

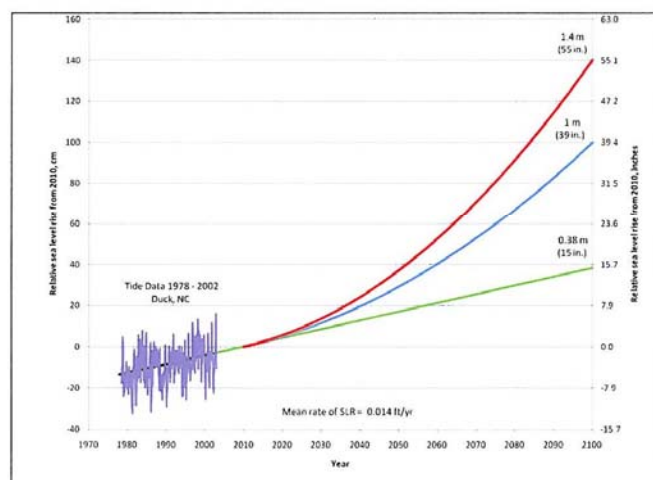


Sea-Level Rise

NC-20 achieved an important change to the proposed SLR draft the Coastal Resources Commission in March of 2011. It all started with the Power Point given by Rudy Rudolph, Director of the Carteret County Shore Protection Office, at the NC-20 meeting in New Bern. Legislative officials and county commissioners from around the region got a real education into the "flawed science" behind the CRC's draft proposal. That proposal mandated that a 39 inch sea-level rise be included in all land use plans in the NC-20 counties. There were a number of policy problems including the requirement to raise the elevations of all public and private developments to accommodate that 39 inch rise over the next 100 years. Additionally, it ignored the effect the document might have on insurance companies looking at insuring coastal properties in the future. The effect such a requirement might have on bank lending for real estate in the region was another question mark. The graph, reproduced below,

CRC's THREE SCENARIOS

- (1) 0.38 m (1.26 ft. or 15 inches) by 2100, or a rate of 4.27 mm/year ("low")
- (2) 1.00 m (3.28 ft. or 39 inches) by 2100, or a rate of 11 mm/year ("middle")
- (3) 1.4 m (4.59 ft. or 55 inches) by 2100, or a rate of 15 mm/year ("high")



was the staff's main "science" for requiring such a drastic policy revision. Of the three lines in the chart, only the bottom line, which is linear, was based on data, but that data was from

Duck, North Carolina. The measuring station there is not even in existence anymore and the data set itself only went back to 1980 and comprised a span of 24 years. In terms of sea-level rise over a century, that is simply not enough of a data set to get a reasonable approximation of future impacts. Additionally, Duck had the absolute worst projection of sea-level rise of any of the other stations in North Carolina, approximately 16 inches. NC-20 suggested the graph was statistically indefensible to CRC chairman, Bob Emory in a meeting in New Bern. The data from Southport showed only half the rate of sea-level rise that Duck experienced and the data there went back to 1933; that gave a very compelling straight line approximation of sea-level rise, not the geometric increase shown on the other two lines on the graph. Those lines (red and blue) projected a sea-level rise of 56 inches and 39 inches, respectively. Their contribution to the fallacy of the graph is that they are based on absolutely no scientific data whatsoever. They are simply "guesses" on the part of the CRC staff. The red line was actually from a 2007 paper by an individual who retracted his estimate (cutting it in half) in a second paper written in 2009. By using the worst possible existing reading, that of Duck, and using it as a "minimum" to compare to the other two hypothetical lines, it afforded the Science Panel the opportunity to pick the middle line and appear to be "compromising" between the highest and lowest estimates.

By the time the meeting took place in Beaufort, the policy had been substantially revised as a result of NC 20 intervention. Absent were any mandatory policy requirements in land use plans or for any other use regarding sea-level rise. Instead, the final document attached simply required the CRC staff to provide relevant data to each county and allow it to do its own planning for potential sea-level rise. At the final presentation which deleted all of the previous policy mandates, we thanked the Chairman and the Board of the CRC. We also asked the staff that in the future projections be based on more defensible data than was used in the original document.

There is no doubt that the sea-level has been slowly rising. All of the data points within the state have shown sea-level rise, although it appears to be fairly slow, linear, and very manageable in most cases. One of the things that Rudy Rudolph included in his original presentation was the geological information showing that in many cases land in Eastern North Carolina, particularly in the northeastern part, is actually sinking, albeit slowly. This is because the bedrock in the northeastern part of the State was essentially lost to the continent of Africa during the continental separation. In the southeastern part of the State, it remained and the rate of settlement (called subsidence) has been significantly less, which is why the Southport reading showed only half of the sea-level rise of the northeastern reading at Duck.

Because of the variability of SLR from north to south on the coast, we suggested that a "one size fits all" approach was not logical. The CRC agreed and decided that each county should be able to assess its own potential for sea-level rise and act accordingly. A very special thank you to Rudy Rudolph, Carteret County Shore Protection Office, and to Larry Baldwin and Missy Baskervill who were intimately involved in this project on behalf of NC-20. It is a tribute to them that Chairman Emory publically thanked NC-20 in his closing remarks.