

# Health in Our Changing Climate: Rising Sea Level

## Why Now?

Higher sea levels can increase flooding and salt water contamination of low-lying areas, and weaken coastal infrastructure. Virginia is particularly at risk.

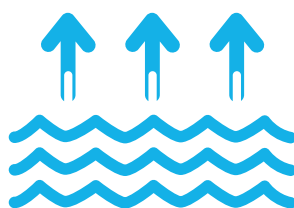
- Virginia has one of the highest rates of sea level rise. At the current rate, sea level in Norfolk will be 1-2 feet higher in 30 years.<sup>1</sup>
- Norfolk will see between 85 to 125 days of high-tide flooding by 2050, compared to the 10-15 days in 2022.<sup>2</sup>
- In 2015, 164,000 Virginians were at risk of coastal flooding. By 2050, an additional 137,000 people are expected to be at risk due to sea level rise.<sup>3</sup>
- In low-lying rural areas and older homes with septic systems, increased groundwater can cause septic tank failure and contamination of waterways. This damages public health, water quality and local fisheries.<sup>4</sup>
- In 2019, salt water contamination was found in approximately 30% of the 2,300 tested private water wells in Virginia. In coastal localities, the prevalence was higher.<sup>5</sup>

**Sea level rise is expected to increase septic system failures and salt water contamination of groundwater. These have serious effects on human health.**



**85-125**

Number of high-tide  
flooding days in Norfolk  
by 2050.



**137,000**

Additional Virginians at  
risk of coastal flooding  
by 2050.



**30%**

Of private wells tested  
with salt water  
contamination.



*Virginia Clinicians for Climate Action*

# Health in Our Changing Climate: Rising Sea Level

## Disparities in Impact

Some Virginians are particularly vulnerable to health and environmental harms due to sea level rise.

- Norfolk has seen a 577% increase in flooding time since the 1970s.<sup>6</sup>
- Many rural areas and older homes rely on septic tanks. Increased flooding and extreme rainfall can result in contamination of private wells and waterways with bacteria, viruses, nitrogen, and phosphorous.<sup>7</sup>
- Analysis of the Tidewater region showed that an increasing number of septic failure “hot spots” are located in places that impact water supply quality, such as at the top of streams or creeks.<sup>8</sup>



577%

Increase in flooding time  
in Norfolk since the 1970s

## What We Can Do

The Clean Energy and Community Flood Preparedness Act, passed in 2020, allowed Virginia to join the Regional Greenhouse Gas Initiative (RGGI) and established the Virginia Community Flood Preparedness Fund. RGGI is a market-based program which drives down heat-trapping pollution while also bringing in revenue to help with flood protection. In our first year of participation in RGGI, Virginia received **\$228 million**. These proceeds are already being used to enhance community flood prevention and protection.

Join Virginia's clinicians in supporting responsible policies to address sea level rise and the health needs of Virginians.

References:  
1. <https://www.vims.edu/research/products/slr/localities/nova/index.php>. Accessed 1/30/23  
2. Sweet, W.V., B.D. Hamlington, R.E. Kopp, C.P. Weaver, P.L. Barnard, D. Bekaert, W. Brooks, M. Craghan, G. Dusek, T. Frederikse, G. Garner, A.S. Genz, J.P. Krasting, E. Larour, D. Marcy, J.J. Marra, J. Obeysekera, M. Osler, M. Pendleton, D. Roman, L. Schmied, W. Veatch, K.D. White, and C. Zuzak, 2022: Global and Regional Sea Level Rise Scenarios for the United States: Updated Mean Projections and Extreme Water Level Probabilities Along U.S. Coastlines. NOAA Technical Report NOS 01. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD, 111 pp. <https://oceanservice.noaa.gov/hazards/sealevelrise/noaa-nostechrpt01-global-regional-SLR-scenarios-US.pdf>  
3. <https://statesatrisk.org/virginia/coastal-flooding>  
4. US EPA, O. (2019, November 2). Septic System Impacts on Water Sources [Overviews and Factsheets].  
5. VAHWQP (2019). Virginia Household Water Quality Program 2019 Annual Report.  
6. Ezer, T., & Atkinson, L. P. (2014). Accelerated flooding along the U.S. East Coast: On the impact of sea-level rise, tides, storms, the Gulf Stream, and the North Atlantic Oscillations. *Earth's Future*, 2(8), 362–382.  
7. Huffman, Jamie; Simonetti, Sarah; and Herbert, R. Scott, "Onsite Sewage Systems: Background, Framework, and Solutions" (2018). Virginia Coastal Policy Center. 35.  
8. Mitchell, M., Isdell, R. E., Herman, J., & Tombleson, C. (2021). Impact Assessment and Management Challenges of Key Rural Human Health Infrastructure Under Sea Level Rise. *Frontiers in Marine Science*, 8. 6.

