



## **LDEQ's Office of Environmental Assessment - Water Survey Group's Water Quality Assessment Post-Hurricane Laura**

As expected following storms matching the intensity of Hurricane Laura, water quality conditions in Lake Charles, Prien Lake and likely other waterbodies in the region were severely impacted. As a result of reported fish kills in both lakes, LDEQ initiated a rapid assessment of water quality in both lakes on Sept. 11. Two teams from Baton Rouge conducted instrument readings to monitor for dissolved oxygen, dissolved oxygen percent saturation, pH (acidity), conductivity, salinity and temperature. Dissolved oxygen was found to be 0.0 milligrams per liter (mg/L) from the surface to the bottom at 11 sites around Lake Charles. Similar results were observed at Prien Lake, with the highest dissolved oxygen level being 0.16 mg/L. The water quality standard for both lakes is 5.0 mg/L. Dissolved oxygen is used as an indicator of water quality because fish require oxygen in the water to survive. Other monitored parameters were similar to those found historically in the lakes.

During hurricanes, trees, branches, and leaves are frequently blown into the water where they begin to rapidly decay. The decay is caused by naturally occurring bacteria, populations of which grow quickly due to the availability of excess nutrients in the water. As bacteria populations in the water and sediment expand, they consume oxygen needed by fish, leading to fish kills. In the case of Lake Charles and Prien Lake, much of the vegetation was likely blown into the water in the forested areas of the Calcasieu River watershed upstream of the two lakes. In addition, the combination of heavy winds, waves, and an influx of saltwater is believed to have stirred up naturally occurring sediments on the lake bottoms and caused erosion of marsh areas surrounding the lakes. All of these impacts would have contributed to rapid bacterial growth and resulting reduction in dissolved oxygen.

As a result, the fish kill in the lakes is thought to have been caused by naturally occurring conditions following Hurricane Laura. LDEQ will continue to monitor the conditions in Lake Charles and Prien Lake.

See maps on next page.

