

# Sea Level Rise

## Q&A Notes and Resources

### Links to resources:

- NC State Extension Publication on Saltwater Intrusion in North Carolina's Coastal Plain: <https://content.ces.ncsu.edu/saltwater-intrusion-in-agricultural-fields-in-northeastern-north-carolina-and-potential-remediation>
- NC Sea Grant local sea-level rise two-pagers: <http://masgc.org/northern-gulf-of-mexico-sentinel-site-co/two-pager>
- New flood risk project <https://floodfactor.com/>
- NOAA sea level rise viewer: <https://coast.noaa.gov/digitalcoast/tools/slr.html>
- Sea Level Rise chapter, Fourth National Climate Assessment, Volume I <https://science2017.globalchange.gov/chapter/12/>
- NC King Tides <Nckingtides.web.unc.edu>

### Onsite Wastewater:

- North Carolina Onsite Wastewater Contractor and Inspector Certification Board:
  - <https://ncowcicb.info/>
  - Note from presentations: that the system that is installed is determined by the Environmental Health staff (regular permit) or an engineer (Engineer Option Permit). The installer has to install according to the permit. For more information, see the NC DHHS Onsite Water Protection Branch (<https://ehs.ncpublichealth.com/oswp/>) and rules (<https://ehs.ncpublichealth.com/rules.htm>).
- North Carolina DEQ Septage program:
  - <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules/septage>
- More information about septic systems from the EPA, including the mound systems discussed during the webinar: <https://www.epa.gov/septic/types-septic-systems#:~:text=Mound%20systems%20are%20an%20option,the%20mound%20in%20prescribed%20doses.>

### **Question and Answer Session:**

- **What accounts for the 1.5 to 2 ft difference in high/low tides along the NC coast?**
  - The tide is generated in the deep ocean and then propagates onto the continental shelf to the coast. The size of the tide grows larger as the width of the continental shelf increases. The continental shelf is wider in the southern part of the state than it is in the northern part of the state

- **Do the melting glaciers around the world have an impact on sea level rise for NC?**
  - Global sea level rise results from both melting of glaciers/land ice and from expansion due to warming (steric). The melting component contributes about twice as much as the expansion due to increasing temperatures (steric).
  - [Chapter 4 of NCCSR](#) contains the figure with the total sea level rise along with the contributions from melting and warming (see Figure 4.2).
- **What impact will this have on agriculture? Salt is present in some groundwater areas in Onslow County.**
  - These Extension publications provide information about saltwater intrusion and its effects on agricultural soils:
    - <https://content.ces.ncsu.edu/effects-of-wind-induced-sodium-salts-on-soils-in-coastal-agricultural-fields>
    - <https://content.ces.ncsu.edu/saltwater-intrusion-in-agricultural-fields-in-northeastern-north-carolina-and-potential-remediation>
- **If someone (in NC) has an onsite septic system, where should they go to learn more about their system's risk for becoming compromised or failing and available options?**
  - NC State Extension publications:
    - Septic Systems and Their Maintenance: <https://content.ces.ncsu.edu/septic-systems-and-their-maintenance>
    - Septic Systems Owner's Guide: <https://content.ces.ncsu.edu/septic-system-owners-guide>
  - NC DEQ information page on solid waste management: <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules/septage>
- **Even though response plans are still in development, how should we strategize to start to get the word out to local citizens about what they may face with their on-site wastewater systems in the coming years? Can we leverage local Soil and Water or Cooperative Extension agents?**
  - It is my intent to use our research as a jumping-off point and coordinate with other groups like Soil and Water.
- **What are the research questions you see us tackling regarding sea level rise in North Carolina over the next 5-10 years?**
  - Continuing to build on our understanding of the science, and how changes will manifest along our coast.
  - We have some understanding of what changes and impacts to expect, as well as possibilities for adapting to or mitigating them, but these solutions are costly. Figuring out how to pay for them is an important area for future work.