WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2004LA21B

Title: Quantifying Hydrologic Impacts on Spatio-Temporal Variability of Stream Water Quality in Coastal Louisiana

Project Type: Research

Focus Categories: Non Point Pollution, Solute Transport, Surface Water

Keywords: Hydrologic Impacts, Hypoxia, Pollution, Streamflow, Space-Time Variability, Water Quality

Start Date: 03/01/2004

End Date: 02/28/2005

Federal Funds: $19,925

Non-Federal Matching Funds: $47,679

Congressional District: 6

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Abstract

Although Louisiana is endowed with plenty of surface water available for its current use, rapid urbanization and intensive agricultural and forest practices have increased the potential for reduction in the quality of its surface waters. Studies on hypoxia in the northern Gulf of Mexico have shown that an average midsummer hypoxic zone has witnessed a threefold increase from 1985 to 2001. This 3-fold increase of hypoxic zone over a relatively short period of time has been attributed to the increase of river-borne nutrients that can exacerbate coastal water eutrophication, favor harmful algal blooms, aggravate oxygen depletion, and alter marine food webs. As result, an action plan with the major goal of reducing nitrogen discharge through Best Management Practices from the inland water into the Gulf has been approved by state, tribal, and federal agencies and delivered to the U.S. Congress. However, a number of questions pertaining to the hydrologic impacts on the space-time variability of stream water quality still remain to be addressed. Answering these questions is critical to the success of the action plan. This proposal address these questions.