



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

Opening Statement

Chairwoman Eddie Bernice Johnson (D-TX)

Full Committee Hearing:

Understanding, Forecasting, and Communicating Extreme Weather in a Changing Climate

Thursday, September 26, 2019

Good morning and welcome to today's hearing on extreme weather. This is a topic that I think is universally relevant, as many of my colleagues and our constituents have dealt with extreme weather events recently.

In fact, NOAA's National Centers for Environmental Information found that in 2018 alone the U.S. experienced 14 climate weather and disasters with losses for each topping \$1 billion dollars. These events included drought, severe storms, wildfires, tropical cyclones, and winter storms, and they impacted nearly every state in the continental U.S. As of July 2019, the U.S. has already experienced six weather and climate events with losses greater than \$1 billion dollars each. July 2019 was also the hottest month on record worldwide, which led to record low levels of sea ice in both the Arctic and Antarctic.

There is an increasing scientific consensus that human-driven climate change is playing an undeniable role in many of the extreme weather events that we have experienced.

Earlier this week the World Meteorological Organization of the UN released a report that found that climate change, through the slowing of the jet stream, could be directly linked to the record-breaking heatwaves experienced across North America, Europe, and Africa in 2018 and 2019. There was also clear evidence that this jet-stream pattern influenced many extreme rainfall events as well.

Yesterday the IPCC released a Special Report on the oceans and cryosphere. It identified that up to 90% of marine heatwaves from 2006 to 2015 were due to climate change. Climate change was also responsible for the increased precipitation, winds, and extreme sea level events associated with some tropical cyclones. The Special Report also determined that some back to back extreme weather events that we have become accustomed to seeing have also been influenced by climate change.

I know many of my colleagues from the Houston and Gulf Coast area have directly experienced these impacts with the extreme rainfall that they saw from Hurricane Harvey two years ago. And

most recently they had to deal with Tropical Storm Imelda, which dropped over 40 inches of rain in some parts of Houston just last week.

This hearing is especially timely given not only recent extreme weather events such as Dorian and Imelda, but also because September is National Preparedness Month. It is important for our constituents to understand how they can and should be preparing for disasters, including extreme weather. It is vitally important that the public can rely on official forecasts from the National Weather Service to inform their response to weather events without worrying that these forecasts have been interfered with.

Though our ability to forecast the path of a storm like Hurricane Dorian has greatly improved, our dedicated meteorologists in the National Weather Service still cannot say with absolute certainty what the intensity of a storm like that will be. These track forecasts have relied heavily on satellite observations, and any interference with the data in these observations, such as water vapor measurements, could have dire consequences for communities that lie in the path of similar hurricanes.

We have discussed in this Committee the importance of sustained observations to feed into the weather models that are used to develop forecasts, and the need to continually be improving those models and subsequent forecasts. I expect today's hearing will be no different. But, in addition to the need to continue to support the physical science, observations, and modeling that goes into developing forecasts, there is also a need to understand how to better integrate the social and behavioral sciences in our weather enterprise. More research is needed to understand how our biases can impact the forecasting process, and how our past experiences with extreme weather events can influence how the public interprets forecasts and notices from emergency managers.

With that, I would like to extend my welcome to our very distinguished panel and thank them for joining us this morning. We are looking forward to a robust discussion on how this Committee can help our country better prepare for future extreme weather events; events that we are likely to expect with more frequency and intensity due to climate change.

Thank you.