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# New climate report carries dire warnings

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Few places are in as sensitive position regarding climate change as the coastal Southeast, and an exhaustive and thoroughly cited report from the U.S. Global Change Research Program paints a troubling picture of what could await Brunswick and the Golden Isles over the next several decades.

The National Oceanic and Atmospheric Administration took the lead on the Fourth National Climate Assessment, which received a surprise release on Friday. The report’s list of authors draws on scientists and other officials throughout the federal government.

Generally, effects of rising temperatures and rising sea levels pose a significant threat to what could commonly be referred to as our present way of life, not to mention dramatic changes to the flora and fauna that currently call our area home.

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## The Heat

In its chapter on the Southeast, the report notes the increasing number of days when nighttime temperatures don't fall below 75 degrees, and cites studies that show the expectation is for that pattern to grow to, in some areas, as many as 100 more such "warm nights" by 2100.

“Exposure to high nighttime minimum temperatures reduces the ability of some people to recover from high daytime temperatures, resulting in heat-related illness and death,” the report states. “This effect is particularly pronounced in cities, many of which have urban heat islands that already cause elevated nighttime temperatures.”

A state climate summary by the NOAA National Centers for Environmental Information, and used as input by the U.S. Global Change Research Program, shows that Brunswick experiences more than 30 “very warm nights” annually, in which the low doesn’t dip below 75 degrees. In comparison, Atlanta usually only experiences four.

That also matters for people who work outdoors — those folks make up 68 percent of annual heat-related deaths. Information cited notes heat-related impacts on labor productivity in Southeastern states, estimated in 2015, amount to 570 million lost labor hours, or \$47 billion.

According to a map showing the higher scenario of projected changes in hours worked, by 2090, in Glynn County and surrounding areas, there is an estimated loss of 3-4.9 percent of work hours due to the warming climate. The data is based off an Environmental Protection Agency study from 2017.

The report cites numerous studies that predict warmer temperatures during winter will allow mangrove forests to move north, replacing existing salt marshes. While both salt marshes and mangrove forests have their beneficial impacts, replacing one with the other creates new problems.

“Foundation species are species that create habitat and support entire ecological communities,” according to the report. “In coastal wetlands and many other ecosystems, foundation plant species play an especially important role. Hence, the loss and/or replacement of foundation plant species, like salt marsh grasses, will have ecological and societal consequences in certain areas.

“While salt marsh and mangrove wetlands both contain valuable foundation species, some of the habitat and societal benefits provided by existing salt marsh habitats will be affected by the northward expansion of mangrove forests.”

### **Sea-level rise and persistent flooding**

Also, increased occurrences of what’s been termed as nuisance flooding are expected to continue. That results in impacts from the day-to-day to the long-term. Just this past week, part of U.S. Highway 17 from around Darien to Ga. Highway 99 in Glynn County had to shut down because of tidal flooding that put high tide around two feet higher than usual.

The flooding out of roads and rail lines pose a threat to ports from Charleston, S.C., to Jacksonville, Fla., as well, which the report states are “particularly vulnerable to both coastal flooding and sea-level rise.”

The report states that while the average global sea level rose 8-9 inches in the last 138 years, three of those inches were only in the last 28 years. The report also notes multiple recent studies showing the Southeast is at particular risk, with sea level rising here higher than at other places in the world, because of issues like sinking land and “oceanographic effects such as changing ocean currents.”

Coastal housing and infrastructure are also under the gun. The report reveals there is a 66 percent probability – matching the intermediate and intermediate-low sea-level rise projections – that along the Atlantic and Gulf coasts, between \$66 billion and \$106 billion of real estate will be below sea level by 2050, with that reaching \$238 billion to \$507 billion by the end of the century.

The report states, “Coastal property and infrastructure losses cascade into threats to personal wealth and could affect the economic stability of local governments, businesses and the broader economy.”

### **Spread of diseases**

The coast, from Charleston to Jacksonville, is already a prime spot for diseases spread by mosquitos and ticks, and continual warming is likely to only exacerbate that issue.

“Climate change is likely to modify the seasonality, distribution, and prevalence of vector-borne diseases in the Southeast,” according to the report. “Vector-borne diseases pose a greater risk in cities than in rural areas because of higher population densities and other human factors – for example, pools of standing water in man-made structures, such as tires or buckets, are breeding grounds for some species of mosquitoes.

“Climatic conditions are currently suitable for adult mosquitoes of the species *Aedes aegypti*, which can spread dengue, chikungunya and Zika viruses, across most of the Southeast from July through September.”

There’s an expectation for dengue cases to increase across the Southeast, though low winter temperatures may still prove a problem for these creatures and prevent the diseases they carry from becoming a year-round issue.

### **Reaction**

Though the report – totaling more than 1,600 pages – comes from a collaboration 13 agencies within the federal executive branch, including more than 300 scientists, President Donald Trump said Monday he'd read some of the report and remarked to reporters outside the White House, "I don't believe it."

David Reidmiller, chairman of the U.S. Global Change Research Program, told a group of reporters last week, "We hope you will focus on the content of the report. We think the report speaks for itself."

Local environmental advocates suggested there is clear evidence in the report for the need to adapt, but doubted whether the will to do so exists.

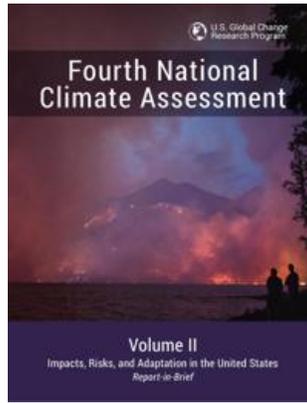
"One piece that stood out to me immediately was the recurring theme that more can be done to prepare for the impacts to come or mitigate projected risks," said Rachael Thompson, project manager for the Glynn Environmental Coalition. "When you have such a detailed report such as this, that outlines every possible projected impact from climate change – from environmental, to infrastructure and economic impacts, etc. – you have to ask yourself, 'Why aren't we doing more?'"

"The answer is simple – politics. Valuable time is being wasted debating whether or not climate change exists, when politicians should be spending that time collaborating with scientists to develop the political solutions that are needed to solve these developing problems."

David Kyler of the Center for a Sustainable Coast said that while "the outlook is very grim," it remains possible to change some of the outcomes.

"Unless unprecedented efforts are made to substantially reduce the combustion of fossil fuels within the next decade, the damage to life and property caused by extreme weather events – including wildfires, crop losses and flooding – will grow catastrophically worse," Kyler said.

He continued, "Although solutions to this problem are technologically feasible and economically viable, political resistance to transforming from fossil fuels to clean energy is powerful. Narrow profit-making interests opposing the needed remedies for climate change are being pursued at great peril to our future."



NCA Report in Brief  
 Bill Crane Nov 26, 2018



**Key Message 1**  
**Coastal Economies and Property Are Already at Risk**  
 America's trillion-dollar coastal property market and public infrastructure are threatened by the ongoing increase in the frequency, depth, and extent of water flooding due to sea level rise, with cascading impacts to the larger economy. Higher storm surges due to sea level rise and the increased probability of heavy precipitation events exacerbate the risk. Under a higher scenario (RCP8.5), many coastal communities will be transformed by the latter part of this century, and even under lower scenarios (RCP4.5 to RCP2.6), many individuals and communities will suffer financial impacts as chronic high tide flooding leads to higher costs and lower property values. Actions to plan for and adapt to more frequent, widespread, and severe coastal flooding would decrease direct losses and increasing economic impacts.

**Key Message 2**  
**Coastal Environments Are Already at Risk**  
 Fisheries, tourism, human health, and public safety depend on healthy coastal ecosystems that are being transformed, degraded, or lost due to climate change impacts, particularly sea level rise and higher numbers of extreme weather events. Restoring and sustaining coastal ecosystems and enhancing natural and nature-based infrastructure solutions can enhance community and ecosystem resilience to climate change, help to ensure their health and vitality, and decrease both direct and indirect impacts of climate change.



NCA Coastal Executive Summary  
 Nov 26, 2018



**Key Message 1**  
**Urban Infrastructure and People at Risk**  
 Many communities across the Southeast are particularly vulnerable to climate change compared to others in other regions, with impacted impacts to infrastructure and human health. The safety and vitality of these metropolitan areas, including the people and critical regional resources located in them, are increasingly at risk due to heat, flooding, and other more severe impacts brought about by a changing climate. Many of these cities have not recently grown and offer opportunities to amend effective adaptation efforts to prevent future negative impacts of climate change.

**Key Message 2**  
**Protecting Flood Risks in Coastal and Low-Lying Regions**  
 The Southeast's coastal plain and other low-lying regions support a rapidly growing population, a diverse economy, critical resources, and regional infrastructure that are highly vulnerable to climate change impacts. The combined effects of changing extreme weather and sea level rise are already increasing flood frequency, which impacts property values and infrastructure stability, particularly in coastal cities. Without significant adaptation measures, these risks are projected to exacerbate deep high tide flooding by the end of the century.



NCA Southeast Executive Summary  
 Nov 26, 2018

## Wes Wolfe