

Federal science agencies help prepare and respond to Hurricane Harvey

August 29, 2017

In anticipation of Hurricane Harvey making landfall on the Gulf Coast, the U.S. Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), and National Aeronautics and Space Administration (NASA) were preparing for the massive storm by monitoring its development and helping to direct the Federal Emergency Management Agency's (FEMA) resources towards the likely hard-hit areas.

The USGS teams on the ground deployed storm-tide sensors to measure storm surge levels and the effects of flooding on the coast. The USGS also implemented their Coastal Change Forecast Model to predict beach erosion caused by the storm, which could be used by emergency managers to identify high-risk areas to evacuate. The USGS streamgauge network, which operates year-round, measured flood levels as rain inundated Texas.

NOAA and NASA satellites were used to track the storm as it developed, assisting with predictions related to wind speeds, precipitation levels, and storm risks. On August 22, days before Harvey reached the coast, NOAA's National Hurricane Center (NHC) predicted that rainfall would exceed two feet, with strong storm surges and flooding resulting from hurricane-force winds as Harvey moved onto land. NASA's Soil Moisture Active Passive (SMAP) satellite measured soil moisture in Texas before Harvey, finding that soils were already saturated with water before the storm hit, indicating a higher flood risk.

FEMA and its federal partners will continue to mobilize personnel and resources to support state, local and tribal efforts throughout Texas and Louisiana. Relief and recovery funds will likely come from FEMA's Disaster Relief Fund, which needs to be funded with the rest of the Federal Budget in order to provide aid past September 30th.

Sources: U.S. Geological Survey, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration
