LDEQ Ecoregion DO Criteria Development Project

Water Permits Division, Water Quality Standards

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LDEQ Ecoregion DO Criteria Development Project

- Project history/background
- Current activities

Project History/Background

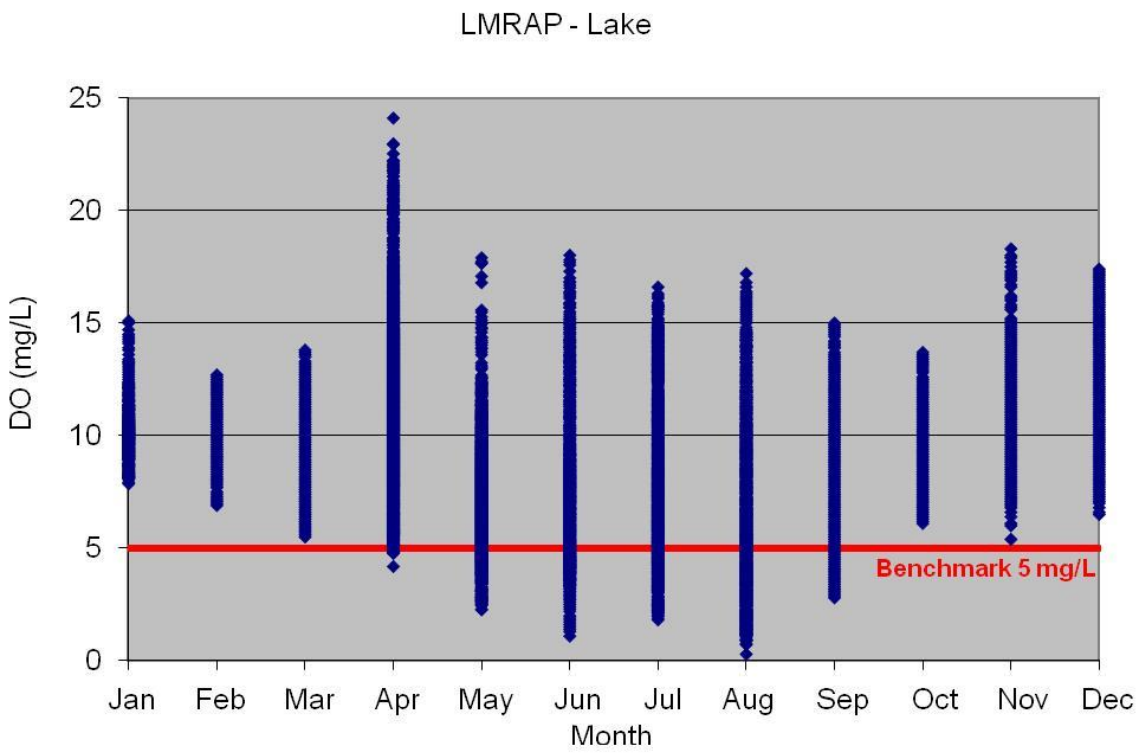
- LDEQ investigated using an ecoregion approach in the early ‘90s to establish DO criteria across a region for different waterbody types.
- Starting in 2005, LDEQ collected and analyzed data that led to DO criteria refinements in two ecoregions, the Coastal Deltaic Plains (CDP) and the Lower Mississippi River Alluvial Plains (LMRAP).

Project History/Background

Protocol for DO Criteria Development :

- Least impacted reference sites were selected for sampling in the CDP and LMRAP ecoregions.
- Continuous monitoring data collected for DO was analyzed to determine the critical period, or the time frame in which high temperature, low flow (or no mixing) and low rainfall conditions allow the maximum extent of biochemical, oxygen-demanding activities to occur.

Project History/Background



Project History/Background

Protocol for DO Criteria Development :

- Once critical period had been established, the data set was truncated to exclude all data points not collected between 6 AM to 12 PM.
- Data was aggregated by ecoregion, water body type, and critical/non-critical period and the 10^{th} percentile of DO was calculated.
- The lower of either the National benchmark value or the 10th percentile calculated from the datasets became the criteria for each ecoregion, water body type, and critical/non-critical period.

Current Activities

- The criteria development and assessment protocols developed with EPA during this project have been used more recently in an attempt to refine DO criteria for inland rivers and streams for five more ecoregions.

Current Activities continued

- LDEQ conducted data analysis for the least impacted inland rivers and streams ecoregion project.
- For three of the five ecoregions, proposed criteria calculated was routinely low (<2.0).
- LDEQ is currently exploring other methodologies for use in conjunction with the observed data to calculate DO criteria.