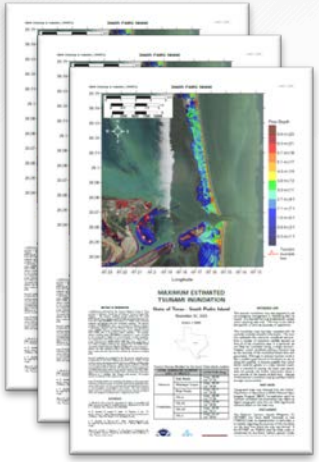
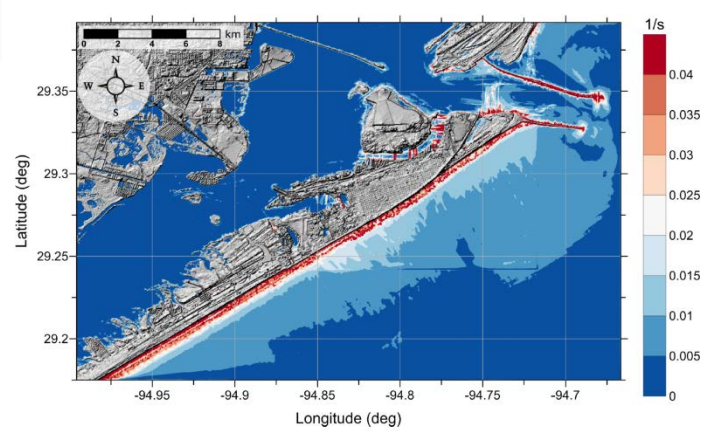
GOM
ACCOMPLISHMENTS & FUTURE ACTIVITIES

Portland, OR. JAN 31-FEB 3 /2017

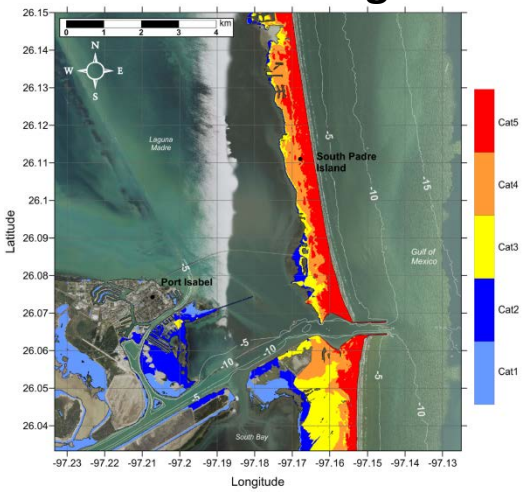
Inundation Maps



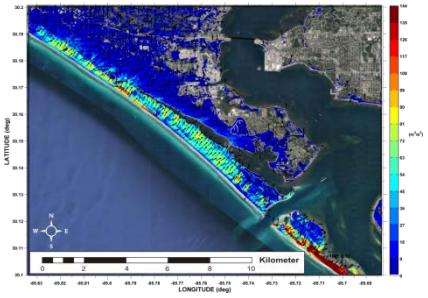
Maritme Products - vorticity -



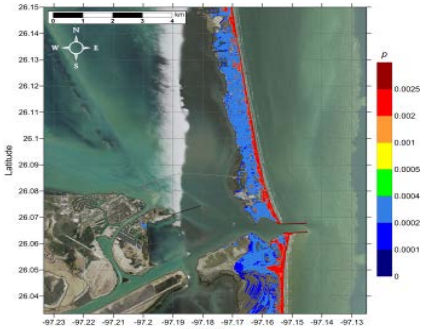
Tsunami potential VS. Storm Surge



Site-specific Momentum Flux

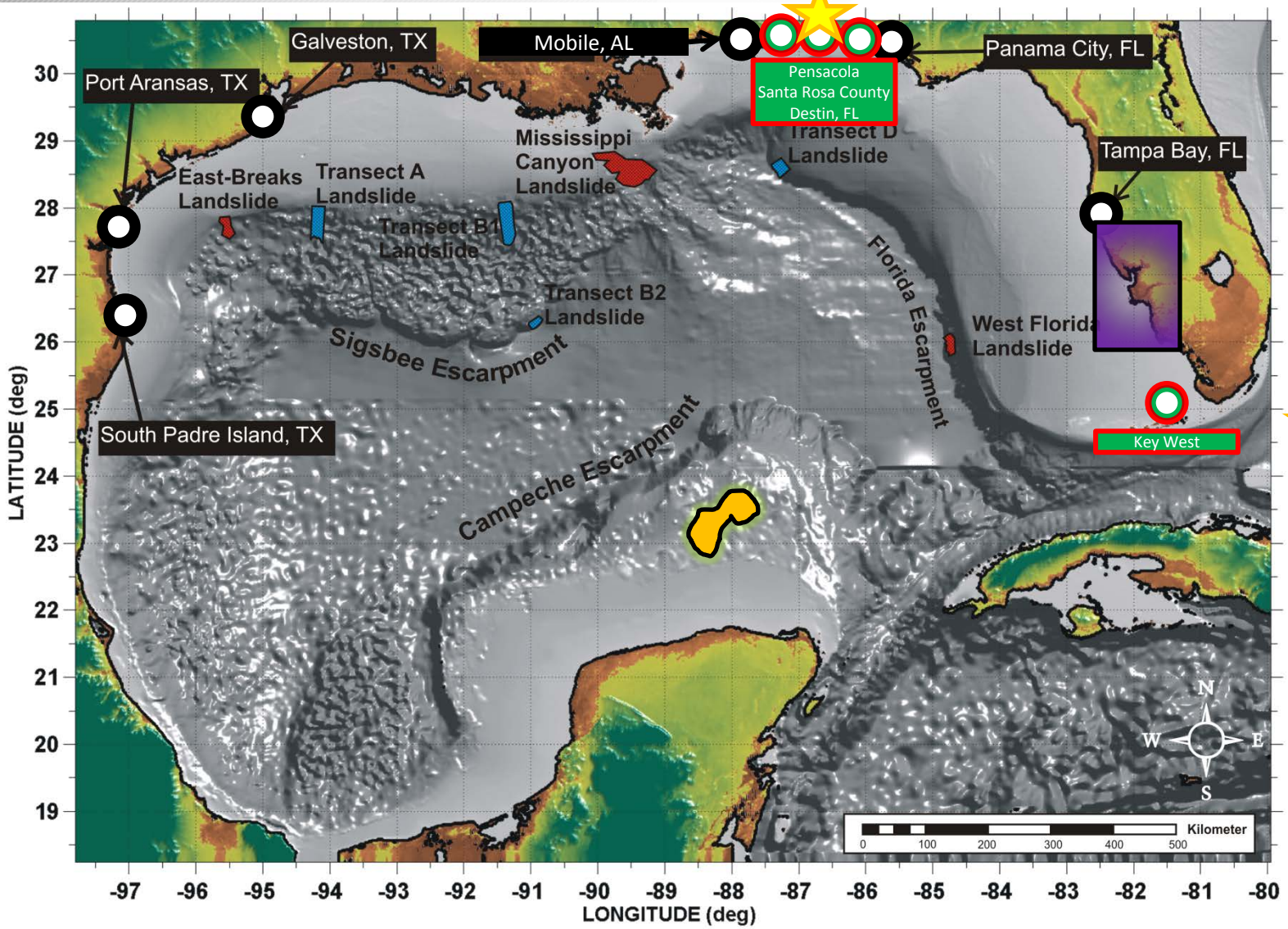


Probabilistic Annual exceedance rates



By: Chayne Sparagowsky
Wei Cheng, Jens Figlus
Juan Horrillo

TSUNAMI Sources and Mapping Activities



Historical Landslide Source

Probabilistic Landslide Source

Mapped Location

Currently in Development

Santa Rosa County - Tsunami Ready

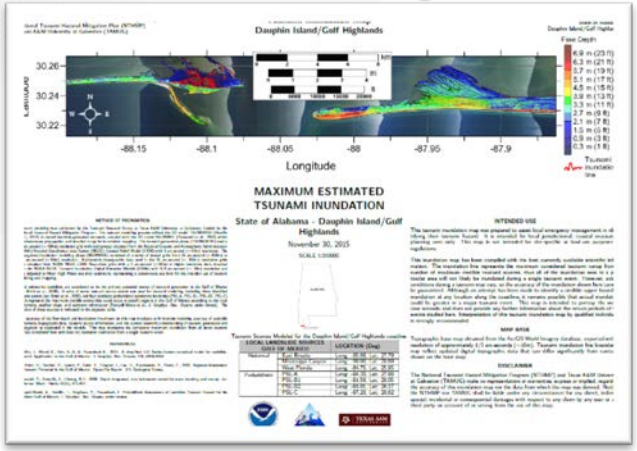
Projected development FY17

New source FY17 –USGS-

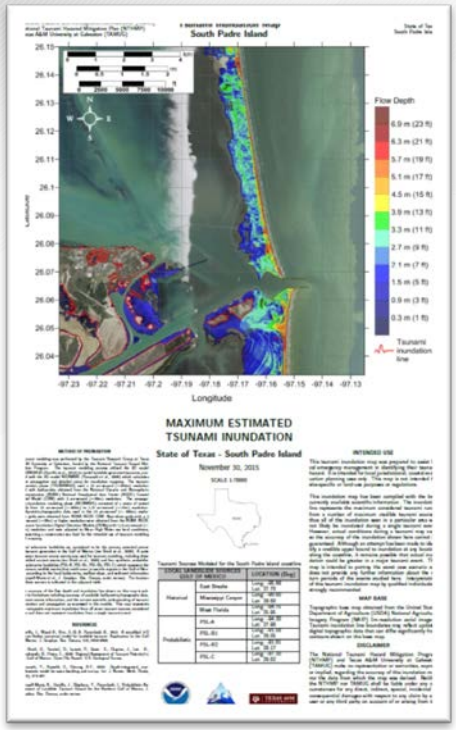
TSUNAMI INUNDATION MAPS

http://nws.weather.gov/nthmp/NTHMP_Web_Resources.html#gulfmaps

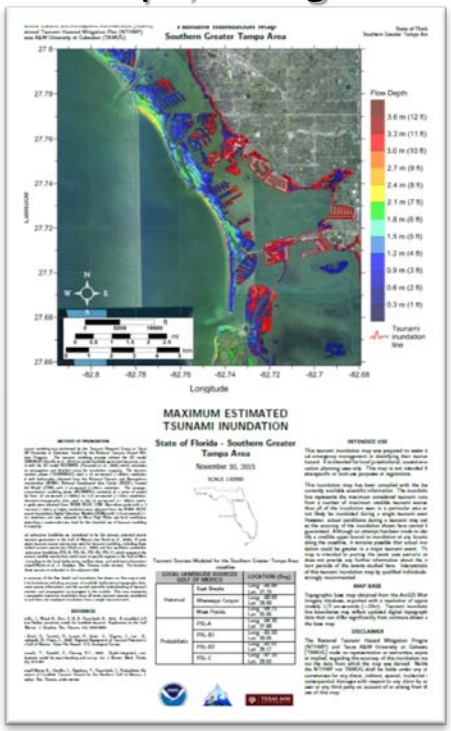
Mobile, AL Region



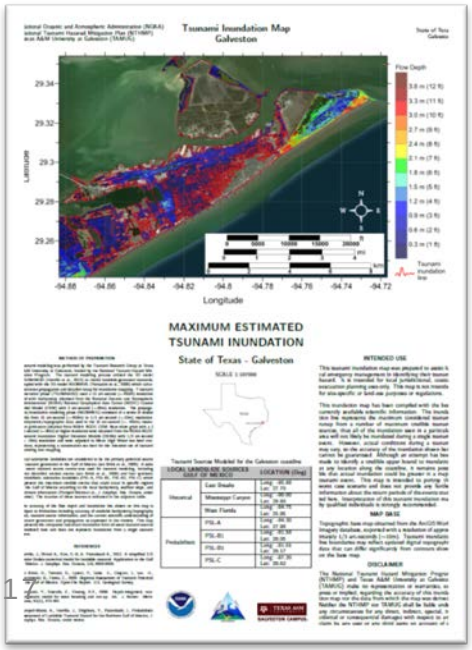
South Padre Island TX



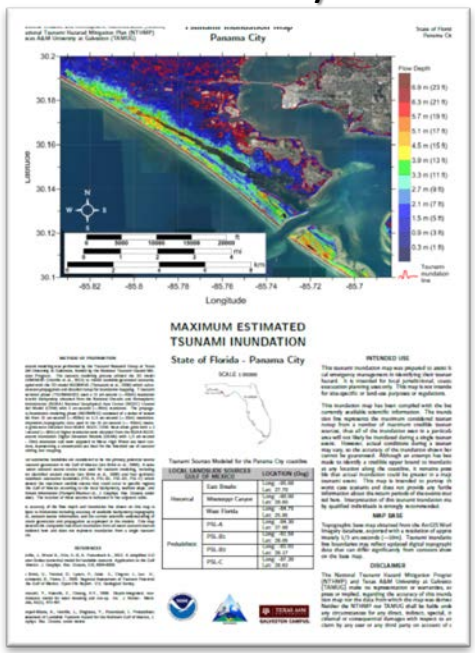
Tampa, FL region



Galveston TX



Panama City FL



FUTURE ACTIVITIES FY17

- In addition to the two tsunami maps* along the strip between Sarasota to Naples, FL, and new tsunami sources identified recently by the (USGS) -> Yucatan peninsula
- GOM will be continuing with the correlation between tsunami potential with hurricane storm surge for quick estimation in regions lacking of tsunami inundation maps
- GOM hopes get an EM soon.

Comparisons of tsunami VS storm surge inundation indicate that while the details of referencing tsunami inundation potential to hurricane storm surge is dependent on local topographic effects, general regional trends can be identified

- Immediate beachfront areas are inundated at levels comparable to major hurricanes (Category 3 or higher) with some places experiencing tsunami inundation that is well above Category 5 levels (5 m 16.5ft higher or more in some localized places) e.g., South padre Island, TX. and Panama City, FL.
- Where the continental shelf is wide or where the community is located more inland (e.g. Galveston, TX, Mobile, AL, and the greater Tampa, FL area), tsunami inundation depths seem to be generally comparable to a Category 3 hurricane at the immediate beachfront with small stretches of Category 4 levels possible, and down to Category 1 levels in more inland areas.

Minimum Offshore Safe Depth
100 phantom ~ 200 m

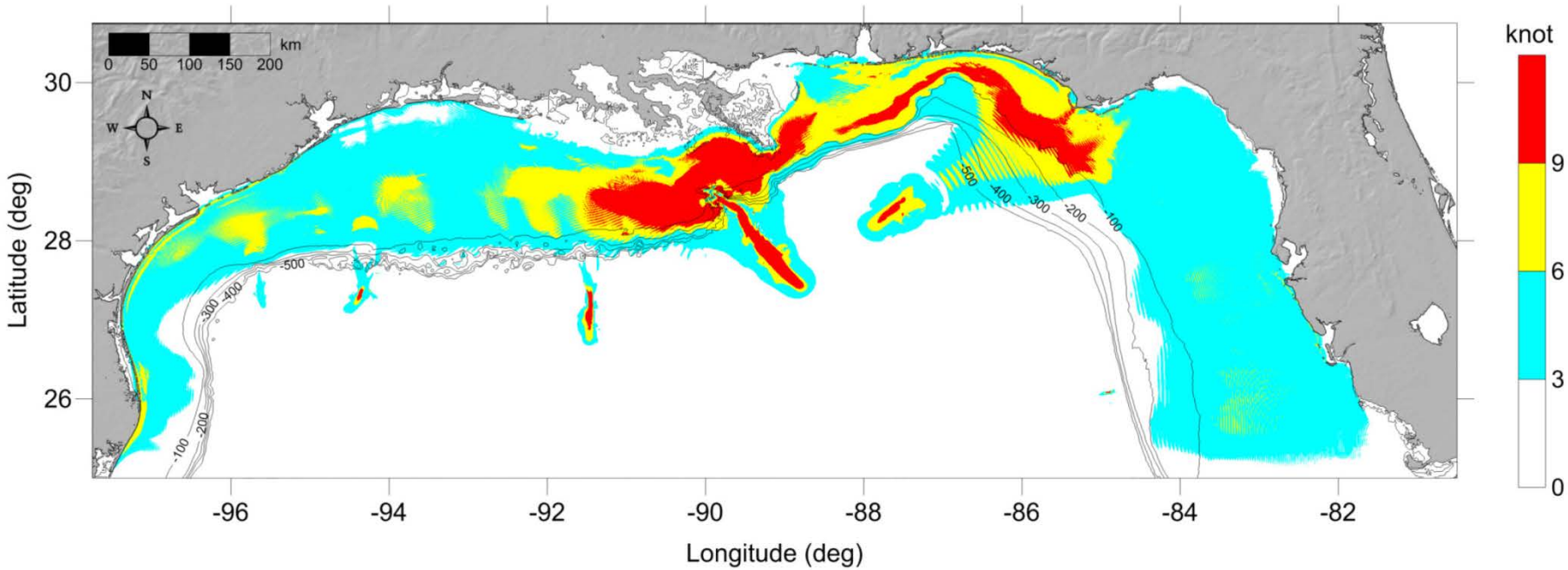


Figure 44: Maximum of maximum velocity magnitude contour plot in the Northern Gulf of Mexico (15 arcsecond resolution) for all landslide scenarios.

Galveston, TX
Damage Current

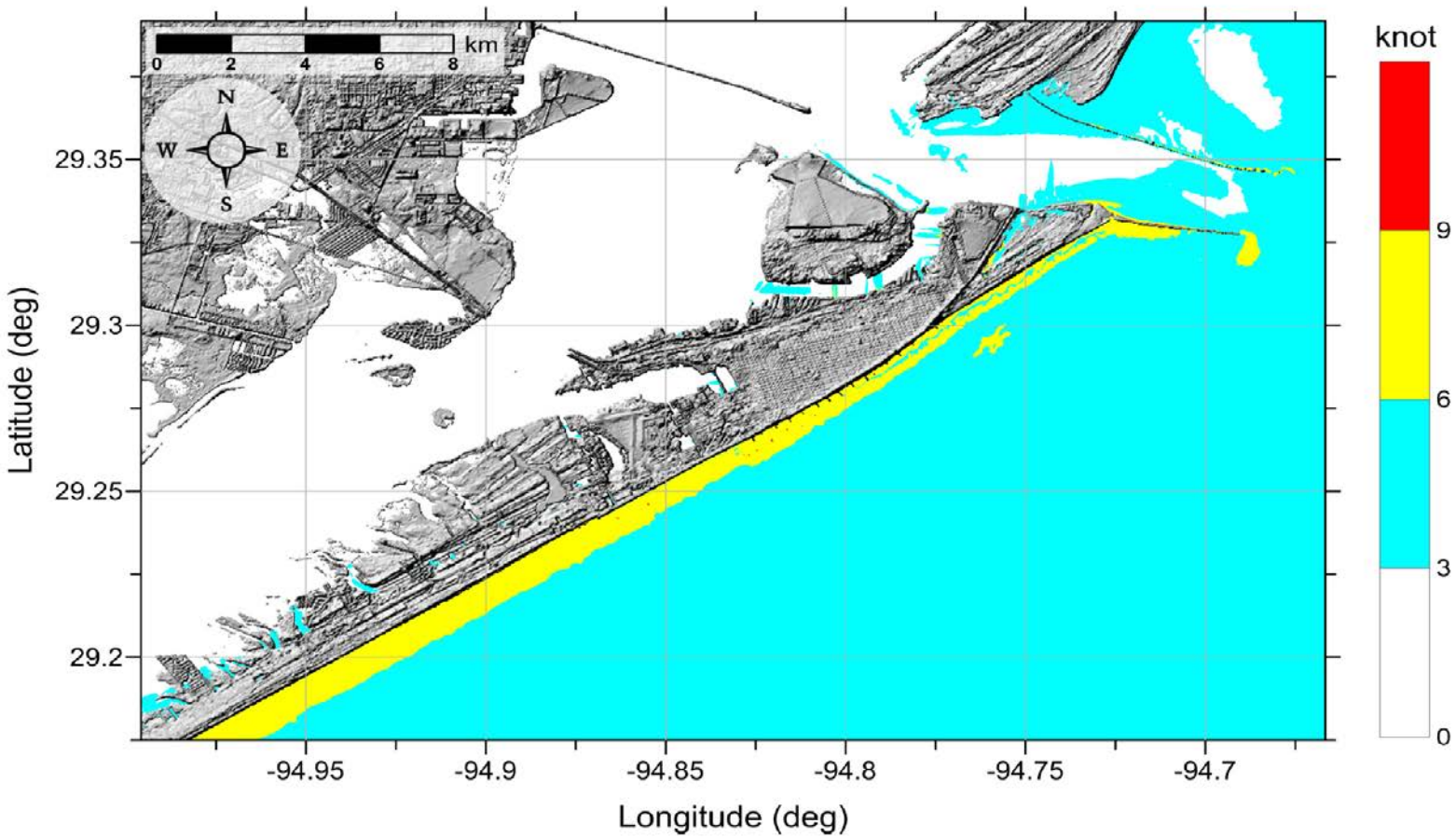


Figure 46: Maximum of maximum velocity magnitude contour plot in Galveston West Bay and Bay Entrance (1 arcsecond resolution) for all landslide scenarios.

Galveston, TX
- Vorticity -

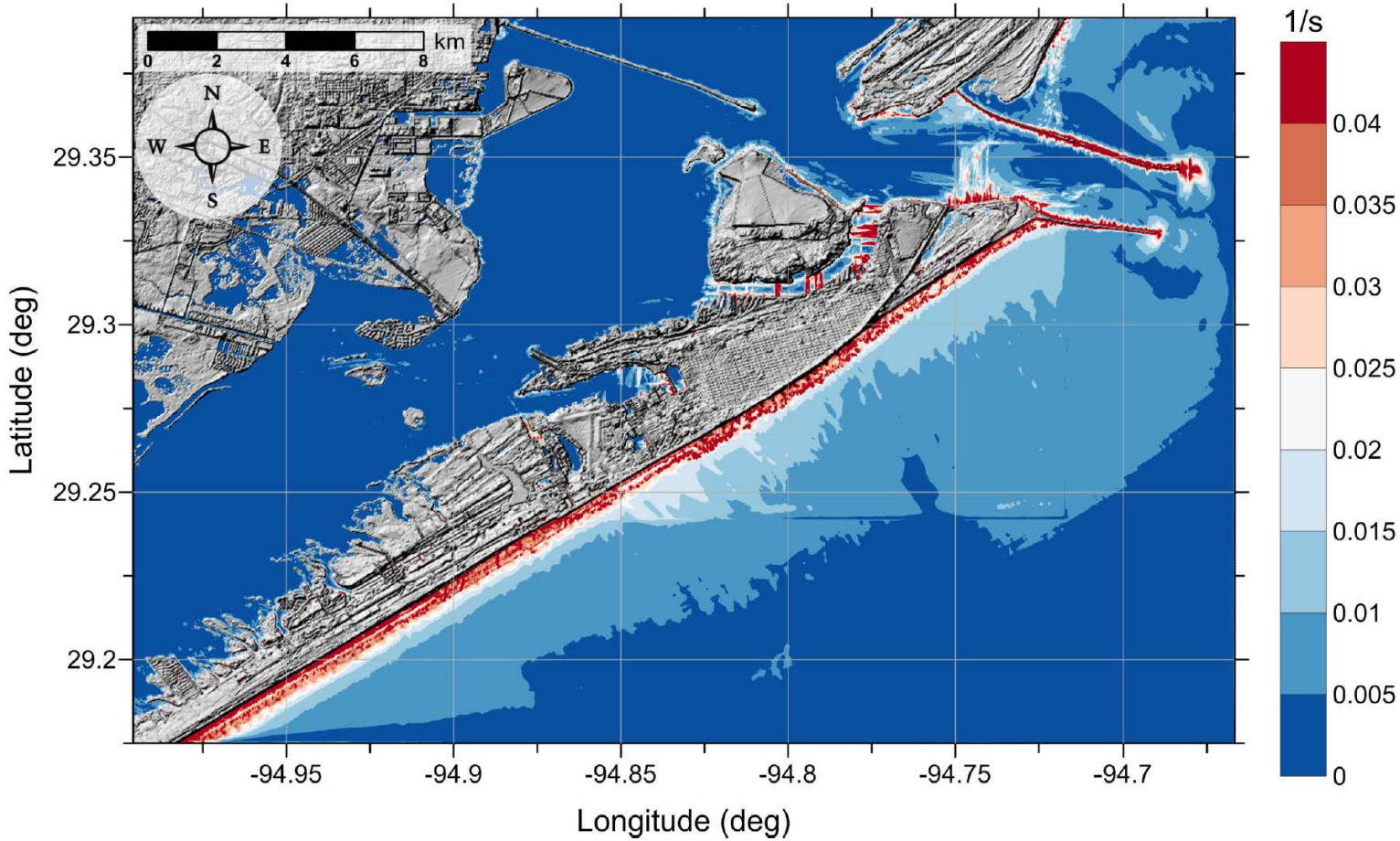


Figure 47: Maximum of maximum vorticity magnitude contour plot in Galveston West Bay and Bay Entrance (1 arcsecond resolution) for all landslide scenarios.

PROBABILISTIC TSUNAMI INUNDATION

Determination of annual exceedance rates above certain tsunami inundation threshold levels for the GOM.
Example : South Padre Island, TX:

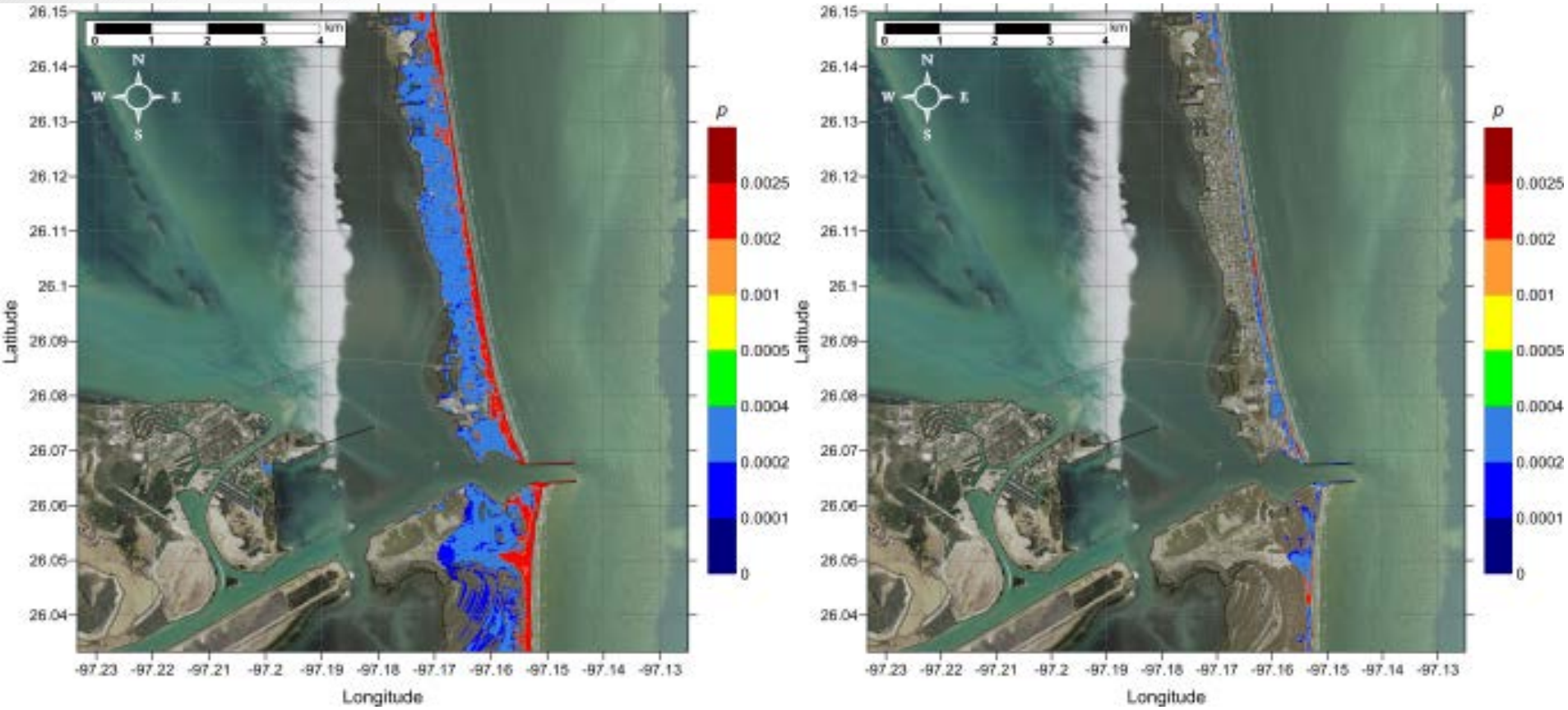


Figure . Probability of tsunami inundation exceeding 2m (~6.6ft) and 4m (~13.1ft), respectively, in South Padre Island, TX.