

# WATERWAYS

A Quarterly Publication of the Iowa Drainage District Association

Volume 3, 2007

## Dead Zone Near Record Size



The coastwide extent of the Louisiana-Texas "Dead Zone" mapped the first week in September is 20,500 square kilometers (or 7,900 square miles), similar to the size of New Jersey, reported Dr.

Nancy Rabalais, chief scientist for the Northern Gulf Hypoxia Studies. The low-oxygen waters extended from near the Mississippi River across the Louisiana-Texas border toward Galveston. The long-term average since mapping began in 1985 increased with this year's measurement to 13,500 square kilometers (or 5,200 square miles). The goal to reach 5,000 square kilometers in size (about 2,500 square miles) as stated in the "Action Plan for Reducing, Mitigating and Controlling Hypoxia in the Northern Gulf of Mexico" continues to remain far off.

The scientific word for the commonly named Dead Zone is "hypoxia," or low oxygen, which results in the failure to capture fish, shrimp and crabs in bottom-dragging trawls when the oxygen falls below the critical level of two. Rabalais and her team saw evidence of the impact on sea life as crabs, eels and other bottom animals trying to escape the severe oxygen conditions on the bottom were swimming to the surface en masse. The other clear indicator was the lack of shrimp trawlers throughout the large area.

Higher-than-average nitrogen loads for May of 2007 led to the prediction by Dr. Gene Turner of Louisiana State University that the 2007 area of hypoxia would be above or near the maximum size since mapping started in 1985. The 20,500-square-kilometer area falls short of that mark, but ranks within the three largest-sized zones to date.

Possible explanations of the lower-than-predicted size are: 1) stormier-than-average conditions in the first half of July preceding the mapping cruise that

disrupted the formation of hypoxia and, 2) the tropical low-pressure disturbance on the western part of the study area that would have disrupted hypoxia in shallower waters from Cameron, Louisiana, to Galveston, Texas. Values near hypoxia, however, were extended well beyond the borders of the delineated zone. Dr. Rabalais reported that, "We were in some pretty stiff winds and high seas the last two days of the cruise, enough to stir up the shallower waters."

Dr. Rabalais and her colleagues, who measure oxygen conditions monthly along a line of stations offshore to Terrebonne Bay and continuously with an oxygen meter in a frequently hypoxic area, watched low oxygen start to develop several times in the spring through early June, but it was disrupted on and off in June and the first half of July by stormier-than-average conditions for that time of the year.

The seasonal formation and persistence of hypoxia are influenced by the discharges and nutrient loads of the Mississippi and Atchafalaya rivers. The seasonally-warmed, fresher river-source water forms a layer above the deeper, cooler and saltier Gulf waters and prevents oxygen from reaching the bottom. Nitrogen and phosphorus from the river stimulate the growth of microscopic plants, the phytoplankton. The phytoplankton are either transferred into the food web or end up as organic debris that falls to the sea floor. Decomposition of the organic debris by bacteria depletes oxygen in the lower waters.

The research was funded by NOAA's Center for Sponsored Coastal Ocean Research. The mapping was conducted from July 21-28 from aboard the research vessel, Pelican, a vessel that is part of the National Science Foundation's Oceanographic fleet. ☪



## More Reduction in Nitrogen and Phosphorus Needed to Cure Hypoxia

**D**raft recommendations for reducing hypoxia in the Gulf of Mexico call for greater research and monitoring because so little is known about the low-oxygen event. A scientific advisory board panel on Gulf hypoxia is also calling for greater reductions in nutrient loadings. An earlier recommendation by the hypoxia task force had recommended that nitrogen levels be reduced by thirty percent. **This panel, which will submit its new recommendation to the task force, is stating that both nitrogen and phosphorus should be reduced by 45 and 40 percent, respectively, by 2015.**

The phosphorus reduction goal is new and is based on professional judgment, the report states. One-half of the reduction could be achieved by tightening effluent standards for point sources.

Still, the nitrogen and phosphorus reduction goals may not be great enough, scientists state. "Studies have suggested that climate change will exacerbate hypoxia, thereby necessitating nitrogen load reductions on the order of fifty to sixty percent," they say.

However, the panel says more information about the sources of nutrients, both point and non-point, is needed. The panel is an advisory board appointed by the U.S. Environmental Protection Agency to reassess the science behind an earlier report offering recommendations on reducing hypoxia in the Gulf.

Rick Robinson, environmental policy advisor for the Iowa Farm Bureau, feels that the task force risks losing all credibility if such a recommendation is adopted. "The draft recommendation flies in the face of all historic and current voluntary practices, management practice realities, and economics with respect to non-point source agriculture," Robinson said. "There appears to be a significant disconnect between the science and the draft recommendations."

### Alter Crop Production

The draft cites the "perverse effects of subsidies" given to farmers raising crops and that "strong economic incentives" are needed to change behavior. The report talks about restructuring farm program payments, even creating incentives to abandon corn and soybeans for perennial crops.

It says that economic incentives favoring corn-based ethanol production could nullify other efforts to reduce hypoxia and enhance water quality. The panel sees no benefit from producing ethanol from corn except improved air quality.

Options to reduce nutrients include penalizing nutrient contributors and providing subsidies to those reducing nutrients using innovative technologies such as precision nutrient applications, buffers and other practices.



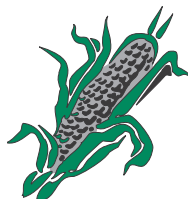
### Farmers Not to Blame

The latest science indicates that variability in weather leads to highly variable nutrient losses in both the short- and long-term, Robinson points out. Furthermore, he said, **Emerging science suggests that current nutrient impairment problems are not mainly due to mismanagement of fertilizers and manures, but more to historic changes in land use and hydrology that come from the conversion of prairie and wetlands to cropland.**

While switching from row crops to perennials would likely offer the greatest potential for nitrate reductions, "limited economic returns and management gaps inhibit the adoption of perennials," Robinson said.

"Care must be taken in the final science reassessment process to avoid premature economic policy recommendations that may promote the wrong practices," he said. Increased federal investment in monitoring and evaluation would enable states and local watersheds to be more strategic with nutrient reduction programs, Robinson said. He adds that "the report clearly veers off course by making policy recommendations with regard to non-point source pollution. Making policy recommendations is inconsis-

(Continued on page 3)





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## More Reduction . . .

Continued from page 2

tent with the federal charge for the Scientific Advisory Board," he said.

### Target Money

Also needed is targeting dollars from the federal conservation programs to watersheds with the greatest potential for nitrogen and phosphorus reductions. The report is also recommending alternative uses for livestock manure, such as composting, pelletizing and granulation, used as both an on-farm and local bioenergy source.

The panel says the goal remains to reduce the five-year-running average size of the hypoxia zone to less than 5,000 square kilometers by 2015. The science advisory board report will be taken up by the hypoxia task force at a meeting in Cincinnati in late October.

The draft can be viewed on the Web at [www.epa.gov/sab/panels/hypoxia\\_adv\\_panel.htm](http://www.epa.gov/sab/panels/hypoxia_adv_panel.htm).

Source – Iowa Farm Bureau Spokesman

## Groups Ask More of Farmers on Runoff

**F**armers should be required to do more to curb runoff of farm chemicals into the Mississippi River basin if they want to keep getting federal subsidies, environmental groups have stated. Under a 1985 law, farmers who receive subsidies are required to follow soil conservation measures on land that is considered to be highly susceptible to erosion.

The environmental groups said in a report that the conservation requirements should be tightened and also applied to land that isn't classified as highly erodible. "What we are asking is to raise the bar a bit and to expect more from subsidized farmers," said Susan Heathcote, water program director for the Iowa Environmental Council.

Runoff of chemicals from farms in Iowa and other Midwestern states is blamed for creating a "dead zone"—an oxygen-deprived area nearly devoid of sea life that appears each summer in the Gulf of Mexico. Experts fear the problem will worsen as farmers expand corn acreage to fill the growing demand for biofuels.

In Iowa, about 7.6 million acres of land is eroding at unsustainable rates, including 1.9 million acres that isn't classified as highly erodible, according to the U.S. Department of Agriculture.

In a few states, including Minnesota, most of the land with excessive erosion isn't classified as highly erodible.

Farmers traditionally object to increased conserva-

tion regulation, preferring instead that the government provide payments to help farmers address environmental problems. But, the environmental groups said that there is too little money available for those types of programs.

Farmers should be required to plant and maintain areas of trees and grass along streams and ponds, the report said. The report also said that the USDA has reduced its oversight of compliance with existing conservation plans and frequently overturned findings of violations by farmers.

"It's high time for Congress to require more environmental protection in exchange for farm subsidies, especially now, when budgets are tight and there isn't enough money to solve problems with the conventional voluntary cost-share approach," said Michelle Perez, a senior analyst of the Environmental Working Group and the report's chief author.

In written comments on the report, the USDA's Natural Resources Conservation Service said that the conservation compliance program was working and that erosion rates "have been held in check."

Farm groups say that growers have been taking steps to prevent excess nitrogen fertilizer from running off their land, including leaving more crop residue on the ground to prevent erosion. Seed companies are trying to develop varieties of seed that will need less nitrogen fertilizer.

"In general, things are much better than they were in the past," said Ron Litterer of Greene, Iowa. He becomes head of the National Corn Growers Association next month. "That being said, there is always room for improvement."

Other groups behind the report included the Gulf Restoration Network, Minnesota Center for Environ-

(Continued on page 4)



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**Groups Ask More . . .**

*Continued from page 3*

mental Advocacy, the Prairie Rivers Network and Public Employees for Environmental Responsibility.

*Source – Phillip Brasher, Des Moines Register* 🍷

## Clean Water Act Proposed Changes Spike Controversy



Congress is still considering the idea of changing the definition of “waters of the United States” in the federal Clean Water Act by taking out the terms “navigable waters” and replacing it “waters of the United States” (see companion article in the Volume 2, 2007 newsletter).

The impact of such a change would mean that every county would have to get a Clean Water Act permit for any project that would impact the newly defined “waters of the United States.” Under the Congressional proposal—H.R. 2421—the new definition would include “all waters subject to the ebb and flow of the tide, the territorial seas, and all interstate and intrastate waters and their tributaries including lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, and all impoundments of the foregoing . . .”

IDDA has gone on record in opposition to the legislation. Now, other groups are starting to take notice too. The September issue of the National Cattlemen’s Beef Association newsletter says that the “NCBA is strongly urging Congress to oppose any efforts to expand the Clean Water Act” and calls it “a huge land grab on the part of the federal government.”

In a lead editorial published in the September issue of the Iowa Farm Bureau “Spokesman,” Bob Stallman, president of the American Farm Bureau, notes that “don’t be fooled by the legislation’s title. It may say ‘restoration,’ but it’s not. It is an expansion of the federal government’s arm into the majority of landowners’ property across the country. If passed, the results



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would be broad and significant. The legislation is not well defined. This creates an open invitation for the courts to define which activities should be regulated. Agriculture is wearing a bull’s eye.”

Farm Bureau notes that for a “streamlined” version of a permit that would cover basic regulations, the waiting period is 313 days with a cost of \$29,000. An individual permit, which could apply broadly to many agricultural landowners, takes an average of 788 days to obtain with a cost of \$271,000. Currently, the backlog for permits is 15,000–30,000 applications.

“This red-taped method of government will be both burdensome and expensive for landowners. Further, the expanded reach would not only pre-empt traditional state and local authority, it would alter the balance between federal and state powers. The federal government’s reach will literally be in all of our backyards.”

In an article in the June 21 issue of “Landowner,” the legislation is called a stealth attack over the regulation of your land. “Basically, this ‘clarification’ means that if it puddles, it’s under the Clean Water Act.”

Also, according to that issue of “Landowner,” the U.S. EPA and Army Corps of Engineers recently issued joint guidance to their field offices to address some of the regulatory concerns that have been raised by the U.S. Supreme Court. According to the guidance, the agencies will regulate three classes of waters. They will:



1. Continue to regulate “traditionally navigable waters,” including all rivers and other waters that are large enough to be used by boats that transport commerce and any wetlands adjacent to such waters;



2. Continue to regulate “non-navigable tributaries that are relatively permanent and wetlands that are physically connected to these tributaries,” and



3. Continue to regulate on a case-by-case basis for other tributaries and adjacent wetlands that have certain characteristics that significantly affect traditionally navigable waters.

IDDA has written letters to the Iowa Congressional Delegation asking them to oppose the bill. So far, no Iowa congressmen are listed as co-sponsors of the legislation. 🍷



## State EPC to Study Biofuel's Impact

As Iowa's renewable fuel industry grows, this state must decide whether policies are needed to lessen the industry's impact on natural resources says an Iowa State water quality expert. Rick Cruse, director of the Iowa Water Center at ISU, told the Environmental Protection Commission (EPC) at its August meeting that the state's quest to become the renewable energy capital of the world could challenge soil and water conservation efforts.

"If it's done inappropriately, the state might look like the Saudi Arabian desert, with an empty oil field underneath," Cruse said. Cruse notes that federal policy makers have set a goal to replace thirty percent of all liquid fuels in the United States with renewable fuels made from corn, soybeans, crop residues and other biomass by the year 2030. Proposed efforts to boost renewable-energy production have created excitement in rural communities and in the "halls of Wall Street" about the economic development opportunities, Cruse said.

But Cruse added, "When money talks, natural resources have little voice" regarding the growth of the renewable fuels industry. He cautioned that the removal of corn stalks as a feedstock for the next generation of renewable-fuels production, cellulosic ethanol, could create more soil erosion and runoff into waterways. "The plant residues that are required for bioenergy use are also required for soil and water conservation," Cruse said. "We need to decide how much crop residue removal is too much." Cruse suggested that the state encourage the production of renewable fuels from multiple sources of biomass, including switchgrass, wood pulp, corn grain and various crop residues.

Decentralized processing at multiple locations will help reduce the demands for transport and storage of the large loads of biomass needed for the production of the next-generation renewable fuels, Cruse added. "The question is how do we balance our energy needs, financial interests, and soil and water conservation goals?" Cruse said. "This is where the policy needs to be focused."

### Advisory Committee

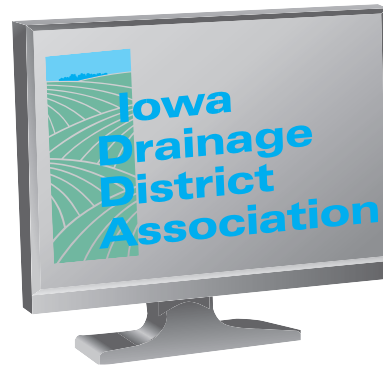
Following Cruse's presentation, EPC Commissioner Charlotte Hubbell of Des Moines recommended that the EPC establish an advisory committee to look into the ethanol industry's impact on the environment. Hubbell expressed concern that the EPC doesn't have rules governing how to deal with ethanol-related environmental issues as state policy.

However, EPC Chair Darrell Hanson of Manches-

ter questioned whether the EPC should use its regulatory authority to change how the ethanol industry is developing. Added EPC Commissioner Paul Johnson of Decorah: "Does anyone have legitimate authority to question or shape the course of the industry as it affects the environment?"

The EPC plans to continue its ethanol production discussion at future meetings.

Source – Iowa Farm Bureau Spokesman



## IDDA Web Site

At the IDDA board of directors meeting in August, members approved a budget amendment that would allow IDDA to develop its

own Web site. Board members will hear a progress report on the site at their October meeting. According to IDDA executive director John Torbert, it is hoped that the Web site can be up and running by the end of the year. The first year budgeted cost for Web site development and hosting is \$1,430.



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## Louisiana Wetlands— Why Should Iowa Care?

Louisiana's coastal wetlands are disappearing, but do Iowans care? They should. The economic future of America's heartland is tied in many ways to America's river—the Mississippi—and ultimately the health of America's wetlands. As the wetlands erode, so do five of the nation's fifteen largest ports. These ports aid in the transportation of millions of tons of Iowa corn, soybeans, cereal grains and oilseeds to buyers worldwide and deliver hundreds of millions of dollars in iron, steel and chemicals back to Iowa.

But, despite its critical importance to Iowa and to the nation, we are allowing twenty-five to thirty-five square miles of Louisiana coast to wash away each year. Every thirty-eight minutes, we lose an area of wetland large enough to fill a football field.

Not only do Louisiana's wetlands feed the Iowa economy, they are also vital to the national economy, ecological sustainability, and domestic energy security. In addition to sustaining ports in the Mississippi delta, the wetlands protect against severe storms, such as Hurricane Katrina.

Wetlands create natural levees. But their degeneration draws populated and commercial areas closer and closer to the coastline. In fact, some scientists say that, had Hurricane Katrina struck 50 years ago, wetlands would have lessened the surge that reached New Orleans by as much as five to ten feet.

In Louisiana's coastal wetlands, ecology and energy share the same interests. The coast is ecologically invaluable as it houses seventy-nine rare, threatened, or endangered species and over four million wintering waterfowl. Simultaneously, it protects a network of pipelines and refineries without which America would lose approximately thirty percent of its oil and natural gas. As our wetlands disappear, their ecological and economic significance disappears with them.

From America's heartland to America's wetland, we must all join forces to save Louisiana's coast. Existing levees along the Mississippi are blocking sediments and nutrients that the river would naturally deposit in the delta to compensate for rapid coastal erosion and subsidence. Instead, a growing hypoxia



or dead zone the size of New Jersey had emerged in the Gulf. Chemical, agricultural and industrial runoff has amassed there because levees separate it from wetlands that could diffuse the toxic river wash.

The America's Wetland Foundation recently visited Dubuque with Louisiana officials and community leaders from Women of the Storm to explain what we all have in common and how wetland loss impacts the Iowa and world economy. Iowa policy leaders were briefed on the efforts to save the wetlands so that together, we can develop a sustainable and productive coast.

Working in conjunction with scientists and experts across the nation, Louisiana has developed a master plan to save America's wetland. It proposes a comprehensive systemwide approach to restoring the Mississippi's natural sediment deposits and replenishing the wetlands. The Louisiana legislature recently appropriated \$200 million to the execution of the master plan after voters passed two constitutional amendments that protected federal dollars in a trust reserved for

restoration.

In Congress, we are brought together by the fate of The Water Resources Development Act, which the president has threatened to veto. The bill contains provisions to secure areas vital to Iowa commerce, and it prevents the erosion of the wetland's value to the nation.

If you love the great river or if you are a farmer or conservationist, a tradesman or wildlife enthusiast, if you pay an electricity bill or buy gas, you depend on the wetlands. Louisiana needs help from Iowa and from the rest of the United States, especially those who depend on the Mississippi River system, to restore America's wetland and all it offers

*Source – the preceding editorial was written by R. King Milling, chairman of the board of America's Wetland Foundation. It is reprinted from the 9/17/2007 Des Moines Register.* ♡

Waterways is a quarterly publication of the Iowa Drainage District Association. Comments can be directed to the association at:

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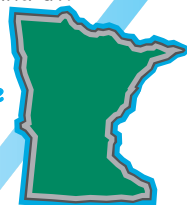
## Iowa/ Minnesota Forum

Annual Iowa/Minnesota  
Drainage Forum  
Tuesday, November 27  
Ames, Iowa

According to Dr. Matt Helmers at ISU, the agenda is still under development but the planning topics include hypoxia reassessment, bioeconomy impacts of drainage water quality and other emerging drainage research topics. Once the agenda and registration details are available, it will be emailed to IDDA member county auditors.

Additional information can be found at:

<http://www3.abe.iastate.edu/agdrainage/index/html>



### Annual Conference Agenda Announced

The IDDA Annual Conference will be held on Friday, December 7, at the Starlight Hotel in Fort Dodge. The agenda for the conference is as follows.

- |            |  |
|------------|--|
| 7:45 a.m.  | Registration Opens   |
| 8:30 a.m.  | IDDA Annual Business Meeting   |
| 9:15 a.m.  | Dean Lemke, director of Water Resources, Iowa Dept. of Agriculture and Land Stewardship; “SAB Hypoxia Report and What It Means for Production Agriculture in Iowa” |
| 10:15 a.m. | Dr. Matt Helmers, Iowa State University; “Potential Yield Impacts of Improved Drainage”  |
| 11:00 a.m. | Mark Lindflott, state biologist, NRCS; “The Mini-mitigation Bank and How It Could Help Large-scale Drainage Projects”  |
| 11:30 a.m. | Sponsor Presentations  |
| 12:00 p.m. | Buffet Lunch   |
| 12:45 p.m. | Iowa Secretary of Agriculture Bill Northey   |
| 1:30 p.m.  | Adjourn  |



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Please use one registration form for each person attending. Registration cost is \$35 for IDDA members and \$45 for non-members. Registration fee includes morning coffee and rolls, noon meal, all conference handouts and conference gift item. Speakers and some sponsors are exempt from the registration fee. On-site registration will also be available. Registration refund requests must be in writing.

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*Questions? Contact IDDA Executive Director John Torbert at 515/221-1961 or [jtorbertidda@mchsi.com](mailto:jtorbertidda@mchsi.com)*

Please return registration form no later than December 2 (if possible) for purposes of meal count.

### **Unattributed Wisdom**

*"If you change the way you look at things, the things you look at change."*

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