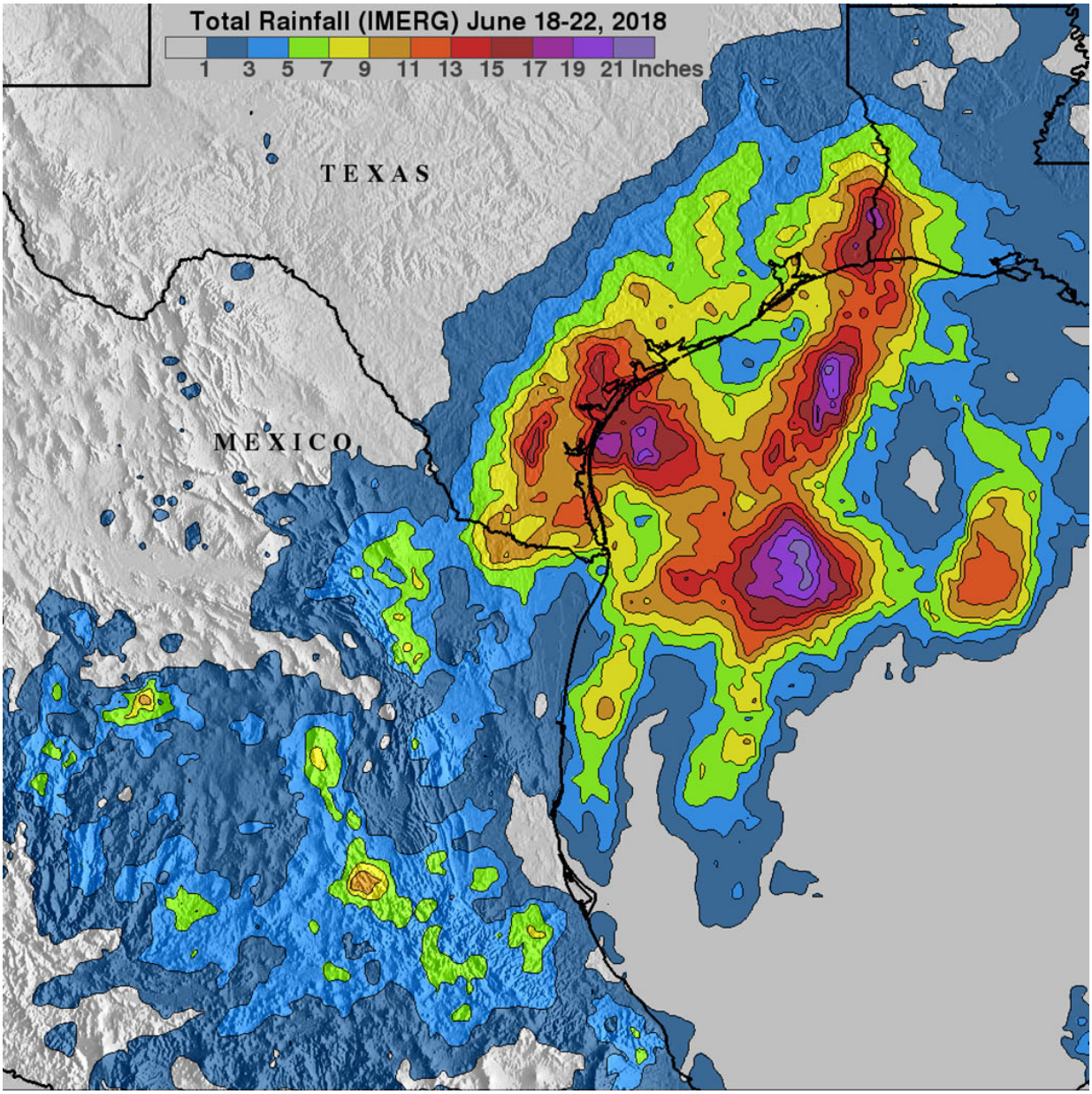
IMERG examines flooding in southern Texas from tropical disturbance

June 22 2018



IMERG data shows extreme flooding in parts of Texas from low pressure tropical disturbance. IMERG estimates indicated that the heaviest rainfall occurred in the northwestern Gulf of Mexico where over 21 inches (533.4 mm) of rain fell. IMERG data also indicated that more than 9 inches (228.6 mm) fell in large areas from south Texas to western Louisiana. This extreme rainfall resulted in the worst Texas flooding since hurricane Harvey in August 2017. Credit: NASA

While Tropical Storm Bud was lashing parts of western Mexico and causing flooding that extended into the American Southwest, a tropical disturbance was spinning over the Gulf of Mexico and straddling southeastern Texas. This system sat in place for almost a week bringing extremely heavy rainfall and causing a flash flood emergency. More than 15 inches (381 mm) of rain fell in Hidalgo County, Texas between June 18 and 22.

With streets being overrun by rain waters, the Governor of Texas declared a state of emergency for six counties in south Texas Thursday afternoon, June 21, two days after rain began. The heaviest rain from the system had ended by Friday morning, June 22, but the weather service was still calling for more "occasional showers" in the area. At 1:37 p.m. CDT on June 22, 2018 the National Weather Service in Hidalgo County, Texas issued this warning: "Flood Warning for Southeastern Hidalgo County in Deep South Texas and Northwestern Cameron County in Deep South Texas until 1:30 a.m. CDT, Saturday [June 23]. Local Emergency Management and Department of Transportation continued to report residual flooding occurring across the warned area. Multiple roads remain impassable due to ongoing flooding from resent heavy rainfall that ranged from 10 to14 inches over the past few days. In addition some locations that will experience flooding include: Harlingen, Weslaco, San Juan, Alamo, Donna, Mercedes, La Feria, Elsa, Progreso and Edcouch."

Integrated Multi satellitE Retrievals for GPM (IMERG) data were used in this space based estimate of rainfall accumulation over Texas and northern Mexico during the period from June 18 to 22, 2018. These IMERG estimates were derived from various satellite space-borne passive microwave sensors, including the GPM (Global Precipitation Measurement mission) satellite's Microwave Imager (GMI). GPM is a joint mission between NASA and the Japan Aerospace Exploration Agency, JAXA.

IMERG estimates showed extremely heavy precipitation fell over southern Texas and the northwestern Gulf of Mexico. IMERG estimates indicated that the heaviest rainfall occurred in the northwestern Gulf of Mexico where over 21 inches (533.4 mm) of rain fell. IMERG data also indicated that more than 9 inches (228.6 mm) fell in large areas from south Texas to western Louisiana. This extreme rainfall resulted in the worst Texas flooding since Hurricane Harvey in August 2017.

Provided by NASA's Goddard Space Flight Center