



U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY

Opening Statement

**Chair Lizzie Fletcher (D-TX)
of the Subcommittee on Environment**

Subcommittee on Environment Hearing:
“Sea Change: Impacts of Climate Change on Our Oceans and Coasts”
February 27, 2019

Good morning, and welcome to the Environment Subcommittee’s first hearing of the 116th Congress. Building on the momentum of our first full Committee hearing on the State of Climate Science, today we’ll be discussing how climate change is impacting our oceans and coasts. This is an important topic, and I want to convey a few things as we begin: First, every American should care about changes to the oceans, even those who do not live along the coast. Second, we are already seeing visible changes and paying a very real price. Climate change impacts are here—happening now—not far-off events for future generations to address. And those impacts can be seen in our oceans and our coasts.

According to NOAA, nearly half of Americans live along our 95,471 miles of coastline, which span three oceans, the Gulf of Mexico, the Great Lakes, and the Pacific and Caribbean islands. And more people are moving to the coasts each year. The Fourth National Climate Assessment found that coastal zones employ 134 million Americans and contribute a staggering \$16.7 trillion to our national gross domestic product. And for the other half of Americans who don’t live on the coast, the oceans and coasts impact them directly and indirectly, too, providing economic, recreational, and cultural opportunities. There’s a lot to lose – not only for the environment, but also for our thriving economy and communities – by failing to address climate change impacts on our oceans and coasts.

As science has established, climate change is real, it’s happening, and it’s caused primarily by human activity. NOAA just reported last month that 2018 was the fourth hottest year on record. Many people don’t realize that global warming would be significantly worse without the buffering effects of the oceans. Oceans act like a big sponge, soaking up much of the excess carbon dioxide and heat in the atmosphere. In fact, the International Union for Conservation of Nature found that if the excess heat trapped by the oceans between 1955 and 2010 were released back into the lower atmosphere, the temperature would warm up nearly 97 degrees Fahrenheit. The oceans are protecting us from climate change’s impacts by buffering against the increase in temperature, but this buffering is causing major changes to the oceans.

Increased carbon emissions alter the oceans in three main ways, making them warmer, more acidic, and less oxygenated. These changes are occurring at unprecedented rates. For example,

according to research published in the journal *Science*, the chemistry of the oceans is changing faster now than in the last 300 million years.

Climate change has now claimed its first mammal in a way directly related to today's hearing. Just last week, the Australian government reported that the Bramble Cay mosaic-tailed rat, a small rodent, was driven to extinction. Their island home became inundated with saltwater from rising sea levels, causing their food and shelter to disappear. The threats of sea level rise, ocean warming, acidification, and deoxygenation are far-reaching, and many marine species face risk of extinction as these changes occur faster than most species can adapt.

In Texas's Seventh Congressional District, which I have the privilege to represent, we are seeing some of the earliest effects of coastal climate change, and we stand to face great risks as the fourth largest city and biggest energy exporter in the United States. At just 50 feet above sea level and as one of the flattest cities in America, Houston already experiences heavy rainfall, and our region the threat of storm surge – increasing the risk and reality of flooding. Hurricane Harvey set the record for total rainfall from a tropical cyclone continental U.S. Climate change is intensifying storms – making so called 1,000 year storms like Harvey more frequent - and causing the sea levels to rise in Galveston Bay. According to the Fourth National Climate Assessment published in November, sea level rise along the Texas Gulf Coast is twice as large as the global average. Experts are warning cities like ours don't have that much time to adapt.

That is why I am glad we are here today to hear from our distinguished panel. I would like to welcome our witnesses this morning. Some of our scientific witnesses have been involved in writing and reviewing major climate science reports – the National Climate Assessment and the IPCC Assessment Report – and are here to summarize some of the major findings on ocean and coastal changes. We will also hear from a representative of a coastal industry whose experience of these issues is instructive for us all.

I was encouraged in our first Committee hearing to hear interest from Members on both sides of the aisle toward developing solutions and technologies to address climate change. Adaptation and mitigation are very important parts of this conversation, with today's hearing laying the foundation for future discussions that will lead us to legislative solutions.