

Identifying Inland Impacts of Decaying Hurricanes Rita, Gustav, and Ike over Northern Louisiana and Northeast Texas



Idamis Del Valle ⁽¹⁾, Armando L. Garza ⁽²⁾ and Keith Stellman ⁽²⁾
 (1) Department of Physics, University of Puerto Rico, Mayagüez Campus
 (2) National Weather Service WFO Shreveport, LA



Introduction

•From 1850 to 2008, 195 tropical systems have made landfall in the states of Texas and Louisiana.

•During that time period, the National Weather Service (NWS) in Shreveport, LA has been involved with forecasting the weather conditions that have impacted inland communities as far as 150-200 miles inland from the coast.

•The most recent and significant hurricanes that have impacted the Shreveport County Warning Area (CWA) are Hurricanes Rita, Gustav, and Ike.

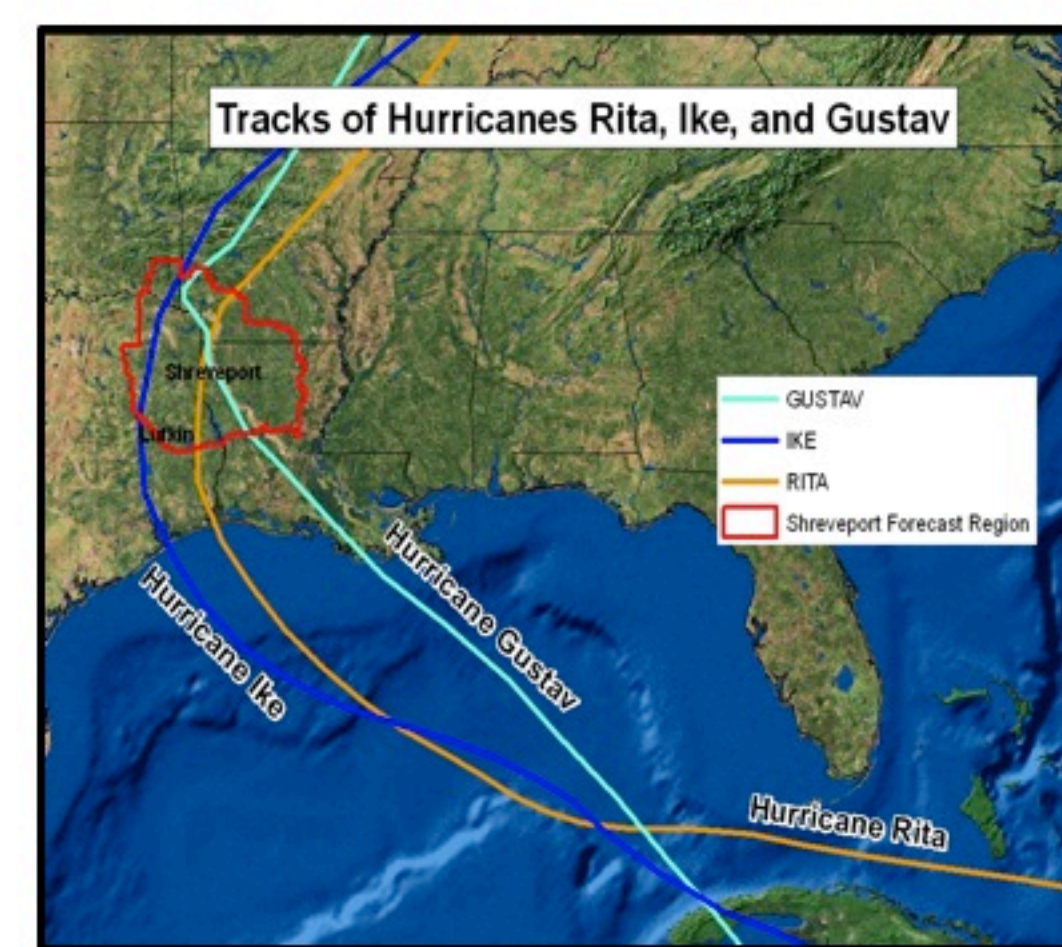


Figure 1. Tracks of Hurricanes Rita, Ike, and Gustav.

Impacts of Hurricane Rita Over Shreveport CWA

•**Wind Impacts** – Strong tropical force winds with peak sustained winds that were in the range of 25 mph to 60 mph. Peak wind gusts were up to 100 mph.

•**Tornado occurrences** – Largest tornado outbreak for the NWS in Jackson, MS with 55 tornadoes in 36 hours. Shreveport CWA did not experience any tornadoes during Rita.

•**Flooding Impacts** – Rainfall amounts were up to 10 inches in east Texas.

Impacts of Hurricane Ike Over Shreveport CWA

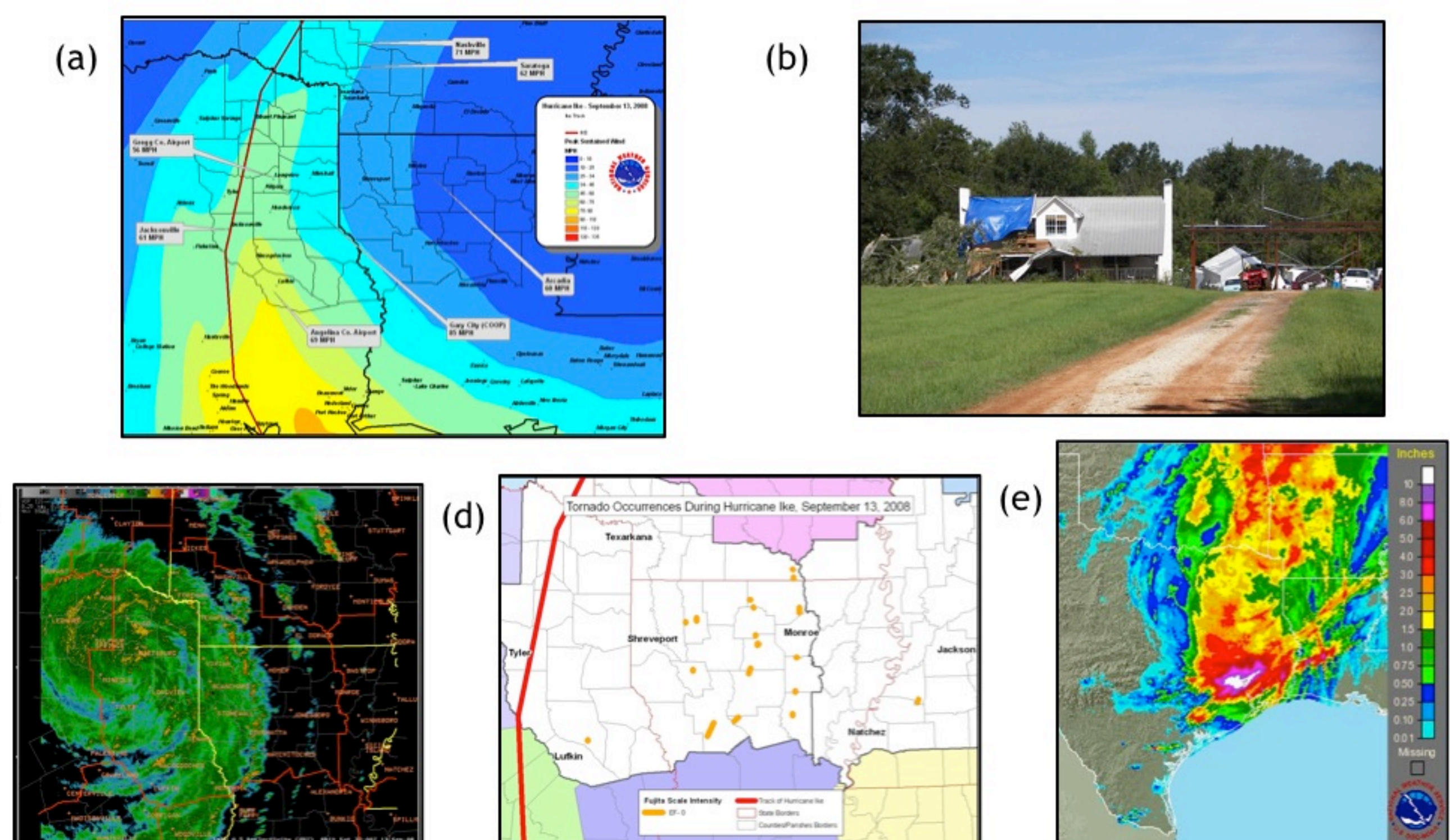


Figure 4. (a) Peak sustained winds with gusts in the callout boxes on September 13, 2008 (b) Wind damage in Nacogdoches, TX (c) Radar image from September 13, 2008 at 22:00Z (d) Tornado tracks for September 13, 2008 and (e) 1-Day Observed Precipitation on September 14, 2008 for Shreveport CWA.

•**Wind Impacts** – Strong winds with peak sustained winds that were in the range of 25 mph to 75 mph.

•**Tornado occurrences** – The NWS in Shreveport, LA reported a total of 18 tornadoes on September 13, 2008.

•**Flooding Impacts** – Ike was not a significant producer of rainfall across Shreveport CWA. From September 13 until September 15 2008, rainfall amounts were up to 6 inches.

Impacts of Hurricane Rita Over Shreveport CWA

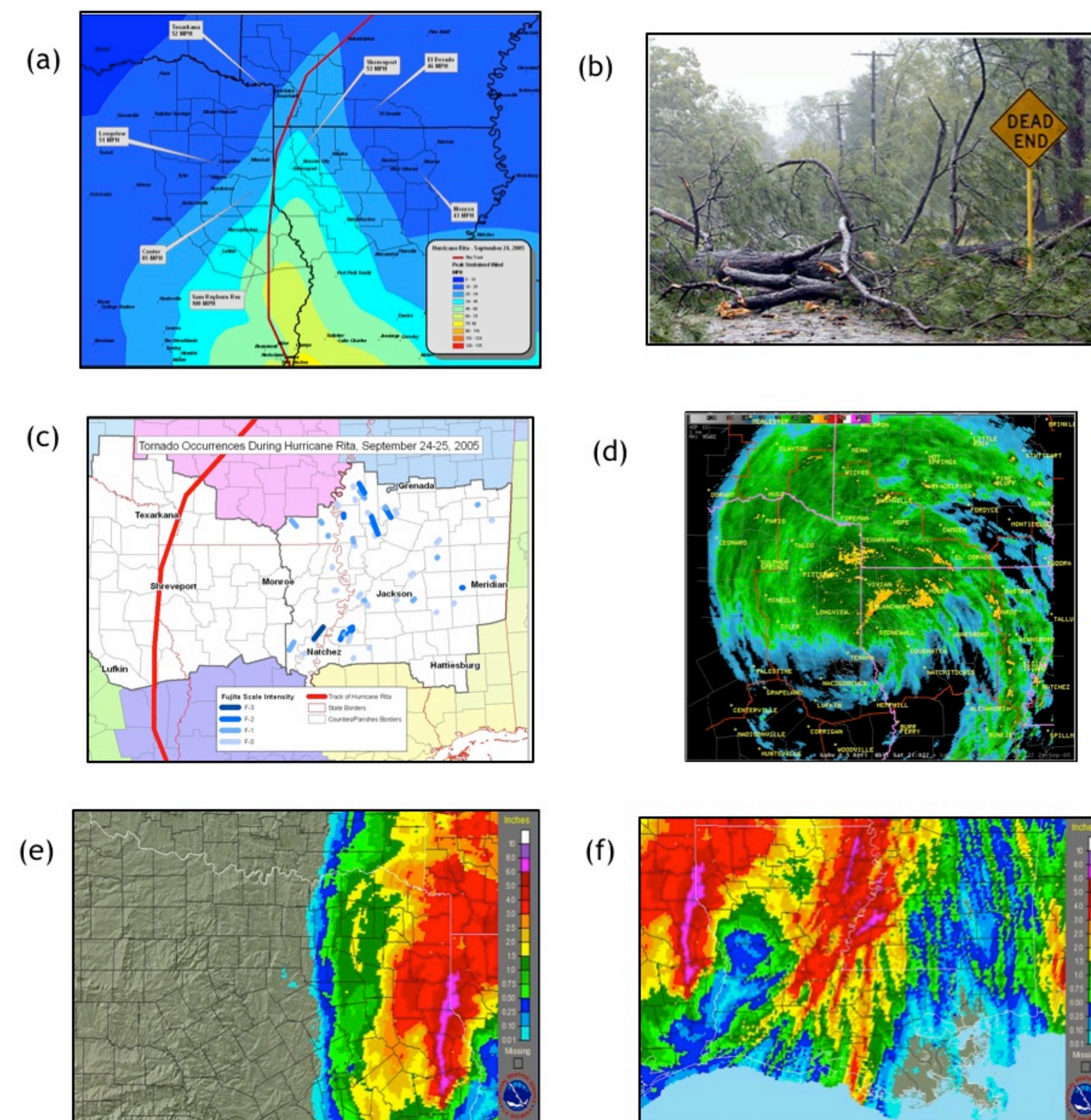


Figure 2. (a) Peak sustained winds with gusts in the callout boxes on September 24, 2005 (b) Wind damage in Lufkin, TX (c) Tornado tracks for September 24-25, 2005 (d) Radar image of Hurricane Rita from September 24, 2005 at 21:02Z (e) 1-Day Observed Precipitation on September 25, 2005 for North East, TX and (f) 1-Day Observed Precipitation on September 25, 2005 for Louisiana.

Impacts of Hurricane Gustav Over Shreveport CWA

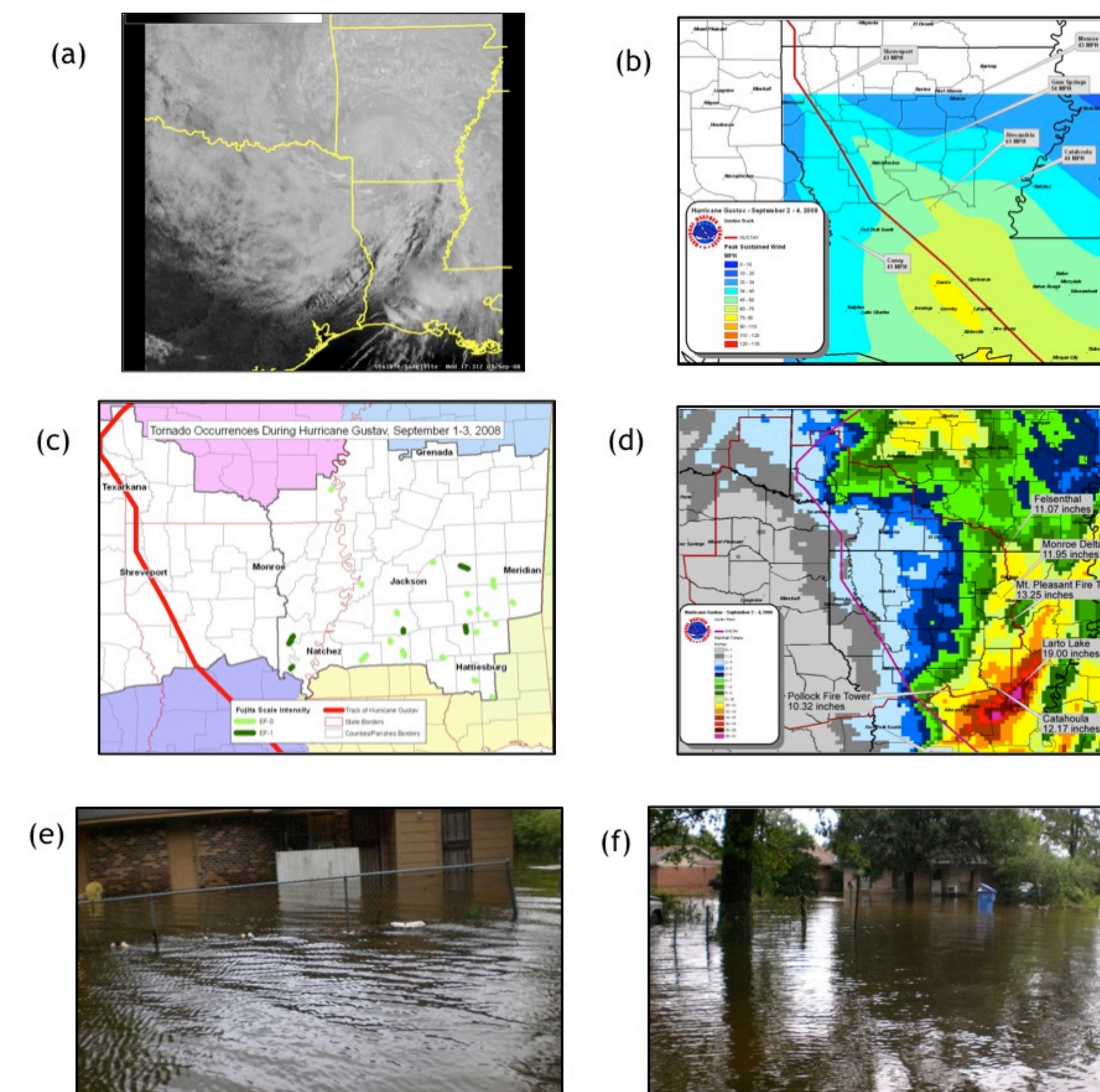


Figure 3. (a) Visible satellite image from September 3, 2008 at 16:45Z (b) Peak sustained winds with gusts in the callout boxes on September 2-4, 2008 (c) Tornado tracks for September 1-3, 2008 (d) Rainfall Amounts for September 2-4, 2008 (e) and (f) Flooding damage in Monroe, LA.

•**Wind Impacts** – Gustav's highest winds were far south.

•**Tornado occurrences** – The NWS in Jackson, MS reported a total of 26 tornadoes. Shreveport CWA did not experience any tornadoes during Gustav.

•**Flooding Impacts** – Amounts of rainfall were up to 13 inches.

Comparisons of the Impacts

•Ike and Rita produced higher winds farther inland and higher peak wind gusts than Gustav due to their fast forward speed.

•Ike had the biggest inland extent of the peak sustained winds.

•Correlating tracks and location, the tornadoes that were spawned were located at an average distance of 150-200 miles northeast and east of the tracks of the hurricanes.

•Hurricane Gustav was the largest producer of rainfall amounts (up to 13 inches) due to its slow forward speed.

Acknowledgements

•Special thanks to Armando L. Garza, Keith Stellman, Ken Falk, Nicholas Fillo, and all of the staff from the NWS in Shreveport, LA for their help and support.