

Chesapeake Notebook

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## Study: Sea level rise poses threat to military bases in Bay

July 27, 2016

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*Much of Naval Station Norfolk in Hampton Roads, the largest such installation in the world, lies less than 10 feet above sea level. (Jeff Day)*

The giant Naval Station Norfolk and other military facilities on the Chesapeake Bay have long been prepared for defense, but now face a threat unlike any seen before: sea level rise of as much as seven feet by 2100.

A new [Union of Concerned Scientists](#) study evaluated the risks of climate-induced inundation at a sample of 18 military bases on the East and Gulf of Mexico coasts. Five are in the Bay's tidal regions.

[Naval Station Norfolk](#), the largest such base in the world, faces not only rising seas but subsiding land. A nearby air and army installation, [Joint Base Langley-Eustis](#), is also slowly sinking.

Between shifts in land and sea, the naval base at Hampton Roads could experience rising waters of as

much as two feet by 2050 and 6.9 feet by 2100, the union projects. And in a category 1 hurricane, the weakest, the storm surge could wash over a quarter of the base by 2050, up from roughly a tenth today, according to the study.

UCS used the mid-range and highest sea level rise projections of the [2014 National Climate Assessment](#) and projected the impact of storm surge using a [National Oceanic and Atmospheric Administration](#) computer model.

The report suggests that the Pentagon ought to be preparing its installations to deal with the highest sea level rise projections because risk reduction is a top priority for military assets.

A Navy official said the service is responding. Brian Ballard, Navy Region Mid-Atlantic community plans liaison, said Naval Station Norfolk is raising the height of existing piers and retrofitting them with double decks, to make it easier to access utilities and reduce damage inflicted during “heavy weather.” The Navy is incorporating climate change impacts in all its installation master plans, Ballard said, and the Defense Department is updating its building codes for new construction and renovation to reflect the risks.

However, the Pentagon’s sea level rise projections are significantly lower than those in the UCS study. The DoD forecasts rising seas ranging between one-quarter inch and one inch by 2050 at Naval Station Norfolk. Ballard declined to comment on the UCS projection that sea level could rise 1.4 feet to 2.0 feet by 2050.

That difference notwithstanding, Naval Station Norfolk does have tidal gates and other protections against storms that UCS did not factor into its study. For the longer term, Ballard said the Navy is not planning to install massive sea walls and gates akin to those used in the Netherlands, but has not ruled out any protective measure. The potential cost of adaptations cannot be estimated today, but whatever the enormous investment, it could be spread over time as infrastructure is repaired and rebuilt, Ballard noted.

The Navy official stressed that the service is collaborating on climate change adaptation with local, state, and federal government entities in the Hampton Roads region.

“We must work hand in hand to start proactively addressing the potential impacts of flooding and sea level rise,” Ballard said.

Not far from Norfolk, significant portions of Joint Base Langley-Eustis stand to be flooded at normal high tides by 2050. Up to a third of the Army’s Fort Eustis could be under water twice daily, according to the UCS study. At Langley Air Force Base, a fifth of the acreage could be inundated at every high tide.

Air Force Technical Sgt. Katie Gar Ward, spokeswoman for the 633rd Air Base Wing, said that to adapt to rising seas, Langley plans infrastructure changes, such as placing electrical equipment on raised platforms, shoreline stabilization efforts and having 50,000 sandbags on hand at all times. Langley also has a pumping station that can funnel 7.4 million gallons of water per hour into the Bay. Eustis has similar safeguards, minus the pump and sandbag stockpile, she added.

Other Bay military sites facing threats from rising seas include the [Naval Academy](#), the [Washington Navy](#)

Yard, and [Joint Base Anacostia-Bolling](#).

By 2100, flooding at high tide could cover as much as two-thirds of Naval Base Anacostia, one-third of the Annapolis military school and about 30 percent of the Washington Navy Yard, USC projected. Only Bolling Air Force would get off relatively unscathed, with less than 5 percent submerged by high tide. Storm surges could be far worse, the UCS warned.

The 18 bases along the East and Gulf coasts examined by UCS are far from the only U.S. bases facing climate problems. A roughly 3-foot increase in sea level would threaten 128 coastal DoD installations across the United States, according to a [2011 National Academy of Sciences](#) study.

Category: [Climate Change](#)



### About Jeff Day

Jeff Day covered government policy developments for more than 20 years at Bloomberg BNA, including Chesapeake Bay restoration efforts since 2009. [Send Jeff an e-mail](#).

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Skip Bazinet on July 27, 2016:

The sea level rising will have an adverse effect on naval installations. Wow, what an astute observation. I'm impressed.

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dagnabit on July 27, 2016:

I noticed that this propaganda piece did not mention Al Gore who said the ice caps would be gone by now

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