

Improving forecast accuracy can save financial resources and lessen physical and emotional stresses associated with storm preparation and evacuation.



Facts: Coastal communities along the Gulf of Mexico are experiencing one of the fastest growth rates in the U.S. The risks of tropical storms and hurricanes continues.

These factors translate into increased risk of damage and loss to coastal communities. Improving the forecast accuracy of storm path and intensity and associated surge and flooding is a priority for the Gulf of Mexico region. It will improve capabilities for preparation and evacuation that are especially important as the demands on the coastal infrastructure, such as roads, increase with population growth and continued development in high risk areas. In addition, improving forecast accuracy can save financial resources and lessen physical and emotional stresses associated with storm preparation and evacuation. The accuracy of hurricane predictions can improve in two ways: (1) enhance and refine hurricane-related models and (2) increase the information used in forecast models.

Proper hurricane modeling requires substantial computer power to process data from a variety of platforms, such as satellites, buoys, tide gauges, Doppler radar, and aircraft (Figure 1). Multiple models are employed to construct predictions on storm path and intensity shared with the public (e.g., the National Hurricane Center uses 43 different models). Many federal and state agencies and universities use different models with similar data to predict surge and flooding risks. Increasing the reliability, accuracy, and number of observations will improve prediction capabilities, which can save lives and help citizens and communities prepare properly for storms.

Storm Prediction and Data Sources

National Hurricane Center Model Predictions

<http://www.nhc.noaa.gov/modelsummary.shtml>

Predicting Hurricanes Times Have Changed

http://celebrating200years.noaa.gov/magazine/devast_hurricane/welcome.html

Dial a Buoy

<http://www.ndbc.noaa.gov/dial.shtml>

Coastal Risk Atlas

<http://www.ncddc.noaa.gov/cra>

Storm Preparation

NOAA Extreme Weather Information Sheets (NEWIS)

<http://www.ncddc.noaa.gov/activities/noaa-extreme-weather-information-sheet-newis>

StormSmart Coasts

<http://stormsmartcoasts.org/>

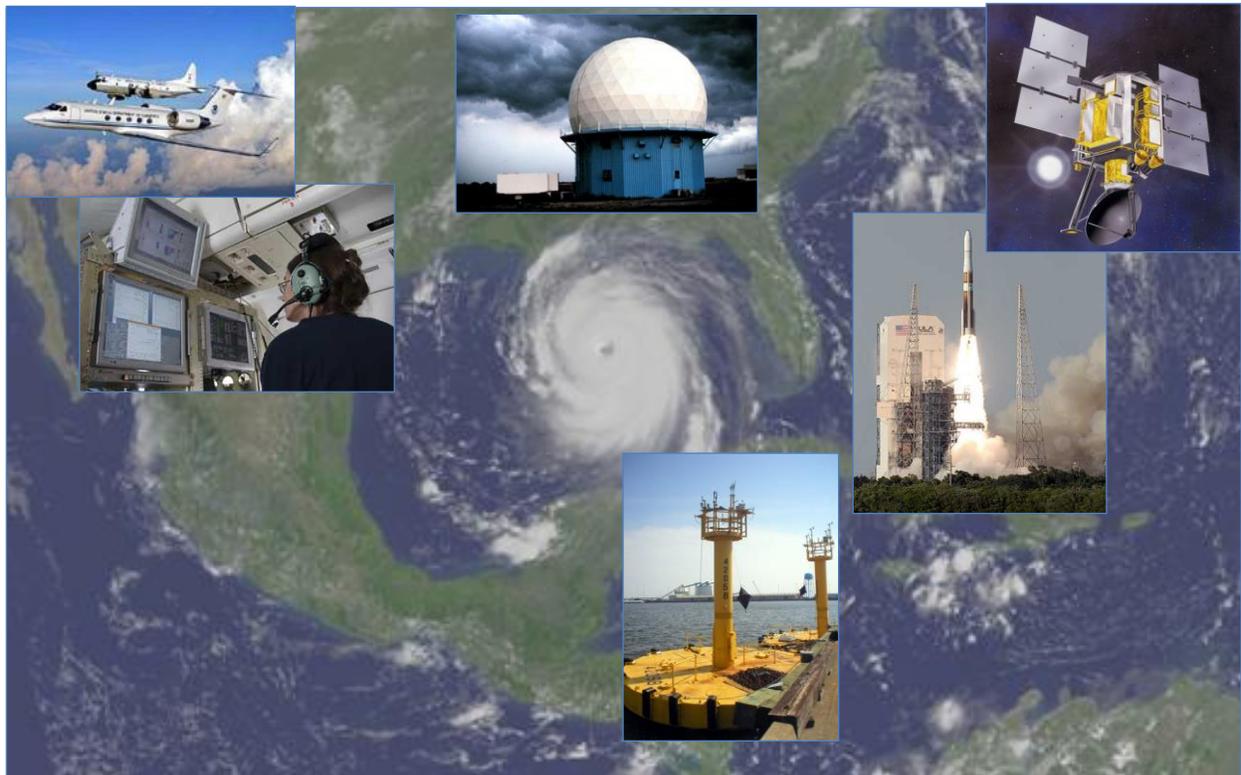


Figure 1. Data are collected from land, space, sea, and air for use in making hurricane predictions (Images from: NASA and NOAA).