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Division of
Coastal Management



N.C. Sea-Level Rise Study Update

N.C. Coastal Resources Commission Meeting

May 15, 2014

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BACKGROUND

- March 2010 CRC Science Panel/Sea Level Rise Panel complete first NC SLRAR.
- November 2010 DCM starts meeting with local governments about Draft SLR Policy.
- April 2012 CRC Science Panel/Sea Level Rise Panel completes an Addendum to SLRAR.
- August 2012 CRC approves Draft SLR Policy for rulemaking;
HB819 becomes law without Governor's signature.
- October 2012 Draft SLR Policy withdrawn from the rulemaking process.
- Summer/Fall 2013 Nominations invited for ad hoc Panel members for the 2015 SLRAR;
New CRC members appointed pursuant to S.L. 2013-360.
- May 2014 CRC to discuss nominations and study charge.

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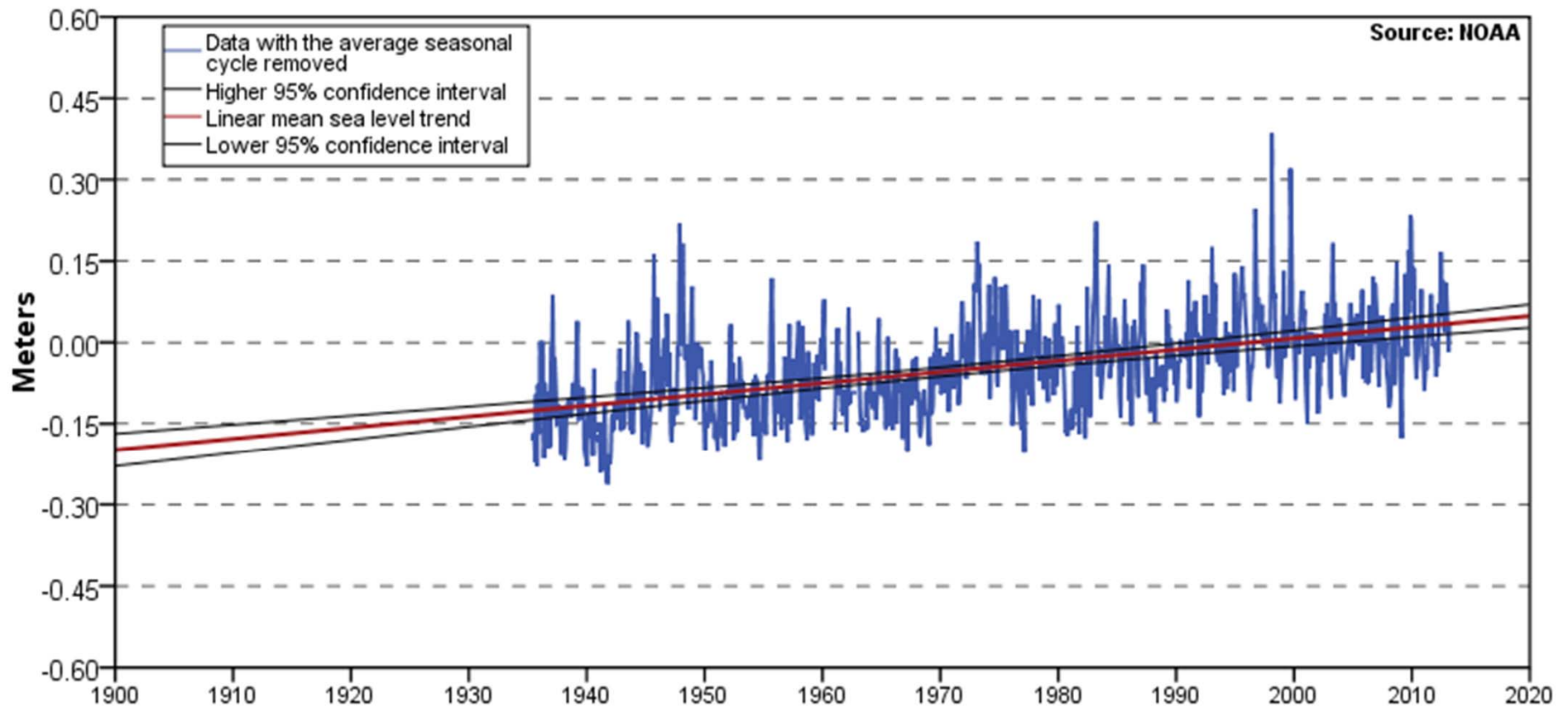


2010 SLRAR HIGHLIGHTS



NC tide gauges reveal a significant difference in the rate of SLR from the south of our coast...

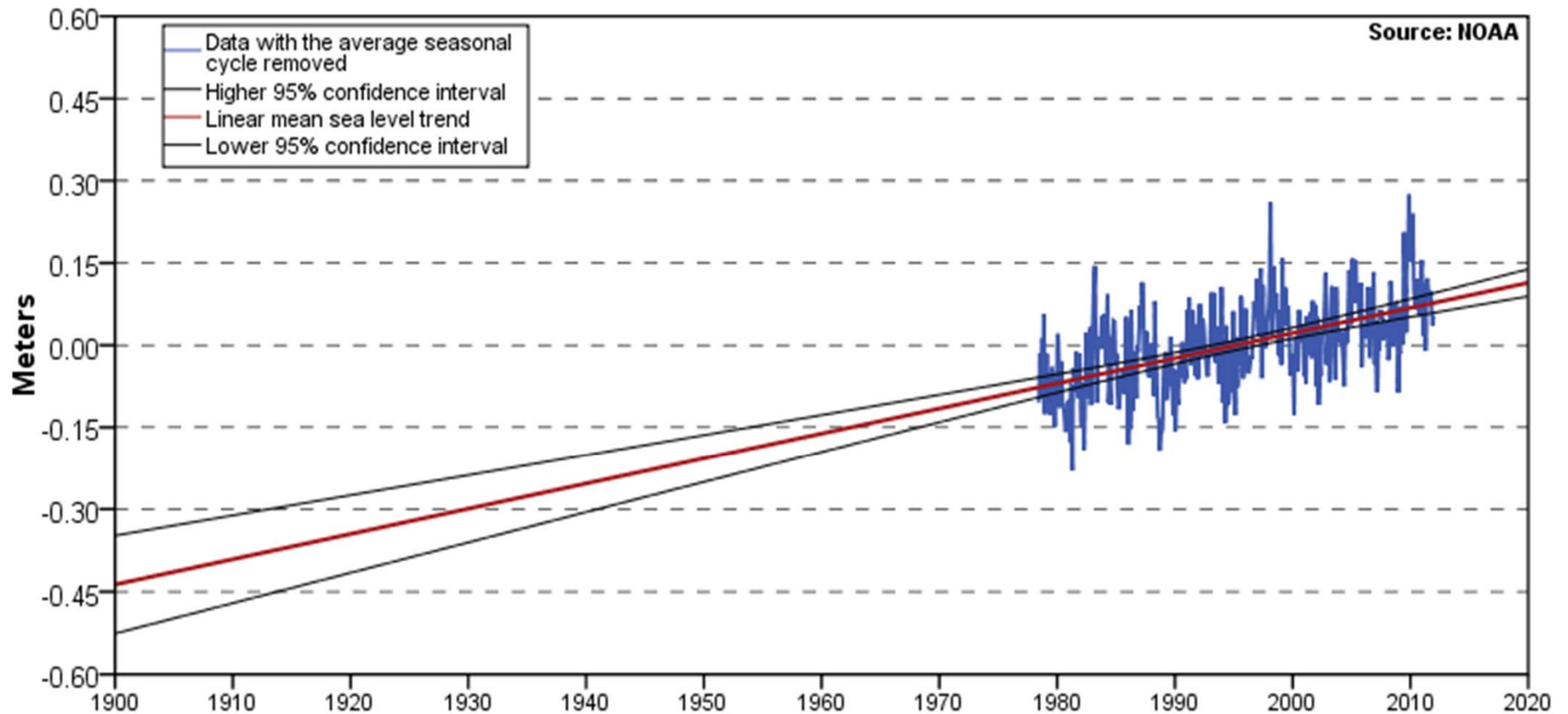
Wilmington, NC 2.07 +/- 0.40 mm/yr





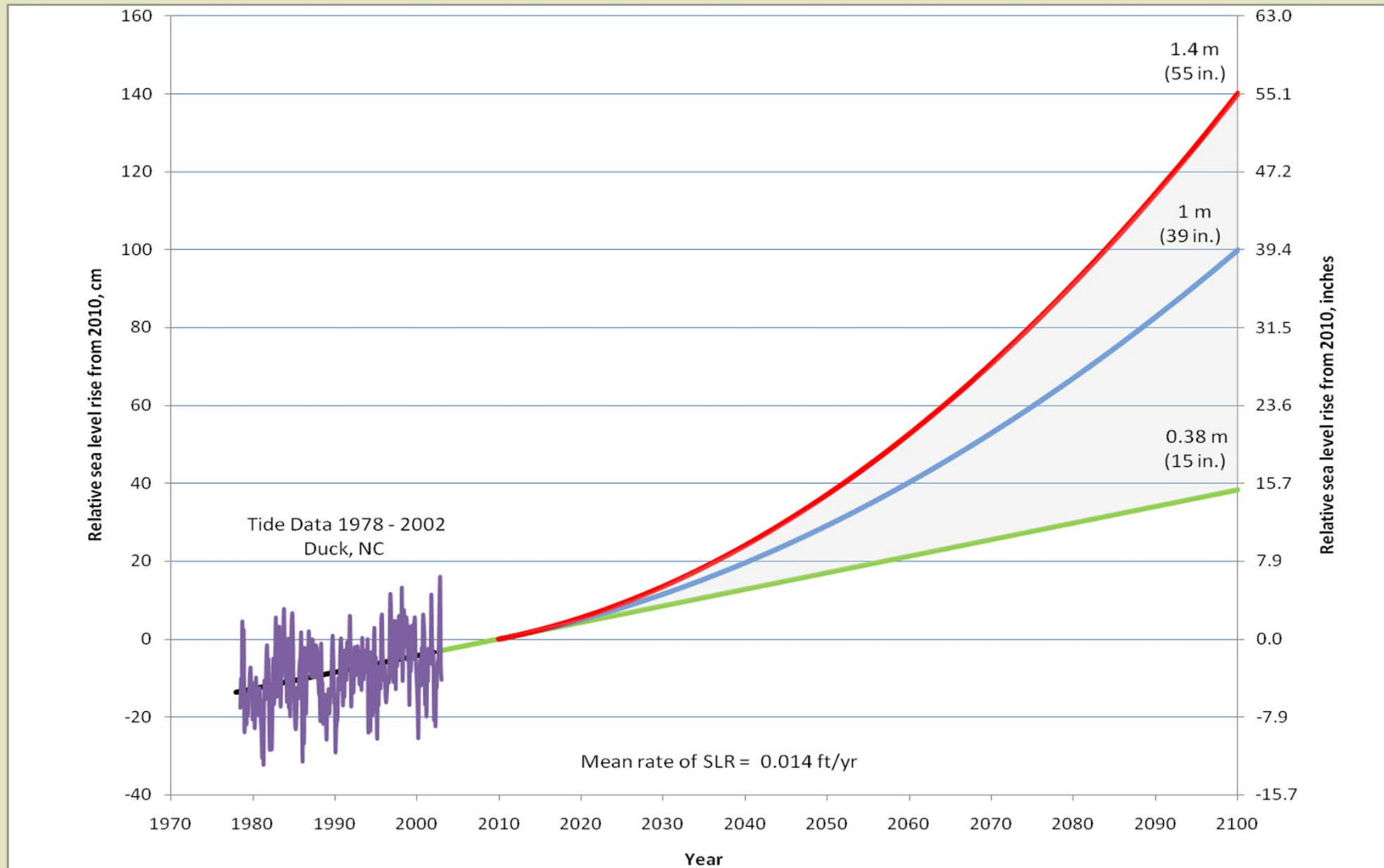
..to the north.

Duck, NC 4.59 +/- 0.94 mm/yr





The Panel presented a range & planning number



Source: North Carolina SLRAR, March 2010



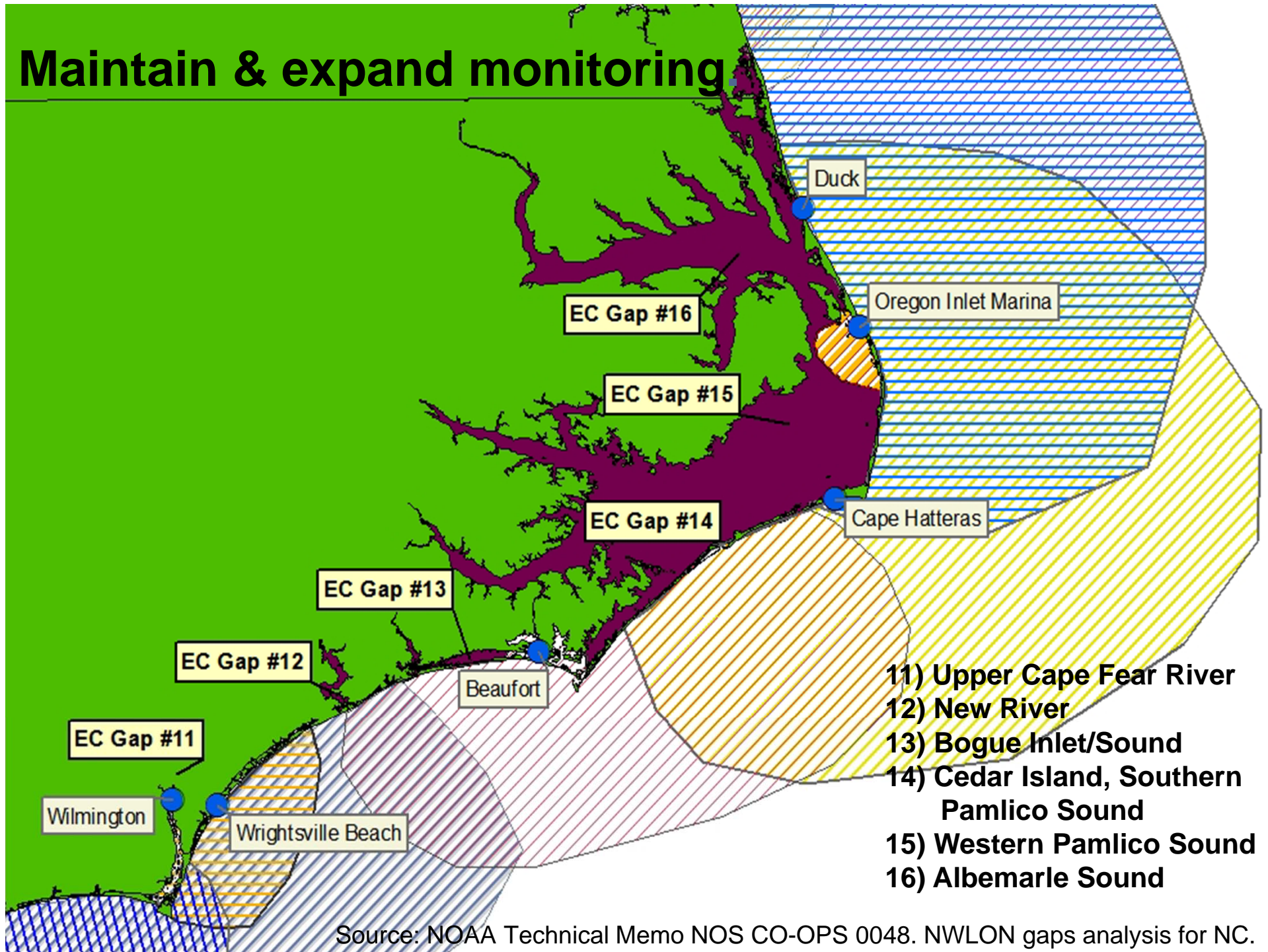
Confidence level or margin of error for the reported ranges and rate curves

(Source: 2010 SLRAR)

It is important to understand that the curves were generated using a constant acceleration rate to reach the selected endpoints derived from the literature, and **are not projections of actual sea level at specific future dates.**

As a consequence, **it is not accurate to interpolate quantities of sea level rise for specific years since we do not know whether RSL acceleration will be constant over the next 90 years.** The curves are primarily intended to illustrate the expectation of increased acceleration.

Maintain & expand monitoring



Source: NOAA Technical Memo NOS CO-OPS 0048. NWLON gaps analysis for NC.

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SESSION LAW 2012-202 (HOUSE BILL 819)

**GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011**



Session law 2012-202, SECTION 2.(c)

The Coastal Resources Commission shall direct its Science Panel to deliver its five-year updated assessment to its March 2010 report entitled "North Carolina Sea Level Rise Assessment Report" to the Commission no later than **March 31, 2015**.

The Commission shall direct the Science Panel to include in its five-year updated assessment a comprehensive review and summary of peer-reviewed scientific literature that address the full range of global, regional, and North Carolina-specific sea-level change data and hypotheses, including sea-level fall, no movement in sea level, deceleration of sea-level rise, and acceleration of sea-level rise.

When summarizing research dealing with sea level, the Commission and the Science Panel shall define the assumptions and limitations of predictive modeling used to predict future sea-level scenarios.

The Commission shall make this report available to the general public and allow for submittal of public comments including a public hearing at the first regularly scheduled meeting after March 31, 2015.



Prior to and upon receipt of this report, the Commission shall study the economic and environmental costs and benefits to the North Carolina coastal region of developing, or not developing, sea-level regulations and policies. The Commission shall also compare the determination of sea level based on historical calculations versus predictive models.

The Commission shall also address the consideration of oceanfront and estuarine shorelines for dealing with sea-level assessment and not use one single sea-level rate for the entire coast. For oceanfront shorelines, the Commission shall use no fewer than the four regions defined in the April 2011 report entitled "North Carolina Beach and Inlet Management Plan" published by the Department of Environment and Natural Resources. In regions that may lack statistically significant data, rates from adjacent regions may be considered and modified using generally accepted scientific and statistical techniques to account for relevant geologic and hydrologic processes.

The Commission shall present a draft of this report, which shall also include the Commission's Science Panel five-year assessment update, to the general public and receive comments from interested parties no later than December 31, 2015, and present these reports, including public comments and any policies the Commission has adopted or may be considering that address sea-level policies, to the General Assembly Environmental Review Commission no later than **March 1, 2016**.



2014

- May 1 CRC receives the 2013 list of nominees for ad hoc additions to the Science Panel for the SLR Assessment Report, and is invited to submit additional nominations.
- May 15
1. CRC considers a charge to the Panel for approval.
 2. CRC discusses nominees for the assessment report. Chairman appoints following the May meeting.
 3. CRC initiates call for nominees for a volunteer panel for the SLR cost-benefit study.
- June Staff contacts assessment report authors to schedule an in-person meeting.
- July Science Panel and ad hoc members meet to review the scope of work and develop a process for conducting the study (including report outline, methodology, individual assignments, standards for consensus, deadlines, minority opinion, etc.)



2014

- July 31
1. CRC finalizes scope of work for cost-benefit study.
 2. CRC considers nominees for the cost-benefit study. Chairman appoints after the July CRC meeting.

Sept/Oct Prior to the October 22-23 CRC meeting, Science Panel and ad hoc members meet to review progress on assessment report, and the cost-benefit panel will meet to develop their study charter. Staff will report on progress at the CRC meeting.

December Science Panel meets to finalize first order draft of assessment report.

2015

February Panel finalizes second order draft for March 2015 CRC meeting, and sends to cost-benefit panel.



2015

- March Panel presents the draft assessment report to the CRC; CRC invites public comments.
- May CRC holds a public hearing on the draft assessment report at their first meeting after March 31st. CRC requests revisions to the draft assessment report, if desired. Draft remains open for public comment.
- June Cost-benefit panel finalizes first order draft and staff forwards to the CRC for review.
- September Cost-benefit panel meets to finalize second order draft; CRC releases for public input.
- December Public comment closes on assessment report and cost-benefit study.



2016

January Staff forwards all public comments to Science Panel and cost-benefit panel for them to consider amendments to the draft reports.

February Study panels present final reports to the CRC. CRC delivers final reports, including public comments and any SLR policies adopted or under-consideration to the Environmental Review Commission.



Next steps:

1. Review and approve the draft charge to the Science Panel/Sea-Level Rise Panel.
2. Select additional members for the Science Panel/Sea-Level Rise Panel.



PROPOSED CHARGE TO THE SCIENCE PANEL/SEA-LEVEL RISE PANEL

The CRC has determined that the issue of potential sea-level rise is of extreme importance to the State, its policy makers and the citizens of NC. It is further noted that periodic updates of current data are vital to help formulate future policy.

The CRC therefore charges the Science Panel/Sea-Level Rise Panel to conduct a comprehensive review of scientific literature and available North Carolina data that addresses the full range of global, regional and North Carolina specific sea-level change.

The CRC further determines that the scope and time period of the study and report regarding sea-level rise shall be limited to a “Rolling 30 Year Time Table”. It is the intent of the CRC that this Rolling 30 Year Time Table will be updated every five years.

The CRC further directs the Science Panel/Sea-Level Rise Panel to report regional ranges of possible sea-level rise as described in S.L. 2012-202.

It is the policy of the CRC that a 30 year study period is consistent with other time periods such as oceanfront setback policy and home mortgages.



Ad hoc nominees

1. **Larry Atkinson**, Old Dominion University (Rob Young)
2. **Robert Brown***, Duke (Larry Baldwin)
3. **David Burton***, NC-20 Science Advisor (Larry Baldwin)
4. **Reide Corbett***, ECU (Stan Riggs and Pete Peterson)
5. **Carolyn Currin**, NOAA (Pete Peterson)
6. **Dave Mallinson**, ECU (Stan Riggs and Pete Peterson)
7. **Nicola Scafetta***, Duke (Larry Baldwin)
8. **Stan Young***, National Institute of Statistical Sciences (Larry Baldwin)

**Nominated for both full and ad hoc membership*