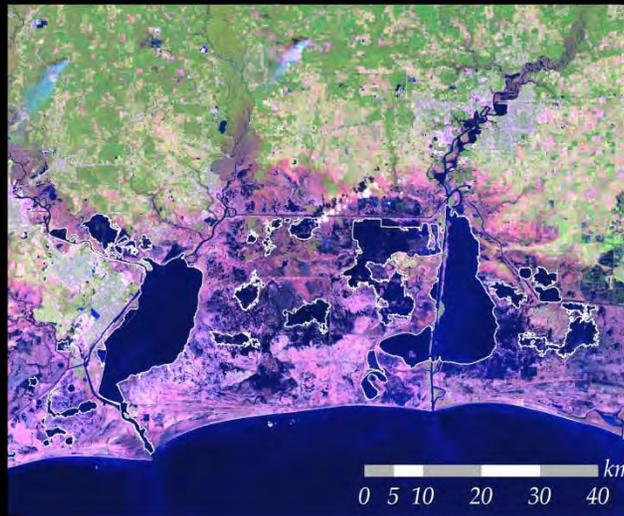
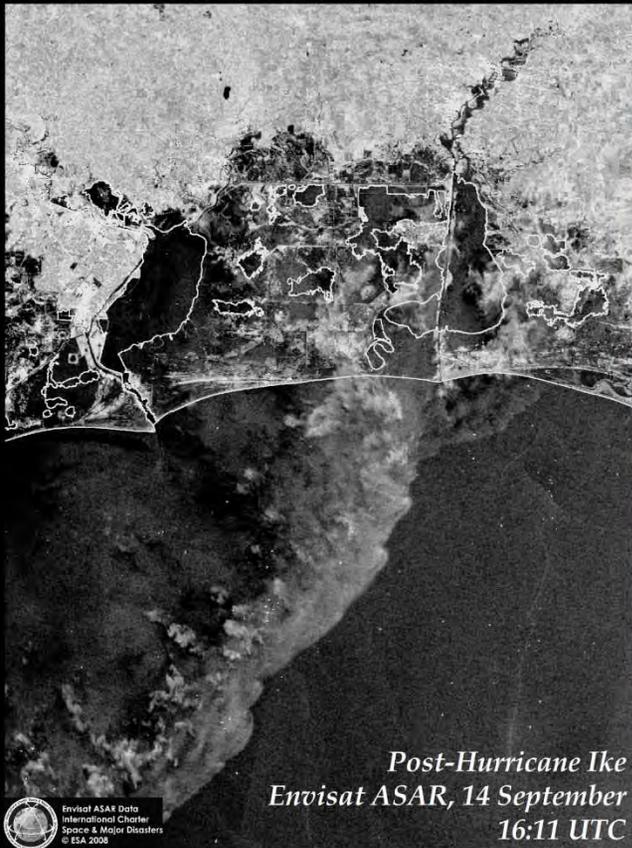
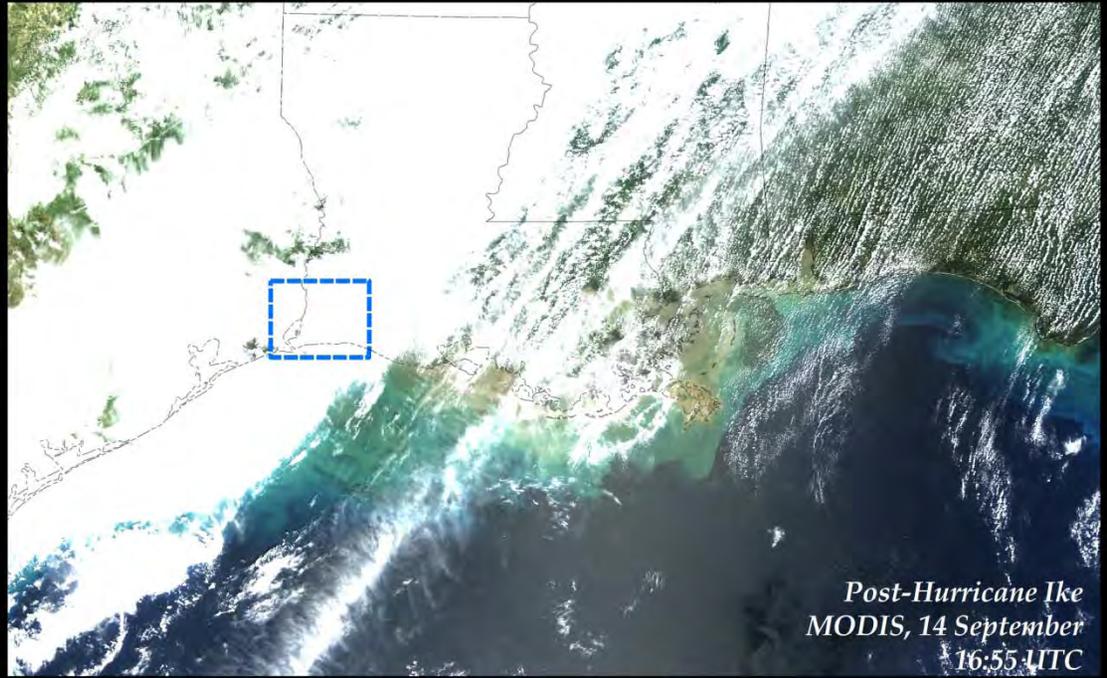
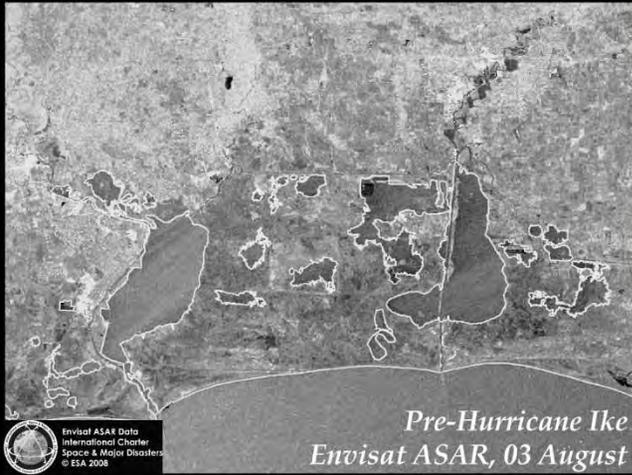


# Emergency Response Mapping of Surge Flooding and Damage to Coastal Resources with Satellite Radar and Optical Data

A rare example of the synergistic application of optical and radar satellite imagery in an emergency response situation encountered during and after the landfall of Hurricane Ike at Galveston, Texas, on 13 September 2008 (Ramsey III, E., D. Werle, Z. Lu, A. Rangoonwala, and Y. Suzuki, 2009. Cover graphic, *Journal of Coastal Research*. 25(5)). The overpass of the European Envisat satellite on 14 September offered immediate acquisition of Advanced Synthetic Aperture Radar imagery that provided an unobstructed view of the impacted area (owing to the cloud-penetrating capability of radar), and thereby, critical information for human rescue efforts. In contrast, optical imagery would not have provided the same efficiency or quality of information for rescue operations. For example, the dense and extensive cloud cover visible on the Moderate Resolution Imaging Spectroradiometer (MODIS) image precluded the effective use of optical satellite imagery for relief operations. In terms of environmental monitoring, however, optical satellite imagery offers important information that can be combined with radar imagery to provide a more complete understanding of environmental impacts. For instance, optical imagery acquired on 29 September 2008 by the Landsat-5 Thematic Mapper (TM) reveals an area of sudden marsh dieback (purplish tone) that coincides with the surge flood extent (dark tone) substantiated by comparison of the post-hurricane 14 September and pre-hurricane 3 August 2008 ASAR images.

Envisat ASAR data are copyrighted by the European Space Agency and were provided via Cat-1 2853 Project. The Terra MODIS imagery is available thanks to NASA's "MODIS Rapid Response System" (<http://rapidfire.sci.gsfc.nasa.gov/realtime/2008258/>). The Landsat TM data are courtesy of the USGS EROS data center. Mention of trade names does not constitute endorsement by the U.S. Government.

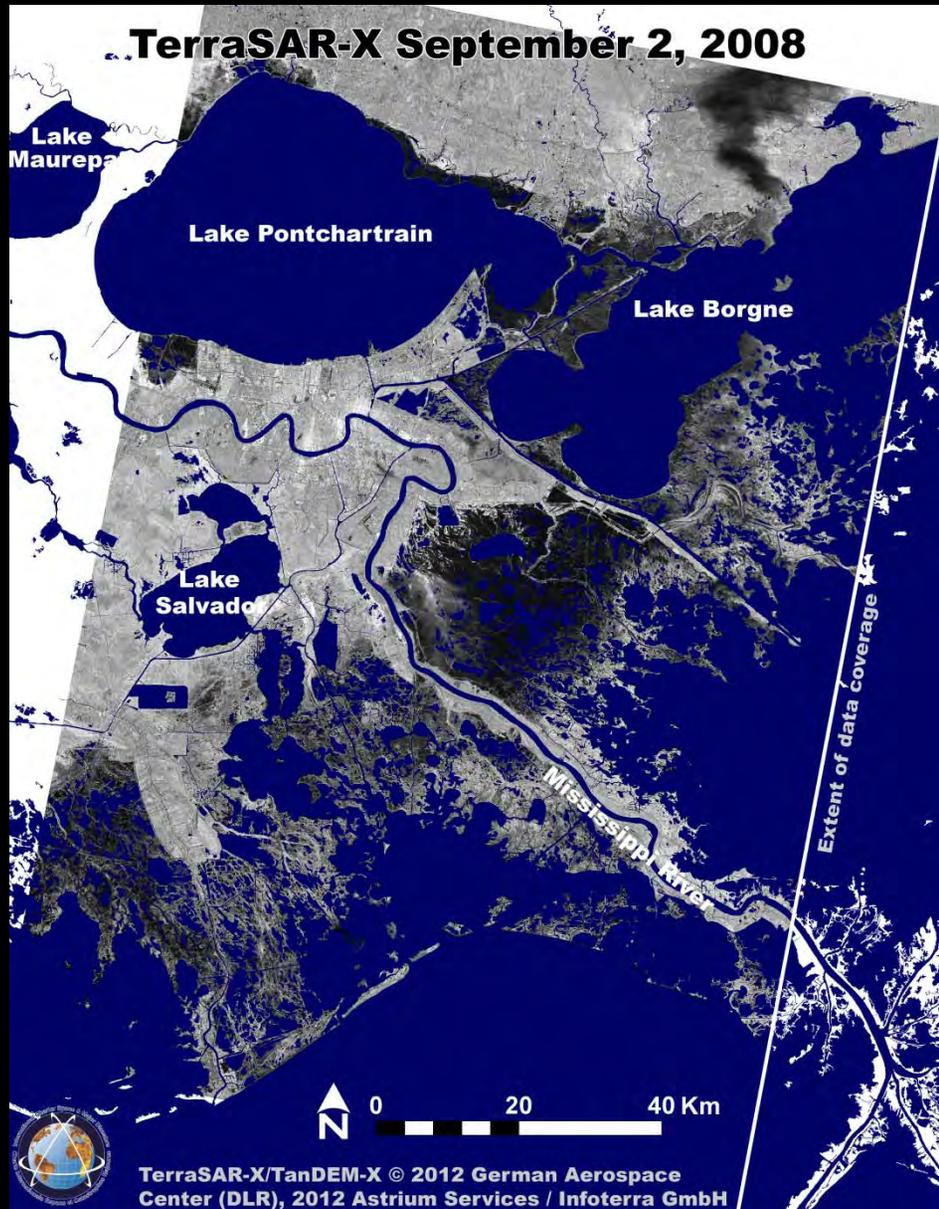


# Flood Inundation during Hurricane Isaac derived from TerraSAR-X scene data

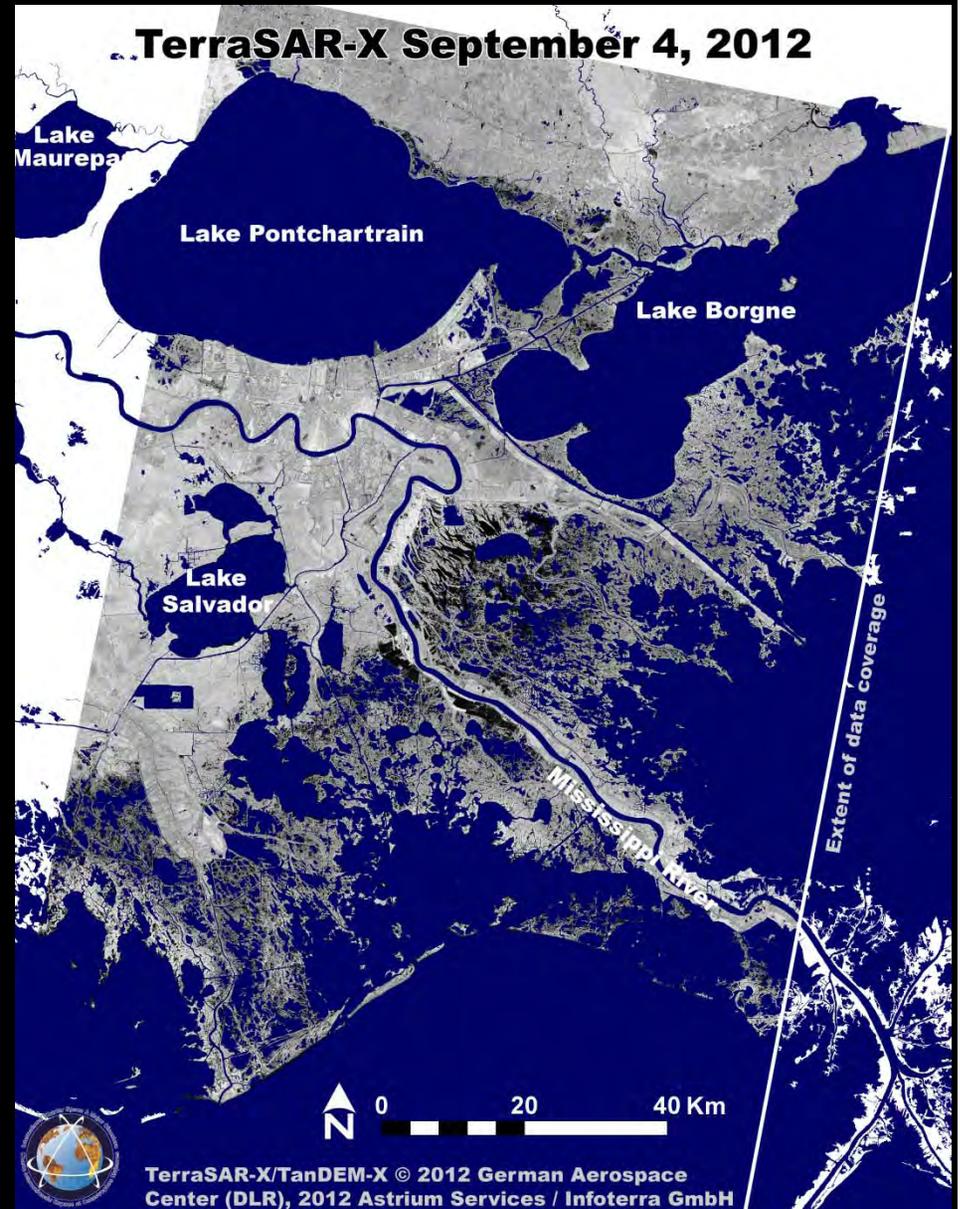
- The international charter call was activated on August 31, 2012 to monitor flooding due to Cat-1 Hurricane ISAAC
- ISAAC made two land falls one on August 28 at 7:45p.m EDT(1145 UTC) Southeast Louisiana in Plaquemines Parish just southwest of the mouth of the Mississippi River and the second on August 29 at 6a.m EDT (1000 UTC) Southeastern Louisiana, just west of Port Fourchon, La.

Hurricane Isaac visible satellite image from GOES East at 1615Z on August 28, 2012. Image Credit: NOAA

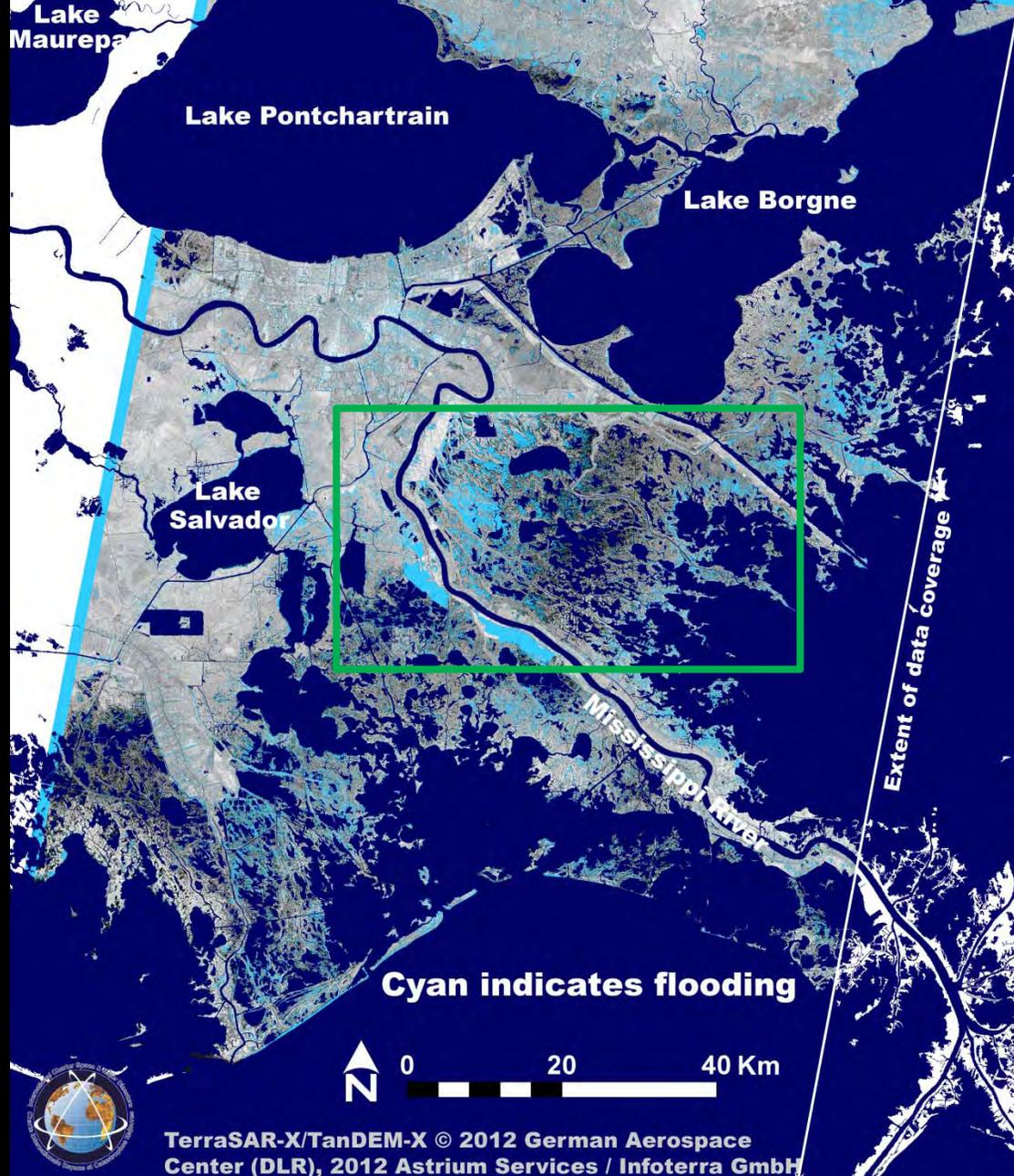
# Pre-Hurricane Isaac



# Post-Hurricane Isaac



# Flood Inundation during Hurricane Isaac based on TerraSAR-X September 4, 2012 and September 2, 2008 data



Cyan indicates flooding



# Flood Inundation during Hurricane Isaac

based on TerraSAR-X September 4, 2012  
and September 2, 2008 data

