

**Statement of Chairman Marco Rubio**  
**Commerce Subcommittee on Oceans, Atmosphere, Fisheries and Coast Guard**  
**“Improvements in Hurricane Forecasting and the Path Forward”**  
**May 25, 2016**

I call this hearing to order and thank you all for being here.

We convene this hearing one week before the official start to the 2016 hurricane season, and as the hearing title suggests, we will focus on improvements in forecasting, and we’ll discuss how track and intensity forecasts can further be enhanced.

Ninety years ago, Florida was hit by a Category 4 storm. Although it was later named the “Great Miami Hurricane,” it devastated not only Miami, but crossed the Gulf of Mexico inflicting damage to Pensacola Bay. This was a time with little meteorological data or capabilities, and thus, alerts to Floridians came too late. The National Hurricane Center reports that Coconut Grove experienced a 15 foot storm surge and people mistakenly left their homes as the storm’s calm eye centered overhead. It is unclear how many perished, as the Red Cross estimates 373 souls lost their lives, but the count cannot be certain as more than 800 people were missing.

Although my home state has not seen a hurricane make landfall in almost eleven years, we must never sit idle and succumb to “hurricane amnesia.” Innovation is the key to ensuring lives and property are spared by accurate forecasting. This hurricane season, two new tools will be at the disposal of our researchers and forecasters. The first, called “The Coyote,” is a small unmanned aerial system deployed directly from the P-3 hurricane hunters. This drone is able to fly into weather conditions that are otherwise impossible for manned aircraft, while capturing atmospheric observations and relaying that data, in real time, to the Hurricane Center. This technology has been in testing since 2014, but will fully be utilized in upcoming storms. The second involves two tools for storm surge, which is critically important as water is responsible for 90 percent of the deaths associated with storms. The Storm Surge Watch and Warning Graphic, while still in the experimental phase, will provide watches and warnings to coastal residents, similar to those issued for tropical storms or hurricanes, but will focus solely on the risks associated with high waters. In response to these risks, it will issue guidance for evacuations in the areas impacted.

The Potential Storm Surge Flooding Map, which began testing during 2014, will become operational this season. This map will highlight areas where storm surge could inundate areas and estimate the height at which waters could reach. One only needs to look at Hurricane Katrina to realize how devastating a storm surge can be. Not heeding storm surge warnings could be the difference between life and death. I applaud the National Hurricane Center for its work on this new tool, and I stress the importance of educating people on the dangers of storm surge.

The need for timely and accurate forecasts cannot be overstated. Indeed, advancements in forecasting have made great strides as technology and research have intersected. As our witness notes in his written testimony, the National Hurricane Center's "five-day track forecast is about as accurate as the three-day forecast was 20 years ago." This improvement in modeling not only allows more notice for evacuations, which will help especially in the Florida Keys, but appropriately provides for proper planning and damage mitigation to be conducted prior to a storm. Also, increased confidence in the Center's track and intensity forecasts will lead to the public's trust in heeding warnings.

Last year, along with my colleague Senator Nelson, I introduced the "Hurricane Forecast Improvement Act" which would require NOAA to improve guidance for hurricane track, intensity, and storm surge forecasts. The bill is modeled after NOAA's "Hurricane Forecast Improvement Project" which has laid the groundwork for coordinating and improving research. This program has a worthy goal of reducing errors in storm tracking, and with continued research, it is my hope a reduction in the loss of life, injury and economic harm will result. Now is the time to continue the momentum for research and technology to drive our forecasters to better track storms, not cut millions of dollars from the Project as the Administration's fiscal year 2017 budget suggests. I had hoped my legislation, which was adopted into Chairman Thune's larger weather bill, would have made it to the President's desk by now, but unfortunately it has been tied up due to unrelated issues. Nonetheless, I will continue to push for its passage and support the Center's work for better forecasting. I must note that Senator Nelson has been a good partner in these efforts, and I look forward to continuing that partnership so that this does indeed get signed into law.

In closing, Floridians will always remember the year 1992 as the year Hurricane Andrew changed the landscape of our state forever. Noted as the third strongest hurricane to hit the United States, Andrew produced a 17 foot storm surge, was responsible for 23 deaths and caused \$26.5 billion in damage. For the terrible destruction this storm inflicted on Florida, it also shed light on the need to be

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prepared. Last week, our nation recognized Hurricane Preparedness Week. Our witness, Dr. Knabb, took part in many activities to increase awareness. Education, coupled with strong support from state and local partnerships, is key to ensuring families have a hurricane plan in place. At the end of the day, the most important function of storm forecasting is indeed to protect the lives of those we love. Floridians are incredibly resilient, but as we enter this year's hurricane season, which I hope will not be active, I urge everyone to assess their risk, develop a plan, and be prepared.

On a side note, two weeks ago, I visited the National Hurricane Center in Miami and saw firsthand the good work that is being done on this front. I again thank Dr. Knabb for appearing before us today, and I now recognize Ranking Member Booker for his opening statement.