

NOAA IN THE CARIBBEAN

CONNECTING NOAA & PARTNERS ACROSS THE CARIBBEAN



NOAA in the Caribbean Newsletter - Winter Edition

Hello NOAA in the Caribbean Community,

If you weren't able to attend in September or would like to rewatch any of the presentations, the [recording and meeting materials](#) are now posted on the [Southeast and Caribbean Regional Team's website](#). The recording is available with both English and Spanish subtitles, which you can select in the settings of the YouTube video player.

Should you have questions or want more information, please contact CaribbeanNews@noaa.gov. We hope to see you at our next NOAA in the Caribbean event!

Thank you,
The NOAA in the Caribbean Executive Team

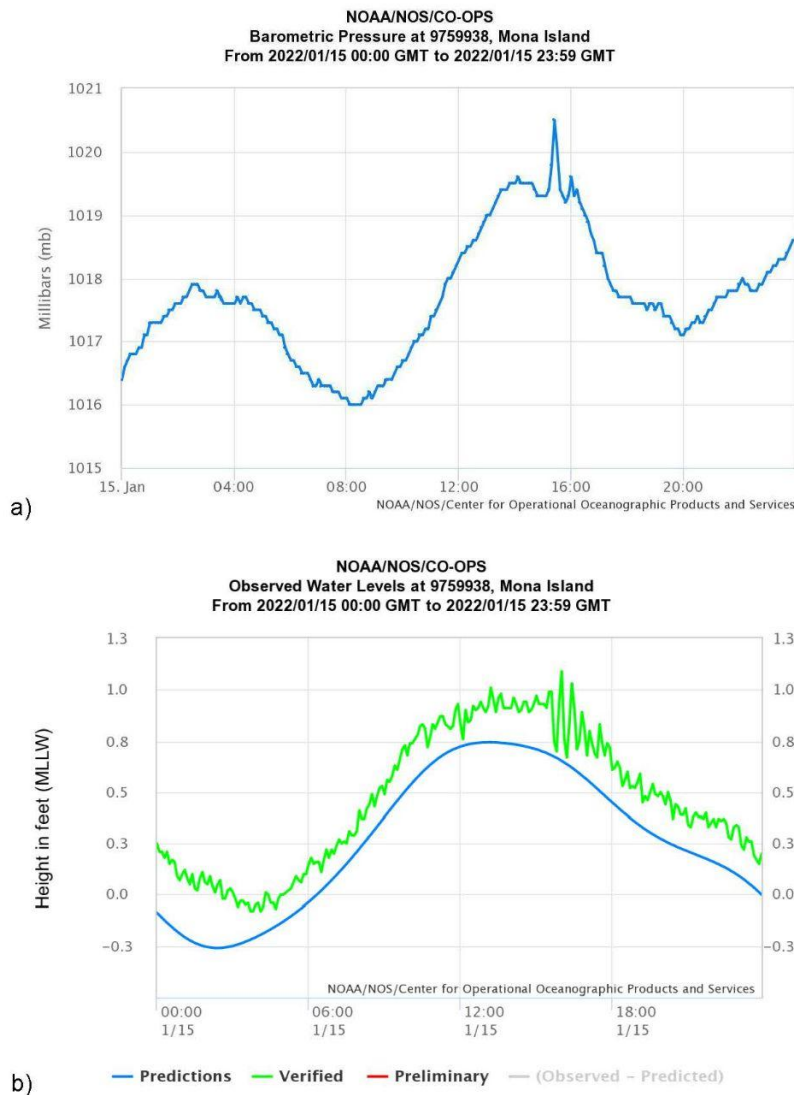
Tsunami Observations in the Caribbean from Hunga-Tonga-Hunga-Ha'apai Volcano Eruption

The 15 January 2022 Hunga-Tonga-Hunga-Ha'apai Eruption generated tsunamis that caused damage locally, regionally, across the Pacific and in the Caribbean. Waves 15 m high hit the west coasts of the Tongatapu Islands, 'Eua, and Ha'apai Islands (Government of Tonga), and elsewhere waves up to 2 m in amplitude were reported by the Pacific Tsunami Warning Centre (PTWC) in the Pacific. To save lives, countries issued warning and advisory alerts, and in some places evacuated coastal populations. Altogether, the PTWC issued 12 bulletins over a 20-hour time span and reported 117 tsunami wave measurements from 26 countries across the Pacific.

The enormous explosion, heard by several countries in the Pacific region, obliterated the subaerial remnants of the volcanic island, generating an atmospheric disturbance that extended into the stratosphere and was observed by international satellites. The explosion also generated a pressure wave that traversed the globe, and in some places coupling with the ocean surface caused the generation of small tsunami waves in the Caribbean, Atlantic, and the Indian Ocean. The PTWC issued both an International and Domestic Information statement to advise on the observation of the sea level disturbances.

In the Caribbean, around 12 hours after the eruption (much too soon for a tsunami traversing the ocean from Tonga to have arrived) small amplitude tsunamis were recorded at many stations. These disturbances have been associated with the pressure waves generated by the eruption, which were also recorded throughout the region on barometric sensors on stations like Mayaguëz, Puerto Rico (Figure 1) The International Information Center Caribbean Office

Caribbean Office (ITIC-CAR) prepared a PowerPoint that can be downloaded from the ITIC event page, which has an event summary and compilation of reports (<http://itic.ioc-unesco.org/index.php>). The document includes 43 marigrams over a 12 to 36 hour period January 15-16, 2022 from 19 countries and territories of the UNESCO/IOC Intergovernmental Coordination Group for Tsunamis and Other Coastal Hazards for the Caribbean and Adjacent Regions. The marigrams were downloaded from the UNESCO IOC Sea Level Monitoring Facility. Only stations that had data for the time of the event were included. The hyperlinks to each of the stations has been included to facilitate access to the data set as well as the Estimated Time of Arrival (ETA) of the ocean traversing tsunami from Tonga reaching each of the stations.



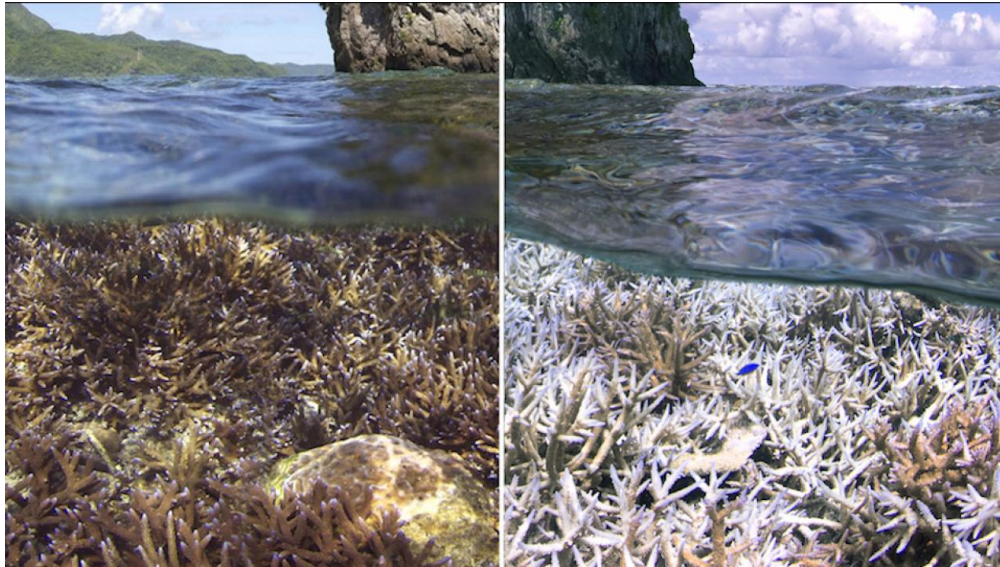
(Photo caption: Barometric pressure (a) and sea level (b) time series from January 15-16, 2022 from the Mayaguez sea level station. The sea level station located on Mona Island, Puerto Rico, recorded a tsunami with a wave height of 12 cm at 16h01 GMT on January 15. This was 15 hours and 23 minutes before a tsunami travelling through the ocean from Tonga would have reached the station. The timing of

the tsunami did coincide with a sudden change in barometric pressure which is interpreted as the signature of the shock wave produced by the volcanic eruption. The sea level and pressure time series were downloaded from NOAA's Tides and Currents page, <https://tidesandcurrents.noaa.gov/stationhome.html?id=9759938> (accessed February 17, 2022).)

Analysis shows coral loss of 14% worldwide

First report in 13 years shows damaging effect of warming ocean

This article was originally published on the [National Ocean Service](#) on October 5, 2021.



(Photo caption: Before and after images of heat-stress related coral bleaching in American Samoa, in the tropical Pacific. (XL Catlin Seaview Survey))

The largest global analysis of coral reef health ever undertaken indicates that rising ocean temperatures resulted in a 14% loss of global corals. [The Status of Coral Reefs of the World: 2020](#) report from NOAA and partners around the world also found indications of coral resilience in some locations, offering hope that coral reefs can recover if immediate steps are taken to curb future ocean warming.

“People around the world depend on healthy coral reefs and the services they provide for food, income, recreation, and protection from storms,” said Jennifer Koss, director of NOAA’s Coral Reef Conservation Program. “It is possible to turn the tide on the losses we are seeing, but doing so relies on us as a global community making more environmentally conscious decisions in our everyday lives.”

This is the first report since 2008, which fills a significant gap in contemporary understanding of global status and trends in coral reefs. The analysis used data from nearly two million observations from more than 12,000 collection sites in 73 countries over a time span of 40 years (1978-2019), representing the work of over 300 scientists.

For more details on the report, please visit the [Global Coral Reef Monitoring Network](#).
For more information the primary contact is jennie.lyons@noaa.gov.

U.S. coastline to see up to a foot of sea level rise by 2050 **Report projects a century of sea level rise in 30 years**

This article was originally published on the [National Ocean Service](#) on February 15, 2022.



(Photo caption: New U.S. regional sea level scenarios developed by NOAA and partners will help coastal communities plan for and adapt to risks from rising sea levels. This photo shows flooding in Norfolk, Virginia, on May 16, 2014.)

The United States is expected to experience as much sea level rise by the year 2050 as it witnessed in the previous hundred years. That's according to a NOAA-led report updating sea level rise decision-support information for the U.S. released today in partnership with half a dozen other federal agencies.

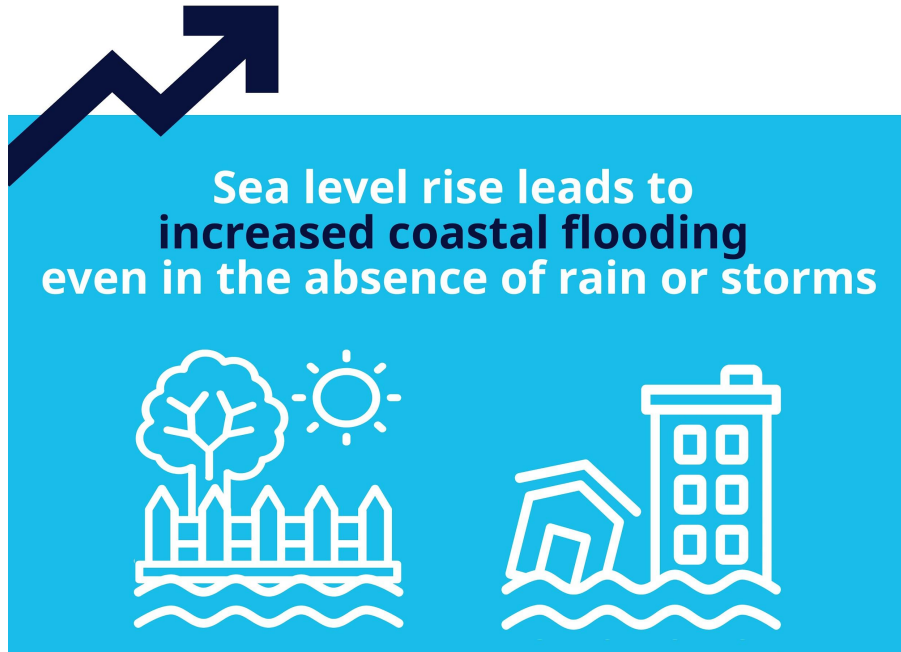
The [Sea Level Rise Technical Report](#) provides the most up-to-date sea level rise projections for all U.S. states and territories by decade for the next 100 years and beyond, based on a combination of tide gauge and satellite observations and all the model ensembles from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). The report projects sea levels along the coastline will rise an additional 10-12 inches by 2050 with specific amounts varying regionally, mainly due to land height changes.

The report updates the [federal government's 2017 sea level rise projections](#), and provides additional information on tide, wind, and storm-driven extreme water levels affecting current and future coastal flood risk. A suite of federal tools are using this data, including the [NOAA Sea](#)

[Level Rise Viewer](#), which are critical to the Administration’s commitment to tackle the climate crisis by making actionable climate data accessible to those who need it.



On average, the U.S. will see as much **sea level rise by 2050 as seen in the last century**

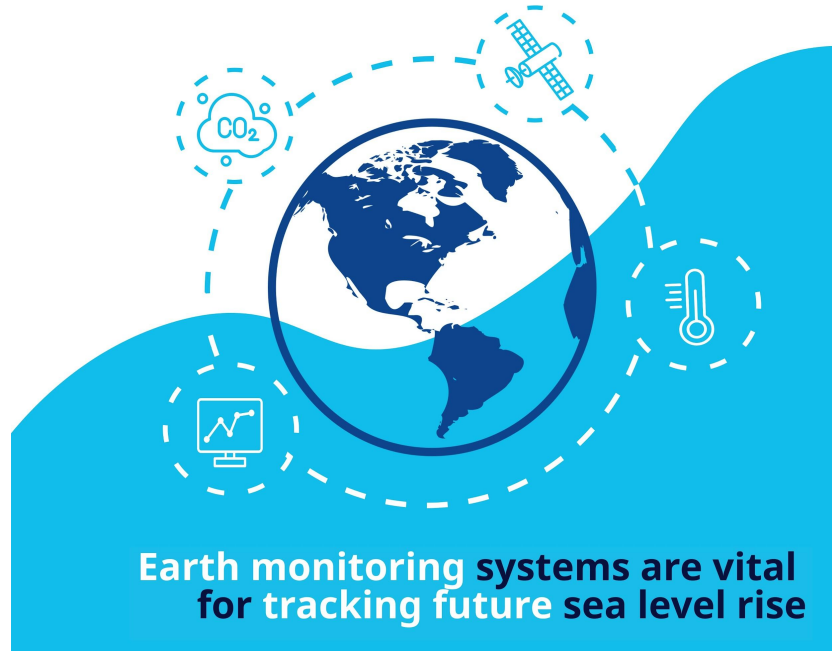


(Photo caption: On average, the U.S. will see as much sea level rise by 2050 as seen in the last century. Sea level rise leads to increased coastal flooding, even in the absence of heavy rain or storms.)

“For businesses along the coast, knowing what to expect and how to plan for the future is critical,” said U.S. Secretary of Commerce Gina M. Raimondo. “These updated projections will help businesses, and the communities they support, understand risks and make smart investments in the years ahead.”

“This new data on sea rise is the latest reconfirmation that our climate crisis — as the President has said — is blinking ‘code red,’” said Gina McCarthy, National Climate Advisor. “We must redouble our efforts to cut the greenhouse gasses that cause climate change while, at the same time, help our coastal communities become more resilient in the face of rising seas.”

At least two feet of sea level rise is likely by 2100 and reducing emissions now can lower future risk



(Photo caption: At least two feet of sea level rise is likely by 2100 and reducing emissions now can lower future risk. Earth-monitoring systems are vital for tracking future sea level rise.)

“This is a global wake-up call and gives Americans the information needed to act now to best position ourselves for the future,” said Rick Spinrad, Ph.D., NOAA Administrator. “As we build a Climate Ready Nation, these updated data can inform coastal communities and others about current and future vulnerabilities in the face of climate change and help them make smart decisions to keep people and property safe over the long run.”

The report also finds that the sea level rise expected by 2050 will create a profound increase in the frequency of coastal flooding, even in the absence of storms or heavy rainfall.

“By 2050, moderate flooding — which is typically disruptive and damaging by today’s weather, sea level and infrastructure standards — is expected to occur more than 10 times as often as it does today,” said Nicole LeBoeuf, NOAA National Ocean Service Director. “These numbers mean a change from a single event every 2-5 years to multiple events each year, in some places.”

“This report supports previous studies and confirms what we have long known: Sea levels are continuing to rise at an alarming rate, endangering communities around the world. Science is indisputable and urgent action is required to mitigate a climate crisis that is well underway,” said Bill Nelson, NASA Administrator. “NASA is steadfast in our commitment to protecting our home

planet by expanding our monitoring capabilities and continuing to ensure our climate data is not only accessible but understandable.”

This multi-agency effort is a product of the Interagency Sea Level Rise and Coastal Flood Hazard and Tool Task Force, composed of NOAA, NASA, EPA, USGS, DoD, FEMA and the U.S. Army Corps of Engineers, as well as several academic institutes. The report leverages methods and insights from both the United Nations Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report and supporting research for the [U.S. DoD Defense Regional Sea Level database](#).

Read the [Sea Level Rise Technical Report](#).

For more information the primary contact is jennie.lyons@noaa.gov.

NOAA welcomes new Climate Adaptation Program Specialist in Puerto Rico

Wanda Crespo-Acevedo was recently hired through the contractor, Lynker, as the new Climate Adaptation Program Specialist in support of the NOAA Regional Integrated Sciences and Assessments Program (RISA) in Puerto Rico. This position is co-hosted in Puerto Rico by the USDA Forest Service International Institute of Tropical Forestry (USDA-IITF) Caribbean Climate Hub and the Caribbean Coastal Ocean Observing System (CARICOOS).

The NOAA RISA's Program specialist will facilitate the connection between climate impacts and adaptation research and the planning and preparedness activities of significance to the territory. According to the job description, the role of this position will be to help bridge the decision making and research communities in Puerto Rico around the topic of climate adaptation, including:

1. the translation of findings from climate assessments and studies into products and materials that support decision makers, and



(Photo caption: Wanda Crespo-Avevedo, new Climate Adaptation Program Specialist)

2. convening scientists and managers/planners around key topics to support adaptation planning and implementation.

Wanda's position will help establish critical interagency and community-based partnerships necessary to further climate adaptation planning and preparedness in Puerto Rico.

Announcements

General Announcements:

- 1) **UPCOMING FUNDING OPPORTUNITY:** The passage and signing of the Infrastructure Investment and Jobs Act (IIJA) presents an unprecedented opportunity to make an impact for habitat across the country! The bill provides roughly \$3 billion over 5 years for NOAA, with funding available for habitat restoration, conservation, and resilience efforts including, but not limited to:
 - a) \$491 million to provide funding and technical assistance to restore marine, estuarine, and Great Lakes ecosystems, and to help prevent flood damage in coastal communities. This investment helps protect the safety and well-being of coastal communities by buffering shorelines from erosion, reducing flooding, and removing potentially hazardous structures.
 - b) \$400 million to enhance fish passage by removing barriers and providing technical assistance under the Magnuson-Stevens Fisheries Conservation and Management Act, specifically citing the Community Based Restoration Program. These funds will help protect and restore habitats that sustain fisheries, recover protected species, and maintain resilient ecosystems and communities.

In the near future, NOAA's Office of Habitat Conservation (OHC) will be releasing a Notice of Funding Opportunity (NOFO) to solicit project proposals from partners around the country in support of habitat restoration, conservation, and resilience. A weblink to these funding opportunities will be shared through the NOAA in the Caribbean listserv as soon as they are available.

NOAA in the Caribbean Newsletter

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If you wish to submit any questions, comments, story ideas, artwork or photographs, please email us at CaribbeanNews@noaa.gov.

NOAA in the Caribbean Newsletter is produced by the NOAA in the Caribbean Steering Committee, including support from NOAA's Office of International Affairs, Southeast and Caribbean Regional Collaboration Team, Office for Coastal Management, National Marine Fisheries Service SE Regional Office, Office of Legislative and Intergovernmental Affairs, and National Centers for Coastal Ocean Science.

