

and have better maps of Mars' surface than our seafloor. It's time for that to change.

Sen. Murkowski and I are currently developing the BLUE GLOBE Act (Bolstering Long-term Understanding and Exploration of the Great Lakes, Oceans, Bays, and Estuaries Act) to give our oceans the attention and investment they deserve. This bill will improve coordination among our ocean-facing agencies, allowing for better data collection, integration and access. The BLUE GLOBE Act will also drive innovation in ocean research and technology and help build a new blue tech workforce.

In addition to my work within the Senate Oceans Caucus, I'm working hard to support coastal resiliency and readiness. Though we still have a chance to stave off the worst consequences of climate change, we can no longer pretend we are immune to sea level rise, increased storm surge and other coastal threats driven by changing oceans. To help coastal communities prepare for these changes, the first grants from my National Oceans and Coastal Security Fund were announced in November. This fund, co-managed by the National Fish and Wildlife Foundation and NOAA, is a dedicated resource for hardening coastal infrastructure, building community resiliency, investing in restoration, and supporting ocean and coastal research. Congress approved \$30 million for the fund in fiscal year 2018, and I will be pushing to keep this significant new source of funds going.

Life first emerged in our oceans eons ago, and we have a responsibility to protect the ocean for our future generations. I'm working diligently with my colleagues on both sides of the aisle to give our oceans the protections they deserve. I have big goals for 2019, and hope you will join us in making it the year of ocean action. **ST**

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## Review & Forecast

### Congress Must Back NOAA's Groundbreaking Efforts

By Rep. Eddie Bernice Johnson (D-Texas)  
Chair  
U.S. House Committee on Science, Space, and Technology

**A**s 2018 comes to a close, another devastating hurricane season concludes with it. Thousands of people have been affected by this year's series of calamitous storms, which brought record wind speeds and rainfall to our coastal communities. The ability to alert the public well before these dangerous weather events is vital to preserving American life and property and is a task that falls to



NOAA. From operating unmanned systems on the ocean floor to satellites in space, NOAA provides a number of essential services in weather forecasting, satellite operation and coastal restoration to expand the development, innovation and efficiency of weather-forecasting technology.

Housed under NOAA, the National Weather Service (NWS) provides each American's local weather station with the crucial data informing daily weather forecasts. NWS receives the data used in its models from satellites and buoys operated by other divisions within NOAA. For example, the National Environmental Satellite, Data, and Information Service (NESDIS) operates and coordinates NOAA satellites in partnership with NASA. In space, these satellites collect data daily to feed forecast models and provide the essential services that inform weather watches and warnings. Given the complexity and costliness of the advanced technology that drives NESDIS, robust government support is critical to the success of the program.

In addition to weather forecasting, NOAA supports the nation's coastal communities and the ocean economy through the National Ocean Service (NOS). NOS works to ensure safe and efficient transportation and ocean commerce, provides expertise in responding to oil and chemical spills, and manages marine sanctuaries and protected areas. The detailed information they provide safeguards our coastal economy and marine resources; without NOS, the valuable resources contained in our oceans could be badly damaged.

Harmful algal blooms (HABs) are one such threat to our marine and coastal ecosystems, and they have proliferated in the last few decades. During an algal bloom, algae grows rapidly and in large quantities, blocking sunlight and increasing the oxygen content of the water. Higher oxygen content can suffocate fish and other marine species, like coral reefs. Moreover, some species of algae emit toxins that are harmful not only to marine life but also to humans. Currently, Florida is fighting off a bloom that has resulted in deaths of more than 100 manatees and 200 Kemp's ridley sea turtles. In order to address this toxic concern, the NOS has a number of programs dedicated to monitoring, preventing, controlling and mitigating HABs. NOS provides public access to early-warning systems, allowing the public to see where blooms are located and where they might spread in the future. NOS collects bloom data using satellite imagery, buoy data, field observations and public health reports. By supporting this important office, NOS will be able to more accurately predict these events and track a variety of other threats to the health of our oceans.

In addition to algal blooms, marine and coastal ecosystems face a number of dangers, including marine debris. Scientists estimate that every year approximately 8 million metric tons of plastic end up in the ocean, posing risk of ingestion and entanglement to marine life. The Marine Debris Program (MDP) is NOAA's response to our mammoth ocean plastics problem. MDP's mission is to investigate and prevent the adverse impacts of marine debris. I am looking forward to working with NOAA and

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# Review & Forecast

## The Fight to Protect Our National Marine Sanctuaries

By Rep. Salud Carbajal (D-Calif.)  
Member, Congressional Oceans Caucus  
U.S. House of Representatives

***“From climate change to increased plastic pollution to renewed threats of new offshore oil and gas drilling, our oceans face unprecedented challenges. Many of our oceans are experiencing rising sea levels, changes in water temperature, acidification, loss of marine mammal life and fishery declines due to increasing global temperatures.”***

Ocean waters have helped us curb climate change impacts by absorbing harmful heat-trapping gases like carbon dioxide emissions and generating half the oxygen we breathe. However, if we do not act quickly to protect our ocean’s ecosystem, we are risking the health of our entire planet.



From climate change to increased plastic pollution to renewed threats of new offshore oil and gas drilling, our oceans face unprecedented challenges. Many of our oceans are experiencing rising sea levels, changes in water temperature, acidification, loss of marine mammal life and fishery declines due to increasing global temperatures.

Protecting this unique ecosystem is vital for both our well-being and our economy. As policy makers, we must adopt good-stewardship policies that help preserve our oceans for generations to come. That is why I support our national marine sanctuaries and better ocean management policies.

Our national marine sanctuaries are treasured waters that serve to protect biologically diverse and sensitive habitats like kelp forests, deep-sea canyons and historical archaeological sites. On the Central Coast of California, we are lucky to have the Channel Islands and Monterey Bay National Marine Sanctuaries in our own backyard, two of 13 total nationwide.

This past summer, I was fortunate enough to tour the Channel Islands National Marine Sanctuary with a group of 22 Central Coast veterans. During the visit, I learned about the extraordinary conservation efforts being spearheaded by some of our very own veterans, such as Ken Tatro.

Tatro served in the United States Navy from 1958 to 1964 and continues to serve our country as a volunteer with the Channel Islands Naturalist Corps. He leads stewardship efforts to protect the sanctuary by educating visitors on the unique resources found within the Channel Islands during whale-watching trips, island hikes and community events—which I had the chance to experience first-hand.

Preserving the Channel Islands National Marine Sanctuary not only ensures future generations can experience our cherished local treasure, but also strengthens our lo-

supporting their research to mitigate the globe’s ocean plastics disaster.

It is time for Congress to back the groundbreaking efforts being made at NOAA. Data available to Congress and the public results in more informed decisions that can greatly impact our environment and the health of our people. For the past two decades, annual warmer-than-average temperature records have reliably been broken. We, both as a nation and globally, must learn about and adapt to our changing environment. Data from our agencies have shown the clear connection between climate change and the increase in severity and frequency of tropical storms.

Scientists have made it clear that the severity of global warming will only continue to grow, and if we do not take proper action, we will be left with irreversible, sometimes fatal consequences. Global warming has dire effects on nearly every aspect of our lives. As wildfires scorch our western states and severe weather events drown our coastal cities and towns, it is crucial that we prepare for what is ahead and make the right investments to mitigate the toll global warming is taking on our people, our environment and our economy.

A push for funding and support of research and innovation at our NOAA facilities will undoubtedly increase the efficiency of weather forecasting in the United States and ensure that the National Weather Service lives up to its mission of protecting life and property. As chairwoman of the House Committee on Science, Space, and Technology, I look forward to the possibilities the future holds in engaging with NOAA. The very roots of the Science Committee began in discovery, research and paving the way through uncharted territory. In the 116th Congress, I look forward to getting back to those roots. **ST**