

Figure 247: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 7:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

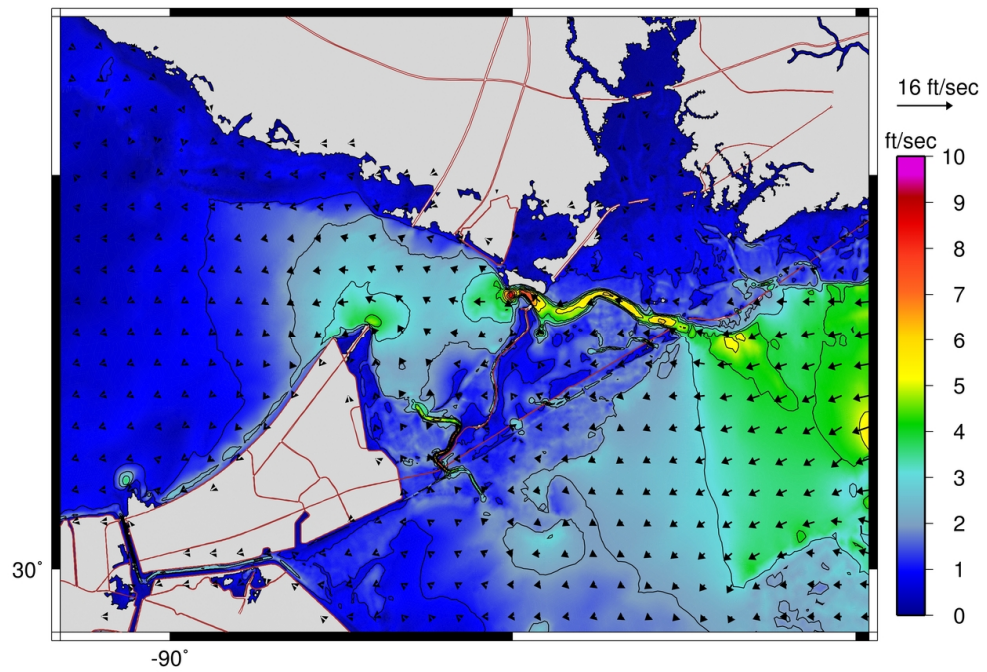


Figure 248: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 10:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

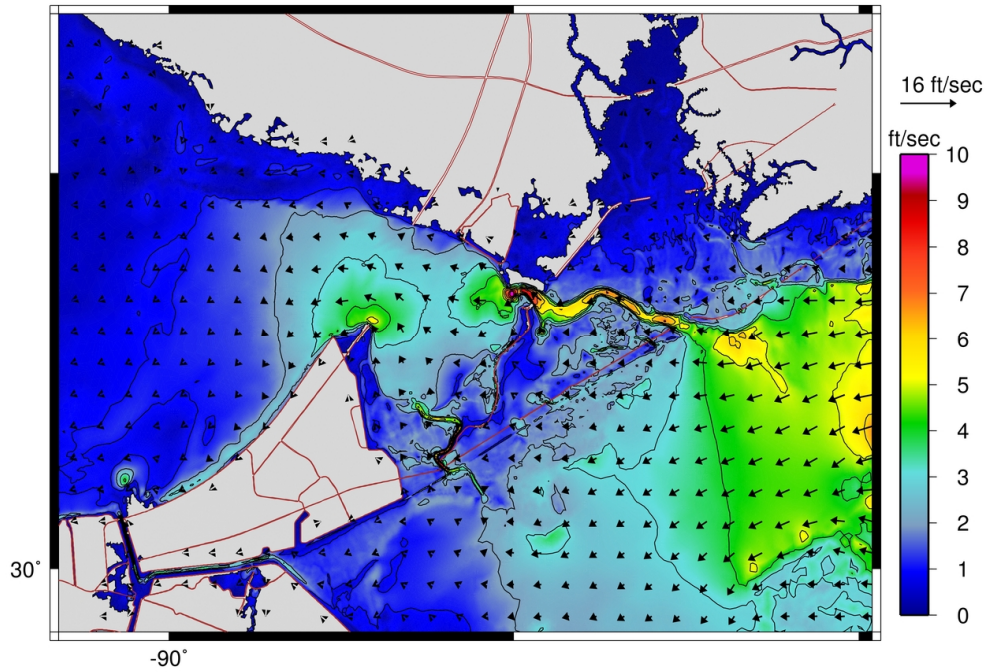


Figure 249: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 11:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

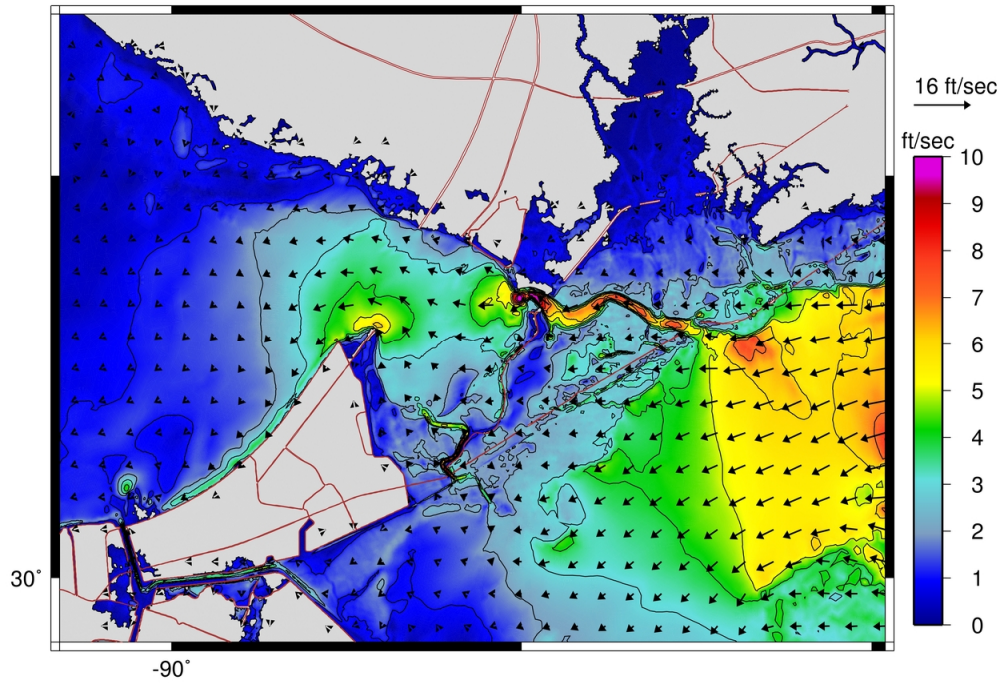


Figure 250: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 12:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

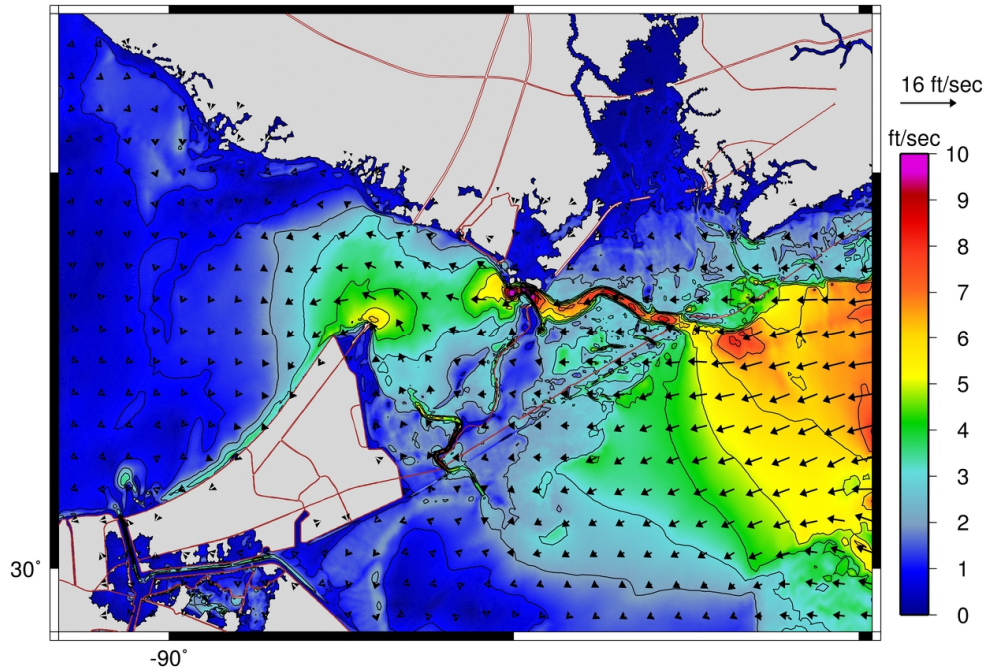


Figure 251: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 13:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

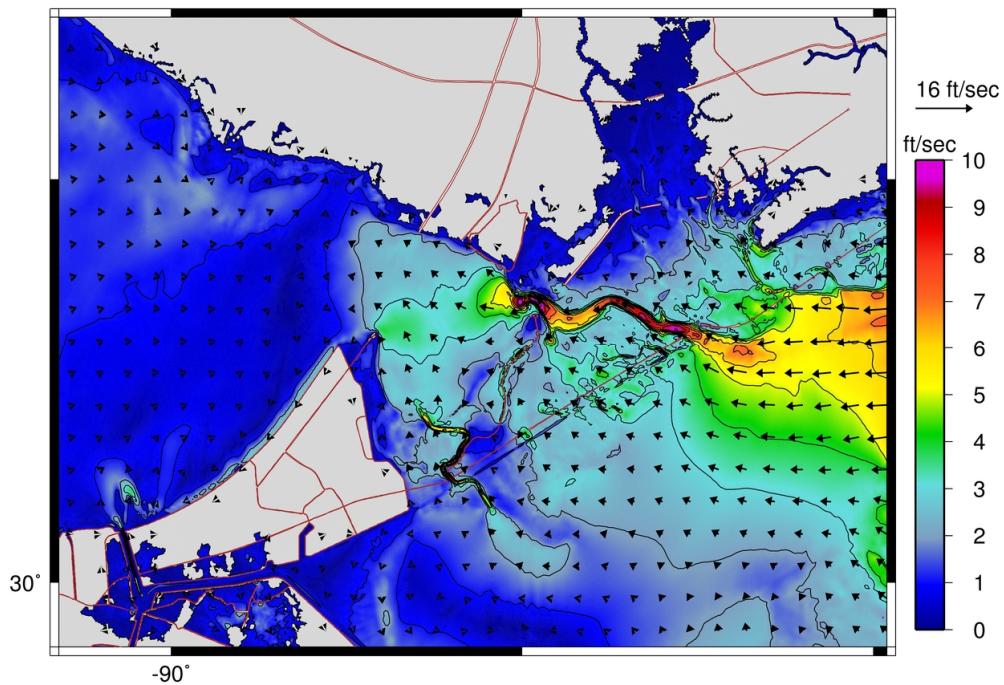


Figure 252: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 14:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

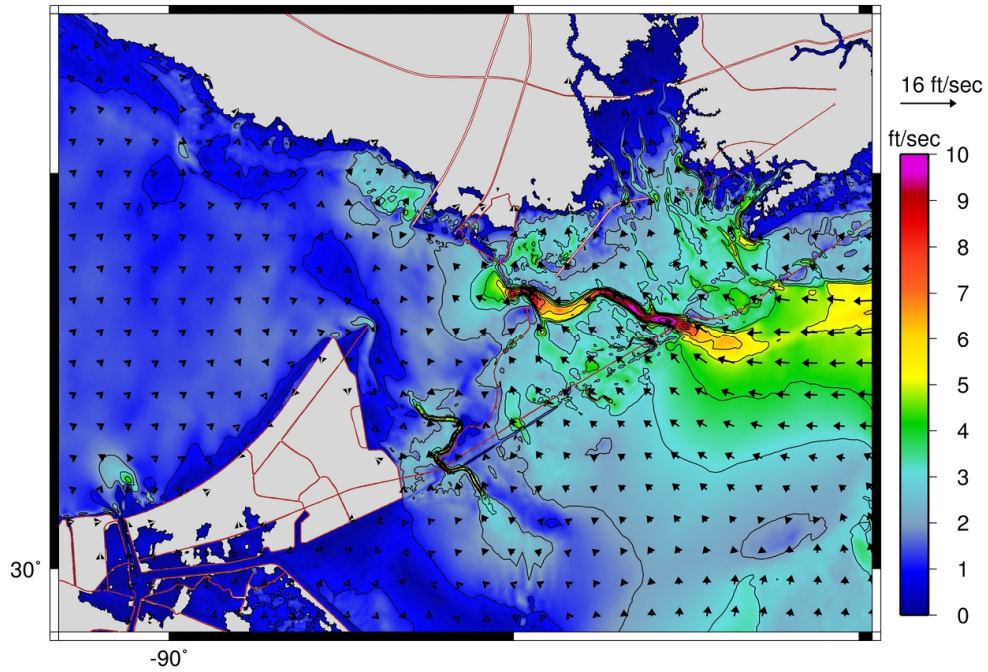


Figure 253: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 15:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

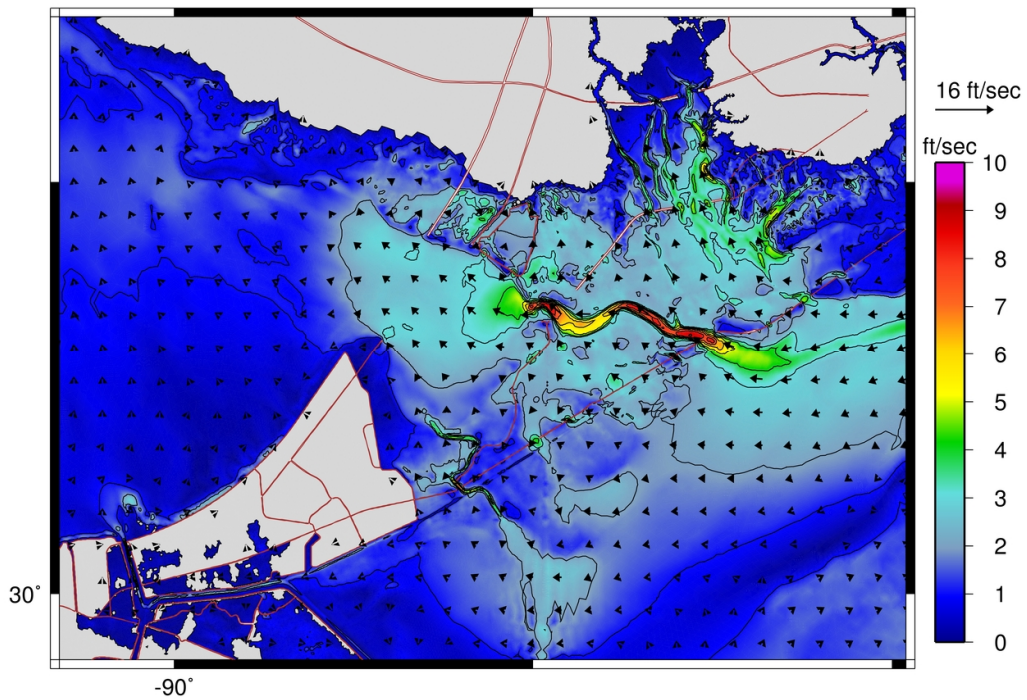


Figure 254: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 16:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

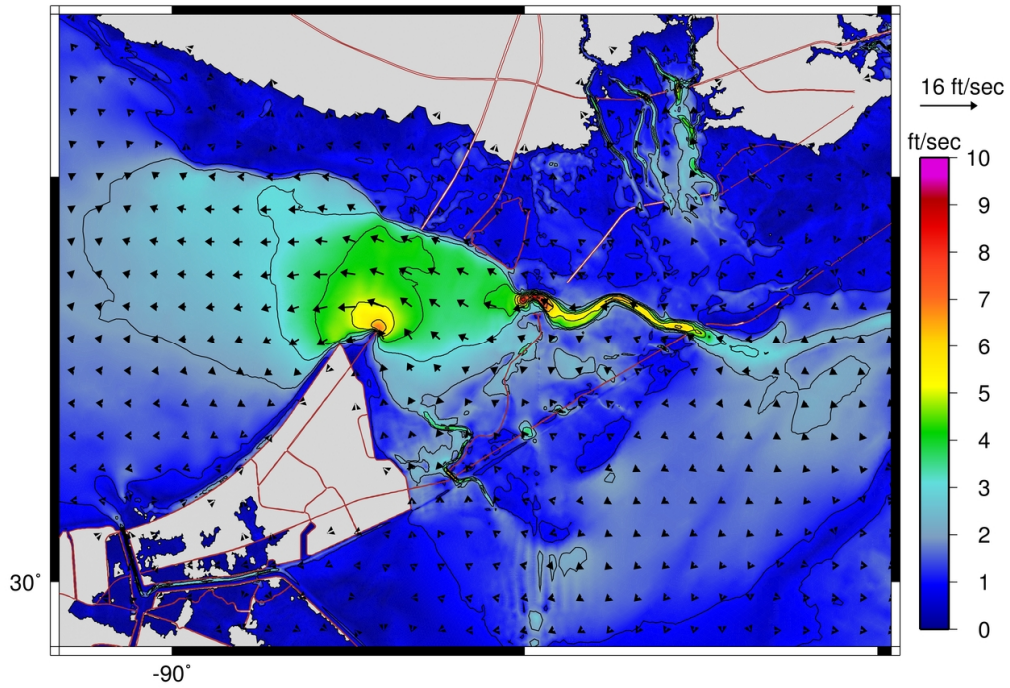


Figure 255: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 17:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

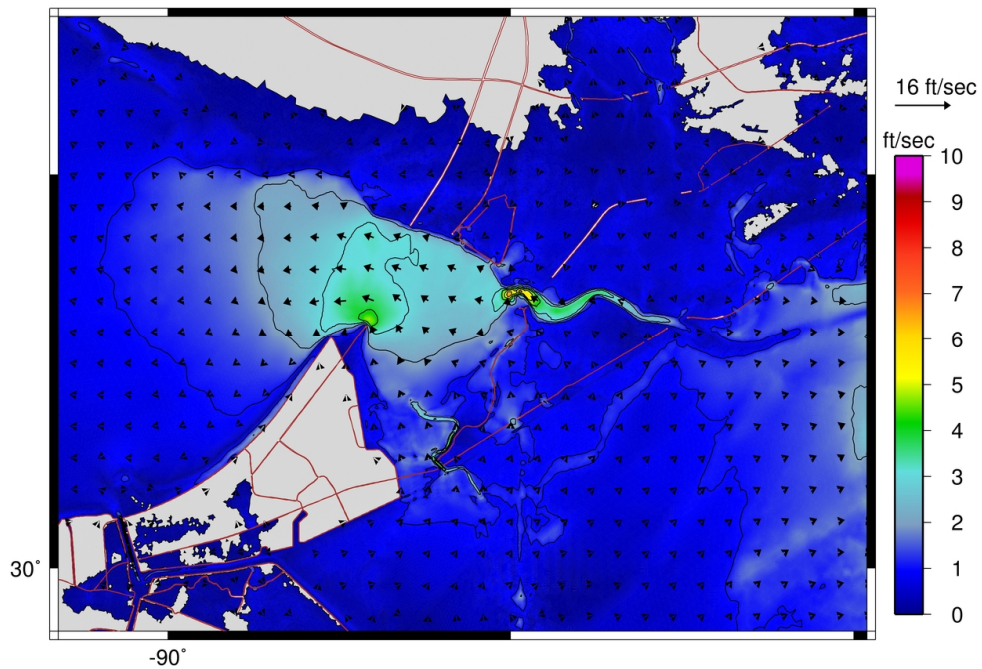


Figure 256: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 20:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

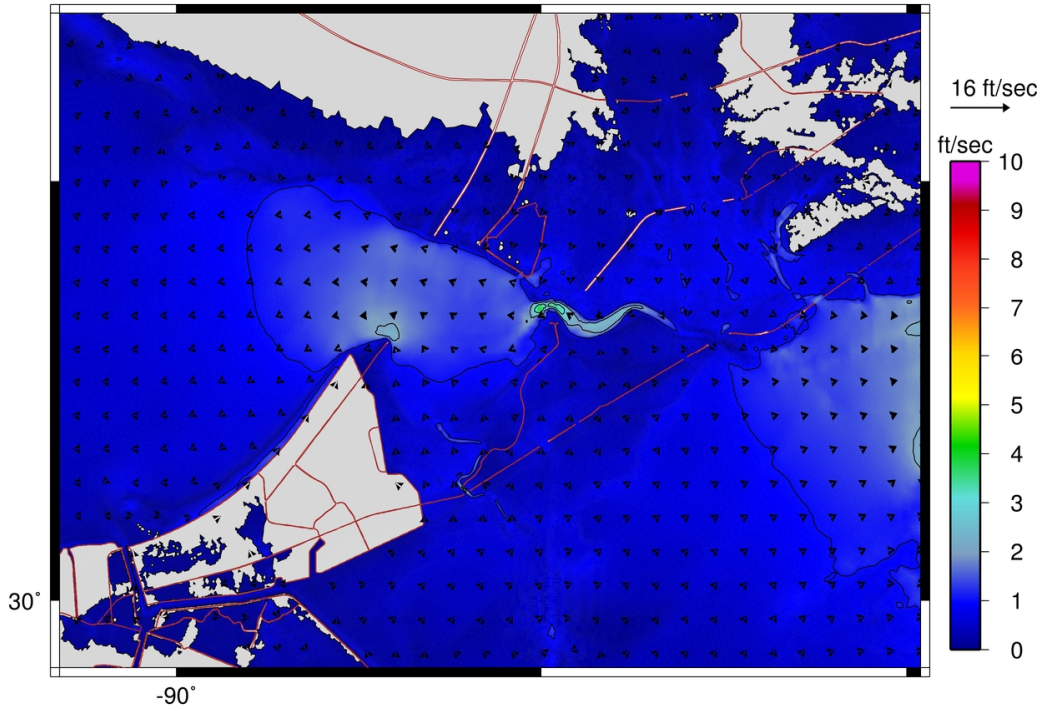


Figure 257: ADCIRC current contours (in feet/second) and current vectors (in feet/second) for Hurricane Katrina at 23:00 UTC on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

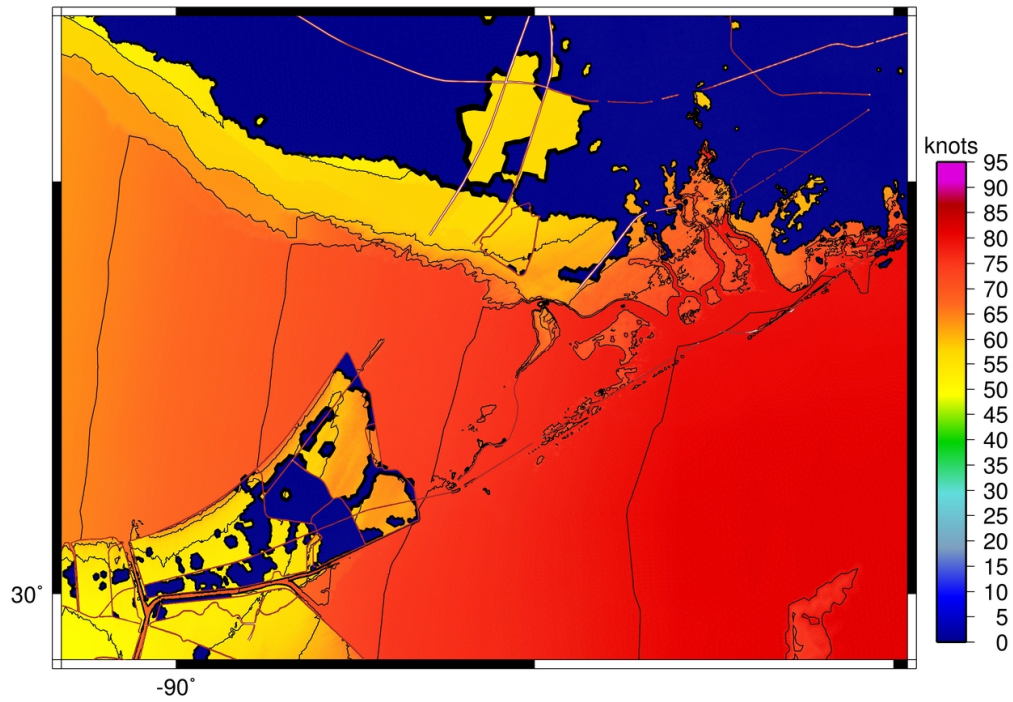


Figure 258: ADCIRC maximum wind velocities (in knots) during Hurricane Katrina on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

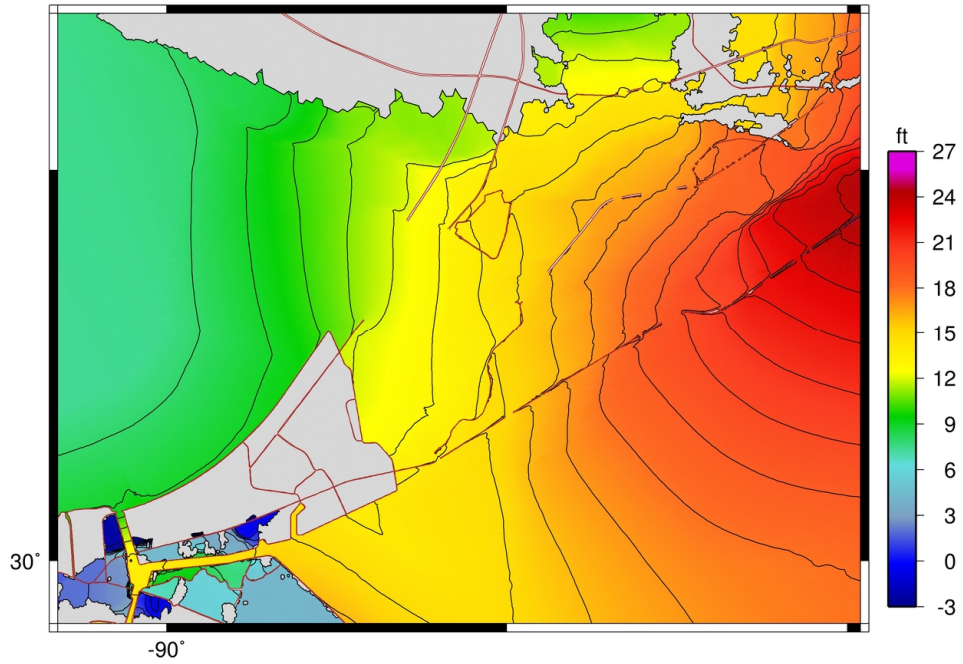


Figure 259: ADCIRC maximum elevation contours (in feet) during Hurricane Katrina on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

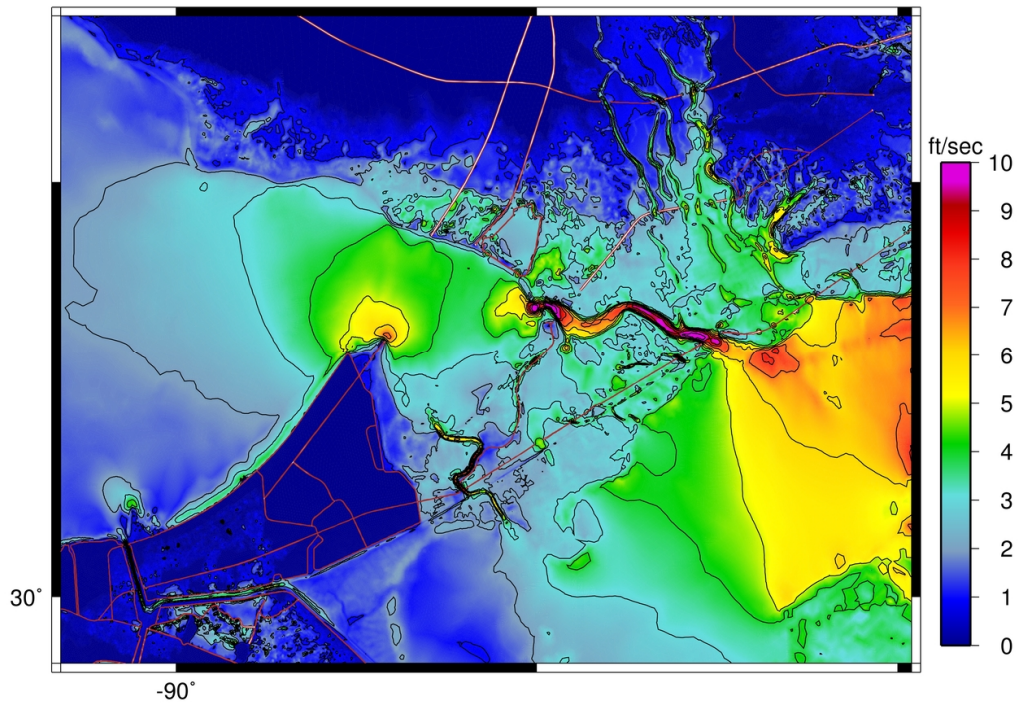


Figure 260: ADCIRC maximum current contours (in feet/second) during Hurricane Katrina on August 29, 2005, for the area between Lake Pontchartrain and Lake Borgne.

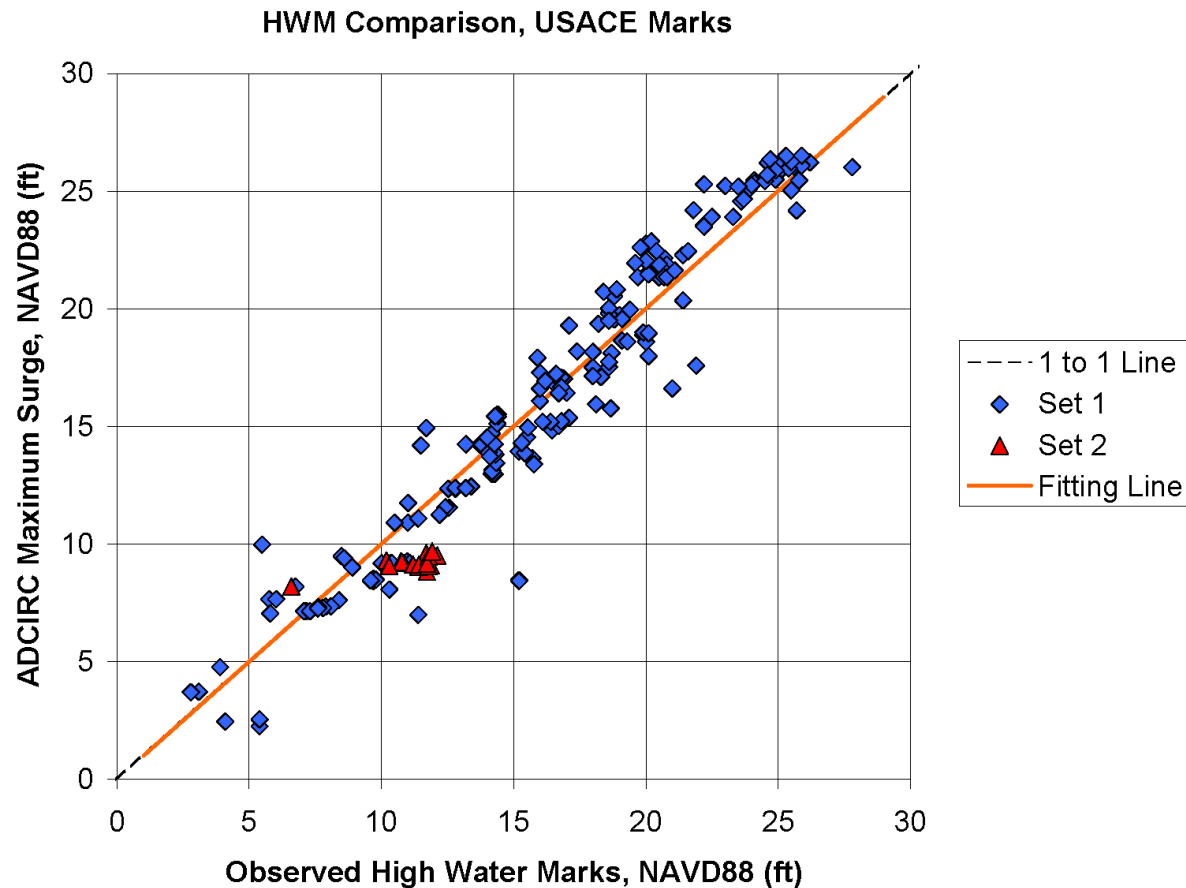


Figure 261: Comparisons between observed high-water marks and ADCIRC maximum surges at 206 locations shown on Figure 263 (USACE marks). The ADCIRC maximum surges are the temporal maximums of water surface elevation solutions computed at each location. The marks represented by red triangles (Set 2) are the high-water marks found on the south shore of Lake Pontchartrain, which are shown on Figure 264. The blue rectangular marks (Set 1) are the rest. The fact that ADCIRC solutions under-predict maximum surges at these locations where structures are expected to play a more important role in run-ups indicates the necessity of non-hydrostatic computations, which can be done using the Boussinesque equation. Linear fitting computed from both Set 1 and Set 2 is shown as the orange line. The slope of the fitting line is 1.0007 and R2 value is 0.9317. The correlation between the observed high-water marks and the ADCIRC maximum surges is 0.9679.



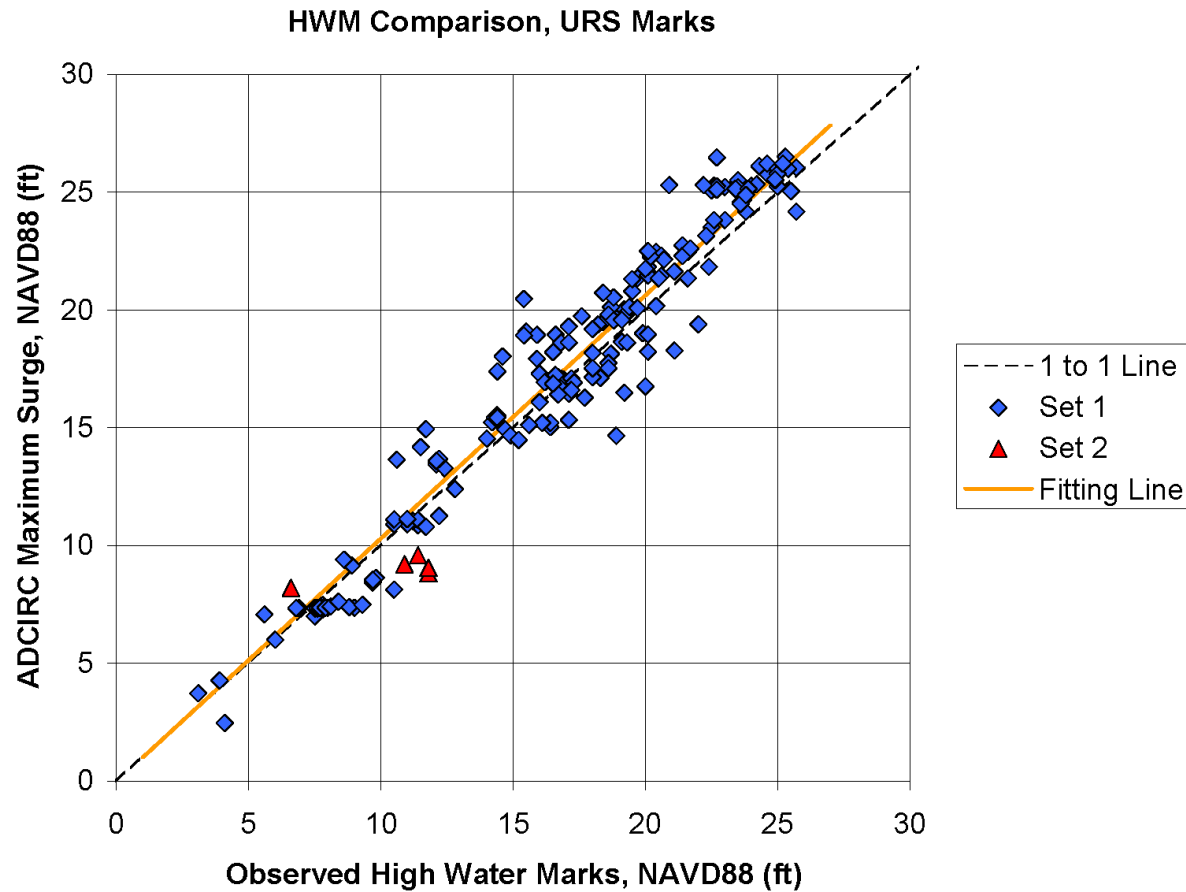


Figure 262: Comparisons between observed high-water marks and ADCIRC maximum surges at 193 locations shown on Figure 265 (URS marks).

The ADCIRC maximum surges are the temporal maximums of water surface elevation solutions computed at each location. The marks represented by red triangles (Set 2) are the high-water marks found on the south shore of Lake Pontchartrain, which are shown on Figure 266. The blue rectangular marks (Set 1) are the rest. The fact that ADCIRC solutions under-predict maximum surges at these locations where structures are expected to play a more important role in run-ups indicates the necessity of non-hydrostatic computations, which can be done using the Boussinesque equation. Linear fitting computed from both Set 1 and Set 2 is shown as the orange line. The slope of the fitting line is 1.0315 and R2 value is 0.9460. The correlation between the observed high-water marks and the ADCIRC maximum surges is 0.9734.

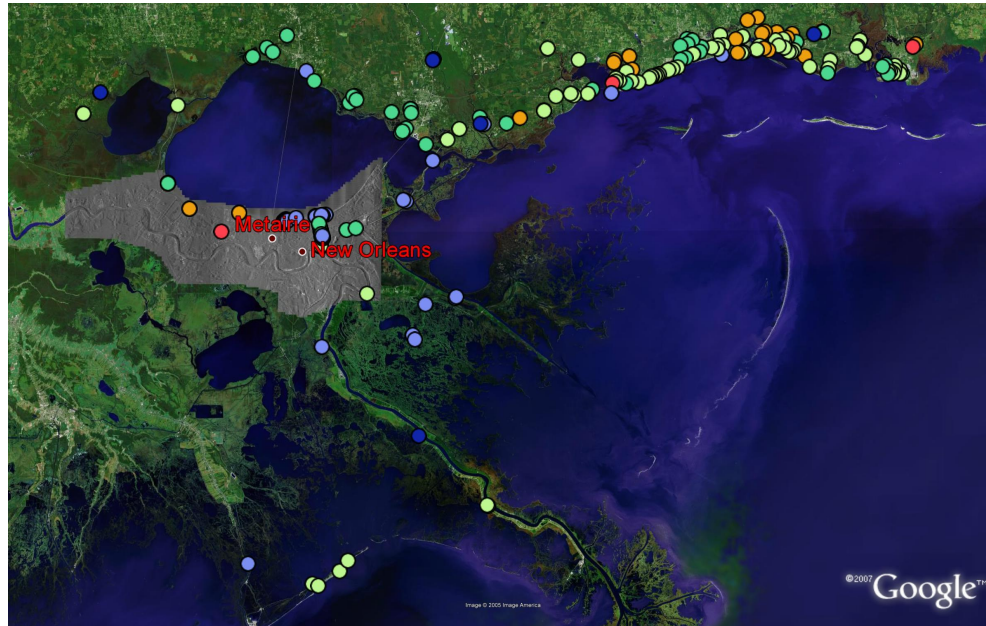


Figure 263: Locations of 206 high-water marks provided by the U.S. Army Corps of Engineers.

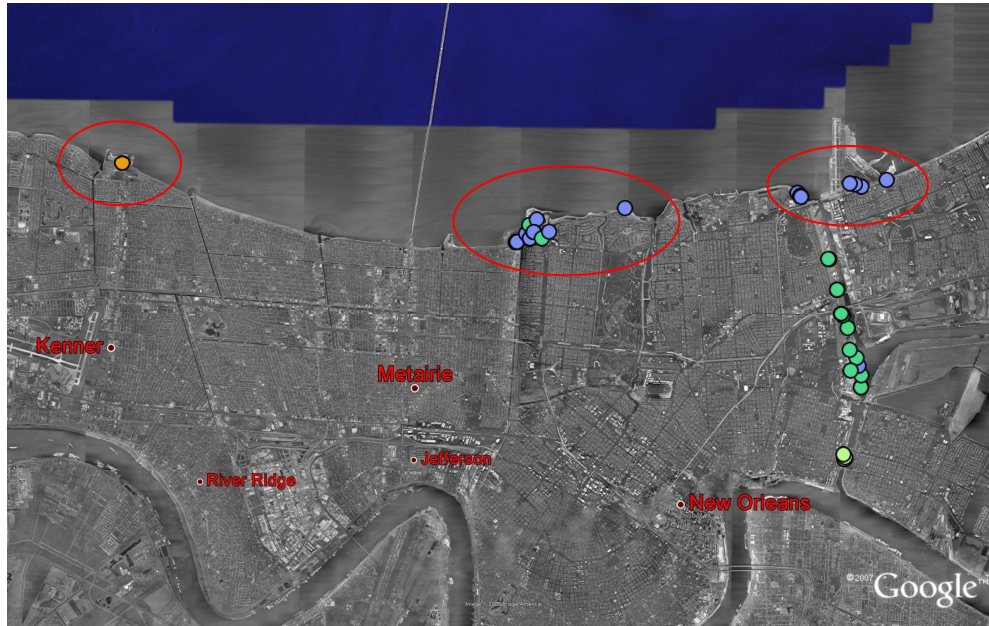


Figure 264: The points indicated by red circles are 18 high-water marks found on the south shore of Lake Pontchartrain out of 206 high-water marks provided by the U.S. Army Corps of Engineers.



Figure 265: Locations of 193 high-water marks provided by URS Corporation.

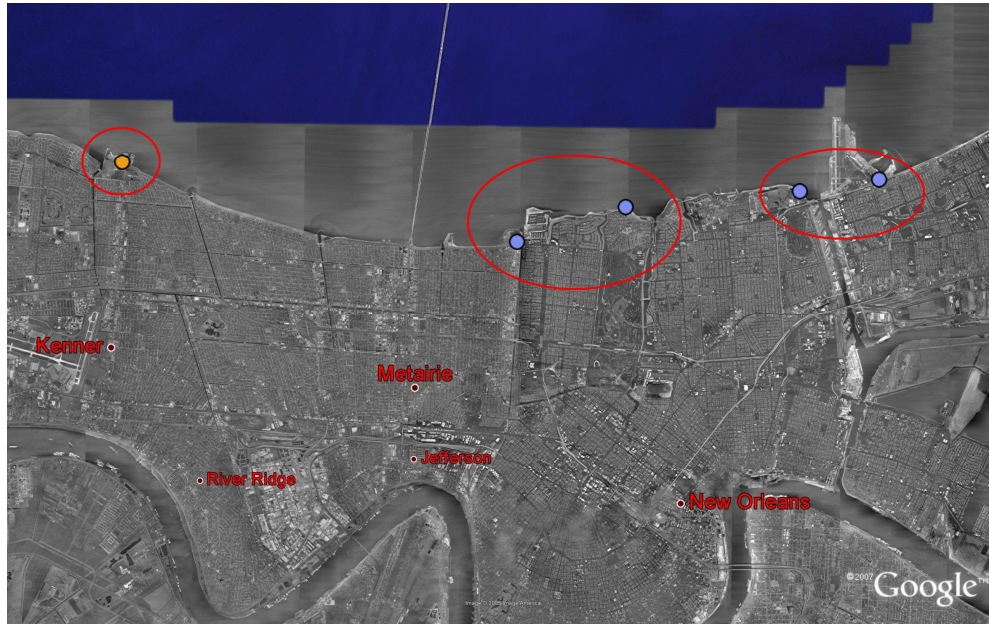


Figure 266: The points indicated by a red circle are 5 high-water marks found on the south shore of Lake Pontchartrain out of 193 high-water marks provided by URS Corporation.