

The Virgin Islands Consortium

USVI, Puerto Rico To See Catastrophic Damage Resulting From Climate Change, U.S. Report Warns

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Imagine a Caribbean where water is a scarcity because of extended droughts. Then, when the rain does fall, it's wetter but shorter, leading to catastrophic flooding. Now, visualize for a bit saltwater intrusion associated with rising sea levels, which further reduces the availability of freshwater. In coastal towns -- which includes the U.S. Virgin Islands' three main municipalities: Charlotte Amalie, Frederiksted and Christiansburg -- the problem becomes the towns' very existence.

These are some of the findings in a major scientific report issued on Friday by 13 federal agencies. The report presents the most dire warnings to date of consequences the United States and the U.S. Caribbean face if notable steps are not taken to combat

global warming. The report finds that by century's end, effects of global warming could erase as much as 10 percent of the American economy.

The [1,656-page assessment](#) was mandated by the U.S. Congress and made public by the Trump Administration. The report's authors said the administration did not attempt to hinder the assessment's release, an interesting move since President Trump has proven to be one of global warming's biggest skeptics.

Extreme Events

Extreme events pose significant risks to life, property, and economy in the Caribbean, and some extreme events, such as flooding and droughts, are projected to increase in frequency and intensity. According to the report, increasing hurricane intensity and associated rainfall rates will likely affect human health and well-being, economic development, conservation, and agricultural productivity. Increased resilience will depend on collaboration and integrated planning, preparation, and responses across the region, the report found.

CLIMATE INDICATORS

↑ Stronger and more frequent
(drought, storms)



Changes in wildlife habitats and species distribution



Increasing ocean acidification



Increasing ocean surface temperature



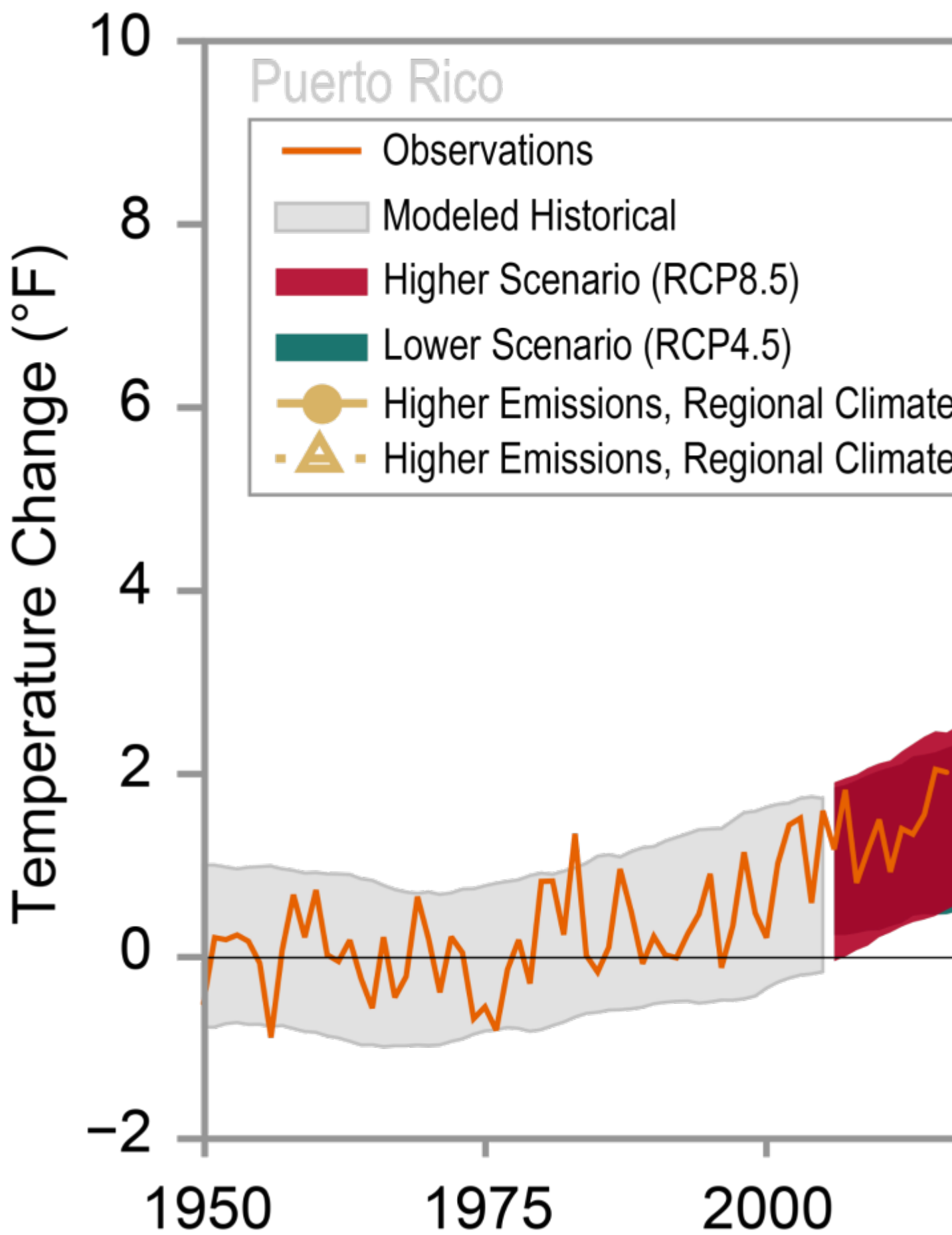
Increasing

CLIMATE IMPACTS

The Mapp administration, which was working collaboratively with the federal government to harden the U.S. Virgin Islands' infrastructure following the devastating 2017 storms, Hurricanes Irma and Maria, [was voted out of office on November 20](#). It's now incumbent on the incoming Bryan administration to continue those efforts.

The Caribbean lies in a region where the natural climate system acts in a way that compounds the effect that warm ocean temperatures have on hurricanes, the report says. In particular, when ocean temperatures are unusually warm, other environmental factors that affect hurricanes tend to be optimized. This is not the case for regions along the U.S. mainland coast, where warmer waters tend to cause other factors to restrain hurricanes. There are also disparities between the United States' resources to respond to local hurricane impacts and those of the Caribbean. Furthermore, any impacts that may be exacerbated by global and regional climate change tend to disproportionately affect regions that are geographically small and relatively short on resources.

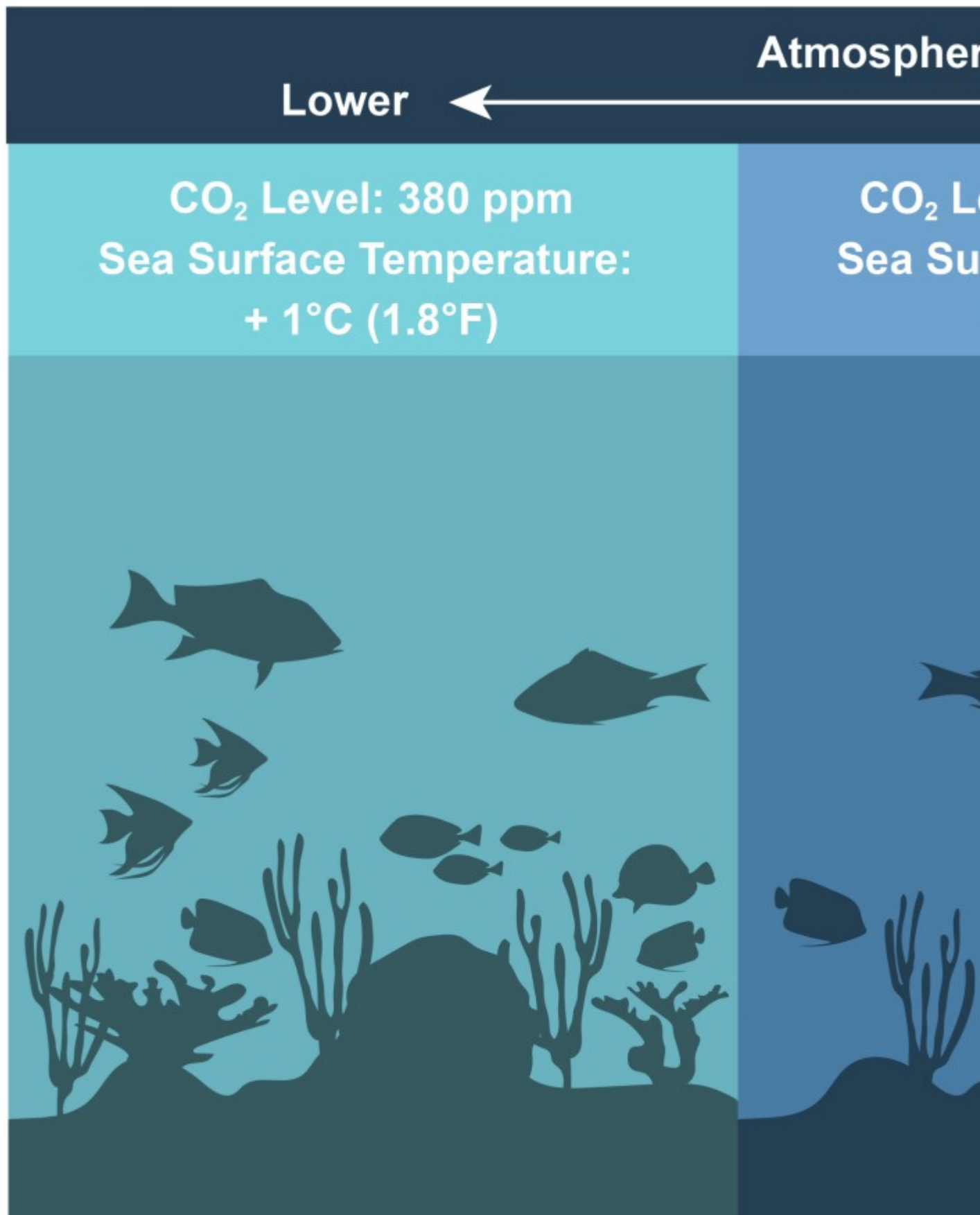
While there is still much uncertainty in global climate model predictions of tropical cyclone formation, climate models project an increase in the frequency of strong hurricanes (Categories 4 and 5) in the Atlantic Basin, including the Caribbean, according to the report. Drought projections for Puerto Rico suggest an increase in both drought intensity and frequency due to increases in both average and extreme temperatures and decreases in precipitation.



Challenges, Opportunities, and Success Stories for Reducing Risk

The challenges for the U.S. Caribbean region in formulating disaster risk responses to extreme events lie in its geographical, social, and economic vulnerabilities, the report found. Puerto Rico and the USVI face common challenges, such as distance from continental resources, scarcity of land resources, increasing pressures on coastal and marine resources, high volume of food and fuel imports, and limited human resources. Distance from the continental United States increases the region's vulnerability due to limited access to resources in times of need. Current fiscal and economic challenges of the region, coupled with an increasing elderly population, create additional challenges for the islands' governments to prepare for, respond to, and recover from climate-related disasters.

Improvements in data collection of extreme events and cost analyses of disasters have enhanced the resilience capacity of the U.S. Caribbean by supporting decision-making processes, particularly for drought events. Policymakers and disaster risk managers, as well as the general public, benefit from accurate data to support planning for disaster risk reduction. At present, current and historical data on the effects associated with extreme events are limited and not readily accessible for government officials and disaster risk managers.

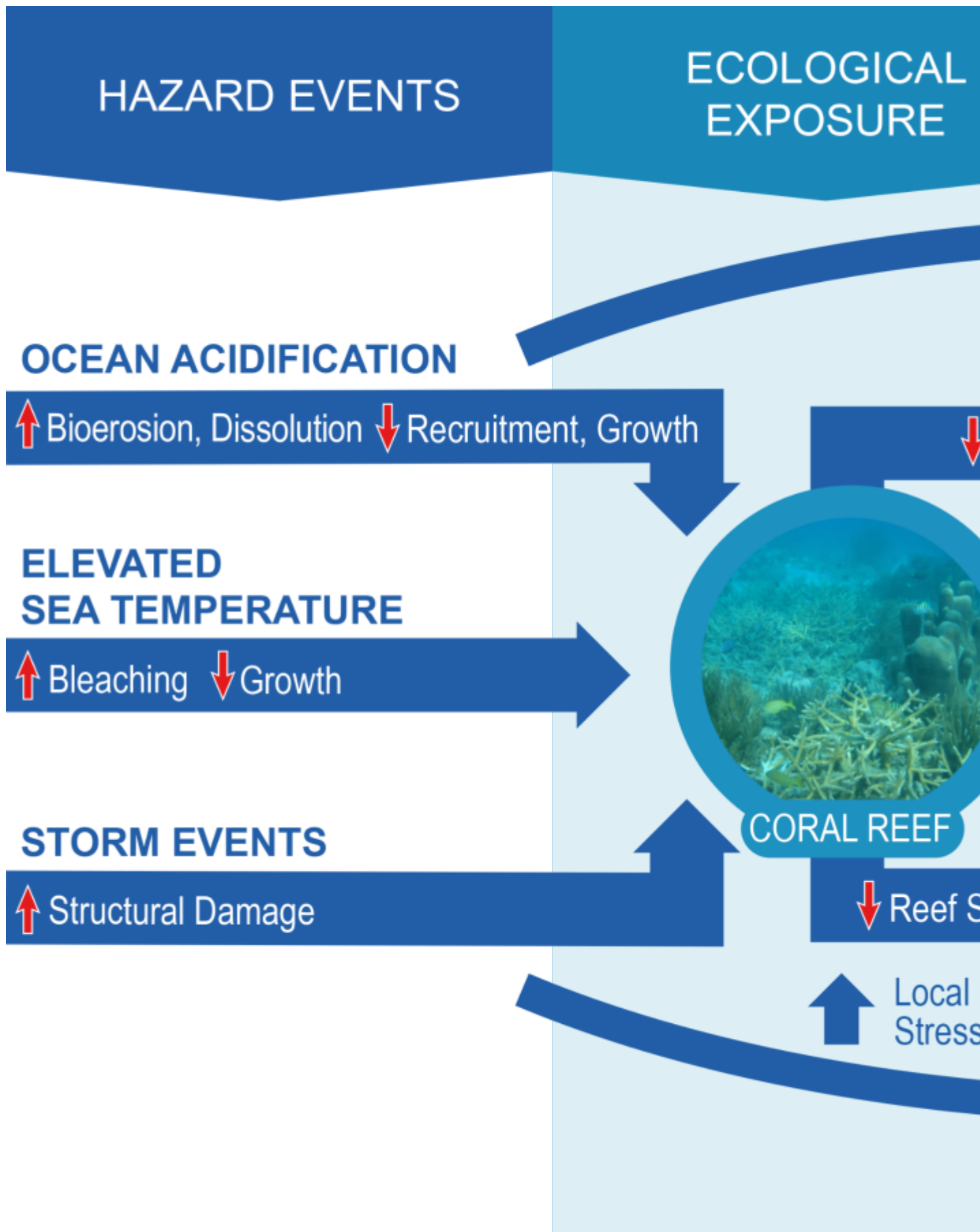


Freshwater

Increasing global carbon emissions are projected to reduce average rainfall in the Caribbean region by the end of the century, constraining freshwater availability, while extreme rainfall events, which can increase freshwater flooding impacts, are expected to increase in intensity.

Sea level rise

Since the middle of 20th century, relative sea levels have risen by about 0.08 inches (2 mm) per year on average along the coasts of Puerto Rico and the USVI, according to the report. However, rates have been slowly accelerating since the early 2000s and show noticeable acceleration (by a factor of about 3) starting in about 2010–2011. This recent accelerating trend is in agreement with what has been observed along the southeastern U.S. seaboard, and rates of global and regional relative sea level rise are projected to continue to increase substantially this century, largely dependent on the amount of future greenhouse gas emissions, the report says. Under the intermediate-low, intermediate, and extreme scenarios, relative sea levels are projected to rise by about 0.8 feet, 1.2 feet, or 2.8 feet (24 cm, 37 cm, or 84 cm), respectively, by 2050 across the region compared to levels in 2000 and by about 1.6 feet, 3.6 feet, or 10.2 feet (0.5 m, 1.1 m, or 3.1 m), respectively, by 2100. Additionally, the region may experience more than the global average increase under the higher scenarios in response to changes in the Earth's gravitational field and rotation due to melting of land ice, ocean circulation, and vertical land motion.



In the territory's case, part of the way forward will be the local government's ability to build on its relationship with the federal government, and employ a first-rate strategy to

capture the \$8 billion set aside to aid the USVI following the 2017 storms. Mr. Mapp had lobbied tirelessly not only for reconstruction dollars, but additional funds for resiliency, whereby damage to the territory would be mitigated.

Relative to efforts to reduce the impacts on Climate Change, the bulk of those events will rest in the lap of the continents, among them the United States, which is the second largest emitter of CO₂.

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