



Louisiana State University

# Agricultural Center

Louisiana Cooperative Extension Service

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Gulf of Mexico Hypoxia Working Group  
National Oceanic and Atmospheric Administration (NOAA)  
National Centers for Ocean Science - Room 9127  
1305 East-West Highway  
Silver Spring, MD 20910

Re: Comments on Integrated Assessment of the Cause and Consequences of Hypoxia in the Gulf of Mexico

I have asked my faculty to review the integrated assessment report prepared by the hypoxia team, and I am submitting to you a summary of their comments. It appears that few, if any, changes in attitude and data interpretation have been made as a result of the public comment on the six volumes prepared by the Hypoxia panels. Some of these areas we consider to be highly significant omissions.

Perhaps the most significant omission is the obvious lack of completion in the EPA prepared list of municipal sewage treatment plants. The list that EPA submitted to the consultants contains 6,770 municipal plants for 31 states. This is an average of 220 plants per state. Louisiana had 2,595 plants in 1989. Since plants of all sizes were included in the EPA database, it cannot be complete. If we assume a modest number of 1,000 plants per state, then the contribution of nutrients to streams in the Mississippi River Basin would increase from 11% to 50%. It also must be noted that this is a direct contribution to streams and is not diluted as is the nitrogen going from field edge to surface waterbodies.

Another area of major concern is what we believe to be an under-estimation of storm water nutrient contribution from urban and suburban areas. Listed as insignificant in the nitrogen sources evaluation, these areas contribute from 15 to 21 pounds of nitrogen per acre per year based on a 1995 USGS publication reporting on a five year storm water study in Baton Rouge, Louisiana. With 15 pounds of nitrogen per acre coming off commercial areas that are primarily streets and parking lots and 21 pounds of nitrogen per acre coming off suburban neighborhoods, this contribution is not insignificant considering the proportion of the Mississippi Basin in urban and suburban land uses. Sales of fertilizer for non-production agricultural uses (via hardware and department stores) totaled \$8.4 Billion in 1998. At \$20 for 50 pounds of fertilizer this equals 4,200,000 tons of fertilizer sold in the U.S. to home owners. The significance of these contributions has not been fully evaluated.

A third area of nutrient and organic contribution to the Gulf of Mexico that was given no consideration is the contribution from the 25 to 30 square miles of marshland lost each year along the Louisiana coast. The top 8 inches of soil weighs approximately 2,000,000 pounds or 1,000 tons per acre. If 2 feet of soil containing 20% organic matter are lost when an acre of coastal marsh erodes, then the 30 square miles of marsh lost each year contributes 56,250,000 tons of highly organic soil to the shallow Gulf. This soil contains 11,250,000 tons of organic matter. This load alone could cause a severe impact on the oxygen content of the adjacent Gulf waters as it is highly bio-degraded. Plant material contains an estimated 5% nitrogen and 1% phosphorous. The volume of organic material released into the Gulf from the lost marsh

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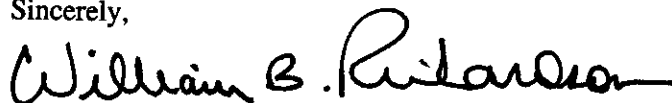
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would contribute up to 562,500 tons of nitrogen and 112,500 tons of phosphorous and potentially aggravate nutrient over-enrichment. The exact amount of this contribution is not known and has not yet been fully researched. Determining the causes of the Hypoxia problem and developing effective solutions to it require that this source be evaluated both from the organic matter and nutrient impacts.

Lastly, a great deal of concern was made regarding stormwater impacts on flooding animal waste storage systems, but little if any consideration was given to the impacts of flooding on human waste storage and handling systems. The recent storms in North Carolina flooded or destroyed very few animal waste facilities but did flood or destroy a number of human waste facilities. Of the 2,495 municipal facilities in Louisiana, approximately three-fourths contain oxidation ponds. Economics dictates that in other states a similar percentage exists. All of these are subject to flood damage as is the more modern type facility. Sewer systems are subject to flooding, and the normal sewer overflow management practice is to by-pass the excess water into the receiving stream and report it as an incident to EPA. A recent 2 inch rain caused a 120,000,000 gallon storm surge into the Baton Rouge sewer system, in effect doubling its normal daily flow. Contributions from these sources were also not taken into consideration.

We are concerned that a "rush to judgement" attitude among some of the panelists is causing a fixation on agriculture to the point that other potentially significant nutrient sources are being neglected. It cannot be denied that some nutrients and sediments escape from fields used in the production of the bulk of the nation's food and fiber supply. However, we must not take actions that will ultimately jeopardize our nation's food security and rural economic health without full deliberation and consideration of all the facts.

Sincerely,



William Richardson  
Chancellor  
LSU Agricultural Center

cc: Dr. Jack Bagent  
Dr. Larry Rogers  
Dr. Leo Guidry