



Flooding and Sea Level Rise on the Eastern Shore: Frequently Asked Questions

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Flooding and Sea Level Rise on the Eastern Shore: Frequently Asked Questions

Q: What do we mean by sea-level rise, shoreline erosion, recurrent flooding, and increased storm occurrence?

A: **Sea-level rise** is the long-term change in the relative level of land and sea. On the Eastern Shore, multiple factors contribute to sea-level rise, such as the melting of ice as the ocean warms, the gradual sinking of the land, and ocean current patterns. **Shoreline erosion** is the gradual breakdown and movement of rock, vegetation, and other sediment due to both physical and chemical processes of water, wind, and general meteorological conditions. **Recurrent flooding** is flooding that occurs repeatedly in the same area over time. It can be due to precipitation events, high tides, elevated groundwater level, or storm surge. **Increased precipitation** is an increase in overall rainfall due to increased temperatures and an accompanying increase in atmospheric moisture content. We are concerned about these issues because the effects are expected to increase with climate change.

Q: What are the historical trends and future projections of these effects?

A: Sea level has risen considerably over time and has been measured to have increased nearly 1.5 feet since the 1930s in the Hampton Roads region. While the measured increase in sea level since the 1930s is consistent with historical trends, numerous studies are in agreement that the rate of sea-level rise is accelerating, with future levels being approximately 1.5 to 2 feet higher by 2050 and as high as approximately 9 feet by 2100 (VIMS, 2017). Since sea level rise projections for this region are higher than others along the coast, the Eastern Shore's coastlines are constantly responding and will continue to evolve in response to these changing conditions. Additionally, water temperatures are on the rise and the Eastern Shore's climate has warmed bringing a variety of changes to the type and abundance of wildlife and aquatic life. Also, the time period that certain species migrate through the region, and the growing seasons of our vegetative species are being affected by rising temperatures. The region has also seen extreme precipitation conditions relative to historic trends, leading to intense rainfalls. More information can be found in the region's Hazard mitigation plan, available at: <https://tinyurl.com/yysxv93t>.

Q: What problems are these effects causing and what are possible future problems?

A: Impacts from flooding, erosion, and storm activity can range from temporary road closures to the loss of personal property, critical infrastructure, and even life. Several areas are currently vulnerable to road closures during storm events and it is expected that future elevated water levels will have increasingly significant impacts on transportation infrastructure and the communities, facilities, and economies that depend upon them. The Accomack-Northampton Planning District Commission (ANPDC) partnered with the Virginia Department of Transportation to conduct a regional study and vulnerability assessment of the effects of inundation on



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transportation infrastructure. The study is available at this link: <https://tinyurl.com/y3ss3l3f>. Storm events also bring about an abnormally elevated height of sea level, often called a storm surge. In addition, water, utilities, and septic systems can be impaired during flooding and storm events. Finally, on some Eastern Shore farmlands, saltwater encroaching into surface and groundwater as it is pushed by the rising sea level is making crop production increasingly difficult in low-lying areas.

Q: Are there existing tools and resources where I could learn more about these topics?

A: *The Nature Conservancy* has developed an interactive coastal resilience tool customized for the Eastern Shore of Virginia. It features an interactive map that explores the effects of sea-level rise and coastline change, and it can pinpoint specific locations on the Eastern Shore. One thing you can learn from this tool is a general idea of your elevation and what you can expect with regards to your property <https://maps.coastalresilience.org/virginia/#>. ***ADAPTVA*** is an online portal with multiple tools, including Virginia's flood risk information system, shoreline management information, and an interactive map that projects sea level rise and potentially vulnerable areas <http://adaptva.com/info/tools.html>. ***The Accomack-Northampton Planning District Commission*** established a climate adaptation working group to coordinate efforts among local, state, and federal representatives of government, aquaculture, agriculture, and community organizations to better plan and mitigate risks associated with climate change and sea-level rise. For more information email info@a-npdc.org or call 757-787-2936.

Q: How will flooding and weather events affect my access to emergency services? What should I do in case of an emergency?

A: Due to flooding, evacuation, or road closures, emergency services may not always be able to make it to you, particularly in a timely manner. You should keep and maintain an emergency plan in your home for these situations, as well as an emergency kit that contains items such as non-perishable food items, plenty of water, a battery-operated radio, a first aid kit, and important family documents. In addition to this, identify your closest emergency shelter. Leading up to significant storms, local emergency managers will determine what actions, including evacuation, are necessary. During an emergency be sure to listen to the radio for updates, the primary radio stations for Eastern Shore warnings are WESR 103.3FM (1330AM) and WCTG 96.5FM. Local television, as well as social media, will also be utilized by local emergency managers. If an evacuation is called, Evacuate via US-13 North into Maryland. Please note restrictions on traveling the Chesapeake Bay Bridge-Tunnel begin when winds reach speeds of 40 miles per hour. Note if you have specific medical needs, you should plan to accommodate for these in your emergency plan. The Federal Emergency Management Agency (FEMA) has a variety of information and resources to help you prepare for flooding, hurricanes, and other disaster events <https://www.ready.gov/>.



Q: What are the VDEM evacuation zones? How were they determined?

A: The Virginia Department of Emergency Management (VDEM) has placed evacuation zones, labeled A through D, across Coastal Virginia. The evacuation zones are hurricane storm surge zones determined by the National Hurricane Center using ground elevation and the area's vulnerability to storm surge from a hurricane. There are four evacuation zones, ranked by the risk of storm surge impact, with Zone A being the most likely to flood. When a storm is approaching, emergency managers will determine which zones are at risk and notify residents via local media, social media, and other communication tools, about what they should do to stay safe. Depending on the emergency, being safe might mean staying at home, a short trip to higher ground, or traveling to a different region. You can find your zone at knowyourzoneva.org. These VDEM evacuation zones are different than the FEMA designated flood zones. FEMA flood zones are determined based on an area's risk of flooding due to various sources such as riverine, poor drainage, sheet flow, coastal, and storms. FEMA flood zones are used to determine flood insurance premium rates and some building code requirements. FEMA flood zones should not be used to determine the need to evacuate. You can find your FEMA flood zone by going to <https://accomack.mapsdirect.net/>.

Q: What can I do to protect my property?

A: There are structural changes you can make to buildings on your property to make them more resilient to flooding. Often, this involves elevating the building onto a new, higher foundation. You can also install flood vents in your home that allow the free passage of water and prevent water pressure buildup. Additionally, vegetative buffers like living shorelines can help protect your property from flooding and storm surge. A vegetative buffer is a strip of natural vegetation along the shoreline that mitigates erosion and protects the shoreline. "Conserved" lands, including easements and preserves, are one way to ensure vegetative buffers remain in place. More information on living shorelines can be found at https://www.vims.edu/ccrm/outreach/living_shorelines/index.php. It is important that water is able to properly drain from your property, therefore routine maintenance of any ditches is critical. This is a shared responsibility of the Virginia Department of Transportation, localities, and private property owners. Information regarding Accomack County's Ditch Maintenance Program can be found at <https://www.co.accomack.va.us/departments/environmental-programs/ditch-maintenance>. Moreover, because flood damage is not covered by standard homeowners' insurance policies, another option is to purchase a National Flood Insurance Program (NFIP) policy through your insurance company. FEMA provides multiple resources regarding flood insurance, including this website: <https://www.floodsmart.gov/>.

