

Environmental Research in the Lake Pontchartrain Basin

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Three areas of research conducted in the Lake Pontchartrain Basin since 2007 will be discussed. Most recently, efforts have focused on the search for hydrocarbon pollutants associated with the BP/Deepwater Horizon oil spill along Lake Pontchartrain's northern shore and into Lake Maurepas. Hydrocarbon detection using FT-IR following extraction since June 2010 yielded positive tests only for samples taken in July shortly after Hurricane Alex. Further analysis of these samples by GC/MS indicates that the expected alkanes and PAHs were not the source of the signal observed in FT-IR. Instead, analysis of the mass spectral pattern reveals a more surfactant like compound that may be attributable to COREXIT.

A second study conducted in 2008 focused on nutrient and chlorophyll changes in the southwestern portion of Lake Pontchartrain associated with the opening of the Bonnet Carré Spillway. The flood control structure was opened in April 2008 in response to rising waters in the Mississippi River and brought large volumes of nutrient and sediment rich freshwater into Lake Pontchartrain. Nitrate and silicate levels increased in the vicinity of the spillway during the opening but rapidly decreased after its closing. At the same time, chlorophyll changed little during the opening but a major spike in chlorophyll levels after the closing of the spillway indicating rapid algal growth was observed.

The third study was conducted from 2007 – 2008 in Lake Maurepas and focused on phosphate and silicate levels in the lake. Nutrient levels were compared to historical data from prior to Hurricane Katrina. Discharge weighted nutrient concentrations were significantly elevated in 2007 – 2008 at most study sites compared to pre-hurricane data and may be linked to increasing human population in the Upper Lake Pontchartrain Basin following Hurricane Katrina.