conducted by NCEM.
- There should be long range planning to assure eventual discontinuation of building of any "permanent" structures on the barrier island because the actual sand beach will remain for some time to come. Without hard structures (includes buildings and roads) we can still enjoy the (shifting) beach for swimming - and so can visitors to our area. They just can't LIVE on top of what is supposed to belong to all of us.
- This a Global Problem requiring global evaluation. The international Science community, The Intergovernmental Panel on Climate Change and the UNEP coordination can be ignored but the science will inevitably be incomplete and flawed and as will plans based on flawed or outdated data. This is especially true for the the 2100 horizon. On 20 or 30 year horizon- real estate and landowner interests are well represented in the general assembly and local governments and especially need to hear from the scientific community.
- This is a private landholder problem if a problem at all. It's the same as if a hurricane washes down your house. Unless you have insurance you pay, not the gov.
- This is a problem which needs to be addressed on a national level since actions in one state, to allow new coal-fueled plants for instance, will affect NC. That said, it is the responsibility of the NC Coastal Resources Commission to act on those issues that fall within the borders of NC - to protect wetlands for instance.
- This is a question I grapple with every day. I was tempted to say that everyone needs to help lead on this, but I do fear that "leadership" among some will be in the counterproductive, denial-based direction. Ideally, all would embrace the challenges we face, come to understand that the resilience of our human communities will depend as never before on the resilience of our natural communities, and support enlightened approaches to management. Ultimately we must balance economic, social, and environmental needs, but in the full awareness of the science behind the natural systems and the futility of certain actions. We cannot promise to maintain the status quo for anyone.
- This is a subject that should be handled by those qualified and knowledgeable sufficiently to honestly assess the situation without politics entering into it. The IPCC, for example, reports that the rise in sea level that has been recorded during past decades is quite small and it is not a justification for the hysteria that has been seen in imbeciles such as Al Gore. Gore is now a multi-millionaire based upon his Henny-Penny championing of radical environmentalism justified by "global warming". The globe's climate and temperature is ever-changing and has fluctuated for millions of years. This is nothing new.
- This is VERY high priorty. We may already be beyond being effective no matter what we do.
- This question presumes & predetermines that the responder agrees that sea level rise is actually occurring. Not an objective question.

- This requires a great deal of thought. From my experience with politics, especially in Carteret County, the only interest of the County Commissioners is in real estate development and money. Therefore, they should not play a role in anything so important as sea level rise!
- this should be a coastal issue and addressed locally. If the government gets involved (the general assembly) if will get so complicated, things that need to happen will not.
- This situation will have to be tackled by more than one agency. This will have to be a group effort to lessen the impact on property rights and losses.
- Those affected should play major roles - real estate developers should refrain from developing in vulnerable areas - that's why I said they should play a major role - a positive role. I'm afraid that their role will be negative - they will continue to build in vulnerable areas - and the buyer be damned!
- Truth will be far superior to regulation at any level. Based on history in the last 20 years, it will be extremely difficult for State Government to keep themselves from using "save us all " regulation but that is exactly the wrong thing to do.
- Universities and colleges, both public and private
- Until the threat is WELL documented, any actions other than planning should be minimal.
- Until we have facts, it is difficult for the public, dvelopers, and landowners to get involved. The best interest can be served by the facts being presented without the input of special interests groups...
- We can't stop the seas rising, It is not our decision.
- What does action mean: stopping it, which is only possible on a global scale; preparing people for the inevitable yes the State should do that.
- What sea level rise?
- Why not have the suppoting actors elect their own leader? Give them all a year to get to know each other and learn from one another and perhaps a real leader on these issues will unfold.
- You ain't gonna stop mother nature and it's a waste of time/$s to try.
- You should contact The American Littoral Society.

Q7. What measures would you recommend the Coastal Resources Commission and Division of Coastal Management take to address sea level rise?

- "Let the buyer beware". If someone wants to spend their money on a house after being educated on the risk, then they are accepting the risk and should accept the consequences.
- ???????????????? is the sea level rising? This survey starts off by asking me if I think the sea level is rising. I'm a real estate broker. Why do you care what I think? I'm not an expert and have no actual measurements. What do the measurements at the Duck ocean pier show?
- 1) Groins and seawalls benefit one area by taking away sand from other areas - robbing Peter to pay Paul. This has been demonstrated time and again by coastal scientists. 2) Unlimited sandbag use is not a viable option. Any storm with winds and surge severe enough to put structures at risk will scatter the sandbags all over the shore. Don't encourage landowners to believe that this is a viable strategy. 3) Absolutely! There should be strict limits on the types of development and structures permitted in high-risk areas. This is a no-brainer. Those areas WILL be subjected to storm surge eventually. No more Holiday Innlets, please. 4) Managed retreat is the best strategy from an environmental standpoint but in the current political climate I think it is not a feasible alternative. Who would pay for it? 5) Maps! YES. 6) Require local land use plans to consider sea level rise, by all means - but the best available information and technical assistance must also be provided.
- A managed retreat would be the best option, but would be very difficult from a logistics standpoint.
- a whole range of additional actions are needed. See the N.C. Coastal Federation State of the Coast Report at www.nccoast.org for examples
- ABSOLUTELY NO HARDENED STRUCTURES SHOULD BE PERMITTED EXEPT TO MAINTAIN NAVIGATIONAL CHANNELS. NO SAND BAGS, BULKHEADS, JUTE BUNDLES OR ANYTHING ELSE SHOULD BE ALLOWED TO PROTECT PROPERTY OR BUILDINGS (INCLUDING HOMES) BUILT ON BARRIER ISLANDS, INLETS OR ESTUARIES!
- Absurd questions except for the first one.
- Again, the rate of rise is all over the board. Tough to make a definitive call, but should be based on science not perception or hype. Tancred, tricky you are; groins and seawalls are we talking apples to apples? Not a fair question without the definitions and potential site use and goal; and what about inlet stabilization using dual jetties?

- Again, there is all this speculation about anticipated rise, and I see no evidence it exists.
- All answers above are qualified by my observation that changes in sea level rise are not sufficiently understood to serve as justification for any of the above available actions. Accordingly, governments should work to assimilate as much worldwide data as possible, watch for emerging consensus from the worldwide academic community, educate the public on it and then take actions. Meanwhile, apart from the role of sea rise, we know enough now that inlet dynamics can destroy beaches and structures and terminal groins in isolated locations specifically tailored to the dynamics of particular inlets can be used as a tool to preserve and build up the public's valuable ocean beach resource at those inlets, without harm to the inlets, adjacent beaches or surrounding habitat. We have enough data to understand that seawalls, non-navigational jetties, and other hardened structures are not a good idea. The survey question above using the phrase "groins and seawalls on the oceanfront" can mislead. Terminal groins are a different species of tool. They build ocean front beaches without being on the oceanfront. Seawalls, in contrast, are on the ocean front and actually decrease ocean beach. Unlike terminal groins, seawalls merely wall off structures from ocean waves and surges. The positive effect of terminal groins and the negatives of seawalls are sufficiently understood now regardless of any changes in sea level.
- All of the above answers are based on the assumption that there will be a rise in sea level which I do not believe has or can be proven. I can see little or no change from the last 60 years of living on the coastal area other than damage from severe storms which comes and goes.
- All of these suggestions have some benefit to certain areas, the key is to not force this into a one size fits all rule or law.
- All the measures I recommend are most immediately useful as means by which we can mitigate damage from coastal storms and hurricanes at already-existing sea level. The mapping of hazards should include storm surge and wind damage models as well. In any case, policies that promote more intensive development of the coast should be significantly changed.
- Allow landowners to take risks, but on their own dime. Do not give any taxpayer assistance to landowners who lose from sea level rise or from hurricanes, etc.
- An open dialogue between all of the groups listed in #6 should be used to determine what measures should be addressed. Until I hear all sides of an argument I cannot form an opinion.
- Answers in this section are not precise. The general process is to use demonstrated science to inform the public but to avoid regulation at virtually all costs. Regulation cannot become expansive enough to cover the variables which will have to be considered. The engineering and related professions again be allowed to lead with design based on science rather than to try and regulate processes from either the federal or state levels. To the extent that humans are creating sea level rise, multinational cooperation is essential. The arguement that the US alone can lead is almost silly. The arguement that population can be allowed to grow from 6 billion to 10 billion in 50-75 years and have any chance of containing the causes is also silly. Population and environmental distruction is going to have to be intelligently addresses without the kind of forceful regulation so typical of current State and Federal actions.
- Any homes that were built correctly following rules that were in effect in the past should be allowed the freedom to do what is necessary to protect them. It is not fair to put new rules in place that will cause these people to lose their homes due to erosion. Even now there have been rules put in place that will cause people who followed all building rules to now lose their homes. They are not allowed to protect themselves. This is not fair! If new governmental rules cause these home losses, then the government should have to pay the homeowners for their financial loss.
- Anything residents directly on the coast do will not stop their property from being engulfed.
- As I stated, I have not seen any sea lelel rise in the past 75 years, I see no need to start all these foolish ideas to combat something that is not happening
- As regards deciding how much sea level rise will occur in future; this is a point that will be argued in science communities, and debated in political arenas. Waiting for agreement on this important issue will result in lost time and opportunity. The ocean is rising and will continue to do so during this interglacial period. Our best hope is slowing the short-term rate rather than halting it altogether; this is where energy conservation can help. We cannot halt sea level rise and this is why we must plan for coastal community retreat.
- Based upon the Beachfront Manangement Act you may not be able to afford a managed retreat if you have to pay property owners current fair market value as was decided in the Lucas Case in SC. What may be interested is that the Lucas Case did not consider Global Climate Change, whihc may serve a means to legally appeal LUCAS inlight of the costs
- Change building codes to allow houses that can float off their foundations to survive flooding. This is done in Holland. Houses are built on cement barges as foundations and have pilings like floating docks. They look similar to regular

houses, but can float up and back down without damage. These are not appropriate in areas that will experience active surf.

- Change is inevitable. Be it from annual storms or other forces. The coast is shifting sand that moves with changes in tide and current. You can not hope to nail it down. You can only change and adapt as it changes and adapts.
- Climate is cyclic and we are entering a cooling phase; therefore, sea level may start to fall.
- Coastal Resources Commission and Division of Coastal Management need to reform themselves or allow them selves to be reformed so that good science in the public interest prevails. Consultancies with outstanding Universities in the state and seeking Federal grants for basic research should take precedence over legal wrangling over engineering decisions about short term fixes. They need to rethink the whole concept of coastal management in a global context. This perspective was unavailable when they were chartered. Think 2100!
- Connect long-term SLR adaptation strategy to agencies responsible for dealing with episodic events (i.e. disasters) in order to develop a coordinated approach that takes advantage of the attention, funding and resources provided before and after disasters.
- Current homeowner premiums on the outer banks far exceed any history of loss. Most damage is from water. HO3 does not protect against water, only National Flood Insurance does. Why allow such high premiums on coastal communities when inland communities have an even greater record of hurricane damage.
- Data is needed, then a plan of action can be established.
- Development on the Outer Banks, while pleasant, is unwise, was unwise, and forever will be unwise. THe island is made of sand and is in constant flux. The fact that we are number three, as a state, in ranking for most Hurricane hits, behind Florida and Texas needs to also be taken into account. Property Owners must be required to provide their own insurance for the structures - not the Beach Fund. The Beach Fund, if it is going to move forward, must be funded by properties located within the CAMA counties. Basic insurance principles must be applied to beach properties - the higher the risk, the higher the premiums.
- Do not confuse sea level rise with erosion and storm damage. The latter two effects are real and should drive plans and policy. Sea level rise, barring a major catastrophic event, is related to large scale, cyclic climate changes and are highly unlikely to have an impact in the short horizon of 100 years. Besides, who decides what sea level is most desirable?
- During the drought of last year, I had the grand idea of possibly starting a fund to build a desalination plant near the NC coast. This plant could potentially alleviate some of the rising waters, and also provide a new water supply for the eastern (and potentially peidmont) region of the state. I know this would be an enormous cost, but in the long run this would help to potentially solve two major problems that have potential to affect alot of NC residents.
- encourage alternatives to DOT funding especially of HWY on Outer Banks such as high speed ferry
- Encourage insurers to limit coverage, and thus costs, of dwelling ownership in risk areas. If folks want McMansions, fine, but let them underwrite the financial risks personally or under a Lloyd's type program of thier own.
- end insurance on houses and other structures
- erosion not sealevel rise is the problem
- Expand research into impact of global warming on terrestial and aquatic creatures and upon vegative life.
- Expand the Coastal Barrier Resource System areas Toughen up building permits in the Coastal zones Prohibit human wastewater disposal in the coastal zone (e.g. septic tanks, drain fields, spray sites) no matter what level of treatment is achieved. Allow for the development of 'inland retreat areas' and promote mass transportation of 'day trippers' so that coastal areas are improved and maintained for all to use...not just a wealthy few.
- Get as much scientific input as possible.
- Get started NOW ! We're running out of time.
- Given the uncertainty of the speed of sea level rise (recent data indicates the ice sheets are ahead of most models) limited resources should be spent on determining the rate and amount of sea level rise. We know it will happen, and need to move out of highest risk areas and take steps to increase resilience of other areas.
- Groundwater resources are at risk and require state level evaluation, allocation and alternatives planning. Infrastructure, including roads, bridges, sewer lines, etc. need to be planned with future sea level in mind.
- Hardened shorelines should only be used as a last resort where dense urban development has already ruined the possibility of natural buffering and adaptation abilities. It is the least environmentally responsible choice.
- Help local and state provide a realistic incentivezed retreat plan

- Honestly, I think people shouldn't be allowed do live directly on waterfront property regardless of sea level rise threat or not. These areas should be left (or in the case of sea level rise, increased) to buffer rise and storms and provide an area for common use for coastal activities (fishing, boating, swimming, nursery areas, etc)
- How can the CRC "decide" how much sea level rise is expected? So much is being done in an urgent manner regarding climate change and sea level rise, based on computer modeling. In some cases, assumptions used in the models have already been proven false. The CRC should provide educational information and work to achieve a reliable basis in scienticic fact before issuing more regulations.
- I am familiar with Holden Beach. We need a Terminal Groin at the Lockwoods Folly Inlet. We are spending a lot of money on renourishment projects only to see the sand wash into the inlet. Please help.
- I appreciate the recent work of CRC and setbacks on the oceanfront. This should address the type of sea rise anticipated in the next 50 years, the average life span for structures on the beach. Therefore, I don't think we need to further increase setbacks.
- I believe most coastal residents are aware of sea level rise and the potential for the rate of increase to rise. However, the residents likely to be affected have been willing to accept those risks for the benefits associated with living near the coast. Education and awareness are the key elements to prepare for sea level rise, not new regulatory schemes. Environmental alarmists and the regulatory programs that have responded to these alarms have driven up the cost of coastal property beyond the reach of most state residents. Continued restrictions on coastal development will accelerate this outcome. Sea level has risen much beyond current levels in geologic time and have been much lower in geologic time. We can not expect to stop the rise. We just need to let people know the risks and they can decide whether to take them.
- I believe that if retreat is the desired course of action, the state must make plans to compensate owners fairly for taking development rights. This seems to be the only way to preserve beaches, and treat property owners fairly. It is CRITICAL for the state to create a dedicated funding source for aqcuiring development rights in potential impact areas. This would satisfy current property owners, and provide a valuable resource for the state, and will promote tourism in the long-term. The key is to develop the political will to develop a comprehensive plan to manage the coast.
- I do not believe the powerful real estate interests are going to let anyone curtail their projects and desires. I expect it is going to be business as usual until proberties are at risk and damaged. I for one do not want to have to pay for their losses due to the risky nature of the low lying areas. But I am sure that the insurance industry is going to make me pay regardless. Funny that we can not build in the flood plain here (considered risky) in the piedmont but you can put a house right up next to the Atlantic ocean...
- I do not think either agency has the authority to set development standards or types of structures for property (i.e., on land) at significant distances from established shore lines. It seems only the legislature would have such authority. It is not clear how far inland this survey is asking about, is it a few hundred feet or miles?
- I do not think the CRC should be the body that decides "how much sea level rise is expected in the future". I believe the General Assembly, or the Governor (or both), should establish a panel of experts to look at available science, models, information from the feds, and so on - specific to NC, if much is available - and have that panel of experts make recommendations to our elected leaders, so they can establish the ground rules, legislatively, for how we, as a state, are going to respond to sea level rise. As part of those ground rules, the General Assembly and Governor could provide direction to the CRC and other appropriate state & local agencies on the bounds, or boundaries, within which to frame the rules governing land use & development. I beleive the topic is still too controversial - and there's too much at stake - to leave the big decisions in the hands of a single board, agency or other single government entity. I do believe that the CRC needs to remain strong & united, and they should NOT give in to development or other economic pressures to begin to allow groins, jetties, sea walls, or other hard strcutures in the name of protecting those economic interests. We do not need to turn into New Jersey because of sea level rise.
- I don't think anyone should "decide" how much sea level will rise, I think the latest models and research should be used to predict sea level rise and then a consider to take an even more conservative estimate from there for coastal planning. I think natural measures should be taken to address coastal erosion increases, this does not include shoreline hardening, as those measures often are short sighted. Sandbags are a short fix as well and are only used to save buildings that shouldn't be allowed to be built. There should be a retreat from the shore and measure put in place to let structures go that will be damaged from sea level rise while discontinuing plans for more structures in affected areas. It is time to think far in advance, not 5-10 years from now.
- I don't think the sea level is rising....the ocean is scrubbing the shore...much different.

- I feel an risk assessment should be done first. Probabilities of sea level rise and contingency plan for each probability.
- I have some issues with the wording of item #1. I think we need to anticipate a 'range' of projected sea level rise and plan accordingly. Of actions to be taken, there are levels e.g. 'no regret' actions. There are many actions that would be good to do regardless of the "level of SLR decided on" -e.g. requiring land use plans to consider SEL.
- I need to see proof... how can we document or project sea level rise?
- I think everyone needs to understand the projected sea level rise. All affected need to be working from the same page. Developers must disclose information prior to building so it is important to get the information to them before they invest in potentially unworkable projects.
- I think it really has to be a local initiative for it to work and that requires someone/some people that will champion it to their neighbors and local governments.
- I think that the houses East of the beach road should be reviewed and should pay a higher burden of the taxes and or insurance costs and possibility of condemning the properties. It is best to return this land to dunes for the protection of the barrier islands.
- I think the CRC must look at a range of options, but I also would submit that while some are seemingly taking a "sky is falling" perspective only bolsters an agenda of "naturalization" or restricting land use by individuals. Far too often we have seen folks make claims on everything from carbon footprints to ensuring there is a protected habitat for the most obscure organism which makes many question if they can do anything without raising the ire of those who have little else to do in life except become environmental activists. We need to ensure there is a balance in anything that is done and not embracing everything that may or may not actually ever occur. In general I don't really believe we're going to see much in the form of sea level rise in the next 100 years...but even if we did, I think we have already plenty of regulations in place in the form of setbacks which would more than handle whatever could happen. So in short what should we do, other than nothing we should perhaps continue to study the issue. I do believe we should implement terminal groins and I lay blame at the feet of individuals such as Speaker Joe Hackney who has refused to let this issue come before the North Carolina House of Representatives by blocking the bill from coming out of the environmental committee. We see actions whereby some would seek to prevent island and inlet stabilization knowing full well that their actions will cause government at all levels to continue to renourish these areas...even though studies at Fort Macon and especially on Pea Island have shown these structures are sound and benign in impact.
- I think the CRC should keep in mind its charge to protect natural resources in any steps it takes to address sea level rise.
- I would allow no building nor rebuilding of permanent structures in areas that are most at risk. If a permanent structure in an area most at risk is more than 50% destroyed it should not be allowed to be rebuilt.
- I would also look into ways to help marshes move inland to absorb storm impacts. We should find collaborators in DOT who see that road and bridge maintenance will be futile and find alternatives (such as high-speed ferry systems). We cannot harden the coast and hope to keep it for long. That only builds the pressure that a storm will break through with and cause greater devastation.
- I would think that sand bags are a "bandaid" approach and that these are not long term solutions, but should be considered for use until a long term solution can be implemented. I am not sre thatgroins and seawalls have proved effective when used , although it may be that these work in some but not all situations. Again I am not a scientist or an expert.
- If a house gets washed away, owner incurs all risks and costs. Once a structure has been claimed by the sea, you cannot rebuild. We should strive to return our barrier islands to thier best use, barrier islands that protect the mainland from storm surge and waves. Our barrier islands should increasingly be more publicly owned, and we should strive for a mortorium on building new structures on barrier islands.
- If a person is dumb enough to build in a vulnerabe area, it's their problem not mine.
- If government doesn't act at ALL levels how can the multifaceted life/death issue of water level rising be addressed. "WE" are government, and government is all of us.
- If landowners are expecting to be bailed out with beach erosion mitigation, road and utility rebuilding, emergency management etc, then they should expect to be regulated as to what can be built and where.
- If our government would cut the flow of tax payers money to rebulid or repair these ocean front and sound front properties, no restriction would be needed. Heince, all the control the government wants would not be needed. Absolute power corrupts Absolutly.
- If residents or developers want to build in these areas there should be no structures or seawalls to stop deflect the rise and the government should not provide funds for building or maintenance in these areas.

- If the polar ice caps melt entirely, and it has been heading that way for some time, Asheville will be ocean front property. Scientist say this could bring a 500 foot rise in sea level! Greenland is melting fast, its contribution alone could rise sea levels by 20 feet. We needed to act years ago! Please act1
- If the precise sea level rise could be determined, which I doubt, much of the "what to do" would be easy, but I think that high/moderate/low risk zones can be determined and that restrictions on development coupled with prohibitions on rebuilding in high risk zones would be a start. I do not oppose PERMITTED use of groins and properly designed seawalls to slow the deterioration of shorelines. In Maryland, the state does this along the Chesapeake Bay areas most subject to erosion and taxes the landowners to recover 100% of their costs. This way the structures always meet state standards and are a coordinated series of structures unattainable by the haphazard activities of individual property owners. While I oppose UNLIMITED personal use of sandbags, i believe they have their place within the list of permitted stabllization structures. All said and done however, once the sea level rises enough, no amount of stablization will prevent the landscape from shifting. I believe this is where the managed retreat portion of the effort must take place.
- If they need to start preparing for this then they need to be preparing for the next ice age because it too is coming and may happen at the same time as the sea level increase but there is nothing that we can do to stop it. What about an astroid from space that may wipe out man kind prior to either event. I am not saying that they aren't happening but can see nothing that anything that we can plan for. Legislation can be passed that will limit or slow global warming but planning for its occurrence is in my opinion stupid.
- If you wait until it can be measured by direct observation, it will be too late.
- In summary, treat this as a change in the flood plain. Local zoning boards already know how to set appropriate building regulations for flood-prone areas. Use that as a guide in adopting what to do for areas potentially affected (i.e. potentially in a flood-prone area).
- is the sky falling too????
- It is hard to trust CRC as it is loaded with people who have a vested interest in protecting their property or business or providing services to "protect the beaches"
- It is late! North Carolina has not had the leadership needed to put the measures in place.
- It is unrealistic to think a decision can be made on how much sea level rise will be in the future...No one truly knows the answer to this. An estimate is the best we can do.
- It's past time to limit funding of infrastructure (sewer, water, bridges) to barrier islands since they spur more development. Also high density development should be capped at existing structures. Seawalls and groins should continue to be prohibited on the oceanfront and along inlets and hardened structures along the estuaries should be the last option available to landowners, not the first they turn to as it is now.
- Keep in mind the benefit of society at large and not just the short-term effects on individual landowners when planning for the future of North Carolina's coast line. NC citizens and the environment should not pay the high price for short-sighted planning that affects relatively few wealthy landowners.
- Keep information and communication lines open with critical info available for folks to make sound decisions.
- Keep it natural! We can only make things worse when we get involved. I would rather no shoreline than one that looks like New Jersey's. Our shoreline is a living thing and we can't expect to be able to lock it down. Let "natural selection" pick the real estate that stays and goes. If that mean the beach house I may inherit one day gets taken by the ocean the so be it. Its just a house. I'm an optimist though.
- let nature run its course and if a house is in the way, let it go...no rebuilding, and no barriers or extra measures to protect homes
- Let nature take it's course. If your million dollar house falls in the ocean, to bad! Don't expect me to help you replace it so it can fall in the ocean again.
- Let's be honest regarding the limits to long term climatic modeling as compared to short term event modeling. The fact of the matter is folks can and do build long term models to reflect their own agendas and be very sophisticated in so doing. The best approach will be to evolve toward better coastal use through both economic long term motivations and short term safety considerations.
- Limit insurance coverage for people whose structures are in those areas...also require real estate agents to divulge that information to prospective buyers.
- Make coastal property owners pay the real cost of their insurance
- Make estuarine development requirements consistent regardless of water classification!

- Manage or stop the march to the sea of building homes on beaches or low lying areas. In the past taxpayers have paid the burden of this completely wrong direction of allowing the buildup of homes on a area that has historically proven to be unreliable. Beaches and barrier island are just that sand and sand moves everytime we have storm or as in this study sea level increase.
- Managed retreat? What does this mean? Mandatory? Voluntary? Does this mean help for those who want to retreat or does it mean that the government can come in a tell a property owner he must retreat? I think this approach would infringe on personal rights. But help with voluntary retreat would be highly recommended!
- Need to cease overly regulating property owners with an ever growing list of restrictions. Also need to cease programs to bail out property owners who took risks fully knowing the consequences - examples - North Topsail, ocean front damage from hurricanes, New Orleans residents choosing to live below sea level, etc.
- Need to specify private vs. public development/structures. Private structures should not be protected by the Federal or State governments. Public ones, like the Bonner Bridge, Fort Macon, aquariums, etc., should have effort made to protect them,
- no more building at the beach
- None
- Oh pleeze.....
- Other (please specify)
- Predictions of rise should be used only if done by highly responsible scientists, with comparative studies; scientists who are not on the payroll of real estate developers. Additionally, real estate brokers and sales people should be required to inform buyers of ocean front property, etc. of the dangers of building on dunes,hurricane prone exposed beaches, etc. All of NC residents, and tourists .use the beaches, and costs--including insurance premiums--should be equally applied; though I do think oceanfront homes should pay a higher premium, since the qualify for Fed. dollars if loss or property due to hurricanes,etc..
- Predictions should be used sparingly in dealing with the issues as the predictions can be wrong. The best plan involves accepting the reality of the transcience of the coastline and begin a retreat from the previous practices of trying to fight the ocean.

- Provide for the independent study of the environmental impact of terminal groins on inlets and beachfronts.
- PUBLIC EDUCATION
- pUT A CAP ON THE AMOUNT OF INSURANCE AVAILABLE TO hIGH RISK DEVELOPMENT.
- putting a thumb in the dyke is not going to prevent things from happening. altering or prolonging the inevitable is doing us any good and only costing money.
- RE maps: DCM cannot generate a SLR map that does not include a high level of uncertainty. The biggest challenge we face in the SLR debate is the problem of taking action given this uncertainty. I recommend publishing maps of risk zones, so folks will know that any given line on the map only represents an increment of difference in risk predicted, not a line between wet and dry. Tought to explain and tough to sell, but this is the public education challenge of SLR -- not that it is rising. Most now believe that. But that the best science can't tell us exactly how fast or where.
- Recommend terminal grions at inlets or channels where appropriate but not seawalls or other upland structures.
- Regardless of causes, the coast is threatened by a rising sea level. The entire Grand Strand will disappear by the end of this century. Planning and actions to respond to the loss of this major resource must start now.
- remove insurance protection for landowners who insist on building in high risk areas
- Residential buffers are good to have regardless, to protect the banks and reduce erosion. Groins and seawalls increase the problems of sedimentation and pinnacle erosion.
- Reverbishment
- Run off from lawns, sewage seepage, and destruction of our wetlands by a select few are our States Real problem at the present moment. But hey, our State is operating in the past, with no real concern for our wetlands and environment. The marine Corp bases should also have their activities limited.
- Same answer as previous question. The question assumes that sea level rise is occurring, therefore the question is a leading question. If sea level rise is not occurring, then no action is required and any action that is taken is a waste of money and time.

- Science must trump development $$. State/county must not be built on property and transfer taxes. This is an opportunity to diversify and create jobs. Buy up the most at risk waterfront properties and plant heavily to help create some of the buffer we've lost.
- Sea grass should be planted and no one should be able to build.
- Sea level rise does not exist
- Seawalls And groins should be allowed in Inlet areas. Using Masonboro Inlet and Moorehead City as Models. Our coast is one of the biggest draws to NC and these Inlets should not be so dangerous to use. I am not saying every Inlet but there is not one between the two I mentioned. New River would be a very useful spot both for recreation and the Marine base. Get the sand bags off the beach! Condemn the Riggings they were given the chance to move now it's not an option. Help the Owners of Bay front and the like construct break waters and or bulk heads. This is too valuable a tax base to lose. I built a break water and it is savig about a foot a year. But there was no help with the $73,000 price
- See earlier comments about "one and done" deed tags for insurance funded rebuilds of storm damaged homes. The NCCRC should lobby for this legislation.
- Seek legislation to require disclosure of risk in real estate transactions on waterfront and low lying areas
- Seperate groin and sea wall on the ocean front! They are not the same thing. I would approve groins in certain instances but not seawalls!
- shift some costs from the public back to the private land owners and developers. Any efforts to restore or shore up the shoreline such as beach renourishment, seawalls, and so on should receive no public funding. Require that all purchasers of homes and or land in hazard areas be fully informed of the risks and estimated annualized costs arising from destruction of their property due to natural coastal related hazards. Along with this, any destruction in designated hazard areas shall not be paid for or compensated by the public. Rather, compensation should be offered to assist in relocation to a non hazard area.
- Should be a support role. Communities should address the issue and let these agencies know what they need or would find helpful.
- Since when has the government or scientist been accurate on estimates? The weather people are wrong 80% of the time as it is. So if they can't be accurate four days out how am I to believe they can come up with a workable estimate geared for 90 years down the road?
- So, you can predict with certainty the change in sea level of the lifespan of a building. Wow, tell me what the sea level is going to be next year.
- Some of the questions in the survey are misleading (the first two that I marked, ' do not recommend' because they imply that setbacks should be a response to rising sea level). Setbacks should be in response to shore erosion, not sea level rise. Rising sea level does not cause shore erosion. Storms and waves are the reason that you need setbacks. Please try not to perpetuate the misconception that shore erosion is being caused by rising se level.
- Some things that need to be done will not "fly" politically in the current climate. Nobody wants to be told where they can and can't build and how they can build. Then what do you do with all the current existing structures? I wish I knew the answer!
- Spending huge amounts of money and/or allowing loopholes for private landowners is not going to affect sea-level rise. It will waste resources on the special interests of the few instead of where those resources can be best put to use; education and implementation of best practices for the good of the many. That is the purposeof government and government agencies.
- Start managing our resourses to support future generations.
- Stop subsidizing insurance policies for beach development.
- Support alternative sources of energy such as wind and sun, to decrease the burning of fossil fuels which are warming the planet and causing polor melting and rising sea levels.
- Terminal groins at inlets should be allowed. No other groins or seawalls should be allowed. The biggest challenge is mainland low lying areas rather than barrier islands. Barrier islands can be maintained as they have been over the last 40+ years.
- Terminal groins should be an option for the CRC to consider. Shoreline hardening on the ocean should be generally prohibited but considered in certain circumstances as presently allowed by rule and law. By combining seawalls and terminal groins, the results of the survey will be less valuable.
- The answer is "YES!"

- The CRC with Sea Grant's help could produce color coded seal level rise maps expected within a 10, 25, and 50 year time frame that could be used by land owners and planners when prepapring new land use maps. I don't think you should regulate private property from these maps.
- The emphasis should be on prevention of sea-level rise and not on a reaction to it. A reduction in Greenhouse-gas emmissions and consequently a slowing or possibly reversing of global warming may just still be possible, but not for much longer.
- The hidden agenda behind the motive of sea level rise surfaces in these choices. Bigger goverment. The CRC and DCM should issue a statement that says something to the effect that folks who live in coastal areas of NC may or may not be at some risk of sea level rise. Also, if as the vein of this survey suggests, sea level rise is a certainty, how would sand bags or terminal groins stop the sea from rising?
- The minimal risk from sea level rise justifies none of these actions; however, some should be considered to address the risk of catastrophic flooding from storm events.
- The only reason I checked groins or sand bags is to protect and restore habitat damaged by storms so that there is more room for humans and wildlife to cooexist.
- The only thing they should do is alert home owners and developers to the possible (in 150 years or so) sea level rise. Tax dollars should not be spent on sea level change which creeps along at 3 mm per year. if a structure can survive a hurricane, sea level rise will not be an issue. If it can not survive a hurricane, then it will proably not be around long enough to be impacted by sea level rise.
- The primary job of government is to collect information, develope intelligent policy and provide guidance based on that information. The role the State of NC has taken on is to ensure that income based on tourism persists and that the risks for property loss in the highest risk area of the State is bourn by the general population. Stick to the role government should have - find the information, develope policy and guide the communities to make good choices for long term sustainability. You can't stop nature, so learn to roll with the punches, just keep the rest of the citizens of NC out of the budget for the coast.
- The public beach is one of nc's most valuable resources both for the ecological health of the area and the economy via tourism and fisheries. Protection of this resource is paramount. Private seawalls, groins, and other hard structures destroy this public commodity.
- The sea leve will continue to rise due to global warming. Therefore the shoreline will continue to move in-land. Daaaaaaaah!
- The second question requires that the scientists (not a speculative public opinion poll) determine with CERTAINTY that sea level rise is happening and at what rate. All these answers are meant to discourage further oceanfront developement, sea level rise or not.
- The state should provide information and technical assitance to local government but I think local government and its citizens need to take responsibility and those building in high risk zones must be informed and must take most responsibility.
- The statement above of "Decide how much sea level rise is expected" is missleading and a task of large difficulty. As the environmental conditions and factors change we will continually be on a learning curve. Modeling can be performed but these will have to be continually uopdated
- The supposed continuance of sea level rise should not be utilized as a tool for more government control over private property and/or more government confiscation of private property.
- The timing of when and how much sea level will rise is the issue that needs to be well communicated. If over the next 25-30 years, sea level rise is expected to be small, say in the order of a few inches, there, there is no need to be overly restrictive in regulating development that has a life span of 25-30 years. There is something to be said for allowing existing development to stay as is, and then when it is damaged or destroyed by storms, apply new regulations that account for future sea-level rise over the next 25 - 30 years.
- There are some very basic rights of property ownership that come into play here. There are also serious financial impacts on families that need to be mitigated. I believe the a "Buy Out" program similar to what is done in flood prone ares needs to be instituted with the land being turned over to the states. This would compensate property owners for their loss, as well as providing space for future beaches and pubic access areas as the sea level rises. For government or any other agency to take away property without just compensation is a henious crime.
- There is no man-made way to keep the ocean from reclaiming territory--it will just cost more money which will be paid by all taxpayers and benefit the very few.

- There needs to be a coordinate admission of the problem followed by a change in the economy.
- Think outside the box ... consider alternatives to deal with sea level rise or fall. Consider systems like desalinization to use water inland and across the US. If we can build pipelines from Alaska to US, surely we could use sea water to meet drought needs and irrigation in areas of our country. There are many other items to consider if we think outside the box. Aquafer recharging and so on.
- This area of science is so speculative that it would only be a hypothetical exercise for the State of NC to involve itself in. There are already far too many restrictions on development at the coast.
- This entire survey implies a pre-determined outcome with which I disagree.
- this has been done in our neighborhood by developers and homeowners and the walls out into the river cause more destruction of the rivers edge and the walls take out the land in front of the walls too deep to enjoy the water and our folks love the beach
- This survey appears to be the cart before the horse since you have already advanced the setback rules and are in the process of removing long standing sand bags. The questions involving those elements are already biased. The areas of little or no focus are the river delta's where we are encouraging rivers edge development without restriction. We have for 30 years focused on the ocean front with no real look at the impact of western river flooding, river side development (which allows hardened bulk heads) with both residential and commercial development being done on the edge and over. There appears to be little consistency in the thought process as agencies look at river and beach erosion etc. The results of Floyd on this state are a good example or the mud slides in the west as a result of inland tropical storms coming up from the gulf.
- Use the best available information and begin to educate the public and developers about the future possibilities.
- Use the science now know about the barrier Islands their movement and the natural processes involved in beach formation to make decisions on what to do.
- We cannot 'decide' the level of sea level rise, yet we can proactively respond in a precautionary manner. The concept of retreat or landward migration needs to be understood by the public, planners and policy-makers. Such landward migration WILL occur whether we are prepared or not prepared. Responding proactively to RSLR will allow us to maximize benefit of ecosystem services and minimize losses.
- We must not draw a line in the sand and protect oceanfront homes at all expense. We must respond to the environment as it changes and work with nature rather than against it. Homes should be heavily restricted in Inlet Hazard Areas and planning for future natural movement of inlets should be considered.
- We should reduce the impact caused by humans. But we should stop endorsing projects (i.e. recreational beach renoursihment projects,....) which counter Mother Natures large scale plans.
- Wealthy folks want oceanfront estates, it will be a long time before sea-level rise dissuades them of this desire. As long as they foot the bill for their desire, no problem; but the average taxpayer should not subsidize anyone's beach house.
- What about addressing climate change? Even if we consider sea level rise due to climate change to be inevitable, we should not stop our efforts to change behavior to limit and stop climate change. I agree we need to take tangible steps to deal with the problem of sea level rise, but doing nothing about the root cause of the problem is like covering a giant open wound with a bandaid.
- What are "at risk areas"? Why are some areas more at risk than others? Won't sea level rise effect every shoreline? If not, then the problem it is that development has been allowed, encouraged and even subsidised in areas where no development should take place (ie: barrier islands & close-to-the-water beach houses). If property insurance rates for these developments were set according to the true risk, the rest of NC's Citizens would not have to subsidise coastal insurance rates and coastal infrastructure costs, and these developments would not be at risk due to sea level rise, hurricanes or any other natural disaster.
- What does a groin have to do with sea level rise? Sounds like more buracacy to me. I am not opposed to groins, I'm just not sure what they have to do with sea level rise... Once again, if a person builds on the shore they are responsible for property damage themselves. If they want to use sand bags on their property they should be allowed for whaever the reason. People need to be held accountable for decisions they make.
- When there is solid evidence that there is, indeed, a sea level rise, then take steps.
- While action on setback requirements may ultimately be needed, we need to better understand the degree of se level rise to expect first. Comprehensive public outreach will be reqiuired before more drastic measures are contemplated. It would have been intersting to ask the seawall and groin question as two questions rather than a combined one.

- While maps are a necessary for understanding and planning for sea level rise, the general public could easily misunderstand their purpose and misinterpret them. I personally think large permanent structures should be banned from vulnerable areas, but also understand that some people don't like such restrictions and believe they should be allowed to move forward and do what they like with their property. If such a policy is pursued, then people who build in high-risk areas should not be entitled to receive disaster funds (or subsidized insurance) to compensate them for their risky endeavors.
- While the use of groins and seawalls to protect existing property might be relevant, it generally creates a false sense of security for property owners who might benefit from other more enivironmentally sensitive approaches to sea level rise.
- with insurance caps on coastal properties, building should be only constrained by private investment decisions. In other words, if it doesn't cost public funds, let it be destroyed.
- work with FEMA to reduce public's liability in coastal zones; ie. make property owners more responsible for losses.
- You are assuming that there is Sea Level Rise. I do not believe you have substantiated data to confirm even the remote possibilty.
- YOU HAVE ALREADY DECIDED THAT THERE IS A SEA LEVEL RISE. I HAVE NOT SEEN ANY RISE IN 60 YEARS IN CORE SOUND. PROVE THAT IT IS RISING BEFORE YOU WASTE A LOT OF MONEY DOING STUDIES.
- You left out the most important step, and that is broadscale education and research to adopt climate friendly lifestyles, in patnership with other actors.
- Your questions are based on bad science
- Your survey is mixing and confusing the issue of erosion and sea level rise. They are not the same and you shouldn't mix them in your survey. Erosion and shoreline modification by tides and currents built the outer banks. Careful what you judge to be "bad".

Q8. Please describe what else you think should be done in North Carolina to address sea level rise.

- "Near the ocean" development is at risk regardless of changes in sea level. Accordingly, ## 1-13 and the next to last specified choices above are concrete steps for consideration in light of "always known" risks associated with near-ocean development and accordingly should be considered. Action steps based on a presumption of sea level rise are premature until further is known. However, more is needed to be learned and urgently. Thus, the answers above reflect positive steps for risks already understood from being near the ocean and urgently requiring more study. I do not advocate concrete policy steps until the changes in sea level are better understood. But we should come to that understanding as quickly as possible without delay.
- "No opinion" = not sure of whether the action should be taken. Need more information before the appropriate actions can be recommended/endorsed.
- "Somewhat" resposnses partially driven by need for more information and timing; not that they are bad ideas.
- 1. An incentive to property owners to relocate threatened structures is ridiculous unless it has historical value. Otherwise cost is owners responsibility. Building a structure close to the water is kind of like building on a fault line..you run the risk of it eventually being swallowed up. 2. If the state is going to create a trust fund to relocate structures I think it should only cover those structures with true Historical value. 3. Increasing the height of a structure level is not going to decrease the risk of the location and increasing the setback is still only a temporary fix.
- 1. VERY STRONGLY SUPPORT: "Purchase and set aside more undeveloped land to allow wildlife habitat to migrate as sea level rises." 2. THE LAST THING WE NEED IS ANOTHER "COMMISSION"! JOINT PARTNERSHIP BY EXISTING AGENCIES SHOULD BE ABLE TO SHARE FINDINGS AND PRODUCE USEFUL DATA AND SUBSEQUENT RECOMMENDATIONS.
- A ban on insuring new buildings in the areas of high risk would be good. Banning the use of insurance money to rebuild buildings in high risk areas would also be good. I am not opposed to insurance payouts to existing building, but rebuilding a building that will be at higher risk in the future is throwing good money after bad.
- A dead-line for the commission's recommendations must be set. TIME IS OF THE ESSENCE.
- A new study commission will only produce results that perpetuates the commission. N.C. has sufficient commissions and resources to handle this question.
- A sea level rise commission should be scientists, economists and socio economists. Developers and cohorts have a whole different agenda. We need a paradigm shift---more and bigger is not better nor is it sustainable.
- A trust fund for threatened structures should only be available for those in financial distress / the financially distressed owners of homes that that were not purchased within the last 5 years. It is not economically responsible for the state

government to bail out tax shelters anf second/vacation homes. Any kind of state trust fund intended to maintain coastal life at the ststus quo (beach renourishmnet, waterway projects) is a waste of time and money. These projects simply cannot "turn the tide" and to try will certain bankrupt the state.

- Again we are talking about and ever changing enviornment, if people want to buy land and develope in a high rick situation, to regulate take would be wrong, and depriving use of personal property. The way to regulate this is to cut any government funding , rebuilding, beach pushes, anything except access to the beach, therefore ultamatelly this will put a stop to all of these problems.
- Again, I am no fan of paying money to fools who build on sandbars. As it was, several of the barrier islands would go underwater during strong N'oreasters before the CCC built the dunes. Now we have hotels, condos and houses on those dunes. Before I built my current house, we studied the flood maps, had a surveyor come out and determine the altitude and then chose the building site. 25 ft above sea level is low, but I am surrounded by much lower farm land and this "island" did not go under with Floyd. So I feel pretty safe, at least for my lifetime. When Hazel hit Longbeach Island, now Topsail, there were about 375 structures before and 25 afterwards. Most of the buildings were cheap and basically designed to be given up to a storm. There are now 10 times the number of structures on that island and a direct hit by a similar powerful storm would probably leave only 25 structures behind. The people who built on that island are asking me to pay to insure them. I am sympathetic to those who live year round and plans should be made as the inevitable erosion occurs to move these communities, and yes there will be taxpayer expense that I accept.
- again, the emphasis shouold be on prevention, and not on reaction to sea-level rise. This is largely a man-made problem, that can be reversed with man-made solutions.
- Again, the issue is the timing of the expected sea level rise. If sea level rise is not expected to be significant until 50 years from now, we do not need to enact overly restrictive measures at this time and spend millions of dollars on enacting measures to protect against it at this time. We can wait until we have a better idea of what is going to occur
- Again, the minimal risk from sea level rise justifies none of these actions; however, some should be considered to address the risk of catastrophic flooding from storm events.
- Again, there needs to be a distinction/choice here about private structures vs. public. I'm all for protecting public structures, but private ones -- the owner should bear the burden, cost, etc. I'm not sold on monitoring sea level rise. We know it is happening. We need to spend money on 1) dealing with canals, etc., that are allowing salt/brackish water to move well inland; such as blocking such canals, or making it more difficult for such waters to reach fresh waters; this is happening at Alligator River NWR. I worry that millions of dollars will be spent on monitoring, planning, modeling, etc., and not much on-the-ground action -- water control structures, buying land, moving roads inland or higher, etc. Yes, we need to provide jobs, and monitoring, planning, and modeling is putting people to work. But, let's make sure we see some tangible, on-the-ground progress, and not just maps of what the shoreline is expected to look like in 2085.
- Again, you are mixing erosion and shoreline issues with sea level rise. If the sea level rises, then a link might be relevant. But if levels don't rise then erosion and shoreline issues are a stand alone issue. This survey is bias in that it links the two issues.
- All lands near the coast, barrier islands and lowlands north of Cape Lookout) are geophysically dynamic and will be greatly affected by sea level rises. The entire notion of defending established, set boundaries on these lands is irrational as the islands migrate and lowlands are inundated. Attempts through hardened structures or renourishment to hold back the sea are not only futile and wasteful but have dire consequences on our fisheries and local ecological systems. On a more personal level, although the beach is a public trust access is increasingly difficult and limited from a practical perspective to many people. The cost of buying or renting at the beach is more out of reach. I feel that public resources spent to protect these "economic engines" is a subsidy to higher income people, be they people investing in property or families who can afford exorbitant rents. Anyone who has chosen to invest in an inherently risky area such as coastal NC should assume full responsibility and liability for their choice and should not expect constant bailouts. As has been said, there will always be beaches. The question is where they will be. Traditional notions of private property do not jive with our barrier islands.
- allow power lines and large scale wind development to proceed for clean energy production
- Another commission is all we need...developers and local tourism "stakeholders" would, of course be represented which would make the commission less than useless, impeding real efforts to address the problem.
- Another government "commission" seems like a waste of money if it is comprised of the ususal commission people that get on the boards or commissions, not because of what they know, but who they know. If that is the kind of Seal Level Rise Study Commission that is being considered then it is worthless.

- any checked items are related to erosion and storm damage and do not pre-suppose sea rise.
- Any state money put towards keeping the sea back is money washed out to sea. Beach renourishment is futile - it is sand washed away within a year or two.
- Beach nourishment in NC needs to be enforced to ensure that particulate matter larger than the allowable does not make its way to the shore. In addition, the dredging needs to be about 1000 meters from its previous dredge sites along the shore to ensure less organic matter is placed from the dredge site to the shore. This is a huge problem that has created rough and smelly beaches. This is not a sea level issue at all.
- Beach nourishment should be allowable in high intensity-use beach areas for tourism and recreation. The question is 'who should pay?' As indicated in a comment above, this is not a response to sea level, but rather nourishment is needed because storms and waves cause shore erosion.
- Because I don't know what current funding levels are for sea level rise research and monitoring, I don't have an opinion on whether that funding is adequate or needs to be increased. A study commission is a worthy idea and the recommendations one could produce would be of great benefit to the state, but recent study commissions have been burdened by oppositional politics and consequently produced little that could be acted on (e.g., transportation study commission, climate change study commission). If a study commission is created, great care must be taken in the development of guidelines and "rules of engagement" to ensure that the commission will engage in honest, thoughtful and open research and debate. The commission should be composed of those knowledgeable in the science of ecology, hydrology and climate change, laws and policies governing the development of coastal resources, and public finance, rather than the typical political stakeholders; i.e., it should be clear that the commission's purpose is to protect the public welfare rather than the financial interests of a few interest groups.
- Before plans are implemented, the studies and predictions must be shared so everyone understands the likelihood of the problems. Once the severity of the problem including timelines and effect is established, response to the problem can be planned. People who live on the water should not be penalized with higher insurance rates. Those who live there purchased their properties without disclosure of these potential problems.
- Cap insurance payout to 300,000 on damages for any structure
- Coastal insurance rates are already disproportionate to the risk.
- CRC, with help from CRAC and Science Panel, is the sea level rise study commission. Flood mapping is a federal issue and should remain so, building height is a local issue in conjunction with federal flood maps. Funding sources and incentives for sea level rise response are the most important state actions.
- Create a fund to buy out owners(fair market value) who want to sell for park like areas. Or still allow them to camp and picnic there after the purchase but it ends with them.
- Create a state trust fund to pay for all beach and waterway projects, and sea level rise response measures = too vague, therefore i have 'no opinion' In general, I think that it may be a waste of money to fight sea level rise (seawalls, nourishment) and instead to move with it - but that is more of a coordination, communications & messaging challenge - that could be accomplished, given that the right players are in.
- Create a study commission made up of coastal citizens and local government officials with heavy concentration of citizens and not politicians. Establish funding to enable that group to hire professional scientific assistance but only as advisory. The commission should make recommendations to the state/federal government.
- Determine wether some areas of land would need to be preserved but not in the way od beach preservation. We are talking about getting advice from Holland on diking.
- Do not recommend sea walls but do recommend terminal groins at inlets or channels, where appropriate
- Do not spend money trying to accomodate codes and building elevations that only deal half-heartedly with the changing sea level. Begin real and effective retreat from the shoreline and immediate coastal areas.
- Do some studying of the potential sea rise, but no more until if and when it is clearly demonstrated that there is actual sea rise. This survey seems to assume that sea rise is an ongoing, proven development.
- Does structure include maintained channels? Another tricky question. How or who will decide how much the sea will rise? Depends on who fills the commission seats, could be back into the doom and gloom mode vs reproducible science.
- Don't bleed the taxpayer
- Don't we have enough committees and commissions? Cannot the existing government form decisions with scientific input? I live in a community that in the last five years spent over $4,000,000 building an elementary school within 300 yards of the oceanfront. I am livid. We won't even have the bonds paid for when the ocean takes it. I have an

acquaintance who believes we should be pumping money into "beach nourishment" (a euphamism for "bad sand that will wash away with the first N'or Easter") because we must preserve the tourist economy in this county. Did I mention he is a real estate broker who has become filthy RICH from these tourists? His monetary interests should NOT be protected. Our environment SHOULD.

- Economic forces will work on individuals when governments stay out of the system other than to provide scientifically sound data collection, results presentations, and broad based education of what the science indicates. Full transparency in real estate actions need to be enforced so that caveat emptor is done with a full deck.
- Ensure that the public has access to objective maps and estimates--coordinate with realestate developers to build in retreat options for coastal property developers and purchasers.
- Fact - the shoreline is a high risk area for development. If the history of development at the shore stays on track, then developers will be building in the highest risk locations and asking for permission to use even more higher risk locations while still asking the general assembly to support protection for losses when the sea reclaims the land. Shipping lanes and docks should be protected. The economics affect the entire region. No plans to support or incentivize moving current or future at risk buildings should be made using the general fund. No more funding in support of development. Sea level rise is a local problem. The coastal folks don't pay more insurance or fees to protect the rest of NC from tornadoes, floods or hurricanes. Why should the rest of NC shoulder protection from loss at the coast? NC should gather information and use that to plan for future development. The people in the rest of NC don't have state agencies, special funds, set asides, study commissions on building a better house to weather tornadoes or floods. There is no fund to retrofit or move houses from the tornado zones. It's a fact of life that nature presents risks. When land use is exploited for profit, the consequences of nature are often overlooked. Man already changed the coast by developing the high risk lands with expectations it would last forever. Global warming seems to be setting that myth straight.
- Focus on GHG emission reductions and mitigation
- Folks who live on or near the coast, or have businesses there, should assume all risk and responsibility for living there.
- FUNDING SHOULD GO TO LOCALITIES TO DEVELOP MANAGEMET PLANS FOR SEA LEVEL RISE.
- Funding should only be given to relocate historical or significant structures not individual homes.
- Given the lack of agreement in within the Scientific Community, and my own research and understanding, I am convinced that what we see happening is a natural, reocurring phenomenon. I remain somewhat skeptical of the "Global Warming" theory and also read the reports of some scientists who opine that the earth temperature has actually been dropping over the past 11 or so years. I am also quite skeptical with regard to how much the human effect has really had or can have on the grand scheme of things re global warming--if it is really occurring across the entire planet. For example, I am given to understand that while the ice is melting in the Artic, it is expanding in the Ant-Arctic.
- Hard structures on the ocean (sea walls) are a waste of money especially in a rising sea level. Those that propose them just don't know the facts. Jetties (aka terminal groins) are likewise a waste of money as they interfere with sediment movement thus promoting beach erosion.
- Highly biased questions composed to receive positive input for a non existing problem.
- Hint we are in a recession. Descretionary spending should be kept to a minimum.
- How about making development in high risk areas ineligible for federal flood insurance. Raising insurance rates on properties that are owned by corporations and wealthy people will not be a disincentive to build there. However, when they have to rebuild without the benefit of insurance maybe they will think twice.
- I do not believe that public monies should be used to subsidize coastal landowners for making risky (or stupid) decisions regarding where to build or buy a vacation, or other other type, dwelling. I could support the use of public monies to protect a public resource, whether it's infrastructure, a public aquarium, school, and so on. I recognize, however, that we will reach a point when even those public facilities will no longer be viable, no matter how much money, science, or "engineering" we throw at them. So, it's important that we start to educate ourselves, and engage something like a "sea level rise study commission" to assist us in planning for the inevitable outcome of having to move, or lose, public infrastructure and other facilities. I am in favor of using public funds for related research, mapping, local and state government planning, and so on. But, I am very much opposed to the use of public monies to "bail out" wealthy individuals or corporations who take risks and make foolish investments. I am adamantly opposed, also, to the idea of non-coastal property owners subsidizing the insurance rates, or economic losses, of coastal property owners. A couple of years ago, I incurred a lot of property damage due to a locally severe (and circulating) storm. No one has assisted me

with recovering my increased insurance costs, or the cost of replacing or repairing what wasn't covered by my insurance. I don't see any need to do that for coastal property owners, either.

- I do not favor an increase in insurance rates as such an increase might adversely affect property owners on fixed incomes and such increases might adversely affect the economy of coastal communities; rather, efforts to mitigate new construction might be more effective. While I am not in favor of raising building height in vulnerable areas--that would only encourage more development--I am in favor of revisiting the building codes for coastal construction to prohibit new construction in vulnerable areas.
- I do not think there should be a multitude of agencies involved(other than to make reccommendations), in many of the above questions. That is why I said the Federal Govt. at the beginning of the survey.
- I marked do not recommend for a sea level study commission, which is propbably the wrong response. We have enough gov. agenciews and do not need to hire new personnel. A committee is fine if it is made up from personnel we have. Our problem with that will be it will be politically picked and run by our politicians, which is already causing enough problems. We have two groups now, Wildlife resources commission and department of marine fisheries, which need to combine and have one group overseeing our STATE resources.
- I noticed the questions suggest a determination can be made how much the sea level is estimated to rise, which makes no sense. The sea level will rise however much it rises. I suggest rather, determine the probabliities the sea level will rise a certain amount, and base planning on probabilities, not a finite estimate, which would serve to prevent planning for low probability rises in sea level, but since you can't say for certain, pegging your planning to a determined estimated levels would be only about 1/5 of the planning needed. Plan for the estimated rise, and for 2 levels on either side. I also feel the risks of sea level rise may be overstated, and changing set backs and building codes would be ill considered without a high probability of a significant rise. But only once a lot of information is compiled, considering the probabilities, should any action be taken, and then only with broad public support. The sea will take care of itself. If your property is in the way, it isn't the responsibility of government to protect your investment. Local governments are the one's needing support.
- I oppose "creating a state trust fund to pay for all beach and waterway projects, and sea level rise response measures" unless this is funded by those most at risk from sea-level rise. It is important not to spread risk among those who do not voluntarily assume it.
- I recognize that some places will be armored against the rising sea, e.g., port cities. Exceptions may be made for poldering them. But in general, in the majority of places we simply cannot effectively polder, whether because of geography, geology, or money, we need to avoid screwing things up before we go.
- I sense a commitment to modeling the amount of expected sea level rise rather than using existing data. I agree that existing data is not perfect, but the delay resulting from the development of additional modeling may not be justified. If it can be done quickly and will provide significantly better data given the uncertainty of climate change and ice/ocean response to that change, then it may be useful. But this shouldn't delay taking concrete steps now to address the need to move forward with adaptation strategies and policy development.
- I support hard structures to stabilize current inlets.
- I think a greater issue is erosion we currently have and the need to implement terminal groins and to install a jetty in some areas. We must get past the perspective that everything is natural. In many respects since the installation of the intercoastal waterway, canals, etc. the way water moves has changed. I have also noticed that due to "environmental concerns" the Corps of Engineers has tried to change the natural flow of areas such as the entrance to the Lockwood Folly inlet to make the entrance go straight out to the ocean vs. the more natural flow turning toward Long Beach. We see this continually dredged by the Corps since the 30's and when I ask why they do this only to discover the water will eventually reclaim it's prior track I'm told "it's environmentally sensitive". Sensitive or not this is the natural flow and this isn't addressed. Many I have spoken with have lost confidence in state and federal agencies, and the seemingly endless studies and research.
- I think that actions should make sure that impacted communities are at the table and heard. I also think that there should be an attempt to make sure that solutions are equitable (i.e. retreat from the coast).
- I think that if landowners /homeowners etc are given a buyout option and choose to remain in a hazardous area they should be charged a rate to reflect their risk. Also I think if they choose to not pay insurance rate to reflect risk then the public should bear no responsibility to help rebuild. The insurance risks should not be relegated to only hurricanes, flooding , or sea rise. There are many inland areas affected by all of these natural occurances as well as other issues such as tornadoes, freezing weather and such.

- I think their is more danger of panic and bad science than there is of sea level rise. It seems it is just something else that can be studied to death.
- I think we should determine if the sea level is rising before we react to the sea level rising.
- I understand that sea level rise is the biggest hammer here but I really wish we could focus on climate change/global warming or the more accurate "climate disruption" since the climate has always been changing and warming is not the only impact of this climate disruption. So for example, while I checked 'highly recommended' for the study commission, I think the focus of that commisison should be climate change adaptation -which would include SLR -AND drought, water resource management, public health impacts, etc.
- I would recommend that NCDOT have a representative on this sea level rise commission
- I would suggest creating the commission and charge them with many of the items lsited above to consider and make recommendations on.
- I would welcome an opportunity to serve on that commision.
- I'd like to hear from the state on changes made since 1999, what improvements have been made to Agency preparation and response for large rain events? Did we learn any lessons?
- If they need to start preparing for this then they need to be preparing for the next ice age because it too is coming and may happen at the same time as the sea level increase but there is nothing that we can do to stop it. What about an astroid from space that may wipe out man kind prior to either event. I am not saying that they aren't happening but can see nothing that anything that we can plan for. Legislation can be passed that will limit or slow global warming but planning for its occurrence is in my opinion stupid.
- I'm not qualified to rank these, thus suggest experts do this. Sea level rise is inevitable for the next 30 years, the half-life of carbon. What we need to do is reduce our collective emissions, esp. in rich countries. Movements like Urban Environmental Accords, the Transition Town movement, ICLEI and the Green Jobs movement are all helpful. Action must be broad-based, not just big-government. Otherwise, citizens will feel alienated.
- In general I do not favor large government-funded research projects because they usually call for additional large expenditures of public money for solutions and ever more research. I would rather see simple programs to identify areas of most risk and then prevent building or rebuilding permanent structures. Folks who lose existing commercial or residential permanent structures in areas of most risk due to storm or sea level rise should forfeit their land and use their insurance money to build some where else. I'm tired of subsidizing other people's folly with higher property insurance rates, beach renourishment and excessive FEMA costs after storms.
- In these honest scientific data MUST be used
- Increase State emergency preparedness for impacts of Hurricanes and extreme weather events on sea level rise and saltwater intrusion. Get other state agencies such as Public Utilities, DOT,Agriculture, Cooperative Extension, Education, to include preparedness for sea level rise and resulting salt water intrusion in their plans.
- Insurance for structures at risk should limited to median house cost and should not protect major private investments in property improvements at public expense
- Isn't their a climate warming commission already in existence? See Floodplain Mapping work.
- It is difficult, maybe inappropriate, to have a position on this topic without reliable scientific data.
- It is not the singular fault of those who own waterfront property (and no, I am not among them) that sea level rise is occurring. It is the fault of everyone, so insurance rates should be spread out nation-wide. Relocation will only work if residents are willing... try to see it from their point of view. Many of them have lived where they do for generations, so think about what you are asking them to give up. More is involved than just a building... it is their history and everything they have ever known.
- It should be clear that if you live in a high risk area, it will be your loss and don't expect the state of the federal government to pay for your loss. Signs should be posted now that project where the water maybe in so many years.
- Let the buyer beware. You can't outlaw stupidity or greed.
- Let the market set insurance rates in at-risk areas
- Moving from the macro approach of your survey, consider the micro issues that property owners have. I own a cemetery business and a home, each is along a tidal estuary. The current laws suppose a fixed sea level. We need new laws that give landowners clear choices about how to protect property from high water intrusion. With perhaps hundreds of thousands of similar citizens along the coast, let's get ahead of the problem. Consider simplifying the permits for actions that will be needed before the sea level rises by a foot: creating berms along estuaries, raising existing structures and their utilities, etc. Also, we need incentives from our insurance rates. For example, my wind and

hail insurance, while having risen drastically over the past two years, has no rate break for the installation of storm shutters. So, rather than spend the $20k for shutters to protect my house, I'll let the insurance trust pay the bill when the next big hurricane comes. I mention hurricanes, because I believe that we'll see the real damages from global warming and rising sea level when we get hit by big storms. Thank you for listening.

- My flood insurance is already very high. I don't want you to increase my payments by making the zone I am in more expensive due to "anticipated" sea level rise.
- My reason to oppose the commission is the strong likelihood that it would be captured by real estate interests. And that it would propose lunatic solutions such as transferring insurance liability across the state to subsidize idiots who build in flood-prone areas.
- My responses here may seem disjunctive. My choices for each point in this section are made with the qualification that I believe we should not engage in practices that could put people in harm's way. Sea walls and elevated structures provide a false sense of security as history tells. Engineering the dynamic coast is a costly and inefficient use of limited energy and resources. We must take a long view now in order to realize our goals for the future; and the long view horizon is slowly rising as seawater creeps ever higher.
- Need to cease wasting tax money on beach renourishment projects that only last until the next Nor'easter or hurricane. Also need to actually prove there will be any sea level rise before we go wasting tax money on all the plans that presume it will rise.

- No permanent walls....we don't want to be like New Jersey!
- None of these ideas are practical if there is no rise in sea level
- Once again, please use SCIENTIC methods, not opinion polls, to determine if there IS a problem. Last summer, when the water was so low that we saw sandbars for the very first time it would have been difficult for anyone to agree to any notion of sea level rising ! It stayed that way for many weeks.
- Other (please specify)
- Pemanent erosion control structures should only be used in situations where beach degradation can be directly attributed to anthropogenic activities and where these control structures would assist in restoring the former conditions of the beach. If beach erosion is occuring due to natural causes, then control structures should not be used to benefit/protect poorly planned and designed human structures. These human structures should be moved elsewhere.
- People who build structures in floodplains and along coastal beaches accept the risk when they do so. In NC, their risk is spread to other taxpayers through the state insurance fund which I think is reprehensible. On the other hand, many of these property owners may have built before the nature of global warming and sea level rise were clearly understood. Consequently, while I expect them to pay the insurance costs of the risks they willingly incurred, I also believe they should not be prohibited from trying to protect their properties while this is still possible by using stabilization structures. But I do believe this must be done as part of a coordinated program. Otherwise the wave and water energies are simply shifted to adjoining properties. As sea level rises, the shorelines and barrier islands will migrate inland. While stabilization structures will slow or prevent this migration during routine weather events, large storms and floods will overcome even the most ambitions of structures. When properties in these areas are 50% or more destroyed by these large weather events, they should not be allowed to rebuild. Insurance should pay for the removal of the remaining structure (to maintain surrounding property value) and the State should offer a tax incentive (at a statewide average per acre cost) for the donation of the property to conservation.
- Private property rights must respected.
- Purchase and set aside more undeveloped land to allow wildlife habitat to migrate as sea level rises - - You've done enough already to take away area to fish. PLEASE don't allow outside agencies (earth muffins) to take any more beach from the people who fish. Remember, this land was given to the state & fed's by the people who owned it when first settled....
- Raising insurance rates on properties that were constructed before recognition of this problem seems unfair. Our family is an example. We have owned our house since 1985, and though the house is paid for in full, recent tax increases and insurance increases may necessitate selling the house (if we even could in the current market). We have kept up our property, paid a share for sewer and other improvements mandated in the community, etc. Raising insurance rates on exisiting structures that were built in good faith within the covenants and restrictions that applied at the time seems unnecessarily punitive to landowners. It seems particularly punitive to landowners who are first-generation owners.

The point of increasing taxes and insurance should be to discourage new building in sensitive areas. Older structures should be grandfathered in.

- Re: beach renourishment - if done in way that not diminish sands in region, can be helpful...such as taking sand from river areas that need depth. Needs to demonstrate not dangerous to creature life of beach itself. Needs balanced approach with scientist involvement.
- Realize that sea level rise is related to energy consumption and life style- work on altering life style to reduce energy consumption and move to sustainable sources.
- Require insurance companies to assist home owners in demolition or relocation of condemned structures prior to falling into the ocean, bays, and rivers. I have seen many homes lost to the ocean and nothing was done to remove the home let alone the debris and septic fields left behind.
- Same answer and previous question. The question assumes that sea level rise is occurring, therefore the question is a leading question. If sea level rise is not occurring, then no action is required and any action that is taken is a waste of money and time.
- Science is needed to guide decision-making in relation to sea-level rise. I am not convinced that funding of this science or the research for this science should be done at the state level; university researchers and large federal research funders (NSF, NAS, NOAA) seem more appropriate for that. I also do think the state needs to be the funding source for re-nuorishment projects. With such a short lifetime, the bang for the buck on nourishment is terrible; this is not an appropriate use of state money, especially when the majority of the citizens of the state do not have access to use these areas.
- Sea level IS rising and it will continue to rise. The scientific evidence for global warming is overwhelming. (Politicians and developers who insist otherwise are deluded, clueless, or corrupt.) Unfortunately, the effects of global warming are most severe at high latitudes, and as a result, polar ice is melting faster than it can be reformed. As long as this trend continues, the total amount of water in the oceans will continue to increase, and sea level will continue to rise. The biggest short-term threat from rising sea level is that it increases vulnerability of all coastal land to flooding during "extreme events" such as nor'easters and - especially - hurricanes. Barrier islands are particularly vulnerable because they are in the path of storm surge, but lowland sites on the NC coastal mainland and property on estuaries are also at risk for severe flooding. Sooner or later, another hurricane like Hazel will hit North Carolina, with catastrophic results. There is no building code that can protect a home on a barrier island from a Category V hurricane. However, strong codes and rational coastal development restrictions CAN minimize the damage from Category I, II, and III hurricanes, which are far more likely to occur in the near future.
- sea-level rise adaptation / wetlands restoration will produce new, green jobs. Programs need to be developed and encouraged to provide training for these jobs.
- See above comments re: climate change.
- Should compare the problem with other problems in the state and prioritize before committing spending.
- SLOOOOOWWWWWW DOWN.....use common sense first...
- So if undeveloped land is not set aside, wildlife will stand there ground and drown? The state should put forth unbiased or retract misleading surveys such as this.
- Some of these just sound like common sense (like further investigation of effects, updating maps, etc.) just as a basic management strategy under the government's responsibility to protect the public.
- Sounds like a lot of state funding will be needed, and the there is none. DO NOT push this down on the local governments. Help the property owners who are already here...on the islands.
- Spend money only on things that should be the role of government as provided for in the constitution.
- Spending more tax money on studies and commissions and trust funds is not the answer. That would only increase the "hype" and funnel public money to politically-connected developers, coastal property owners and so-called scientists who agree with the false agrument of sea level rise. We don't need more doom & gloom. Fix the coastal zoning ordinances, strengthen building codes for coastal properties and stop pushing the cost burden for insuring these unwise developments on the rest of NC's residents.
- Stop the hype.
- Support terminal groins for inlet beaches with beach nourishment. Do not support hard structures along oceanfront beaches.

- Terminal groins should be an option for the CRC to consider. Shoreline hardening on the ocean should be generally prohibited but considered in certain circumstances as presently allowed by rule and law. By combining seawalls and terminal groins, the results of the survey will be less valuable.
- Terminal groins would be useful; and in my humble opinion, and that of Harry Simmons, mayor of Caswell Beach and expert on these matters, are immediately necessary. For example, Lockwood Folly Inlet would be a likely place to study the effect of terminal groins. I am against the private use of sandbags, etc, since they so strongly affect the normal flow of water and sand; however the offshore penetrable groins presently being used in Florida seem to be a serious alternative.....
- The *actions* referenced in 1&5 should occur (relocation of threatened structures), but *not* thru any funding but the owners'.
- The focus of the state agencies should be on preventing increased density and development of NEW structures on the beaches with a grandfathering of those structures that are there. Remove the insurance subsidy to all residential property insurance, cap the payout for commercial loss and the building on any of the beaches will reduce geometrically as will the states revenue. There must be a balance between the restrictive measures you recommend through regulation and the ability of the state to recieve tourist revenue. The polar ice cap is melting much faster than anticipated and we have seen minimal coastal sea rise (including Alaska with the exception of the 3 villages built on the polar ice shelf itself). The greater threat is to our wildlife whose habitat is being destroyed by our urban sprawl across NC.
- The legislative, multi state agency, county and local gov'ts, industry, and citizens. Commissions can build concensus and develop direction
- The scariest part of Sea Level rise in NC is the possibility of salt water intrusion into aquifers such as the Castle Hayne. I would like to see this discussed by the ground water hydrologists in NC DENR
- The state also needs to consider 1) land use planning for the areas that might be expected to grow because human populations migrate inland, 2) impacts to wastewater infrastructure and on-site wastewater treatment facilities (and therefore potential impacts to water resources), and 3) current requirements and use of public monies for wetland and stream mitigation in high risk areas.
- The State and Federal Governments should not use current eminent domain arguements to control private property. The State and Federal Govenments are well into abuse of eminent domain. However, the purchase and preservation of wetland and lowland areas is a wise idea and the price should be based on market values as areas flood and private owners loose private property value due to bad locational and investment decisions. The public is sufficiently on notice already and stupidity should not be rewarded over the next 100 years. Separately, selective use of berms and breakwaters has merit as proven in Florida and in Virginia and Maryland. The Coastal Resources Commission and its implementing agencies have demonstrated the highest level of inconsistency one can imagine in decision making on breakwaters and groins. If a person really looks at what the State has approved and disapproved, one sees the ultimate in bias toward State Projects and the most restrictive biases toward private Projects. The State has published one set of policies and demonstrations 20 years ago and the opposite now. Really inconsistent. Use Virginia, the York River at Yorktown and many other examples as much more consistent models.
- The state can't afford to do any of this. There is already too much money spent on state projects of this nature. The citizens of North carolina are about to be burdened with a 7.75% sales tax, and income tax surcharges. It's time for this growth in state government to stop, and get back to the basics: education, roads, etc. As a property owner on a barrier island I know the risks, and have purchased insurance and done my part to address the risk. Individual responsibility, not state programs, should be the response to sea level rise. Leave us enough money after taxes to take care of ourselves.
- The supposed continuance of sea level rise should not be utilized as a tool for more government control over private property and/or more government confiscation of private property.
- There will always be ocean front, it can migrate into land and ocean front property. If a ocean front land owner is foolish enough to build on the ocean, then he/she should accept the risk that the propery and land may wash away one day. Do not expect the tax payers or insurance companies to pay for re-building his/her beach front property and land. Then not allow the tax payers to cross the re-established beach front property. As I said, there will always be beach front propery, it is just a matter of where. Sound front property may very well be beach front one day, due to migration inland of the outer banks.
- think the research is important, but should be a federal responsibility

- This is a very sensitive move to restructure the way we all live. This is a apple and oranges situation and it cannot be done exactly the same way everywhere. No knee jerk reactions on this issue. Clear direct thinking will solve this and keep in mind simple solutions. People have rights and we have to think about this and come up with justifiable solutions to this process.
- This question sheet reeks of "man made global warming" and how the government is to step in and resuce all of us from ourselves. Leave Mother Nature alone and don't try hidden taxes or other means to push a phoney agenda.
- Those who have already built on land that is susceptible to sea level rise (previous to the knowledge of sea level rise) should not be penalized through increased insurance and tax costs. My home was built in 1909 when sea level rise had not been considered. I do not want to be placed in a position where I have to sell my home because I can't afford insurance - especially when taxes have raised costs out of proportion. Taxes should be grandfathered in for folks in my position, and should not be increased unless the property is sold to someone who knows the risks.
- Unless the planet begins to cool off significantly, there will be a continual rise in sea level due to ice cap melting . So it is best to do something now. It will be a long time for any results.
- Use resources to understand Soil Subsidence in Coastal areas
- Vulnerable areas (to sea level rise) need to be accurately identified. Increasing insurance rates for all the coastal counties is ridiculous when major portions of these counties are not affected by sea level rise. Don't put everyone in the same basket. Recommendations should be site specific. A homeowner in orthern Perquimans County shouldn't pay the same insurance rate as someone on the outer banks.
- We have much to do simultaneously. It can be overwhelming. But we certainly cannot do it piecemeal and pretend to have a coherent plan at the end. Thus the number of "highly recommend" checks. We need to bring the best minds from science, policy, and community planning together, give them the resources and authority to move forward, and reaffirm NC's commitment to a largely natural coastline. Long-term vision and planning are usually not rewarded in political terms. So we much build a collective demand for political leaders to sustain our unique coastal assets in ways that don't undermine the natural systems that make them possible.
- When there is solid evidence that there is, indeed, a sea level rise, then take steps.
- Why is the option for allowing groins and seawalls on beaches an option twice, is that what this is about? I think those structures are similar to sandbags in that they are short sighted. True sea level rise will erode from the within the water table as well causing the land protected by these structures to destabilize and restricting the natural changes that come about with sea level rise. They will not stop it nor protect structures that shouldn't be protected in the first place.
- Yes it is time to spend wisely and not spend to aid developers and those that would purchase at risk dwellings or businesses.
- You guys just want more money for studies....get real jobs...it's like you're all 30 year college students afraid to go out and work in the real world. Still live with your moms, right?
- You seem to be arguing for a non-problem. Sea levels rise and fall as a fact of nature. We (YOU) do not mhave to stick your nose under this tent.

Q9. Are you and/or your organization doing anything on sea level rise that you would like the Coastal Resources Commission or Division of Coastal Management to be aware of? Do you have any upcoming reports or events that you would like us to be aware of?

- 2 foot freeboard added to our federal flood map elevations in conjunction with FEMA/NFIP Community Rating System. Renourishing our beach to provide ample new land height to meet sea level rise.
- A research group at NC State University has been taking a study on hazard/extreme climate/weather condition (hurricanes, seal level rise, etc.) and their influence on environment and society supported by federal agency. global sea level rise and its relationship with Co2 content, global SST anomaly and ocean heat content has been investigated using long-term and short-term data from various sources, those studies focus on answering the question: Global Warming issue â€“ True or False? A paper is under writing.
- All Fishery Management Plans for estuarine dependent species will have information regarding potential effects of SLR on that species and may include recommendations. CHPP update will summarize latest research information that could be used when working on management decisions needed.

- Are you and/or your organization doing anything on sea level rise that you would like the Coastal Resources Commission or Division of Coastal Management to be aware of? Do you have any upcoming reports or events that you would like us to be aware of?
- Are you kidding me!
- As a boat captain, I am on the water four days a week. I also live on the water, so I can see on a year to year compairson the changes that are apparently happening to our coastal areas.
- As a UNCW faculty member, I am most interested in potential research projects that would help inform the Division and general public concerning changes to our coastal area as a function of sea level rise.
- As you are aware, TNC has been involved with oyster reef restoration and a climate change adaptation on the Albemarle peninsula.
- At EDF, we are working to establish a SLR adaptation program that looks principally at private lands and public policy. We will advocate for a set of state policies, many of which you have suggested in the Q, that we believe are essential to adaptation. These will include both regulations to prevent maladaptation and encourage adaptation, and strategies for incentivizing the latter.
- Audubon has prepared several reports including a global climate change report in 2008 regarding impacts including sea level rise on birds.
- Audubon NC is working on this issue.
- Audubon North Carolina is currently engaged in Federal climate legislation approved in the House and pending in the Senate. We are also involved in the APC3 effort and currently building a research center on the northern Outer Banks that will help agencies study climate change impacts including sea level rise and disseminate information to the public about necessary, if not difficult steps we must take in order to assure the long term health and wellbeing of our citizens, visitors and natural resources that sustain us. We will release reports as our research is completed and advertise events that we host or help with.
- Build the Bonner Bridge as fast as possible.
- Cape Fear River Watch and Coastal Carolina United Nations Association will co-sponsor a Seminar on "Sea Level Rise and the Cape Fear River" Saturday November 7th at the CFRW Environmental Center. For Information Contact: Cape Fear River Watch http://cfrw.us/ or The Coastal Carolina United Nations Association TTewey@ec.rr.com
- Carolyn Currin's group is working on shoreline hardening (sea walls and the like) as well as sea level rise, she would be someone to talk to about local work.
- Center for Sustainable Tourism Climate, Weather and Tourism Workshop http://www.ecu.edu/cs-acad/sustainabletourism/Climate-Weather-and-Tourism-Initiative.cfm And Renewable Energy in Tourism Initiative: www.renewabletourism.com
- check with ocean front property owne rs.
- Come look at the benefit of my breakwater. Remove some of the red tape required to do something like that. One organization is all that is required. Currently you have State,county and some places town regulations. Look at Surf City they are packing in as many houses as they can. I believe 6000 square feet is all you need. To me that is just plain idiotic! When the next large Hurricane comes Surf City should be on the hook for a substantial amount for recovery. As should all the towns along the coast that allow as much as can be put there so they can keep the taxes flowing. Slow the big boats down in the waterway they cause huge amounts of damage to the coast line.If they want to roar along let them do so in the ocean.
- Conducting research on local government coastal resiliency to coastal hazards. We are conducting a national study focused on examining the content and quality of local hazard mitigation and land use plan
- Constantly maintain and monitor elevation benchmarks throughout state....work with NOS to include tidal benchmarks in national elevation datum.
- contact John McCord, Education Coordinator for UNC CSI, 252-475-3663 x.28
- CRC & DCM currently have a lot of inconsistencies internally. The best work is being done in participating in NCBIWA and similar organizations. The issues in this survey are not time pressing and well developed public communications and participation over the next 10 years are likely to offer the best and most thoughtful outcomes.
- CRC and DCM are aware of our research activities.
- DCM is already aware of research efforts we have underway.
- DCM is aware of my work.
- DCM is coordinating DENR's SLR Response

- DENR, US Forest Service, DOD, NC WRC, Env. Defense Fund, US Fish & Wildlife Service, Div. Environmental Management, NOAA, and ECU all have projects underway or starting. I assume you are aware of them.
- Developing coupled models of the impact of SLR on the geology, ecology and economics of the Outer Banks.
- Developing plans for incorporating climate change into our agency planning and programs activities.
- Duke has lots going on (Pilney's lab in particular), but I don't know the specifics of any sea level change research. It is a consideration when discussing salinity changes in the estuarine system among several of the labs here.
- Dune preservation
- ECU has researchers working on sea level rise issues.
- EDF is interested in sea level rise/climate change adaption. Last summer, we helped sponsor a series of listening sessions where community members told us changes they were seeing and the types of solutions that should be considered. EDF is also talking with Duke, EPA, DENR and others on this issue.
- EDF is working with several other agencies, and conservation and community groups to link adaptation to economic benefits to local comunities in the Ablemarle Region. The group is call the Albemarle Pamlico Community Conservation Cooperative (AP3C).
- education
- education
- Figure Eight Island Homeowners Association, an organization to which I belong but which I do not represent, is doing everything wrong.
- Fort Fisher Revetment Study
- Friends of Lake Waccamaw State park will begin a hydrology map of the watershed and surrounding areas for flooding, with the help of UNCW Earth Science Dept.
- General public education support for your efforts.
- Helping private landowners to keep farm land, forest land, and permeable surfaces in NC, fighting development and impermeable surfaces, so there is clean, static amounts of water cycling through versus polluted flash floods and droughts.
- I am a retiree and only a volunteer and member of PTRF
- I am an academic researcher specializing in hazards and disasters policy. Some of my research may be useful, and there's more detail on my work at www4.ncsu.edu/~tabirkla
- I am an active Professional Wetland Scientist with a degree in Natural Resources from NCSU (concentration in marine and coastal resources). Independently from my current position, I would gladly become part of any upcoming investigative study and/or research the state may have.
- I am in DCM
- I AM JUST READING WHAT THE EXPERTS SAY.
- I am not afilliated with an organization.
- I am not involved in any associated organizations. Just very very concerned! I have not seen much governmental action on the long term sustainability of life on this planet!
- I am only a member of PTRF. They will provide that information.
- I am only one citizen.
- I am personally very interested & concerned about rising sea levels. I would like to have more information on the subject & I would personally support public education efforts on the problem.
- I am speaking at local clubs and groups educating people about the "Global Warming" scam that has been perpetuated on us by blithering iditots like Al Gore
- I am the Director of Elizabeth City State University's Center for Green Research and Evaluation. We have received a $400,000 grant from the North Carolina Rural Center to promote and create a "Green Economy" in northeastern North Carolina. We are currently exploring strategies for job creation in connection with sea-level rise adaptation - we are a finalist for a Smart Growth Implementation grant from the EPA (8 finalists - 3 will be funded). If we are selected, EPA-hired experts will work with the communities of Elizabeth City, Winfall, and Plymouth to develop sea-level rise adaptation plans that incorporate Smart Growth principles and economic development. EPA will make its decision in early August. We will also be hosting a series of public meetings to discuss "Green Jobs" in the region, including those connected to seal-level rise adaptation, during the fall of 2009. The Majora Carter Group is partnering with ECSU on these meetings, and on our other "Green Economy-related" activities.

- I do not belong to a organization just a home owner that belevs the ocean is rising because of development to close to water will change the flow of the natural tide rise and fall.
- I do not belong to any organization.
- I do not deal with this topic directly, but think that others at the university do.
- I don't think so.
- I have just coauthored a BOOK on sea level rise entitled The Rising Sea. (Island Press) Out this week!!
- I have sent email stating my concerns to the "leaders" of our state.
- I have some test planings dated to 1992 of Atlantic White Cedar at my farm on the Albemarle Sound. This species is more tolerant of salt water than is Bald Cypress, Pond Cypress and the various gum species and therefore may help mitigate some aspects of sea level rise in the Albemarle Pamlico pennisular.
- I HAVE USED THE SAME BOAT DOCK FOR 60 YEARS. I SEE NO SEA LEVEL RISE.
- I no longer live in NC.
- I only do what I can as a citizen to slow climate change.
- I participated and supported the Climate Action Planning Advisory Group in the development of the "recommended Mitigation Options for Controlling Greenhouse Gas Emissions" Report
- I received this message through Crossroads of Carteret County. I am also part of LWV an organization paying careful attention to global warming and actively pursuing legislation to address this.
- I represent a weekly newspaper serving Wrightsville Beach and area stakeholders. I am committed to apprising our readership of coastal issues. We are here to serve your agency.
- I think CRC and DCM are aware of NOAA SLR work.
- i think someone else more knowledgeable from my organization filled this same survey out
- I trust you are in already touch with Heather Jacobs Deck, Pamlico-Tar Riverkeeper. She can answer those questions. If by any chance you aren't in touch with her, access her at: Pamlico-Tar River Foundation Phone: (252) 946-7211 Cell: (252) 402-5644 Fax: (252) 946-9492 www.ptrf.org
- I was a member of the UNC Chapel Hill Albemarle Ecological Field Site in Manteo North Carolina. We performed a capstone research project concerning Sea Level Rise in NC using a survey very similar to this one and created an in-depth report and presentation about our findings.
- I work with Carolyn Currin to study the ecological effects of sea level rise. I believe DCM is well aware of her work.
- I would very much like the state legislature to allow the bill to discuss terminal groins, approved by the senate, to come out and be discussed in the house. It seems undemocratic to not even allow a discussion of a topic and it seems imorral to have this discussion stopped by a donation to an influential leader's coffers.
- If they need to start preparing for this then they need to be preparing for the next ice age because it too is coming and may happen at the same time as the sea level increase but there is nothing that we can do to stop it. What about an astroid from space that may wipe out man kind prior to either event. I am not saying that they aren't happening but can see nothing that anything that we can plan for. Legislation can be passed that will limit or slow global warming but planning for its occurrence is in my opinion stupid.
- I'm just trying to let whoever will listen that global warming is real and sea levels are rising. Most people think I'm just an earthy crunchy tree hugger.
- I'm not the best staff person to ask that. But I've passed the survey on to other folks.
- I'm sure UNC-CH and UNC-W are actively engaged in this effort, but I am not familiar with what's going on.
- I'm sure you are already aware of what NC Sea Grant is doing.
- I'm unaware of any efforts
- I've stopped peeing in the ocean to avoid contributing to the problem.
- Let the houses wash in, prohibit any new marshland construction, and condemn and demolish any building that is in danger. Then make that a public access. The Turtle Nuts, and Bird Nuts have taken all of our other public access away.
- lobbying to Oppose S832, CRC May Permit Terminal Groin.
- lots -putting Tancred in Charge
- Many of our reports and/or Environmental Impact Assessments evaluate sea level rise in each beach nourishment and/or inlet relocation project. We have not conducted any field investigations that provides addiitonal data on sea level rise. However, many of our long-term monitoring reports provides data on species and ecosystems as they stabilize post-construction. These reports can become available upon request. Our modeling data does include include long-term

results on parts of the NC coast and does take into consideration sea level rise. Chris Day, professional engineer, in our CPE FL office could be available to discuss this data and methodology with you further.

- Modeling flood and inundation for FEMA
- monitoring reports
- Monitoring.
- Moved off Wrightsville Beach years ago to higher inland elevation.
- Much of the work of the Cape Fear Arch Conservation Collaborative relates to the possiblity of sea level rise. CFRC&D is working to preserve Eagles Island. In the event of sea level rise, Eagles Island will become a transitional area needed for by the flora and fauna that has lost a similar ecosystem elsewhere do to sea level rise.
- My agency is, but I'm not sure to what extent.
- My area of interest is the undeveloped barrier islands of the Cape Lookout National Seashore. These islands will survive...something you cannot say for the barrier islands that are developed.
- My company does not deal with sea level rise but we do deal with hurricane response. Residents on the coast would be less affected by hurricanes, and specifically storm surge, if they did not live in vulnerable coastal areas.
- my organization IS DCM
- N/A - we dropped our climate change program because of funding issues.
- National Weather service works 24/7 on this situation. www.nws.gov
- NC Cooperative Extension is working with other groups to educate about sea level rise and its potential impact.
- NC DENR - Ecosystem Enhancement Program is involved only very indirectly in the issue of sea level rise. We have a team of watershed planners and project managers who work on stream and wetlands restoration and preservation efforts in coastal river basins. Our local watershed planning (LWP) efforts in coastal watersheds are likely to include local stakeholders (resource professionals, landowners/farmers) with an interest in the possible longterm impacts of sea level rise; but it's not generally something we focus on through our LWP work.
- NC Sea Grant and SC Sea Grant are producing a frequently asked question (FAQ) sheet on sea level rise - contact Regional Climate Extension Specialist. NC Sea Grant Coastal Construction and Erosion Specialist Spencer Rogers is involved in several SLR research projects, including the NC Sea Level Rise Risk Management Study. Other states' Sea Grant programs have taken advisory roles and assisted with outreach for sea level rise policy development; NC Sea Grant may be able to do the same.
- NCDOT is evaluating climate change and how to factor into our studies and planning.
- NCNHP is mapping habitats at the landscape scale, identifying areas that will play a critical role in allowing species and ecosystems to adjust to sea-level rise as well as other impacts of global climate change. These maps and the accompanying analysis will be used in our assessment of both the likelihood of significant impacts to state's native biodiversity and our recommendations for conservation action to help minimize these impacts.
- No - ill do my work and you can do yours. I work with natural resource management as a profession and feel that the state needs to maintain its current level of services to this issue.
- no - not a member of any organization
- No - not at all related
- No and No
- NO but we should be
- No I do not....I just bring this issue into the classroom when discussing Glaciers and Ice Sheets, as well as, Global Warming.
- no- I work for DOJ/DCM.
- No just a personal interest in what should be done for future enviroment protection.
- No not at this time we are busy solving and working on todays problems.
- No specifically, but do have the division's natural resource management program engaged in the research and following the science
- No!
- NO!
- No!
- No, but I sure would be happy to allow sea level rise studies to take place on my property in Marshallberg, NC! Botanical changes, results of seawalls with berms, erosion, etc.

- No, but I would like to see more reports. The only issues we have discussed involve setbacks.
- No, but we will bring awareness to our staff regarding impacts we need to consider.
- No, but would be interested in how local soil and water conservation districts could play a role.
- No, I support the CRC leadership in this area
- No, my agency is not doing anything that I'm aware of.
- No, other than identify areas of most risk.
- No, though I do consider historic sea level rise and other climate change in my courses
- No, we're in the mountains so we are working on different issues. I would be interested to learn how sea level rise impacts other regions in the state.
- No, will not happen. If it does it should be handled by the people who own their property. Maybe Mary Easley could help resolve the problem she too is good at deception.
- No. I am just a concerned and fiscally conservative earth-lover who votes her conscience.
- No. I understand world-wide organizations in association with the U.N. are studying the problem on a comprehensive basis.
- No. We are members pf PTRF, have a vacation home at the beach, and are greatly concerned about the environmental consequences of gobal warming and rising sea levels.
- No. I read an N&O article, and was curious about the survey.
- No. Inland county that might stand to become ocean front property in 200 years:)
- No. State and Federal Governments with hundreds of studies will be more than enough overkill on this topic. OBX has been trying to nourish beaches for years
- No... not living near the coast, I'm not aware of any organizations I could join.
- No.....I am not totally convinced that this is a non-reversable trend that mother nature can't reverse on her own just like the "little ice age". I also believe that I will be long dead before any tangible effects are even noticed along the coast.
- No...just worrying
- no; Private citizen
- NOAA is working on a variety of guidance related to managing impacts from climate change. The agency also obviously does a lot of monitoring (tide gauges, etc.).
- No--I'm just a concerned coastal area resident.
- North Carolina Coastal Economy Vulnerable To Sea Level Rise (http://www.sciencedaily.com/releases/2007/06/070622184644.htm) ScienceDaily (June 23, 2007) â€" A new report finds that North Carolinaâ€™s coastline will continue to experience significant loss in land area, property and recreational value in the next 30 to 75 years due to projected changes in climate, leading North Carolina researchers announced .....
- not a member of any organization
- Not at this time in our state office, however National Audubon has taken an active role in global climate change which includes sea level rise.
- Not at this time, but the League has had an interest in land use planning since its inception (1920)
- Not at this time, but we (the organizations to which I belong) will contact you, if we plan a program or event around the topic of sea-level rise.
- Not outside of our CAMA plan.
- Not really; we maintain maps of shellfishing areas, including depths.
- Not specifically on sea level rise. though this is an important aspect of climate impact on NC, along with building a green economy and the ag impacts.
- Not specifically on the Croatan National Forest.
- Not specifically pertaining to sea level rise, but on other environment concerns such as global warming.
- Not to my knowledge other than monitoring the issue.
- not to my knowledge; tho Mr. Harry Simmons , as chairman of many organizations and known for his input at a Federal level as well as NC state level, would in my opinion be the most logical person to head any relevant committee, etc.
- Nothing specific I'm aware of other than increasing awareness of the issue.
- Nothing to my knowledge at the moment.
- Nothing upcoming. Still in process.

- nothing, as we are well inland
- Nothing. I just plan on continuing to enjoy our coastal resources. The ones God made.
- Our Firm represents various organizations that may be impacted by SLR.
- Our organization (the Albemarle-Pamlico National Estuary Program) is an EPA funded program housed in the N.C. Department of Environment and Natural Resources. In 2008, we held several public listening sessions in eastern N.C. to solicit public opinion on climate change and sea level rise. The report is available on our Web site, www.apnep.org. Currently, we are contracting with the Duke University Nicholas Institute for a "cliamte ready estuary" project. We plan to do more to address these issues in the future.
- Our organization was formed in order to protect the south end of Topsail Island from development. The discussion is moot at this time due to the recession, and sea level rise may make it permanently moot.
- Our staff participate in discussion in mulit-agency forums.
- Participating in discussions but that is all at this time.
- Please check with our Mayor, Harry Q. Simmons, Jr., for the latest efforts.
- Please contact current Chair of Cape Fear Climate Action Network (capefearCAN - at www.capefearcan.com - her name is Ms. Heidi Kaufman, and put these questions to the steering committee. Another way to contact them is to contact Professor of Marine Biology, Lawrence Cahoon, at UNCW in Wilmington, NC (cahoon@uncw.edu) , a member of steering committee.
- Please support a Terminal Groin for the Lockwoods Folly inlet to help Holden Beach.
- Probably EPA does, but I haven't kept track.
- promote large and small wind power systems in the coastal area. No oil or gas drilling.
- Providing information to my fellow citizens.
- PTRF monitors conditions in the Pamlico & Tar Rivers; I feel sure that they are monitoring water levels.
- Recommend that government follow satellite monitoring of global sea level, and not rely upon computer simulations and predictions to dictate policy.
- Recommending larger shoreline setbacks and higher freeboard for buildings.
- Renovation of structures to limit potential damage from flooding based on the owner's experience and research.
- research
- Research on conservation issues
- Riggs, S.R., Ames, D.V., Culver, S.J., Mallinson, D.J., Corbett, D.R., and Walsh, J.P. In Press. In the eye of a human hurricane: Oregon Inlet, Pea Island, and the Northern Outer Banks, North Carolina. In Identifying Americaâ€™s Most Vulnerable Oceanfront Communities: A Geological Perspectiveâ€, Eds. J.T. Kelley, R.S. Young, and O.H. Pilkey. Geological Society of America, Special Publication. Corbett, D.R., Walsh, J.P., Cowart, L., Riggs, S.R., Ames, D.V., and Culver, S.J. 2008. Shoreline Change within the Albemarle-Pamlico Estuarine System, North Carolina. White Paper published by East Carolina University, 10 p. Riggs, S.R., Culver, S.J., Ames, D.V., Mallinson, D.J., Corbett, D.R., and Walsh, J.P. 2008. North Carolinaâ€™s Coasts in Crisis: A Vision for the Future. White Paper published by East Carolina University, 26 p. Culver et al. 2008. Global Warming and Coastal North Carolina. White Paper presented to Sen. Marc Basnight by East Carolina University, 32 p. Kemp, A.C. B.P. Horton, S.J. Culver, D. R. Corbett, O. van de Plassche, W. R. Gehrels and B.C. Douglas. The timing and magnitude 1 of recent accelerated seaâ€level rise (North Carolina, USA). Geology. In Press.
- SACE operates the Southeast Coastal Climate Network, a regional collaborative group of NPOs and individuals tracking the impacts of global warming to our coastal areas and responding to appropriate policy opportunities to address the problems. We are a great resource to disseminate information to coastal allies and have produced sea level rise awareness videos using LIDAR data images and latest science.
- SC CZM - Shoreline Change Advisory Committee draft report due this fall. NOAA SARP grant looking at coastal climate adaptation issues in the southeast region (not yet begun) SC local government workshop series focusing on sea level rise planned for this fall (partnership between NERRS, Sea Grant, DHEC-OCRM and others)
- Sea level rise is an important issue, but North Carolina is likely to be affected more by anthropogenic impacts or the interplay between anthropogenic changes and sea-level rise than solely some estimate of where we think mean sea level will be in the future. I think it will be a mistake to only put sea-level rise in the cross hairs, without giving equal attention to watershed modifications, shoreline hardening, waterway management, and sediment source/transport modifications.

- See positions that PTRF and Sierra Club are developping. These organizations will contact you with there positions as they are being finalized.
- see www.nccoast.org
- Several investigators at the Institute of Marine Sciences have recently completed a NOAA funded study on sea level rise in coastal North Carolina. Many reports and papers describing the results of those studies will be produced in the next few years.
- Several research projects that are ongoing and/or planned to evaluate SLR impacts.
- SLR included in educational programming.
- State land acquistion agencies are concerned about investing money in areas that may be affected; however, there is no alternate source of state capital to buy lands that might otherwise be developed and cost the state millions in the future to protect against sea level rise. We need a fund open to land with both a short-term purpose of putlic beachfront or shorefront recreation, and a long-term purpose of minimizing the costs of sea level rise.
- STOP THIS INSANITY!
- terminal groin legislation
- That there has been no sea level rise at Wrightsville Beach in the past 75 years as measured on my dock in Banks Channel
- The Army Corps has been documenting the rise of the normal high water and Mean tidal ranges in the Cape Fear River due to the recent deeping of the shipping channel. The North East Cape Fear River has really taken a hit in this regard to total die back from salt water intrusion into shallow tidal fresh water estuaries in this region.
- The Audubon Society may be doing something on sea level rise, but I am a member, not a leader and not informed about Audubon activity on sea level in North Carolina
- The Center for the Study of Natural Hazards and Disasters, in cooperation with Massey University in New Zealand are initiating a global study of adaptation to sea level rise. In the US, we will be studying North Carolina's efforts (in addition to LA and Alaska). This will include an assessment of institutions (agencies, the private sector, non-profits, communities, etc.) and their plans, policies and programs. Attention will be placed on those activities that compliment or contradict creating more resilient coastal communities. We will be writing up detailed cases studies for each nation studied.
- The Coastal Habitat Protection Plans (CHPPs), Implementation Plans for CHPPs, and Strategic Habitat Area assessment
- The Conservation Fund continues to support the conservation of natural and working lands in eastern North Carolina. The Fund is proactively preparing for sea level rise identifying high priority conservation areas to prepare for an inland migration of coastal species.
- The CRC is well aware of the role our NCBIWAY Board and menbers are playing in supporting the scientific efforts and other actions that we believe make sense given the limits of what is really know and what might be done about it e.g. planning etc.
- The Environmental Law and Policy Clinic is engaged in several projects relating to climate change, ecosystem services, and adaptation policies.
- The National Park Service is moving forward slowly is determining what it can and should do. A number of coastal National Parks are utilized for research activities. Since much of the N.C. coastal beach and barrier island system is under the custody and control of the National Park Service and other U.S. Department of Interior Agencies, it would seem logical that any approach taken by the State should be done in concert with appropriate DOI organizations to minimize counterproductive efforts.
- The Nature Conservancy is working with partners on the Albemarle Peninsula to create a pilot project that will be replicated across the world the help plants and animals adapt to changes caused by sea level rise.
- The NC Chapter of The Nature Conservancy has a Climate Adaptation Project focused on adaptive management of federal, state, and private lands to build resiliency and mitigate the effects of SLR on the Albemarle-Pamlico Peninsula. Strategies include construction of oyster reefs, hydrologic restoration of drained wetlands, and plantings of salt- and flood-tolerant vegetation. This project is initially focusing on the Alligator River National Wildlife Refuge where experimental adaptive strategies will first be implemented. After monitoring and assessment of success/failure, strategies will be implemented along other areas of the Peninsula.
- The NC Estuarium in Washington has a new exhibit on the possibility of sea level rise. We have had several programs with speakers from ECU addressing this issue.
- The rise of the sea level is going to happened. How much is anybody's guess. Study of the situation and being abreast of it is probably the best we can do.

- the science education of school age children has been greatly hampered in the recent past. Funding, from any source, to alleviate this problem would be in everyones best interest and would certainly make the job of the Coastal Resources Commission or Division of Coastal Management an easier one.
- The Soil & Water Conservation District is here for trying to forward the notion of sustainable land and resource use. Currently we are working with others on several "sustainalility festivals" to increase awareness of our environmental problems. The thing is that the people who attend are usually already aware and the folks we really need to reach do not believe there are any problems at all...except economic.
- The UNC Institute for the Environment is doing a study of the impacts of climate change.
- The WRC is beginning the process of planning for SLR and Climate Change. Please keep us posted!
- There are lots of activities in NC and SC regarding SLR. There needs to be some coordination between these activities so that clear paths forward are found.
- There is a great deal of info on this subject available from NC academic institutions; is DCM sincerely able to move forward w/ the best available science???
- These comments are submitted on my behalf, as an individual. They do not necessarily represent the views of my employer.
- This is not a mission for this commission to be undertaking. Use your resources on a topic that has substantiated science behind it.
- This survey is on behalf of me personally
- This survey was not conducted on behalf of my organization.
- TNC-Alligator River Adaptation Project
- Trying to stay informed
- Two of the members of Friends of Pocosin Lakes NWR are in the process of doing a DVD on Pea Island NWR which will cover sea level rise. I hope to be able to help with that project. See question 10 for more information.
- We (DWR) are participating in the development of the NC BIMP along with the Division of Coastal Management. Our consultants, Moffatt & Nichols Engineers, will be issuing their final draft within the next 30 days. t We expect to be presenting it to various legislative committees and commissions for their use. The BIMP also may recommend that sand budgets for different regions of the the NC Coast be developed and that sea level rise be factored into those budget.
- We are analyzing potential impacts to high priority bird species and critical habitats. No reports or events are planned at this time.
- we are building natural dunes and planting sea grass and sea oats
- We are committed to working with others in collaborations toward an enlightened coastal plan that deals realistically with sea level rise and climate change. We have been a participant in and co-convenor for a number of meetings to discuss these issues. Our role in the Albemarle-Pamlico Conservation and Communities Collaborative is about bringing us all together to find opportunities in responding to these challenges.
- We are covering the issue in our newsletter and in public presentations.
- We are discussing our position but have not implemented any actions at this time.
- We are following all research and opinion on the issue. From this, we conclude that this is a non-issue and do not plan to waste any time on it.
- We are in the process of hiring a faculty program leader who is an expert in sea level rise policy. We anticipate that he will help develop a process for local communities to be informed, engaged, and empowered to make informed science based decisions about their response. Anticipate he will be here working at UNC CSI in June 2010.
- We are involved in legislative matters that would allow for consideration of tools to manage our coast. We must keep in mind (especially in South East NC) that we are not dealing with a natural process any longer. Every since the creation of the AIWW (which I do support) we have altered sand, inlet, marshes, inter-basin transfer of water and now we must establish tools to effectively address the issues we face. Once again, take yourself out of the regulatory role and be part of the solution. Let's effectively use the resources of the State to be part of a solution.
- We are not currently working on any specific projects related to sea level rise.
- We are opposing the location of industries such as Titan Cement in sensitive wetlands and working to ensure that industries contributing to global warming be better regulated. We are working to educate local residents about the importance of converting their yards to native plants and helping to prevent runoff into estuaries.

- We are participating in conferences, seminars and webinars, etc. in an attempt to educate our staff on how to adjust our planning efforts. We do not have any specific activities planned at the moment
- we are staying abreast of the research and potential issues, including development issues and loss of private property that may occur.
- We are supporting and in support of reclaiming and adding wetland "buffers" in the areas of the coastal plains, the development of more realistic energy sources and educating the public as to how large an impact these three goals are to the security and stability of our region and, from a larger view, the world. Big job but at least we've got a start in the appropriate directions.
- We are updating the Coastal Habitat Protection Plan and have included impacts of sea level rise in that update. We have talked about possibly adding a section on sea level rise in each new Fishery Management Plan, or each new plan update.
- We are working as a contractor to US EPA on their Global Change Research Program (GCRP), which includes adaptive and mitigative responses to climate change. Recommend that the CRC and DCM be aware of the GCRP and connect with EPA.
- we are working on contaminats issues associated with global climate change which will affect the fate and effects of pollutants within coastal ecosystems
- We are working toward developing a retreat option on BHI
- We do have a Global Climate Change page, mostly geared towards helping educators find global climate-related resources and also help them stay up-to-date on the latest news and research regarding global climate changes, including sea level rise. It can be found at http://www.eenorthcarolina.org/consumer/global.html and includes an RSS feed for the latest news stories and current events.
- We educate the public about about water quality and natural resource management. Sea level rise is a "new" education interest in our area.
- We examine the impacts of increased salinity and inundation on coastal ecosystems. We also monitor a number of parameters including water level at some locations.
- We generate more energy than we use with solar panels. WE drive a PRIUS that gives us 47 MPG average over the last 3 years. We write our legislators regularly about action to reduce CO2 emissions. We do not use air conditioning. Use fans. We installed instant hot water to reduce energy used keeping hot water 24 hours a day in a tank... What have you done? Thanks for asking. You hit a raw nerve (and I'm 83).
- We have a bi-state extension specialist on climate change (Jessica Whitehead)
- We have been given several presentations from scientists at ECU on the subject. I am not aware of any upcoming events.
- We have completed a preliminary draft of a study of sea level rise issues and an in depth benchmark study of adaptive strategies from other state and local governments on the east and west coast. We will be happy to share the results of this work in the future.
- We have completed a report detailing sea level rise risks on DoD coastal installations from the Cape Fear River up to the Albemarle Sound. We employed a model called SLAMM (Sea Level Affecting Marshes Model). This model simulates sea level rise by using localized information such as elevation, slope, tides, storm frequency, historic rates of sea level rise, marsh growth, and shoreline erosion. Output includes maps that show cover changes over time. Our results indicate large spatial extents of wetland and dryland in the Albemarle-Pamilico region will flood in the coming decades. Under some sea level rise scenarios nearly the entire Dare County peninsula reverts to estuarine water by 2080. Recent aerial photos have revealed that significant areas of forested wetland have converted to marshland on the Dare County peninsula; potentially validating model results. We are actively searching for funding in order to do a detailed analysis with these new findings.
- We have no plans to make a report at this time.
- We need to be study the effects of inundation on aquafers and other water sources. We need to plan for change.
- We offer educational programs to the general public on the impacts of climate change, including sea level rise, but not specific to NC issues.
- We provide education to teacher and students about sea level rise and its potential consequences. We developed a curriculum product that addresses that issue: Coastal Processes and Conflicts: North Carolina's Outer Banks.
- We'd be happy to present our climate ready estuaries report to the CRC and DCM after we have presented it to APNEP.
- Why do anything?

- With my job I don't have much opportunity to work with sea level challenges as almost all of my projects are inland. With the Town ordinances I've worked on I've got them to include riparian buffers and setbacks.
- Working to help communities conduct hazard assessments and develop mitigation plans
- working to stop groins from being constructed, this is not a solution
- Working with local government clients on SE coasts to better recognize and address climate change issues (most immediately, hurricane damage mitigation) when developing or updating their comprehensive plans and development regulations.
- www.nccoast.org
- Yes, I am doing something about sea level rise that you should be aware of. I'm laughing at it, and you.
- Yes, I work for the Division of Emergency Management in the Hazard Mitigation Section. We offer a variety of grant programs for the acquisition of floodprone properties.
- Yes, the CRC is already aware of our work.
- YES, THE DFR IS PRESENTLY WORKING ON A 5-YEAR FOREST RESOURCE AND STRATEGY PLAN FOR THE 18MM+ ACRES OF FORESTLANDS IN NC -- SLR WILL LIKELY BE A PART OF THE COMMENTS OFFERED BY THE ONE OR MORE OF THE SIX WORK GROUPS THAT ARE ADDRESSING THIS PROJECT
- yes, the NC Interagency Leadership Team is planning a climate change adaptation workshop for March, 2010 at the McKimmon. The workshop will be for any and all "planners" -land use planners, air quality planners, transportation planners, wildlife resource action planners, water resource planners, etc. We anticipate having continuing education credits available -there will be plenary sessions -and breakout sessions by part of the state e.g. coast, piedmont, mountains. Also, US EPA is planning a meeting on "climate change adaptation in the Southeast" -early in 2010 in Atlanta.
- Yes, we are preparing reports/ manuscripts on response of fringing salt marsh to SLR.
- Yes, we have found no significant rise in mean sea level in over 50 years of our records.
- Yes. Climate change and possible sea level rise is a primary area of interest for Audubon NC.
- Yes. I am looking for scientific data not media frenzy hype.
- Yes. I am trying to be as user friendly as I can be by doing my part.
- You have to be joking
- You hear from me frequently and work frequently in Alaska as well. You would find the University of Alaska, Fairbanks Campus, research on this issue very interesting. The recent North Slope studies on the melting cap threats to the oil and gas industry infrastructure would also be of interest to you as you look at their assessments on potential asset loss.

Q10. Do you have any additional comments or information about other ongoing work on sea level rise in North Carolina that the Coastal Resources Commission or Division of Coastal Management should be aware of?

- A quick review of existing policy barriers that limit our ability to implement adaptive strategies (living shore lines or the placement of raised oyster reefs) and foster maladaptive practices (groins, bulkheads, increased shoreline development) should be undertaken. This should lead to development of improved policies, or at least reduction of barriers in some situations.
- Absolutely no harden structures on the shoreline. That includes sandbags.
- Actions must be taken on reliable scientific information.
- Again Sea level changes raise/fall is totaly a natural process except for ground water withdrawal and the control of flood plains
- All stakeholders must be involved in studies, recommendations, and implementations.
- Allow Mother Nature to do her thing unimpeded. Work with her, not against her.
- Any attempt to control the OCEAN is futile.
- Any policies and concrete government action premised upon a risk of sea level rise cannot work unless the science justifying the policies is sufficiently credible. If it turns out the assumptions behind the action are erroneous, the actions could cause more harm than the risk of change of sea level. Accordingly, work to date should be carefully scrutinized to determine whether it takes into account entire global dynamics and systems (not just limited geographical areas) and that the means of study are peer reviewed and enjoy world-wide acceptance. I question whether assumptions and models published by CRC/DCM at this point in time meet this criteria.

- Appreciate your attention to this issue and advocate for better planning.
- As a coastal resident, I would love to see more stringent restrictions on building in these fragile areas as well as further restrictions on groins, seawalls, sandbagging and beach renourishment.
- As a world, we need to be doing all things necessary to reverse the warming caused by us.
- As an annual vacation visitor I would encourage NC to plan and prepare for sea rise while keeping the natural beauty of the area. Ecology and preservation should be the focus of the program. Funding from the private sector and the government should be considered. Millions of people will be effected by what happens in the next decade or two, even persons as far away as Ohio. I applaud your foresight and willingness to address an issue that may be years away.
- As the ice caps melt it would be common sense to assume that the water level would rise
- At this early stage, education, study, and monitoring are most appropriate
- Ban terminal groins and jetties
- Barrier islands hift with the currents. There is nothing you can do to stavilize them. Peop;\le know the risks and they should accept those risks. It your property is destroyed, the unsuance should help rebuild the property, the second time.....no, your time on at spot of land is over. Mother Nature says go away,,,,,,,so go away. You have the same problem on the Great Lakes. sea walls and groins stabilize one area at the expense of another. Study Presque Isle in Erie Pa. Accept what is given to you and deal with it the results,,,,,,,,,good and bad.
- Be proactive and don't let real estate interestd have the day on this one. Our beaches and inlets are dynamic. Let them be dynamic. We can still enjoy them for multiple uses, just not for hardened structures and housing development.
- Be smart and proactive and stop the movement to the sea. I do not like to see taxpayers pay for developers greed and the states inability to see into the future that this type of situation was going to happen. Sea rise, Hurricanes, Flooding and other natural mother nature events are always going to happen. Simple is it not.
- Beach home owners that have purchased their houses in the past 10 years are already paying an exhorbitant amount for flood and hazard insurance, so increasing premiums more is cost prohibitive. Do all initiatives for new homes moving forward: building codes, minimum distance from water, etc., don't waste too much time or energy on moving existing homes, etc. Beach replenishment should be paid for in part by the federal government and in part by the state, since beach areas generate income for the state. New built housing should also be hurricane resistant, with modern materials (hardiplank, natural wood, 20 year roofing) on the exterior and storm shutters required. Insurance rates should be much higher for homes with vinyl and aluminum siding, since those seem to be the homes with most repair costs.
- Before moving to NC, I read about a continental shelf of sorts off NC that might collapse and create a 17' wave along the shoreline. I do wonder if this is poppycock or truth and, indeed, the level of concern one should have about this happening in the near future.
- Better publicize climate change issues and impacts, using graphic representations (e.g., aerial photos, maps).
- Both, the resources commission and coastal management do a good job studying the sea rise problem. Also a good job of educating the public. We do not need at this time another study commission. Use your own people, meet on a regular basis and send your recomendations to proper athorities.
- Check out climate research publications concerning Global Cooling such as publications from Drs. Richard Linzen, Nonie Darwish, Alan Carula, James Marusck, David Dilley, Peter Harris, Timothy Ball, Don Easterbrook, Bob Carter, Oleg Sorokhtin, Sallie Baliunas, Sevenasmark, Syun Ichi Akasofu, Willie Sceon, William Herschel, Philip Chapman, Galina Mashnick, Kenneth Tapping, Paul Reiter, John Theon, Valdimir Baskirtsev, etc.
- Close the agency and contribute to education.
- Coastal Management needs to take its head out of the sand and realize all efforts to save structures built on or near the water are futile.
- confidently accurate prediction is the hardest part, and without it nothing can be done, except to indemnify the taxpayer. Immediately require honest disclosure in all real estate transactions concerning coastal land, and remove flood coverage from all new policies in affected areas. People who build on such land should know the risk and assume the responsibility for their own actions.
- Contact information for researchers working on this project: David Welch : 919 406 2101 Robert Mickler 919 406 2104 (PI) Alion Science and Technology 1000 Park Forty West, Suite 200 Durham, NC 27713
- CRC and DCM are currently aware of same projects my agency is aware of, I'm sure.
- CRC and DCM really, really need to open the conversation about strategic relocation -- mentioned in ONE question above. This conversation has to happen, and no one wants to get it started. Thanks for asking!
- Cut your budget.

- DCM must help educate NC citizens about accelerated sea level rise (ASLR) and its impacts. The time for ignorance and denial has passed. A public misperception of risk is no excuse for not adopting policies that can lessen the economic, social, and environmental risks posed by ASLR. It is a good idea to survey the general public's perception of risk and understanding of ASLR. However, is inappropriate to avoid action simply because the wider uneducated public does not believe that it is occurring.
- DCM should adopt a stance that clearly conveys the purpose of beach and barrier island protections is to protect the PUBLIC RESOURCE itself, namely, the very existence of a beach and barrier island, and NOT the PRIVATE STRUCTURES placed there.
- determine if there is any sea level rise vs natural erosion; does the sea level rise, then recede naturally over time? Establish some base line data
- Determining estuarine erosion rates and inventorying development in high risk areas should be a high priority. These should use state of the art techniques, incorporate accuracy estimates or probabilities of uncertainty, and should provide data in useful formats (e.g., GIS) for local land use planning.
- Development on barrier islands should be slowed, regardless of concerns about sea level rise. Development appears to be proceeding at an unsustainable rate with regard to other issues, such as the incursion of saltwater into freshwater aquifers, the perceived need to install hardened structures to protect development from natural migration of barrier islands, etc.
- Do not over-react to a highly theoretical, low probability risk. Focus on current issues driven by current probable threats (storm damage, current erosion). Again, do not over-react and squander limited resources on unlikely events. We stand in danger of damaging our economy and standard of living for no immediate reason.
- Do not spend any tax dollars until a fair 2-sided debate can be held on global warming. So far opposing views have been stopped!! I am not convinced that we are causing any climate change!!
- do not waste tax payers money on the natural process of our world. We can not win against nature.
- Do you have any additional comments or information about other ongoing work on sea level rise in North Carolina that the Coastal Resources Commission or Division of Coastal Management should be aware of?
- don't jump to conclusions.
- Don't spend money you don't have.
- don't spend our money
- Enough information is available to warrant coordinated actions at the state level.
- EPA, NOAA, NC Floodplain Mapping/GTM and several other groups are already doing a variety of sea level rise studies. If you're not working with them, collaboratively, you should be.
- Everythang is on a cycle we may cool off.
- FEMA (DHS) has recently given $5 million to CCPS to study risk and mitigation related to sea-level rise.
- Funding, funding, funding.
- get in front
- Get MOVING !
- get off this false band wagon
- Get off this kick
- Get rid of the sand bags
- GET THE DATA, IF THERE IS ANY!
- Getting this message to real estate developers and coastal community planners is essential.
- Given the real and immediate issues that face the citizens of North Carolina, this issue is not one tax payers should spend any funds on.
- Go back to the comment earlier about Holden Beach. Mother Nature is in charge so don't try to mess with her-and don't try to institute any new taxes for this "rise in sea level".
- Good luck. The government has a role, but it is not to pay 100% for the losses of people who continue to build along these beaches. The outer banks will disappear: I believe the speculation is that a 3-ft rise will result in a significant coast line shift. So what will the expense of raising existing buildings another 5-ft accomplish? Sorry for the property owners who have made the beach their permanent homes (some, for generations). The state should not guarantee or underwrite the continuing folly for NEW development that is crowding these high-risk areas.

- Hardening of ocean shorelines should be banned permanently; no exceptions, no experiments, no exclusions. Channelization and sand mining in inlets should be banned as well as these are critical to coastal wildlife and fisheries. Alteration of inlets has a direct negative impact on wildlife and fisheries.
- How do we make it real to people?? How can we get people to take action when it may not affect them for 20 years?
- http://wattsupwiththat.com/2009/07/18/global-sea-level-updated-at-uc-still-flattening/ http://wattsupwiththat.com/2009/07/22/9507/
- I am a native of Dare County, and have watched for years the decline of the quality of our beaches (oceanside and soundside). The use of seawalls, sandbags, groins and other means of beach stabilization clearly undermines the natural movement of the beaches. Overdevelopment has also created the inability for the seashore to move naturally. With sea levels rising, these decisions by land owners and developers will only contribute to the destruction of our beaches and estuaries. I would love to at least see greater setback requirements for development along our waterways. If people must build along our waters, they should at least do it with common sense and a preparedness for the future.
- I am also concerned about the multiple but uncoordinated efforts on this issue, which are confusing for everyone.
- I am aware that the N.C. Chapter of The Nature Conservancy has gotten a $1 million grant, I think from Duke Power, for monitoring/studying sea level rise at Alligator River NWR, and perhaps other projects they have been involved with in the coastal area.
- I am extremely skeptical of the premise that there is a significant danger of sea level rise, other than normal cyclical events.
- I am not a citizen of NC, but do spend a couple weeks each year vacationing on the Outer Banks. Let nature take it's course and deal with it through good long-term planning.
- I am not fully aware of all they are trying to do. But I try to keep up and do my part. We owi it to those who ill be comming behind us.
- I am opposed to groins. When the public develops an outer island, then the risk is that the development may wash away by mother nature. It is not the financial responsibility of the government or other sectors to constantly be asked to "renourish" beaches for the benefit of a few. Erosion is a natural thing....just because Mr. and Mrs. Smith built their home on the side of the island that erodes the most, doesn't mean that this issue becomes everyone elses problem. Even if there was a public park in a high erosion area, then the thought should be NOT to build a public park in a high erosion area. I do think that information is key and support any efforts to get as much information out to the public as possible so they can make educated decisions about where to build and how it erosion/ sea level rising may impact development. This information may also be helpful in regulating the city and states ability to limit or control development.
- I am very pleased that you have created this survey. It is essential to begin this work immediately.
- I believe all current and prospective land owners should be notified about sea level predictions and that they state will not cover any losses after this notification except for true maritime industries such as fishing. New purchases should sign agreement of understanding that the state will not take action and they are responsible for insurance rate increases.
- I believe most people do not believe sea level rise is real threat. Those people also believe global warming isn't real. I don't know how you can do it, but everyone should be made aware that sea levels are indeed rising and they will be affected by it. But most people won't believe until they start losing land or fish are swimming in their living rooms.
- I believe research should continue on sea level rise. This issue has been discussed for quite some time and is an issue that needs to be dealt with as soon as possible.
- I believe studies by scientists to predict rates of sea level rise and monitoring of actual rise would be of immediate importance.
- I believe that sea level rise is a very important and prevalent issue, especially for NC coastal citizens. Very few peopel feel adaquetly educated on this issue, or simply do not believe it is occurring. It is so important that citizens have access to research and information, and that local governments, educators, and policy makers take an active role in addressing sea level rise.
- I believe this has the potential to become an additional tax burden and insurance increaser for the citizens of NC. Do not ring the bell unless you are sure.
- I desperately wish we could restrain local municipalities from their frantic rush to renourish beaches with exorbitantly expensive dredging and pumping operations. The cost is prohibitive when compared to the durability of the resulting beaches.

- I did my Masters Project for Duke Univ. on Southeast Coastal Adaptation Strategies and qualitatively analyzed different adaptation response strategies for sea level rise. I was primarily interested in finding win-win-win response strategies to deal with the uncertainty of climate science, the need to protect human populations, and the need to protect the environment. I would be happy to provide my MP to anyone interested. I am not an expert, but the analysis I conducted revealed the challenges of finding good solutions as well as the importance of cross-comparing strategies to ensure win-win solutions. Please email me at ulla@cleanenergy.org.
- I do not believe that money should be spent to renourish beaches or save structures. The sands are always shifting and water levels will rise and fall. Our efforts to change these patterns are futile in the long run and a serious waste of taxpayers money. Buying a house on the beach or near tidal waters comes with the risk of water damage. Real estate agents should educate prospective buyers on the risks and costs of this risks. It is a buyers beware issue for existing structures. Towns should not allow houses to be built in areas that are not stable for at least 100 years.
- I do not support artificial means (sea walls, groins or sandbags) to maintain loss of sand.
- I do not work in a coastal county, but at least at the state level I do not believe much has been done to incorporate sea level rise into transportation planning. MPOs and RPOs should be involved in efforts to educate and plan for sea level rise if they are not already doing so.
- I don't believe sea level rise is occuring. Global warming is junk science. Consider this. Even if the global temp is rising and the artic is melting, it's like an ice cube in a glass of water. As the cube melts the water level in the glass does not rise due to the water already being displaced. Since artic ice already displaces an equal volume of water sea levels won't rise.
- I feel that this is an important issue for our state, and we should find out all we can about sea level rise now.
- I have no information to add concerning ongoing work on rising sea levels in North Carolina. I do believe that the general public needs to be more aware of rising sea levels & what this can mean not only in terms of development but more importantly, the effect this will have on the environment.
- I have noticed that the salinity of the water at the mouth of Bath Creek on the Pamlico River is increasing. This has had a affect on the wildlife - more salt-water species, including dolphin, skates, jellyfish, etc. Some have reported shark sightings. I have also noticed problems with our grass right at the shoreline, possibly due to salty water splashing over th e bulkhead.
- I HAVE SEEN THE BEACHES RUINED FROM MASSACHUSETTS TO MARYLAND BY HARDENED STRUCTURES. ONCE THAT PATH IS TAKEN THERE IS NO TURNING BACK, AS PROBLEMS ONLY SHIFT TO ANOTHER AREA. PLEASE LISTEN TO THE SCIENTIST AND RESEARCHERS THAT HAVE SPENT YEARS STUDYING BARRIER ISLAND AND INLET MIGRATION. THE FACT THAT SOME DEVELOPER OR MILLIONAIRE MAY LOSE PROPERTY THAT SHOULD NEVER HAVE BEEN DEVELOPED SHOULD NOT EVEN BE DISCUSSED AS PART OF ANY PLAN. THE TOTALLY BOGUS CLAIMS OF TOWNS LOSING TAX BASE DUE TO PROPERTY LOSS SHOULD ALSO NOT BE INVOLVED BECAUSE IF HARDENED STRUCTURES ARE ALLOWED TO SAVE A FEW HOMES THE REST OF THE BEACH WILL SUFFER MAKING THE TOURIST DOLLARS DISAPPEAR!
- I hope that Coastal Resources will take into account that we cannot beat nature, but that we can improve the level of destruction we cause in order to improve the rising sea level issues.
- I hope your research includes a comparison of modern sea level changes with changes during previous interglacial cycles as well as the last 11,000 years. Sea level rise, global warming and glacial ice melting have pestered our world at least 15 times over the last 1.5 million years or so. Yet, here we have survived and prospered and even the polar bears are still with us. So may I respectfully suggest that you look very carefully at the entire Pleistocene to help project the future. But don't take too long. These interglacial periods only last about 15,000 to 20,000 years and it would be nice to have answers before the ice returns.
- I just know that the sea level is increasing very fast. I have seen an increas of 2 feet in the Chowan River in the past 20 years. When I was much younger, I could walk the beaches of the Chowan. Now, there are no beaches. The water level has really increased...
- I just think it's critical for DCM and the CRC to take the lead in educating the general public, especially in coastal communities and most especially on developed barrier islands, about the latest scientific and planning data on sea level rise. But to avoid being 'alarmist' about the issue and to emphasize the natural causes/processes of sea level rise and barrier island migration. I think there's a reasonable middle ground in the predictions of sea level rise over the next several decades -- different models and different climate change scenarios/assumptions will always yield variable predictions, and it's important not to always assume the worst for purposes of longterm planning. Perhaps the most critical 'target audience' for such education is local developers and real estate brokers, and potential purchases of

coastal property. It's such a complex and politically charged issue -- best of luck to DCM, the CRC and our State as a whole!

- I need more data to prove once and for all that sea level is rising!!!
- I personally believe that we should be absolutley sure the rise is happening. the resulting projections should be honest, with no scare tatics; and future property owners should be made aware of the risks, as well as the current property owners. Perhaps a chart or graph depicting the rise over a time span showing each years projection of increase.
- I prefer a centralized comprehensive sea level plan initiated by the state and feds. I am a advocate of planning; however, multiple plans for multiple agencies/entities will waste crucial time and money. I believe this issue will be better addressed by top down regulation (i.e., state and/or federal regulation). The data and knowledge is out there, we just need to act!
- I really have no idea how we are going to cope with the changes we have made to the ecosystem of the planet. I have always been working in the environmental field and try and bring these issues to light but power and money have no interest in it at all. I am not trying to be cynical or pessimistic, these thoughts only come to me due to my life experiences. I ride my bike to work, I live in a small house (<1,000sf) without air conditioning (just like my grandparents and all before), I take only what I need...like M Ghandi said, "Live simply so that others may simply live". I realize this does not square very well with a capitalistic society that basically says to go out and get all you can because you deserve it. Unfortunatley I place some blame on this religious notion also that it is all here for us to do as we please. My heart breaks for all the other life that we are destroying every day as we go about our endless pursuit of happiness in the form of material acquisitions. I have travelled the world also and so my comments are formed from a wide perspective that most Americans will never have. I have been to the shores of southern India where the problems from sea level rise will devastate many people and am most concerned for these people because they have not created this problem; we have, the consumptive west and mostly America to this point. Now everyone wants to be like us and there simply are not enough resources to support over 6 billion people living like we have. After all is said and done I do not believe we are going to be able to survive nearly as long as the dinosaurs. That seems obvious to me. However I do not believe in laying down and doing nothing. Again, I work every day to try and change/enlighten people's thinking. Just my thoughts...you asked...
- I recommend reviewing the data collected by UNCW for the USACE Harbor Deepening Project (UNC-W, Potential Increased Tidal Range in the Cape Fear River Ecosystem Due to Dredging Wilmington Harbor, NC). This has been an ongoing project since 1999. See: http://www.saw.usace.army.mil/wilmington-harbor/main.htm
- I strongly object to the requiring citizens in the rest of the state pay for the insurance and reconstruction costs of homeowners who decide to build homes at the beach. Generally individuals who decide to buy homes at the beach should be allowed to do so, but they must accept the risk of their decision to live in high risk areas.
- I strongly urge that the science dictate what our actions should be to anticipate the impact on the NC coastal areas.
- I think it's more politically motivated rather than fact!
- I think more awareness of the causes of sea level rise and prevention of global warming to slow and stop sea level rise should be our highest priority. I think the federal government needs to be proactive and take the lead to make the changes necessary to help reduce greenhouse gases and stop global warming so that we can do more than just deal with the repurcussions of global warming such as sea level rise.
- I think North Carolina should start talking with other states to see what plans and projects they are making and implementating on this issue.
- I think that public outreach, especially including visuals like maps or videos, is critical to build consensus for the actions that must be taken to prepare.
- I think that you are already aware of the $5,000,000 effort by the Division of Emergency Management to come up with a plan for sea level rise.
- I think the agencies are aware of relevant activities. My strongest suggestion is that scientific research be used extensively in making decisions--not just short-term economic benefits.
- I think the constant offshore dredging is ruining the ecosystem of the shoreline. Ive seen this happening for years and until sand/dirt was brought in by truck I had seen no imprivement on the width shoreline.
- I think there are a lot of old survey bench marks that should be resurveyed and updated top see how the mean high water elevations (nhw up north) are changing whether it is due to subsidence or sea level rise or both.
- I think there is a general misunderstanding about what the numbers regarding sea level rise mean. This is just a hunch I have, but I have considered doing a public survey about it because I think it exists. I think when most people hear that

sea level rise could be, say, 4 feet, they imagine in their head a four foot rise in the water level along the SLOPE of the beach, not an actual 4 foot rise. People tend to relate to information in a framework they are familiar with, and we've all seen waves lapping and the tide coming up along the slope of the beach. I think that most people do not realize that a 4 foot rise in sea level would mean a vertical rise. I have actually started developing a survey monkey survey with an illustration for people to choose how they interpret sea level rise. I would be happy to share this with you if you are at all interested in persuing this question with the public. Feel free to contact me at 919-733-0711 or rachel.g.smith@ncdenr.gov.

- I think there is a huge disconnect between the state's awareness of sea level rise and the public's understanding of how do deal with it (responsibly). Because so much of the coast is resort/vacation, the public doesn't seem to think of long-term issues there. The state will need to do either a lot of education or a lot of restrictive building codes and other legislation to get the message across to the public and to prevent private and public investment of money in high-risk areas.
- i think we should take all protections necessary to protect our beaches and coastal areas.
- I think you have made a good start. I hope that some of the "Stimulus" money can be spent on these efforts. My fear is that if NC elects another Republican governor that all of these efforts will go for naught.
- I treasure our coast and hope that it can be saved for all future use nad enoyment.
- I would have to see the data before making a comment....
- I would just recommend that any planning and actions North Carolina commits to aligns with adjacent states' efforts. If measures are not taken in concert, it is conceivable that haphazard controls implemented by other states could adversely impact North Carolina's best intended mitigation schemes. Essentially, the entire East Coast should devise a strategic plan which is then customized for individual states based on predicted impacts.
- I would like more information about this and what options we as citizens along the East Coast the US face as a whole with regard to government response and intervention. Thanks
- I would like to assist the NC Coastal Resources Commission and Division of Coast Management in developing plans to address sea level riswe in North Carolina.
- If I am allowed to participate with any commission or scientific study group, I will share many comments and recommendations.
- If it is inevitable, then plan should be to cope with the changes, not throw good money after bad by propping up or encouraging building in poor areas. Developers bear a BIG burden as they have destroyed many areas that should have been left untouched out of greed. They should be forced to bear the cost of by outs, relocation, etc, NOT the taxpayers.
- If sea level rise documentation and research is conducted and a plan is formulated, include adaptive management in the plan. Quite often, initial research shows things to be moving more rapidly within a system than long term and we should be prepared to change initial perceptions and possible planning rules associated with them.
- If they need to start preparing for this then they need to be preparing for the next ice age because it too is coming and may happen at the same time as the sea level increase but there is nothing that we can do to stop it. What about an astroid from space that may wipe out man kind prior to either event. I am not saying that they aren't happening but can see nothing that anything that we can plan for. Legislation can be passed that will limit or slow global warming but planning for its occurrence is in my opinion stupid.
- If we try to let our Marsh's recover they will help immensely with the coming tide. Open the inlets up and let the water back out. Hence the need for well maintained rock lined inlets.
- If we want to preserve out seacoast, then we should do everything we can to reduce global warming, which is driving the sea rise. I recommend DO NOTHING to help owners of beach property. Why should public money be expended to subsidize the rich vacationers who have come to the nuisance.
- If you, as a property owner, are willing to take the risk of building near sea level, then have at it. But DO NOT INCREASE MY INSURANCE COSTS TO COVER PROPERTY THAT IS MUCH MORE AT RISK. People who own property that is higher above sea level shoold not be penalized to help pay for second homes that are built in high risk areas.
- I'm glad that DCM is conducting this survey.
- I'm not the best staff person to ask that. But I've passed the survey on to other folks.
- I'm waiting to see the water rise in my back yard!
- Impacts of sea-level rise on near coastal community potable water supplies should be investigated and planning steps outlined for addressing the potential problems.

- In 1974 scientists calculated that the last crude oil would be pumped out of the ground by 1990 necessitating drastic lifestyle changes - no more commuting to work, the end of suburbs, people having to live within 5 miles of work, schools, a drastic drop in standard of living, etc. Of course, that did not occur. Maybe careful climate studies should be completed with proof - not guesstimates as to if the sea level is changing and by how much. Place that data into the hands of the private sector and watch the results when private individuals and companies have their investments at risk. The government has nothing at risk, but promoting the possibility of sea level changes certainly increases the clout and job opportunities available for the agencies involved.
- In my opinion, coastal communities should be preparing for a catistrophic collapse of the Greenland Icecap. Such an event could lead to a rapid rise in sea level on the order of 1 meter. Prediction of when this might occur is not yet possible. But the impact on our lives would be enoromous and the scenario deserves attention.
- In Wilmington contact the Cape Fear Climate Action Network http://www.capefearcan.com/ United Nations Environmental Program http://www.unep.org/ http://www.connectingdeltacities.com/ Sea level Rise Global Reporting documents http://dewa03.unep.org/pow2010/node/176
- Indirect and Cumulative Effects analyses and studies should factor in known factual info on sea level rise.
- Individuals should be accountable for encroachment and the state should have clear communication about insurace liabilities and allowable property use in devistated zones whether from raising water levels or water related diasters. We need to adopt a common sense approach to property rights in incoastal communities.
- Individuals willing to own land in these areas should accept their own risks. I don't think any government agencies should be bailing people out. I do like the idea of keeping undeveloped land for the wildlife.
- It disappoints me that CAMA allows so many permits allowing bulkheads and filling of wetlands. I live adjacent to the eastern edge of the Pamlico Sound, and have seen firsthand how these actions are detrimental to the environment, especially after flooding from major storm events. Shorelines would be better protected by use of rip rap or building of oyster reefs. We need all of our wetlands intact to act as buffers during storms.
- It is my opinion that if you own property that is at risk, then you should take that risk into account when you buy the property and that the general public should be not responsible financially, i.e. Figure Eight island and some Wrightsville Beach properties. However, if there are citizens that have been on the coast for many years and are not financially able to move, then some aid should be available for them. There is a great need for leadership that helps to forestall the need for response to catastrophic events, and we need to listen to our experts such as Pilkey when making decisions as to development.
- It is obvious at Holden Beach that the sea level is rising and taking away the beach on the east end. Many houses that were front row are gone and what was 2nd row is now front row. Houses there now are in danger of washing away if we have another bad storm. There is a house that has been for sale for several years that has not been sold and I feel it is because of the location. I would not want it as it is just a mattefr of time before the ocean claims it. If anything can be done to save the beach we need to start now not wait until a large hurricane is looming over the beach
- It is very difficult to engage the public and therefore the political will about issues that "may" happen. The effort, time and money put into Y2K may be instructive for teasing out the best methods for handling information that is prospective.
- It should be a priority for the state as sea level rise will directly affect tourism dollars. With less accessible beaches due to sea-level rise, the state's tourism industry could take a strong hit, especially in such violatile areas as the Outer Banks. Without tourism the State's eastern economy would surely falter.
- It will happen. The government should not bail out developers and persons who made bad choices in their location. Absolutely, no hardened structures, sandbags, experiments, etc. Stick to setback requirements and do not make exceptions for building/rebuilding. When lots are no longer suitable for building, government takes it and makes it public space (and waits for the next row to wash in). Any compensation should be between landowner and private insurance. Government should take the properties thru imminent domain or gift with no government compensation (value would be $0 if not buildable).
- it would be most interesting to see what documentation of sea level rise exists to date.
- it's a natural occurence, so let it take it's course.
- it's bogus science and nothing but scare tactics, this planet is over 4 billion years old and will/has changed. I'm opposed to any funding using public funds/taxes.
- It's good to know the state is working on this important issue.

- Just an opinion. Studies on this very important issue are a good thing. However, as we are all aware, nature will have it's way eventually one way or another. I feel that preventive measures to "hold the sea back" are in vain and a definite strain on already overtaxed homeowners. Studies should give infomation on what may happen and where people and structures should be rather than trying to prevent the inevitable.
- Just go slow and not try and change all the rules at once. I keep thinking of the boy who cried wolf. I think we have more of an erosion problem than a sea level problem.
- KEEP building off the beaches and streams.....
- Keep on educating the public on the challenges that sea level rise poses to topograhically low areas of the state.
- Keep the ban on seawalls and groins and other hardened structures in North Carolina! Do not make the general public pay for the stupidity of those people who built their houses on the sand. In other words, if they want to live there on the beach, they themselves should be responsible for paying their own insurance premiums and costs of maintaining those houses and moving them back as sea level continues to rise.
- Let nature decide and anyone that wants to spend there money building in a low area sign waivers that they will not be able to get insurance. Allow no High Rise Buildings over 4 story!.
- Lets work on today.
- Look at Hawaii model of setbacks/development - presentation at CZ09 last week.
- Many of the questions and available responses are equally adaptable to resource protection and flood management. I am strongly in favor of protecting our sea shore resource for all citizens and for floodplain management to save lives and property. We shouldn't be developing in high flood risk areas or closing off our resource(s) for just a few. The current mainstream information on global warming is politically motivated and perhaps inaccurate.
- many of the same issues are already in play due to beach erosion and hurricane damage. We need to quit building and rebuilding on these unstable and unprotected areas.
- Measured actions must be based on predictions supported by a widely-based consensus of conclusive scientific data. Support for the local coastal economy and the substantial investment of the coastal property and business owners must be taken into consideration. Loss of value in coastal communities means large losses of revenue to the Counties and the State of North Carolina.
- Moratorium on new activity in any of the most threatened areas now else there will be a rush to profit while they can get away with it and more to deal with moving/protecting later.
- My "no opinion" answers typically reflect a need for further study of those options.
- My hope is that scientific data will be used, and not hype and emotion..
- My input should be considered minimal. I'm too old to work for organizations working on this. I simply want to preserve our beaches and not build further on them or pollute them. Thank you. Sally Hudson
- My main comment is that the public should be educated about how much impact even a slight rise in sea level can have. The average person would tend to shrug off a sea level rise of say 6 inches as being inconsequential and not comprehend just how much impact this would have.
- My main concern is that the state, specifically NCDOT, will be spending millions of dollars over the next few years for road work and road expansion. However, I doubt they are building these roads with sea level in mind. This will lead to a potential waste of money, due to repairs the roads will need, or even replacement of the road.
- NatureServe, Environmental Defense, and other private conservation groups are developing their own plans for predicting impacts due to sea-level rise and global warming; developing monitoring plans; and formulating plans for responding to these impacts.
- NC has some of the most beautiful beaches on the East Coast! They play a vital part of our tourism industry and our environment. We should do everything we can to protect them! I'm an SC native, and while some of the beaches there have been protected well (ex: Isle of Palms), others have been developed on top of the sand dunes, providing no protection from the sea (ex: Myrtle Beach, Garden City Beach).
- NC is behind other states like Maryland, Rhode Island, Florida among others on the sea level rise issue. We need stronger backing from our elected leadership and state government agencies.
- NC is broke. It has no money to waste on this. When will the governments of this country stop wasting taxpayers money on non proven [expletive deleted] from some left wing liberial crackpots.
- NC SLR study conducted by NCEM.
- Need more input from local coastal citizens.

- no - I am not an expert. I would like to see more publicity given to the research by NC universities on this subject, especially research that is sponsored or supported by CRC or the Division of Coastal Management
- no but I will serve on the committee if I am needed.
- No but I would like to be kept informed.
- No driving on beaches. Light at night restrictions and increased turtle protection and monitoring. Big wind in a big way.
- no- I work for DOJ/DCM.
- No jetties, sandbags, etc.
- No one can predict future sea level rise with any accuracy. Given the wide range of the modeled predictions, a State or CRC selection of one prediction is almost guaranteed to be wrong. Sea level rise planning should be prepared for a wide range of potential future rates of rise. We can expect predictions to be refined with time but it appears unlikely that narrow predictions are feasible in the forseeable future.
- No sandbags, no groins, no hardened structures....Look at the Jersey shoreline!!!!! Mother nature is going to take her own course. Stop fighting it and learn to live with it.....
- no way are you going to get a group of scientists to agree on any "predicted amount" of rise, and so therefore I don't believe resources should be spent today planning for such a scenario. as it becomes more apparent- or less apparent- that we will be affected, only then do I believe the state can start making plans to deal with the situation.
- No, although I believe public access to coastal areas should be consider in future plans as private properties are potentially relocated.
- No, but I am concerned that rising sea levels may catch local municipalities unawares, necessitating massive relocation of public infrastructure without adequate planning.
- No, but I enjoyed the survey.
- No, but I'm glad you're doing this survey.
- No, but it is shocking that development on barrier islands is continuing and thus we are spending millions to renourish these places which won't work, the sand will just keep moving and the water will rise.
- no, but keep up the good work.
- No, I loo forward to the Summit.
- no. Do you the know the meaning of the word "littoral?" Answer that, then you will know if you are qualified to hold your job with CRC, or DCM.
- No. This survey certainly covers the high points of the pending problem(s).
- None I hope you get a BIG response to this survey!
- North Carolina Coastal Economy Vulnerable To Sea Level Rise (http://www.sciencedaily.com/releases/2007/06/070622184644.htm) ScienceDaily (June 23, 2007) â€" A new report finds that North Carolinaâ€™s coastline will continue to experience significant loss in land area, property and recreational value in the next 30 to 75 years due to projected changes in climate, leading North Carolina researchers announced .....
- not at this time. glad to see that you are thinking about the issue.
- Not outside of the terminal groin for Holden Beach.
- Off topic but....as a true born and bred native of the Outer Banks, it is a travesty the way development has been allowed to run rampant up and down our precious coastline. Please plan for wildlife relocation efforts but I do not wish to pay for someone else's folly by building in areas that would have been better left untouched and harming the dune protective barriers. We "old-timers" respected the area, not damaged it through pure greed!
- one comment about a previous question...maybe people with inherited structures(beach house has been in the family for 100 years, grandma left me this house in her will, etc.) where there is a history should be allowed to have some relief in these situations.
- Only that this would coordinate well with some of the ecosystem-based management initiatives that are currently being pursued through APNEP, TNC/other NGOs.
- Only to confirm that a the Rise is real? What I see in my back yard is lower and lower tides, only high water is from storms?
- Oppose S832, CRC May Permit Terminal Groin.
- Oregon Inlet and Hatteras Inlet should be stabilized with groins and jettys

- Orin Pilkey and Stan Riggs have done excellent work and made reports on the barrier islands and sea level rise. Yet, I do not see that anybody in Raleigh is really listening, especially in the legislature. I am afraid that the our legislators only here the jingle of campaign contributions from realtors and developers and the whining from landowners who are in immediate danger of losing their land to the sea. I have no idea how to overcome the obtuseness of the Assembly.
- Our community will need to be pushed into the direction of action, as there is the disbelief, prevalent in so many areas, that it somehow will not happen here.
- Passage of the recent bill that puts every NC home owner on the hook for damage to coastal development if the insurance fund runs out of money is an example of how little the current state government understands what the future climate will be like. A rising sea level will increase storm surge damage, destroy coastal sources of fresh water and create havoc with coastal infrastructure such as roads, power lines, sewage treatment, etc. The tourism industry will be decimated and major areas currently used for agriculture will be damaged by salt water incursion into the water table. I am just a private citizen yet I know all of this. We must start responding to this slow moving disaster NOW!
- Please consider allowing the installation of terminal groins and additional sandbagging projects.
- Please contact me if you would like to study this issue on the Dare County side of the Alligator River as I own 33 acres adjacent to Alligator River.
- please delete this survey. this is not usable data.
- Please directly address the segment of the population that is uninformed or ignorant of the reality of global climate change and sea level increase. Do not underestimate the number of people who do not understand the coastal geography, climate change or have no understanding of science as it applies to this discussion. Be prepared to endure outrage and resistance from those who will never cease to defend the status quo. Please try to educate the populace and stand strong against those who seek to derail any efforts to preserve the natural coastal environment.
- Please do not base your concerns, your planning, your expenditure of public monies, and your alerting the public upon non-scientific information. Most people have been misled. The liberal media, environmental activists, and liars such as Al Gore do not accurately portray reality. Don't build on that. Instead, look at the big picture, look at the expanse of time and the climate changes that have occurred, and avoid using hysteria as the motivation for expanding government and its intrusions into society.
- Please don't make this a panic issue. Simple education of the facts will suffice.
- Please don't waste our tax money on this.
- Please find something relevant to do. IF sea level is going to rise, it's going to rise and no amount of action on your part is going to change anything. We do not need government agencies wasting there time (and our money) researching, planning or anything else when there is nothing you can do about it.
- PLease make sure that the problem is real before we burden the state and landowners with a problem that may be only temporary or one that is only minor.
- Please note comment about the need for beach communities to acknowledge the futility of continuing to build homes, businesses, roads etc. They must accept that sea level rise is occurring and that their efforts at renourishment, walls, etc. ironically lead to destruction of a usable beach front as natural sand patterns shift.
- Please study REAL science, not just science that supports one side of the argument. Global Warming is a complete scam. 3000 record high temps in July alone. The earth hasn't warmed at all in 7 years now. This is so so stupid. Don't fall for this new way to tax and control the lives of free Americans.
- Please use sound, reproducible science and stay away from both ends of the curve.
- Politicians and the various commissions that formulate and recommend policy in the coastal zone need to look far ahead into the future when making policy decision. I mean in the range of 100 years, not just 5-10 years. The current rate of development in NC (not just the coastal zone but the entire state) simply cannot be sustained indefinitely. There is only a finite amount of resources available to us on earth and only a finite amount of space available in NC; the term "sustainable development" is an oxymoron. According to undisputed evidence as outlined in Orin Pilkey's and Stan Riggs' many years of research, over the previous millenia the Outer Banks has migrated seaward and landward of its present location numerous times. This is made clear to anyone that has been to Corova and seen live oak tree stumps currently in the surf zone or seen remnants of oyster beds on the ocean side beaches of the Pamlico Sound. We personally may not be here in 100, 200, or 1,000 years, but I beleive we all agree that our children, grandchildren, and other ancestors will. We must take a long-term approach to these issues and learn to adapt to the environment, not make the environment adapt to us. NC is very-proactive and far-sighted when it comes to beach hardening when

compared to other east coast states (New Jersey), I hope this continues in the future and NC can be a state to model sea level response after.

- Preparation is cheaper than reaction.
- Presviously covered elsewhere in the survey. Thanks for the opportunity to comment.
- PROVE IT TO THE NC PUBLIC!
- Quit wasting our tax money.
- Quit wasting taxpayer money on junk science. What causes changes on beaches are beach renourishment projects not rising sea levels. What a crock of junk science. The government should stay out of this field.
- rapid climate change is real
- Recent EPA Public Hearings in SC only 8% of the public that testified mentioned Global climate chnage as a problem. The majority of comments focused on coastal development (about 80% of all comments). The conclusion drawn from those hearings is the public is focus on the crisis at hand (coastal development) and not on future issues whihc at the moment are not immediate issues. Thus to engage the public we need to use their focus on coastal development and couch much of the impacts from global climate change in terms of how they will enhance and exacerbate impacts from current coastla development. That will resonate with coastal residents.
- Recommend that the State agencies abandon failed policies such as nourishment and hardened structures to resist natural changes in the shoreline and instead develop policies that are complimentary with the expected changes to the shoreline that minimize impact to State and Local government resources and places primary responsibility for changes on affected property owners.
- Recommend the focus change from response to sea level rise, to gathering accurate information on the actual threat.
- Remember individual rights. Tell people about the threat and potential adverse affects. If they choose to accept the risk and the adverse affects occur. To bad so sad. It is not the job of elected or appointed officials to develop plans to overcome stupidity. The smart people are the ones that pay the taxes, and make informed educated decisions, we don't want to bail out those that CHOOSE to take the risk.
- replenish dune lines establish more sand fencing. Since Isabel we have rebuilt a first line of vegtation that has lasted for more than 5 years on our 7 oceanfront lots in Kitty Hawk-maybe you can learn from that!
- Review any work and evaluate the scientific method without politics or emotion: "A method of discovering knowledge about the natural world based in making falsifiable predictions (hypotheses), testing them empirically, and developing peer-reviewed theories that best explain the known data."
- Save our resources, Sea levels will rise & fall over time.
- Sea level has been rising at varying rates since the end of the last ice age. We know that the various elements of our coastal environment have been able to live with sea level rise by virtue of the fact that they exist. Over the past several decades, the effects of man's activities have caused the rate of sea level rise to increase. This raises a number of questions about how the various components of the coastal system will respond. Will the increased rate of sea level rise exceed the ability of sea level dependent wetland surfaces to keep up? How will island migration, inlet processes, and the landward migration of wetland systems be affected by increased rates of sea level rise? If portions of systems collapse, what will happen to other related systems? Regardless of the future rate of sea level rise, the one component of the coastal system least suited to even existing sea level rise is our coastal economic system. We are sitting on a huge development bubble that is unsustainable, it will burst. Some people will benefit, most will not and the impacts will be born by us all, regardless of whether we are coastal residents or not. How do you live with sea level rise and the coast in general? Watch what it does, listen to what it says, love and appreciate it for what it is, leave it alone, and stay out of its way!
- Sea level increase/decrease occurs naturally; it has been going on for years, and the trend towards cooling will be next; we should be aware of this, continue to monitor somewhat, and ensure "good science" is being used in evaluations. Do not think it is a serious problem requiring lots of work and planning along the coast at this time; efforts should be in ways to decrease global warming which will in turn be more beneficial.
- Sea Level is is a myth perpetrated for political ends and perpetuated by gullible idiots. Preparation for the next ice age is more attuned to geologic trends and would make more sense.
- Sea level rise has been going on for along time. We are just excelerating it to the point that it will happen quicker.
- Sea level rise is a challenge unlike any our state has had to cope with, in large part because it is chronic and spans generations. People are quick to react to catastrophe, but slow to respond to events that occur slowly. Sea level rise must become part of our present lexicon as matter of fact as possible so that irresponsible building in light of sea level

threats will no longer be tolerated or supported with public money when stop-gap protective systems inevitably fail. Bangladesh and the islands of Indonesia already know the consequences of sea level rise and are just now working to plan for their respective people and communities, many of whom are one storm away from calamity. North Carolina is not alone on the Atlantic Seaboard in needing to address next steps with sea level rise. We are positioned to be a leader in how states and nations should plan for and respond to climate change and the consequences of sea level rise. We have the scientific authorities in place and only lack political will to make the tough decisions that are ultimately in the best interest of future generations.

- Sea level rise is a scare mongering issue that is helping the state government take control of land that is owned by private landowners. Regulatory and policy issues give the state more power than it can currently manage given the limited, but abundant, resources that it has. Further control will erode the small, private industries that the coastal areas rely on, and will trample personal property rights.
- Sea level rise is one of the many issues that is often addressed as a separate issue rather than as a holistic issue - by that I mean it is a part of the global climate change debate. THe envidence is clear that global temperatures have been rising. The question needs to be: Is global climate change cyclical or is it an upward trend? Evidence is showing that there are changes in the sea level - we do not have a firm grip if we are measuring the data better/more accurately or if we are measuring it precisely. THere is a big difference between accuracy and precision. Accuracy is hitting the target. Precision is hitting the same spot repeatedly. A marksman is both accurate and precise. You can be precise without being accurate (grouping your shots) and you can be accurate without being precise (hitting the target without any pattern.) Sea level change needs to be measured. Erosion has to be measured - is the coastal area decreasing in size because of erosion, or is the land area shifting? Is land moving backward ... was that land originally lower than the dunes that previously existed?
- See above, please, Tancred! Love this!!! Gail
- see above: Prevention is more important that re-action.
- See earlier comments on suggested "one and done" deed restriction.
- show me where the sea is rising, then i could maybe change my answers !
- SLR has been the focus of numerous federal and university studies across the state and should be researched further.
- SLR is a critical issue that should be a primary focus of the Div of Coastal Management
- SLR is a world wide problem
- SLR is just one of the results of climate change and the coastal ecosystems will be impacted by other changes in climate (temperature, storm and rainfall patterns) in addition to SLR. Will these also be included in your strategic planning? Great job getting this off the ground!!!!!
- Small coastal communities do not need any more regulations forced on them. Enough is enough. If the state wants to study sea rise, fine.... but don't regulate the small communities and the people of NC out of existence. Living on the coast has historically been very difficult. Most communities have had to send their children away to get educated and to get good jobs. When the tourist industry began to grow, at least there was a way to make a living locally... not the regulations are forcing the local people out. Environmental issues are going to wipe out the coastal areas and their economies.
- Specifcally, what should be done with most vunerable places: Outer Banks, Hyde Co, Dare Co, Tyrrell Co, Pamliccco Co. Cannot build walls around them.
- Spend some time actually looking at the "global warming" data that currently exists. There are many, many credible scientists that are not caught up in the new religion of "global warming." This is such a farce. The temperature of the earth rises and falls naturally. If the sea levels rise it will be so incremental that it wouldn't be a problem for 500 years.
- Stop Building on the Beaches of Barrier Islands.
- Stop coastal devlopment !!! ALL OF IT!
- Stop the waste of tax money.
- STOP WASTING OUR LIMITED TAX (AND PERSONAL) DOLLARS
- STRS Productions, based in Washington, NC is doing a series of DVDs on refuges called "REFUGE." The producers are Blake and Emily Scott. They just started working on the DVD for Pea Island NWR. This DVD will cover sea level rise. The website is http://www.refugewildlife.com/ contact information: STRS Productions Inc. 200 west 15th street Washington, NC 27889 Ph: 252-946-4728 refugewildlife@earthlink.net emily_scott@earthlink.net They have already done DVDs: "REFUGE - Mattamuskeet" and "REFUGE - Pocosin Lakes." Both of these DVDS are excellent. I am proud to say that the Friends of Pocosin Lakes NWR helped with the "REFUGE - Pocosin Lakes" DVD. Also, Blake and Emily are

very involved members of our Friends group. I know that they are looking for sponsors. NC Division of Coastal Management would be a great sponsor for this project. Also, the NC Division of Coastal Management could give them some ideas for the DVD. Tancred, I met you, years ago, at a NO-OLF meeting in Belhaven. It is great that we stopped the Navy and saved the waterfowl and the Pocosin Lakes NWR. Glad you are working on sea level rise. Frances Armstrong 264 Teachs Cove Bath, NC 27808 252-923-1041

- Surely you have enough to do already. Don't create another bureaucracy out of this issue. Please!
- Take a global perspective, keep an eye on what's happening in places like Indian and Pacific Ocean islands, and use their experience to inform our policies. Avoid subsidizing any activities that would delay response or prolong denial, and minimize investments of public funds in areas expected to be inundated.
- Teach people how to swim, or at least tread water....
- Terminal Groins in the form of bulk heads or similar should be tested....
- thank you for this well-thought-out survey. I will forward it to others to take. MA
- Thanks for including me in your survey. Please keep me posted on the results. I'd like to add some more thoughts but my car pool is calling. Good luck!
- Thanks for reaching out and asking people about this issue. I would encourage you to seek info from communities that may not have internet access but still impacted by this issue and have value to add to this process of information gathering re: sea level rise.
- Thanks for the survey. Glad to see the issue is moving up in peoples' priorities.
- The Albemarle-Pamlico Conservation and Communities Collaborative (AP3C), a group of conservation and community development groups - including the Albemarle National Estuary Program, is actively working on this topic in the NE-NC region. Mayor Brian Roth of Plymouth is the current head of the AP3C Steering Committee.
- The beach nursing program done at Holden Beach I think has been very successful with little interruption to wild life.
- The Center for Sustainable Tourism has recently published â€œClimate, Weather and Tourism: Bridging Science and Practiceâ€. Please contact Lana Williams at williamslan@ecu.edu if you would like to receive a hard copy of this report.
- The Climate Ready Estuaries work being done in Albemarle-Pamlico and the report from the Public Listening Sessions in Albemarle-Pamlico Sound area are both worth watching for what comes out of them. Sure DCM is well aware of both.
- the coastal scientists from the Universities of North Carolina are your best resource. When it comes to getting information about what is going on and the effects on the state there is no need to reinvent the wheel. The knowledge that is needed is largely already available, it just needsd to be coalesced. Don't forget some of the older profesors who may not be actively teaching or researching right now i.e. Orrin Pilkey for example, we have a treasure trove of informed minds in this state. I am a homeowner in one of those critically affected areas, in fact, many of your suggestion choices that I'm against would benefit me financially. The Coastal Resources Commission or Division of Coastal Management has a golden opportunity in this situation to mahe correct decisions od great import that will affect life in this state for decades to come. While the process and results may be unpalatable to many it is imperative the the agency rise above pettiness and the greed of the few to do what is right and best for the many.
- The CRC was the result of North Carolina taking a leadership role in coatal management many decades ago. We as a state staked our future on a natural and accessible coast. It has served us well. We need a new era of bold leadership that maintains those values in the face of great pressures to do otherwise. Audubon would love to help in any ways possible.
- the entire issue of sea level rise is being perpetrated by a lie called Global Warming. If we eliminated the issue of global warming (spent over $70 billion and no scientific evidence as of yet), would we even be having this discussion?
- The issue needs study to determine how significant an issue it may be before contingency plans are appropriate. The issue may not require any action other than definition at present.
- The issue of nitrogen nutrient sensitivity is closely tied to sea level rise especially in the Albemarle region. As the Albemarle gets more saline, its sensitivity to nitrogen will increase and result in algal blooms and possibly fish kills. Actions could be taken now to ramp up to controls on nitrogen management in the watershed thus avoiding the need to get big nitrogen loading reductions over a shorter time span.
- The issue of sea level rise is connected to the issue of global warming. The postive effects of global warming should be anticipated along the coast more so than the negative effects of sea level rise. For example, more boating access points should be installed along the coast in anticipation of year-round boating activities. The positive effects on local economies should be considered also.

- The most important things are to 1. stop building in high risk areas (do not subsidize insurance in these areas, require larger setbacks, do not allow engineering quick-fixes like beach hardening) 2. prioritize highest risk areas and strategize for mitigation and adaptation which should include strategic retreat where appropriate. 3. do not allow engineered shoreline management (e.g., beach hardening and replenishment) - this will just exacerbate sand management issues, delay the onset and increase the severity of impacts, and create a false sense of security, incentivizing more unwise development in high risk areas. North Carolina still has the opportunity to be the leader in the U.S. on sustainable sandy beach coastal management, but really needs to develop some kind of consensus plan so that future attacks on coastal management policy are avoided in the future.
- The National Academies are putting together a series of reports, America's Climate Choices, that might also offer advice on adaptation for both ecological & human communities.
- The problem(if it is real) should be treated as specific area problem and not in a general way.
- The recently released U.S. Climate Change Science Program report on Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region should be a must-read document by all members of the CRC and CRAC, as well as staff of the DCM. It would be ideal if the work group that did this report would make its sea level rise model for the Albemarle Pamlico pennisular available to the public so that we could do simulations of various assumptions of sea level rise and the collapse of soils. The Secretary of DENR should provide very public, moral leadership on this huge issue. The CRC should stop spending so much time on transcations and begin focusing on real strategic issues related to our coast.
- The role of assessing the area(s) affeted by a potential rise, updating masp, and communicating these effects is of paramount importance. At some point a rise would move NC's barrier islands westward.
- The same tools that can be used to mitigate sea level rise will also pay dividends in hurricane and coastal storm mitigation.
- The state should not fund any activities to relocate or overly protect private properties.
- the time for action has long past.
- There are a number of on-going initiatives addressing SLR in the state. Some of these are funded federally and others with state dollars. One example is being led by RENCI. It would be really great if these efforts were better coordinated and included greater representation by other state agencies and universities than those currently at the table. NC has a wealth of knowledge in this area, but it is not being exploited. Some thought as to how to get all of this information on the table is needed.
- There are people who have legitimate concerns about the effects of sea level rise on our economy and the lives and businesses of people who live on our coast. I acknowledge those concerns, but others are better equipped than I to address those issues. Rather, I would like to focus instead on the issue of coastal biodiversity. The coastal species that I work to conserve have evolved in the context of dynamic coastal processes. These natural processes create and maintain the habitat conditions that are required for successful reproduction. From a biological standpoint, my concern is not a limited (1â€™) sea level rise, but rather, how people will respond to that rise. Will people allow coastal processes to continue, and the beaches to move in response? Or, will people revise existing statutory provisions that restrict hard structures and then and attempt to stabilize the coastal shorelines by constructing sea walls, jetties, and groins? For a range of logistical, financial, legal, and engineering reasons, I question whether costal stabilization efforts will be successful in protecting large areas of costal development over the long term from sea level rise. Unquestionably, such a stabilization effort would result in the loss and degradation of intertidal and dry beach habitats, and cause severe adverse impacts to the endangered, threatened, and at-risk species that depend on those beach habitats. I am very concerned that many people on the coast are not thinking about the issue of sea level rise and how it will interact with other coastal conservation issues. Among some, there is an unfortunate distrust of scientific expertise. Sea level rise will occur. It will have drastic impacts on our lives, our economy, and, depending on how we respond, on the environmental values of our coast. I fear that we are not approaching this issue in a realistic manner, and structuring incentives as well as regulatory mechanisms in a manner that is consistent with our knowledge of sea level rise
- There is a large study being conducted on Marine Corps Base Camp Lejeune that will include information and models of response of coastal habitats to SLR.
- There is a USACOE study on the Cape Fear River dealing with waterlevel changes that is being run by Dr. Lynn Leonard of UNC Wilmington that should be incorporated. lynnl@uncw.edu
- There is detailed information about the assumptions and technical issues involved in interpreting sea level rise data from NC monitoring stations. There are histrical boring studies in the coastal plains offering insight to long history

records. Publishing of these analyses and continuous refinement are wise. I don't think that NC is at the point of being knowledgable enough for meaningful content planning. I do think that enough is known to offer and evaluate planning processes by which good decisions can be made. NC does not need shorelines like New Jersey. NC can afford to have freely developing shorelines as Pilkney has long recommended. The best options are in between with a close eye on what Florida and Virginia have already accomplished. A general encouragement for planned and partial withdrawal from the most foward NC Coastal Areas does make sense. For example, Core Banks is better than parts of Hatteras. Portsmouth Island and its withdrawal history is better than Nags Head and Kitty Hawk. Hatteras or even Atlantic Beach is better than the central Atlantic Coast of Florida like Daytona Beach (which should not happen in NC). . City and Town Planning should not encroach further on immediate NC Coastal Areas. A Town like Belhaven should not be give Federal or State Funds to elevate homes. These Towns should be allowed to disappear as they are destroyed by storms whether due to either global warming or just cylical disasters. Purchases by Government for Public Use only and not tax base improvement should be used to encourage the withdrawal process along with very liberal estate gift treatments of coastal lands (specifics here can be offered by this respondant).

- there is no definitive study to prove we have a sea level rise. I understand a professional dept. such as CRC would want to address a real issue but this appears to be an attempt to make up an issue -- be an alarmest-- to find a way to make work.
- There is not general agreement or scientific substantiation as to the degree of sea level rise or fall, if any, in the near to far term, to justify any condemnation, confiscatory or taking of private property rights. Everyone, the public, wants to use the beach. Local communities depend on the tax base provided by coastal properties. The state and the federal government should continue to provide whatever financial and regulatory support it can to help those coastal communities keep those properties and beaches available for public use. In front of my house I see sunbathers, walkers, fishermen, horseback riders, car and truck drivers, loggerhead turtles, Atlantic bottlenose dolphins, etc. As an oceanfront property owner, I provide the opportunity for many tenants to come and enjoy the beach. All of us together pay the cost of maintaining that structure and privilege. The beach in front of my property is in the best shape it's been in in the last eight years, partially due to the diligent renourishment efforts of the Town of Emerald Isle. I was assessed $7,000 over seven years to help pay for that and it's maintenance. I see nothing wrong with the State and the federal government's continuing with the present support they currently provide to help stabilize the coastal beaches and protect the properties near the beach.
- There is still a great need to convince not only the general public and local government officials, but many state agencies that this is a real threat to the resources they manage in the near future, and that there are viable solutions. Many feel it is so far away, or something they can not control, that they shouldn't bother.
- There needs to be much more research done which is supported on the federal level as these communities are a good lithmus for the rest of the country.
- There should be no government buyout of at risk property.
- Think about effects beside strictly inundated communities. Although these do garner the most immediate need for attention, related effects such as saltwater intrusion into the highly productive agricultural lands in the NE part of the state might also require support for helping farmers to cope with new conditions (new crop types, less fertile land, etc.)
- This is a serious problem that we have the opportunity to get in front of. It's coming and it would be to our advantage to be proactive.
- This is all a balancing act. Brunswick County seems to rely heavily on the revenue from Holden Beach taxes and the businesses and related activities that support that area. Rentals, restaurant revenues, businesses, etc. can't survive if taxes and insurance rates continue to rise at the current rate. The state and local governments need to decide whether they value these coastal resources and wish to encourage or discourage their continued existence. They also need to take into account the people factor. Many, many families value their time together at the beach. Even my grandparents who were born in the late 1880's and who were very poor and who never left their state, managed to go to the beach to fish once every few years. On the other hand, some of the research and commitments involved in sea level rise will be very expensive. The least expensive part will be passing restrictions that require significantly more setback and a lighter, smaller development footprint in the sand.
- This survey has been helpful to me in showing the terms of current thinking. I encourage you to think outside the box, with other sectors or disciplines and states and regions outside the US. I realize that this is probably new for you, and thank your for taking this survey. We need to adapt to inevitable results, and prevent further sea rise. Letting NC residents know what they have in common with low-level islands, Bengladesh and the Netherlands and other flat coastal

areas might be helpful. The internet now makes this cheap, and many of these areas have many people who speak English. When can I read the results of the survey? Thanks!

- This survey is a waste of time and $s
- This survey was biased toward more research funds to prove sea level rise. My opinion is that we should spend more time studying natural erosion rates on specific coastal regions, than spending time developing policy based on doomsday projections of total innudation from an organization that received sea level rise research funds this month. I've used the same boat ramp for over 30 years. At mean low water, the water level is where it was 30 years ago. At mean high water, the water level is where it was 30 years ago. If sea level rise is happening at greater and greater rates today, one would think that we would notice it, particularly at a boat ramp that was poured in concrete over 50 years ago.
- Those concerned about the potential sea level rise should move to the mountains or build an ark.
- Those individuals that own or build in hazard areas should bare the full burden of higher insurance rates.
- trying to stay informed
- Understandably much of our state and federal resources are concentrated at the highest risk areas in the northern coastal counties. However, the southern districts need specific maps and information for planning as well. We too could take a direct hit by a hurricane and transform our coastlines in a short time.
- USE ALL THE RESEARCH ALREADY DONE BY THE USEPA AND CORPS OF ENGINEERS. THE EPA LAUNCHED A HUGE SEA LEVEL PROGRAM IN THE EARLY 80'S. START WITH THIS. USE MONITORING DATA AND CURRENT ESTABLISHED MONITORING PROGRAMS. ELIMINATE FEMA SUBSIDIES ON COASTAL FLOOD INSURANCE FOR OCEANFRONT HOMES. PROHIBIT REDEVELOPMENT OF BEACH FRONTS DESTROYED BY HURRICANES. LOOK AT HURRICANE FRAN 1996 AND THE REDEVELOPMENTS THAT HAVE BEEN ALLOWED, ESPECIALLY THE NEW HOMES EAST OF THE INLETS FORMED DURING THE STORM (AND WERE BRIDGED FOLLOWING THE STORM). THIS ACTIVITY SHOULD NOT HAVE BEEN ALLOWED, NOW WE'LL DEAL WITH IT AFTER THE NEXT HURRICANE. ESTABLISH AN AGENCY COORDINATED BORROW SOURCE INVENTORY FOR BEACH NOURISHMENT PROJECTS WITH SPECIAL EMPHASIS ON EMERGENCY BEACH FILL SOURCES. ALSO SOURCES MUSTNOT INCLUDE SAND FROM ACTIVE COASTAL INLETS. PROCEED WITH MMS LEASES FOR SAND MINING IN OFFSHORE SOURCES IN COORDINATION WITH THE REOSURCE AGENCIES AND CORPS OF ENGINNEERS. ENSURE THE NC BIMP CONSIDERS SEA LEVEL RISE. MAKE ALL THIS INFO PUBLIC AND AVAILABLE TO OCEANFRONT HOME BUYERS. CONSIDER A BUY OUT OF OCEANFRONT HOME OWNERS. PERIODICALLY SOLICT COMMENTS SIMILAR TO THIS SURVEY.
- Use sound science to drive management decisions. Scientific organizations worldwide recognize this as a problem that we will face, so begin taking steps now to plan how to best cope with the changes that are coming.
- We are from Massachusetts, and like what was done with Cape Cod - forbid all beach property itself. Can only build way back - same for everyone. No special permits, which are SO easy to procure here in NC at the CAMA hearings. Need full action NOW, not years from now. ALL automobiles should be forbidden from beach at ALL times of year. Where we have property in Emerald Isle autos drive up and down beach in "off" season. Horrible for little kids, much less sea creatures. There are every so many feet boardwalks to beach, as well as piers, that disabled folks can continue to "fish" from. Need a legislative act that kills any auto/truck activity on any beach. It is wrecking what we do have. Our legislature is driven by special interests - real estate and developers. Need FEDERAL ACT forbidding autos/trucks on ANY beach in USA. Period. THANK YOU FOR ASKING.
- We are going to get wet, very wet, if nothing is done to resolve the issues of carbon based global warming. The tasks at hand are more appropriate energy sources (lots of them) and a realistic, factual approach to educating and guiding the public toward a more sustainable livelyhood.
- we are here to help in any thoughtful manner we can.
- We are willing to begin working on this. Call me at (919)716-0088
- We have had flood insurance for 30 years on Bogue Banks & never had a flood claim.
- We have several research projects on-going and under consideration that relate in whole or in part to the SLR issue.
- We need to change the structure of governance to reflect that management should include water and land use together and do management from the beginning of water sheds to the Coastal ocean
- We need, as a state, to be a lot more pro-active about this.
- We should continue our current policy of letting our coastline be formed by natural processes. We should encourage development away from coastal hazard areas. We should provide assistance to those who want to preemptively

remediate the effects of sea-level rise through programs for relocation assistance, low cost loans and tax incentives for voluntary setbacks.

- What about a study of the last 100, 200 and 300 years change in sea level affecting the NC coast? Is this a long-term cycle or ongoing? Thirty years ago the experts were worried about global cooling. See previous question. Thanks
- What are other states or agencies doing? The research and programs and any resulting programs or directives should be shared and consistent, the ocean won't just rise along NC coast, it will be the entire eastern seaboard. No need for someone to duplicate work done by a neighbor.
- What is the amount of sea level rise in the last decade....
- What websites keep up with these issues?
- Whatever happens, the state needs to try to limit politics in determining responses to SLR.
- While I am not an expert in sea level rise, I am a soil scientist. Observing the soils of eastern and coastal North Carolina, I am confident that those soils and their elevation relative to mean high tide is decending. Some of our undifferentiated coastal soils are not so different from the delta of Mississippi, and we have all observed what happend in New Orleans. If a person wants to build at the coast, fine by me, just do not expect me to pick up the tab when the building falls into the ocean, gets blown away by a hurricane or other coastal related disaster.
- While in 2009 it appears we are definitely on a course for sea level rise, there is always the possiblity that something will change and the trend will reverse. The economics of loosing the Outer Banks and other barrier islands is huge. Rapid loss of real estate prices will be devestating to many. My concern is that while I do believe this is happening and people should be informed, the panic and a rapid loss of real estate value are going to be hard to assimilate into the state economy. We need more funding for research so that people can get the straight facts and make decisions based on the best scientific information.
- Why does the state of NC need to try and stop a natural event if it happens. Why would we need to create another New Orleans? Any solution would not be sustainable. If you know that sea levels are going to happen why would the city of Oak Island replace its sewer lines? I'm sure they have received federal and start funds to complete this project. I just returned from a vacation on Oak Island and it made me start thinking of the investment dollars then I opened this survey.
- Why don't you quit looking for new things to spend money on.
- With our without sea level rise, development in coastal areas can be risky at best, particularly along the dunes on our barrier islands. This development should be restricted and only allowed at the developer's/ property owners' risk. Other folks should not be responsible for subsidizing developers' and property owners' losses via taxes or public trust funds. Coastal systems are completely dynamic and attempts to minimize those dynamics, such as sand-bags, groins, bulkheads, and sand replenishment are costly, only provide short-term effects, and sometimes cause more damage than good and, therefore, should be avoided. Sea level rise will only exacerbate these current issues.
- would be happy to discuss these issues with anyone at CRC/DCM.
- Yep, it is going to happen. How much is still to be determined.
- Yes this is the worst survey I have ever seen. If you answer no to number 1 nothing else applies. Fire your consultant.
- yes, I believe EEP can provide information on how our program would be affected by sea level rise
- Yes, read the real data and use that data in educating the public that the wild "hockey stick" projections are pure speculation and hysteria, and base any positions on actual historical data.
- Yes.....focus your efforts on dealing with the real problems of erosion on the ocean beaches and better water quality in the tidal areas preventing shellfish closures.
- You are assuming that there is a problem where there has been no substantiated science to back it up. Highly biased questions render this questionaire pointless.
- You are doing a great job with a very difficult and constantly fluxuation problem. It is my opinion that you would have greater support statewide if your focus were to be more consistent with all areas of water caused erosion, attempting to protect those areas that are not or minimally developed, create greater incentive for rehab of existing development, and purchase of greater amounts of river and sea shore areas for collective recreation and conservation. I would be happy to assist the next time you consider a survey. Have a great day! Sue Bulluck 910/619-2026
- You are probably aware of the NOAA NC EESLR research and FEMA-funded NC SLR Risk Mngt Study. I have observed little DCM involvement in meetings related to these studies, to date. I know that budgets are tight, however, we can not afford to wait on this issue! The academic community is here when you need us.

- You know about all these I think - the NC Sea Level Rise study that the Dept. of Homeland Security funded and which is being done by Dept. of Crime Control and Pubic safety (John Dorman) - EPA's ecosystem servivces researchers are creating a research program on "coastal carolinas" which will be looking at the impact of climate change (and other stressors e.g. development) on ecosystem services. NOAA is doing a lot of work as well.
- You may be creating unnecessary excitement about a problem that is not so pressing. Go balance the budget.
- You should be in contact with Janine Nicholson (Office of Conservation and Community Affairs), who is coordinating these efforts for N.C. DENR. Her phone number is 919-715-2700
- You will not stop the building of houses in low propertys because $$ money can buy land that should not be build on. Theres a new housing project on hwy70 just north of East Carteret high school in the marsh and houses will be build there .I do not understand how the county can let houses be built there. I bet someone got money under the table to aprove it.Take a look for yourself and see if i am wright.
- Your survey is too complicated.