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VIA ELECTRONIC MAIL
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June 29, 2007

Dr. Holly Stallworth
Designated Federal Officer
U.S. EPA Science Advisory Board
1200 Pennsylvania Ave. NW
Washington, DC 20460

Dear Dr. Stallworth:

The American Farm Bureau Federation appreciates the opportunity to comment on the Science Advisory Board (SAB) Hypoxia Advisory Panel's evaluation of the science regarding hypoxia in the Northern Gulf of Mexico (NGOM) and potential nutrient mitigation and control options in the Mississippi-Atchafalaya River Basin.

Gulf Hypoxia is a very complex problem with no simple solution. The panel findings regarding the complex interactions between climate, weather, basin morphology, circulation patterns, water retention times, freshwater inflows, stratification, mixing and nutrient loadings that determine the nature and extent of hypoxic conditions in the Gulf of Mexico clearly shows the complexity of Gulf Hypoxia. We believe it is critical to emphasize that much of the data presented demonstrates that nutrient loads, concentrations, speciation, seasonality and biogeochemical recycling processes are important and integrated causal factors in the development and persistence of hypoxia in the Gulf.

The panel acknowledges that nutrients come from many sources, including the systematic changes to the NGOM including the loss of wetlands, alteration and channelization of transit routes and extreme weather events. In order to address and improve the health of the ecosystem, consistent monitoring throughout the NGOM, and a cooperative, incentive-based approaches for addressing hypoxia in the Gulf will be critical.

Farm Bureau is encourages the panel to review the document and strengthen the balance and consistency on the role that fertilizers play in Gulf hypoxia and rectify what appears to be a bias against "voluntary" conservation programs. The report makes attempts to correlate fertilizer use with hypoxic conditions and focuses a disproportionate amount of effort on fertilizer management strategies. It gives little credit to farmers and ranchers who have made significant efforts to control nutrient losses to the Basin's waters.

The following points are offered for the panels' consideration –

- Nutrient loadings over the past 50 years have come from a variety of sources. We note that the United States Geological Survey (USGS) presented data at the 11th Annual Mississippi River Basin meeting demonstrating a declining trend throughout the last 15 years in nitrogen loadings. In fact, there has been a decrease in loadings of at least 20 percent of all nitrogen compounds over the last five years. This represents significant progress toward a stated goal of 30 percent reduction.
- The panel's finding on the significant changes to the hydraulic regime of the Mississippi and Atchafalaya Rivers to the temporal and spatial extent of Gulf hypoxia is an important finding. Given the complexity and importance of the amount and timing of freshwater inputs to the shelf relative to vertical mixing intensity, stratification and hypoxia, we believe a more complete discussion and recommendation for specific hydraulic control options should be included in the final SAB Report.
- It is difficult to see how focusing narrowly on nitrogen and phosphorous use reduction will alleviate hypoxic conditions in the Gulf. A monitoring system that records data on biological conditions such as salinity, turbibity, N, P, C and Si cycling should be recommended and instituted in a manner that would allow scientific correlation in all three distinct hypoxic zones on the NGOM.
- More work is needed on the impacts of coastal wetlands loss on coastal hypoxia. Between 1990 and 2000, wetland loss was approximately 24 square miles per year. The projected loss over the next 50 years, with current restoration efforts taken into account, is estimated to be approximately 500 square miles (Barras et al. 2003). According to land loss estimates, Hurricanes Katrina and Rita transformed 217 square miles of marsh to open water in coastal Louisiana (USGS 2006). It is counterintuitive that this large-scale loss of organic material, nutrients, water retention time, as well as denitrification and filtering capacity must be considered as a contributing factor to coastal hypoxia.
- The Army Corps of Engineers is currently working on a series of 22 projects along the Missouri River that will dump massive amounts of soil and nutrients directly into the river. The amount of soil and nutrients being loaded into the river from just one of the 22 projects has increased the nutrient load by 11.1 million pounds of nitrogen, 9.3 million pounds of phosphorus and 100 million pounds of carbon. To our knowledge, United States Geological Survey has not considered the impact of loading from this source in any of its data and continues to list agriculture as the top cause of nutrient loading in the Missouri River Valley.
- Nutrient loadings into the Gulf of Mexico have been trending downward and we are troubled that the panel has made little or no effort to determine what may have led to these reductions. Data is available to show that U.S. farmers are applying 41 percent less nitrogen and 53 percent less phosphate per bushel of corn produced since 1980.

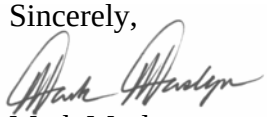
- The content in that areas drained by tiles are significant contributors to nitrogen loading is not supported by any scientific data. Without peer-reviewed data that supports this contention or direct evidence, this section appears highly speculative. Absent data in this section should be removed from the final report.
- Regarding panel findings and recommendations – "*one of the most troubling is*

the overwhelming body of evidence in scientific studies shows that voluntary agreements – at lease those without any accompanying economic incentives – are not likely to be adequate to obtain significant reductions in N and P." This conclusion runs contrary to a large body of evidence documenting success.
    - USGS data shows total nitrogen and nitrate losses are declining.
    - Nitrogen fertilizer use has plateaued, while nitrogen removal with grains has increased.
    - Total nitrogen and phosphorus losses have been reduced with significant reductions in erosion and sediment losses.
- The P reduction goal is not supported by any data and appears to be an arbitrarily selected target number. P is likely the limiting nutrient but the panel should provide greater scientific justification for the P reduction goal.
- Lower fertilizer use may not equal reduced loadings to the environment. Lower rates can mean increased losses depending on site-specific conditions. Nutrient efficiency depends on several factors, including balanced nutrition and interrelationships among nutrients for efficient plant uptake and use.

Emerging science indicates that current nutrient problems are not the result of the mismanagement of fertilizers and manures. The majority of our nutrient issues are due more to historic changes in land use and hydrology. Research is needed to design/refine new management practices and develop cropping system alternatives, possibly with more sod-based rotations. However, these new approaches must be sustainable with respect to both soil and water quality, and must also be economically feasible.

We appreciate the opportunity to provide these comments.

Sincerely,



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