

# Fifteenth Meeting of the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

Cincinnati, Ohio  
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## Task Force Participants

### Federal

George Dunlop, U.S. Army Corps of Engineers

Jack Dunnigan (for Vice Admiral Conrad Lautenbacher), National Oceanic and Atmospheric Administration

Ben Grumbles, U.S. Environmental Protection Agency

Skip Hyberg, U.S. Department of Agriculture, FSA

Dan Jaynes, U.S. Department of Agriculture, REE

Gary Mast, U.S. Department of Agriculture, NRCS

Tim Petty, U.S. Department of the Interior

### State

Wayne Anderson (for Brad Moore), Minnesota Pollution Control Agency

Len Bahr, Louisiana Governor's Office of Coastal Activities

Jerry Cain (for Trudy Fisher), Mississippi Department of Environmental Quality

Charles Hartke, Illinois Department of Agriculture

Sean Logan, Ohio Department of Natural Resources

Bill Northey, Iowa Department of Agriculture and Land Stewardship

Russell Rasmussen, Wisconsin Department of Natural Resources

J. Randy Young, Arkansas Natural Resources Commission

## Task Force Welcome and Presentations

**Ben Grumbles:** Good afternoon. I am Ben Grumbles, Assistant Administrator for Water of the USEPA and also privileged to carry the Task Force meeting today. I would like to welcome you, all of you, to the 15<sup>th</sup> meeting of the Mississippi River Gulf of Mexico Watershed Nutrient Task Force in Cincinnati, Ohio. I would like to particularly thank all of the Task Force members, and Coordinating Committee members and members of the public who have traveled to be here today—and, of course, all of those who support the Task Force meetings and make them possible.

This is a critical point in the efforts of the Task Force to confront the serious challenge of coastal hypoxia and make further progress. And of course to reassess the Action Plan and work together in a collaborative manner to accelerate the progress. I am reminded, as I come here on the banks of the mighty Ohio River, of some sentence that Charles Kuralt wrote when he was writing about his travels throughout America. He said, "I started out thinking of America as highways and state lines, as I got to know it better, I began to think of it as rivers. America is a great story and there is a river on every page of it."

Today and tomorrow the Task Force will be focusing in on this river, and other rivers that are all part of the Mississippi River ecosystem and looking very hard at steps we can all take to reduce the problem, to increase the success of the overall Action Plan. Across the country and throughout the world folks are watching how we work in a cooperative and collaborative manner to reduce the environmental, ecological, and economic threat of hypoxia.

I would like to emphasize that there are some key objectives for this meeting, the most important of those is to obtain concurrence on the draft revised Action Plan. We want to take information from today, including advice and comments from stakeholders on key issues, and apply it to the work already done by the Coordinating Committee and the Task Force. You will recall that at the 11<sup>th</sup> meeting of the Task Force, which was in St. Paul, Minnesota, we agreed to conduct a reassessment of the 2001 Action Plan. The Task Force members directed the Coordinating Committee to develop a process and timeline for the reassessment. This process was developed and included a series of four science symposia, a review of existing Federal and State programs, and an independent peer-review of the science by EPA's Science Advisory Board.

We are reaching the culmination of the reassessment. That is why this meeting is so critical. Over the next four to five months, the Task Force and the Coordinating Committee will work to prepare the revised Action Plan, incorporating information and recommendations from the Science Advisory Board, from public comments, and other input.

Tomorrow the Task Force will meet in an executive session to discuss some key issues and seek agreement on a revised Action Plan that would be released for public comment. One conclusion of the reassessment process is that many State and Federal programs and projects address nutrients. These include nutrient reduction projects, sediment management efforts, fresh water diversions, modeling and target operations, and best management practices to reduce excess nitrogen and phosphorus.

However, we also realize that much work remains to be done. We are confronted with a very large volume of hypoxic water in the Gulf of Mexico that is devoid of most marine life and threatens the ecological integrity of the region. As we listen to today's presentations and comments, I would ask all of the Task Force members to continue to look for ways to solve this national problem.

I am also pleased for all of us to be here in Ohio. I would like to invite my neighbor David Hanselmann, one of our hosts from Ohio, to provide welcoming remarks and to share some of the highlights of work in Ohio to support the Action Plan. David is the Chief of the Division of Soil and Water Conservation in the Ohio Department of Natural Resources.

**David Hanselmann:** Well thank you very much Mr. Grumbles. It certainly is my pleasure on behalf of Governor Strickland and ODNR Director Sean Logan, who was here earlier this morning, to welcome fellow Task Force members and organizations from around the Mississippi River Watershed and the Ohio River Basin Watershed, as well as many folks from Ohio, to welcome all of you to Cincinnati. This is the first time this Task Force has met in the Ohio River Basin, so we are especially pleased here to welcome all of you and to help host the meeting. We

are doing this in cooperation with host USEPA and especially ORSANCO (Ohio River Valley Sanitation Commission)—Alan Vicory, Peter Tennant, Greg Youngstrum—they ought to be up here helping welcoming all of you since they have been helping to coordinate our efforts in the Ohio River Watershed, and John Kessler, my assistant chief as well.

***Attachment A: Welcome from the Ohio Department of Natural Resources***

**Ben Grumbles:** Thanks David. Let me turn to any Task Force members who would like to make any opening remarks, if there are any.

**Len Bahr:** I am from the Louisiana Governors Office. I can not resist making the point that we face in Louisiana two huge environmental issues. One is Gulf hypoxia, which is what this meeting is all about. The other is a catastrophic inundation of our whole delta. The Mississippi River, as you know, is the largest river in North America. Louisiana is built on the largest delta in North America—and that delta is disappearing quickly. We face the challenge of changing the plumbing of the Mississippi River to undo the collapse of the delta and to ease the river's massive flooding. In my judgment, the problem of wetland loss and coastal inundation of the delta is very much tied and integrated with and related to the hypoxia issue.

The Mississippi River has been channelized from below Cairo, Illinois all the way to New Orleans—and there are lots of navigation channels and other problems in Dansville on the Missouri River. We as human beings have altered the plumbing and created these two issues. We in Louisiana are committed to doing what we can to solve both. We need help from upstream, both in terms of public funding of the restoration program and also in terms of political support to do the right thing. We realize that reducing hypoxia is a national challenge that requires interest up and down the river and throughout the watershed of the Mississippi. We are proud to be a partner and we are anxious to have your support up here. We are happy to be in Ohio and recognize that the whole river system is a system, it is not a series of little projects that have been built over the last 200 years. Rather, it is a massive system that we are now stepping back from and appreciating the scope and the scale and the issues. So thanks for being here and again hope you have a good meeting.

**Ben Grumbles:** Thanks, Len. Well we are a nation of rivers and it becomes very clear as we work on revising the Action Plan that these great river systems are connected. As we look at the challenge in the Gulf of Mexico, you could call it the Gulf of America because 31 states drain into the Gulf through the Mississippi River system. It is very much connected to the progress that we make collectively upstream, whether it is the Ohio River or Illinois River or other components of the great Mississippi River system. I would like to also mention that for those of you who are going to be providing public comments to the Task Force, which is a critically important part of our efforts and our reassessments and our decision-making, I would urge you to sign in. There is a sign-up sheet on the registration table so if you have not already signed-up and you would like to speak later in the afternoon during the public comment session please sign-up now, or during the break.

Finally, I would like to say that every single member of the Task Force and the Coordinating Committee shares the commitment to increase the pace of progress, improve water quality,

improve monitoring, and rely on sound science, cooperative conservation, and market-based and innovative approaches to make progress. We have a lot of information to learn today and tomorrow and decisions to make to continue to move forward and increase the success of our efforts.

I would like to turn to Darrell Brown from the Office of Wetlands, Oceans and Watersheds, at USEPA. He will make a brief presentation regarding the process and approach of the Task Force and the Coordinating Committee, and the process and approach that we have used in the re-assessment of the 2001 Action Plan, including the scientific studies commissioned, Coordinating Committee activities, and the major decisions facing the Task Force today and tomorrow.

### ***Attachment B: Review of the Draft Gulf Hypoxia Action Plan (GHAP) 2008***

**Ben Grumbles:** Thank you, Darrell. One of the key strategies for us collectively to support further success on the Gulf Hypoxia Action Plan is through the use of innovative approaches. When I think of water quality trading I think of the Miami River Conservancy. I also think of collaborative efforts with the agricultural community and market-based conservation and also with the utilities cross the region, particularly those represented by ORSANCO who are very important players in this process. Also, the various federal agencies that are part of this Task Force and folks who sit on the Coordinating Committees are here and it is an important discussion that we are going to be having. One of the keys to help us is getting the thoughts and views of the Science Advisory Board. So if it is okay with folks, I would like to turn to the status of the Science Advisory Board Report and the recommendations. As Darrell pointed out, the Science Advisory Board was commissioned to provide an independent peer review of the science and management options regarding hypoxia in the Gulf. I would like to ask Mr. Tony Maciorowski to give us an overview of the process for final quality review by the chartered SAB and the general sense of the requests the charter board is making of the Hypoxia Advisory Panel.

**Tony Maciorowski:** Thank you Ben. I am Tony Maciorowski, and I am executive director of the Science Advisory Board staff office. For those of you who may or may not be familiar with the Science Advisory Board, our office administers three chartered federal advisory committees, nine standing subcommittees and several ad-hoc committees that fundamentally provide independent scientific advice directly to the administrator on a range of scientific issues. So in terms of the Hypoxia Advisory Panel, that is a subcommittee of the charter board. The panel itself has met over the last approximately 14 months. They had four public face-to-face meetings and 16 public teleconferences. They developed an initial draft report in spring of 2000. Public comment was requested at that point. The second draft was released in the summer and this also provided an opportunity for public comment. We received approximately 60 sets of written comments from a wide range of people. As I said, the Hypoxia Advisory Panel is a subcommittee and no subcommittee under the federal Advisory Committee Act can provide advice directly to an administrator, it has to go through the charter board.

The draft report generated a fair number of comments, and it had gone through quality review at the last board meeting, which was October 3<sup>rd</sup>. In that particular meeting, the board was charged with looking at the report, looking at its scientific veracity and integrity, and deciding whether it met the intent of the charge to the Committee. It actually was swayed in some respect by the

number of comments requesting an extension of the comment period. The Board requested that we extend the written comments until November 2<sup>nd</sup>, which was done. That was announced in a Federal Register Notice that came out October 18<sup>th</sup>. On November 16<sup>th</sup> the Hypoxia Advisory Panel will hold another public teleconference to address the comments received to date.

There are 60 sets of written comments over the two draft reports. There were four external reviewers that were asked to look at their specific disciplinary sections of the report, which primarily included oceanography, agriculture, economics, and water quality. In addition, the Charter Board reviewed the report, and a number of comments written were received by the Charter Board. During the discussion, one of the members had raised the issue that this was a very comprehensive and complex report, and the issue that having an extended comment period makes. This led to an extension of the public comment period. In an atypical move, the board asked to discuss how it should best address the comments it received. Under the Federal Advisory Committee Act, the board is not required to do so. In this case, we will do so in the November 16<sup>th</sup> teleconference.

Since receiving those comments and the comments of the board and the external reviewers, the Chair and the Chairs of the working groups have been working with the staff office to collect both comments, primarily to look at how to deal with them. A number of them it feel like the board already has, and number of them refer to specific technical corrections that technical experts have provided. The report is presently in the process of being revised. That will then formulate the basis of the discussion in the November 16<sup>th</sup> call. The entire HAP Panel will discuss those comments and at the end of that call, anything that comes up that requires revision will be undertaken by the Chair of the Hypoxia Advisory Panel, who is also a member of the Charter Board. All of the Chairs of panels are members of the Charter Board. At that point the revised report will go back to the Board approximately three weeks prior to its December 6<sup>th</sup> and 7<sup>th</sup> meeting. The Board will look at those comments and the report at the meeting for its final quality review and approval.

I do need to emphasize here that the Board consists entirely of external USEPA scientists, and that is also true of the panels, subcommittees, and so on. Every one of those members is vetted for a lack of conflict of interest, which is typically directly financial, as well as any public statements that may be perceived as a lack of impartiality.

All of the comments received to date and the draft reports are available on the SAB Web site. The current August 30<sup>th</sup> draft report has been there since that time.

As the process moves forward, I think the Board was largely supportive of the report. The Board had some issues with some language and wanted some things clarified. It was particularly interested in making sure that any technical comments provided that required correction of errors be addressed. I think at the end of the day, the substantive comments will not change dramatically in that next round of reviews. I think most of the comments that we have received have been made several times. The panel has attempted to address a number of them. The Board members in this review had some issues that it wanted developed and raised. We anticipate that there will not be a problem finalizing the report at the December 6<sup>th</sup> and 7<sup>th</sup> meeting.

**Ben Grumbles:** We are making tremendous progress through our presentations before we get to the break, the other discussions, and the public comment session. Now let us turn to Richard Alexander, of the United States Geological Survey. Dr. Alexander will present information about differences in sources for nitrogen and phosphorus throughout the Basin. The information will inform decisions about nutrient management plans and the crop types that are the sources of the nutrients.

*Attachment C: Nitrogen and Phosphorus Delivery to the Gulf of Mexico from Sources and States in the Mississippi / Atchafalaya River Basins*

**Ben Grumbles:** Any question from Task Force members or comments or clarifications?

**George Dunlop:** Thank you. As you may well know, in Florida lots of the federal agencies are involved in ecosystem restoration. One of the challenges that we have had to deal with in the Everglades Restoration Task Force is the distinction between the applicability of modeling versus the applicability of monitoring. Your presentation was just outstanding and informative. I wonder if you can tell us just a little bit about how you all have dealt with the relative value between those two scientific analytic instruments.

**Richard Alexander:** Absolutely. I think that is a good point and I think it is one in which there is sort of fundamental shifting—certainly in the hydrologic sciences. It is a paradigm shift, in a way. I think there has been much more recognition over the last decade—I have seen significant growth on the part of scientists in terms of their interest in using monitoring data and other source of data to calibrate models. This is a very hot topic in the hydrologic and ecological sciences now. We put a great deal of emphasis on the monitoring information and we have a framework here in which monitoring data can play a very fundamental role. As I said, that helps to shape the overall model.

We still start with the fundamentals. You still have to start with some sort of modeling structure, like in advection-dispersion type equations. But, you use the monitoring data in a very intrinsic way to shape the important processes in the model. There is always a question of how much complexity to build into a model. The data should set the limits on that in essence, and that is what we believe we are able to do with this kind of modeling process. We allow the data to shape the method in that way and set an endpoint. When do you have to quit? Can I bring in this additional source? All of the sources that we showed here in the model are statistical evidence and they are robust features of the model. There is an objective way of saying when a source is important and when one is not. That is definitely a very important process to go through in a modeling context.

**Ben Grumbles:** Any other comments or questions? David.

**David Hanselmann:** If you would not mind going back just a little further in the model for cropland—where nitrogen and phosphorus is extrapolated in part from estimates of amount applied per acre. What is the original source of the data and information that goes in to the model in terms of the nutrients?

**Richard Alexander:** Good question. There are a number of sources and those are fully outlined as part of the supplementary information to the journal article we are producing. But there are many USGS sources for that information. We began with the fertilizer commercial sales information. We then refine that and make estimates of what the contributions are for different cropping systems using the NAS information on fertilized acreage for different cropping systems. We then further refine that also using USDA Census of Agriculture Information on what the cropping acreages are for different types of crops. We further use information on corn soybean rotations, so that we can make some estimates of where corn is grown and where soybeans are grown in monoculture, versus where corn and soybeans are grown in rotation. So that comes into it as well; build out the data set with respect to what the inputs are, the nitrogen and phosphorus, to the cropping systems. So it is a variety of USDA databases and that is something we recognize that we also need to improve. We have a number of discussions going on with Bob Kellogg and other folks at USDA to improve the algorithms that we use to try to come up with those estimates of what the inputs are to cropping systems. It is almost surprising at this point that such information is not easy to come by—you do have to design an algorithm to sort of derive that kind of information.

**David Hanselmann:** Thanks that is quite helpful. One other question, and Wayne Anderson from Minnesota might be able to help, but I saw study from Minnesota a couple of years ago about atmospheric deposition of phosphorus and the numbers were rather startling, but evidently on this regional scale those numbers are not showing up.

**Richard Alexander:** That is a good point. We looked closely at that, because we did not want to ignore that and we are aware that that has come up. We are using information from the National Atmospheric Deposition Program, transprogram and NADP stations, about 180 or so stations nationwide. Those tend to capture the big regional sources; they do not capture the local hotspots. That is recognized as a limitation of NADP, but that is the source that we are using. So they will capture the sort of big scale effects, but perhaps these more local scale effects, including atmospheric deposition of nitrogen from vehicles, are not entirely picked up. The atmospheric deposition term in the model probably does not capture those vehicle emissions very well, that is probably tied up within the urban source term more effectively.

**Ben Grumbles:** I think it is an important point, and your data, your information, the SPARROW model, and your presentation continue to underscore this over and over. It is not just one area, one source, one sector, one activity, that contributes to the hypoxia or excess nitrogen and phosphorus. USEPA is increasingly focused in on other sources using Clean Water Act tools or also capturing more information about Clean Air Act emissions. The Clean Air Interstate Rule, which was signed a few years ago, will have benefits in terms of the reduction of NO<sub>x</sub>s and SO<sub>x</sub>s that have water quality benefits. But it is not just a question of agriculture or nonpoint source, it is also point sources, urban, also mobile sources, atmospheric deposition—there are a number of potential sources.

**Richard Alexander:** I agree with you entirely. The sources and diversity of sources is something we need to come to grips with, but the processes are also important. It is the intersection of the sources and processes that pull out in some interesting ways—the stream network system, the effect of reservoirs and so forth. It is important that management be able to

take that kind of information into account. There are important efficiencies and we must ultimately look at this in terms of efficiency. So, taking into account how nitrogen and phosphorus behave, they are very non-conservative, but they behave differently in different aquatic systems and affect the systems differently. To the extent that this can enter into your deliberations in terms of discussions and further down the road as we look in a statewide basis, this is important information to bring in.

**Bill Northey:** One of the things that jumped out for me is the level of contribution of alfalfa considering the few numbers of acreages of alfalfa in comparison to corn and soybeans. It had very high contribution and maybe it goes back to your talk about modeling. Do you say your modeling is really based on the application rates or the use of phosphorus? Or is it based on estimation of the loss of phosphorus from those acres?

**Richard Alexander:** It is both. We use as a baseline the inputs of fertilizers to those systems, including alfalfa, where it would be in terms of phosphorus or nitrogen. But then the model tweaks it with a coefficient or coefficients that would help us understand how much of that is being delivered to stream systems, and also interacting with that are soil properties and climate and other factors simultaneously. That was a bit of a surprise, I think, to us to see that alfalfa was contributing.

I think it probably raises another important issue that I rarely have a chance to deal with; that another role that we see for this model is to inform the science process as well. We feel like one of the important roles for this model is looking at processes and sources at large scales, to raise questions and encourage hypothesis that ought to be played out at a smaller scale in terms of research studies. So that is one case-in-point where it would be helpful to go to something like the SPARROW model or use other local, more specific data to try to gain a greater understanding of the science.

This whole notion of nitrogen being enriched relative to phosphorus for cropping systems and phosphorus being enriched relative to nitrogen for livestock systems is another case-in-point where there is not a lot of research out there, but what is available is tweaked in such a way that we can work carefully on the issue. It is surprising to me that this particular issue has not been fully developed in the literature. I think we are posing questions with this model and there are some important things that we are observing that are very robust on a large scale. There also needs to be another important element here as part of the management (and perhaps the adaptive management) to go on in terms of the research, and have that ultimately feed back into management process.

**Bill Northey:** Certainly it shows the challenge of adding phosphorus management to the work of trying to reduce nitrogen loading. That it is a completely different system and we have got to learn lots of things. What are the opportunities to be able to drill down? One of the things we talked about was focusing on areas and basins. But within those basins we have hotspots and it is not the whole Mississippi River Basin, and in Iowa it is not the whole Des Moines Basin. Can we use that model to drill down and say within all basins of the region there are hotspots that we should go after, and analyze the contributions from those areas, looking not just at the loadings but the actual contributions delivered to the Gulf?

**Richard Alexander:** That is something we want to do and we are working with USEPA now. We have a project with Region 5. Darrell Robertson from USGS out of the Wisconsin State Science Center is the lead on this project. There are a lot of different steps to this process, but we are using this national Mississippi application here to go to the eight-digit HUC Scale within the Mississippi River Basin. We are using that to identify some of those hotspots in terms of delivery to the Gulf—and we are using that scale. We are reluctant at this stage to go to a finer scale, but there is a process for building a new model that will bring in much more monitoring data. This is on the order actually of 1,000 or more stations within the Mississippi River Basin. We are doing it by drawing on the state-based networks, information from STORET, and federally collected data to put that together and help build a next version, really a next generation of this Mississippi Basin model. At that point we will be using smaller stations, stations on smaller drainage areas.

We will be properly positioned at that point to go to a finer scale. But, there is also a certain element of discovery at this point because there are limits in terms of the ancillary information that serves as input to the model. A lot of the information that is produced from USDA and other organizations is county-level information or even some state-level information. There are real restrictions on what you can do with the model in terms of the ability to go to that scale. If we truly want to go to that scale in this kind of framework we have got to put a lot more emphasis on developing the data sets to be able to do that. And I think that certainly includes the stream monitoring data as well.

**Gary Mast:** Did you, in your considerations, take into account whether a particular watershed has more conservation practices than the norm? And did you consider the reduction of nutrients there versus a watershed that has not adapted very well?

**Richard Alexander:** Yeah, that is a very good point. We would want to do that. But, the data sets are rather limited to do that on a broad scale at this point. However, we are trying to work with USDA to better discover what those data sets are and to try to get those into a usable framework. We want to be able to do that, though it is not fully reflected in this model. I think one of the best ways to look at this model is in terms of its ability to look at the baseline conditions, for example in terms of the 1980-1996 timeframes, which have been set up as the baseline for looking at information and to track progress in the Mississippi. I think this model and the results from that are very good for that.

Our update to 2002 reflects changes in the inputs to the model that occurred over that time. We also account for changes in crop harvesting. Yields for soybeans in 2002 are much higher than yields for 1992. We attribute this to the addition of more nitrogen and phosphorus in the crops that shows as part of our 2002 estimates. But we were not able to account for conservation practices that went in during the late 90s (as an example). There needs to be a concerted effort to pull together those data. We have been in discussions with USDA and others, but it is a difficult task to be able to build into this sort of framework over the entire watershed and to try to come up with those data in a systematic way. We would like to do that, but we are not there yet. That is still an enhancement that we want to bring to the modeling process.

**Gary Mast:** And to bring further complication to the model, I am sure you do not have the ability to plug in drought situations in areas—or as genetics improve you would have a better update of nutrients and higher yields that get carted off.

**Richard Alexander:** We do have a mechanism for handling that. In fact, in the 2002 estimates that we made, we ran a separate statistical estimation model on the side that gave us some insight into what the effect was on crop increase, crop production and yields, and what impact that would have on how much nitrogen was remaining behind. So we did incorporate that. But, clearly those are challenging things that need to be brought up into the modeling process.

**Ben Grumbles:** Rich, I think that was an excellent presentation and I do not think we have any more questions at this point. But thank you very much. It really underscores the importance of sound science to help us all target our resources for cost effective approaches. We are running ahead of schedule just enough, I believe, to turn to, before we take a break, Jeff Jacobs. Dr. Jacobs, of the National Academy of Sciences, will their recent study on the Mississippi River and the Clean Water Act. Also, I believe, joining you Jeff will be Alan Vicory. Alan Vicory, the Executive Director and Civil Engineer with ORSANCO, actually sat on the committee, the NAS Mississippi River and Clean Water Act Committee, and will also give some thoughts and insights as well. So, Jeff, I will turn to you now to summarize the findings of the recent report.

*Attachment D: Mississippi River Water Quality and the Clean Water Act: Progress, Challenges, and Opportunities*

**Alan Vicory:** Thank you, Jeff. If you look at the members of the Task Force and you saw me listed down at the bottom, when I was approached to serve on this panel it was pretty evident to me that it was on the basis of having directed an organization for 20 years. In this organization states located nearby a major river have acted cooperatively on behalf of that river. This has been the mechanism through which the Clean Water Act has delivered on that. That seemed to be my role and viewpoint on the committee.

When we saw a lot of the recommendations in this presentation, something that struck me as we had finished up the report, was that when we were developing the recommendations as a panel we did not have a great deal of debate within the committee. The recommendations that you saw came fairly easily—fairly fluidly—to the panel. There was not a great deal of debate on whether it was state versus federal or the nature of the monitoring program and who should be helping and taking the lead on that. I want to send a message that the panel is fairly comfortable, if not unanimous, in the decisions and recommendations that it made.

I just happened to be struck when serving on the panel by a couple of things. One of those was the difference between the upper-Mississippi and lower-Mississippi River in terms of the economy, and even the culture relative to the activities of the states collectively to manage that shared resource. The UMRBA organization has been in place for years—I have visited with them. I have spoken to them about ORSANCO's approach and can tell that all the states up there are in tune with the idea of acting in a coordinated fashion in the Mississippi River. On the lower River, where the economy is totally different, the river is different. They are looking at economic

issues like development, and promoting the river down there as a world-class fishery for tourism and sport fishing. It is that different. Because of these differences, the panel did not recommend a formal, 10-state panel like ORSANCO has because it did not make any sense to do that. They did recommend capacity-building, and championing for the upper Mississippi group, as well as the lower Mississippi group, additionally some appropriate and periodic interactions between the upper Mississippi and lower Mississippi consortium to provide that linkage you need in order to ultimately manage a river as a river and not as a parcel of states.

As we were discussing on the panel I remember hearing things like, “The river is too big and too dangerous to go out and monitor. It is so big that there is nothing I can do about it anyway because there are so many states upstream.” I would be blunt with you and say I do not share such a view. If that were the case, what we have done on the Ohio River would never have occurred. What this is ultimately about is taking control of the management of this resource. Hopefully we provided some viable recommendations to do that.

**Len Bahr:** This is something some of us have been advocating for a long time. Dr. Jacobs referenced Bob Mead’s classic work in 1995, and I just heard last week that Bob Mead, who is retired, would like to follow up that study with another effort. I think that is a great thing for this group to support. I do not know what it would cost, but it could not be that much. The state of Louisiana would like to chip in. I think that after 11 years it is time for a follow-up effort.

**Ben Grumbles:** Gary may have something to say on this, too. Since two of the agencies focused on the most from a USEPA point of view, we truly welcome the report. From my perspective from working on this through other multi-jurisdictional, multi-state ecosystem protection and recovery efforts I would say that in many respects that the report affirms and reaffirms the path that we are on and underscores the need to do it at a quicker pace. I think that one of the overarching themes looking at this natural resource and the important role that states and local governments really have on this is that sustainable solutions transcend political boundaries and agencies, and you rely on sound science. You work over time to build partnerships upriver and downriver. It is a helpful document. There are a variety of different issues that the Task Force itself is grappling with. A real focus for us coming in to the Hypoxia Task Force is to promote as quickly as we can the adoption by states of numeric water quality criteria and standards. That will lead to more action, but it needs to be scientifically and legally defensible—that is a very important focus of this effort. We need to do more on water quality monitoring and measuring the progress or the remaining challenges on this system. We are committed to doing that and also to working with USDA our partners in conservation and stewardship.

**David Vigh:** We do cooperate very well, and it only underscores the direction that we are heading with these two federal departments. The Farm Bill is happening as we speak, the first of November. It has passed in the House and gone through the Senate Agriculture Committee and now it is ready to get on the floor of the Senate and then it will go to Conference. USDA has taken a very active role in this Farm Bill and very much promoted conservation. USDA proposed the 7.8 billion increase in conservation dollars. We also proposed a lot of dollars for a new regional watershed program that is directed exactly at targeting areas like the Chesapeake Bay, the Gulf of Mexico, the Great Lakes, and other areas like that. We are very aware that this is a

direction we need to go. Your report really reemphasizes the direction that Ben and I have been heading.

**Ben Grumbles:** Thank you, Jeff for your excellent presentation, and you Alan for your excellent leadership on various committees including this one.

I am pleased to turn now to another important presentation on the Upper Mississippi River Basin Association Water Quality Statement. I am going to turn to David Hokanson to discuss UMRBA's goals, and the genesis, objectives, and process involved in the development of the recent Governor's Statement on water quality in the Basin.

#### *Attachment E: UMRBA Organizational Overview and Water Quality Program Activities*

**Len Bahr:** What, if any, relationship does the UMRBA have to the Mississippi River Commission with the Army Corps of Engineers that has been in existence since the late 1800s?

**David Vigh:** I am not aware of much of a formal connection between the two. There is certainly the relationship as a federal advising partner with the Corps of Engineers at the UMRBA meetings, and they work with the Corps on a fairly consistent basis, but in terms of all representatives to the Commission, they are not typically involved in UMRBA discussions.

**Len Bahr:** Hearing the report from the Academy and knowing the group that you represent—I have always heard very good things about the upriver groups—and having worked in the LA governor's office for 16 years, I am very much impressed that Governors' support can make a huge difference in terms of getting states seriously involved and taking action. I am a big proponent of treating this system as a river and not simply as a series of projects. I am curious about whether we are stumbling into a situation where a lower group of states similar to the group that you represent provide a serious role for the Corps of Engineers. For better or for worse, the Corps has managed the river for many years. I have rallied for years about the artificial distinction between water quality issues and hydraulics and navigation issues and infrastructure development (including levees and dams)—all of these interconnected aspects. What we are finding out is that a lot of harm has been done, but it is not too late. What I would like to see is sediment budgeting for the whole river. All that wonderful topsoil that is trapped behind the Missouri dams; we could use that! There may be some high tech way of getting it downstream, but we will never do so unless we can act as a grouping of states that see common interests and the need for political unity. I am inspired that there are opportunities here that we could take advantage of.

One more thing, there is recent interstate governor's driven group that was formed in the Gulf of Mexico called the Gulf of Mexico Alliance, which shows great promise. Even though only a few states are along the river itself, it is another model of interstate cooperation driven by a governor's office that we can learn from.

**Jack Dunnigan:** Our experience has been that if you get strong support directly from the governor's office, federal agencies are powerless not to support it. That is the way NOAA thinks

that things ought to be done. We have done that in the Gulf of Mexico Alliance, the West Coast, the Northeast, and the South Atlantic. Another issue, although we often only think of NOAA as an oceans agency, we do have a lot of interests in the central part of the country as well. We do have an ecosystem project extending across the central part of the country led out of our regional office in Kansas City. If it is okay, I will get them your name and see if they can work with you as well. Mr. Chairman, this strikes me as being something that the Task Force ought to be very interested in—especially when you have this level of commitment from the senior executives of these various agencies.

**Ben Grumbles:** I will just chime in that it is extremely important, not just from a Task Force perspective, but from a USEPA perspective, that states take a leadership role in this. The efforts of the Upper Mississippi River Basin Association are welcome and USEPA is looking at how we can better help collaborate and facilitate efforts. Margaret Stockdale from Region 7 is here, Tim Henry from Region 5 is here, so the various USEPA Regions that have a role and a responsibility for working with states along the 10 states along the Mississippi are all interested in how to advance the ball and improve monitoring on the water quality standards piece of it. It is a very important component. I want to thank you all.

## Public Comments

**Ben Grumbles:** It now looks like we are ready to transition into the Public Comments section. We now have the opportunity to hear from you, those of you who are not on federal agencies who are here and wish to share your thoughts. I will start with Tad Slawecki with Limno Tech.

**Tad Slawecki:** Thank you, I am Tad Slawecki, Senior Engineer with Limno Tech and I am attending this forum for the first time. I am here in part because I had the privilege of working with Vic Beermen almost 15 years ago on the first hypoxia model for the Gulf. In the time since, new advancements have made it clear that that we do need the nutrient loadings and they contributed to the original federal Action Plan requiring the 40–45% reduction in nitrogen. I am also here with my colleague Amanda Flynn as a practitioner of watershed management and we feel strongly that it is time to work on implementations. I have been delighted with what I have seen in the presentations today. We are moving towards action.

One point I wanted to make: I saw adaptive management being made into one of the principles. We are very strong advocates of that and want to emphasize its importance. On a more frivolous note, I drove down here today from Ann Arbor, Michigan and I did not see any signs on I95 saying, “You have now entered the Mississippi River Basin.” I thought that we could build on the success of the Chesapeake Bay program, which uses signage stating, “You are now entering the Chesapeake Bay” at the borders. We could go on the other side and put up signage saying, “You are now entering the Mississippi River Basin”—not on all of them, only on the right ones. I know that there are other Basins involved, and that is it. Thank you.

**Ben Grumbles:** All in favor say, “Aye.” Thanks Ted. The next person on the list is Larry Antosh, Ohio Farm Bureau.

**Larry Antosh:** Thank you. I am also here for the first time, so I am learning as we are moving along. I am Director of Environmental Policy for the Ohio Farm Bureau Federation. The Ohio Farm Bureau Federation is the largest agricultural organization within the state of Ohio. I would like to thank you for the opportunity to give comments. I did provide some written comments. Rather than go through those in detail I will hit some of the important points.

The Ohio Farm Bureau Federation is the largest agricultural organization within the state of Ohio. We have members in every county—all 88 counties in Ohio—and our members produce almost every kind of agricultural commodity—you name it, our members are involved with it some how. Because of that, we do have a very strong interest in environmental policy and environmental issues: especially as they affect agriculture and the ability for Ohio to maintain a very viable ag-bio resource industry. And so, we are concerned and interested in terms of what is happening in the Gulf of Mexico and other watershed management activities as they are occurring in the state of Ohio.

In your meeting announcement it stated that you were interested in comments specifically related to existing goals. I will address them and also a few other points regarding what we have heard today, which seems very promising. For the first goal, the Coastal Goal, over the past several years there has been at a minimum a 20% reduction in the nutrient loading that has been going into the Gulf of Mexico. The goal established a 30% reduction, and even though we have come (somewhat) close to meeting that reduction goal, we are not seeing the response in the Gulf that we expected. Possibly the area goal that was established in the original 2001 Action Plan may be a little over optimistic, or the timeline may be a little over optimistic. Just thinking about what has happened in the past 5 years in terms of loading reductions and what the response has been in the Gulf and the hypoxic zone aerial extent, we may want to rethink the timeline and reduction target. We are dealing with a natural system, and natural systems need time to adjust.

The second issue was with the Within Basin Goal. Again, I am pleased to see that we are looking at developing more localized strategies. The fact of having a national strategy and national goals is good, but those that have been actively engaged in the discussions need to be involved in creating strategy. Moving towards a more localized, state-led strategy really makes sense. The issue that we get into as we look at national solutions is what I call, “cookie-cutter solutions.” Every individual land owner and land user is unique. Solutions must be flexible and able to address individual concerns. As you establish national goals and objectives you tend to say it is one-size-fits-all type solutions. We really do not believe that, and in my mind it is not the most appropriate way to address the concerns.

The third original goal dealt with Quality of Life. And again, as we start looking at changing agricultural practices and as land is coming out of productions and being set aside for wetlands, buffer strips or what-have-you, there will also be an impact on the local community and local quality of life. So as those land use changes and conversions and nutrient management alternatives come in to play, you have to remember that there is a strong connection locally to the community and the quality of life at the local level.

One of the things that I would like to point out is that the Science Advisory Report did point out a lot of good things that have happened in terms of conservation practices since the initiation of

the Action Plan. We should not lose track of those. They are good opportunities to be able to pat ourselves on our back. There have been lots of conservation practices implemented. Millions of acres of buffers and conservation tillage have been put into place—do not lose track of that. We are doing a good job. Obviously you could take the great leap and say we have reduced the nutrient loading by 20% over the past 5 years; those conservation practices must have done something. Existing programs are good and we do not want to lose them in the future.

In terms of the revised Action Plan, the revision and documentation are going to be coming at the time of the year where there are a lot of other activities taking place. It is a holiday season. Rather than a 30-day comment period during November, December, January, I think a 60-day comment period would probably be more appropriate just because of being able to get things out for review, assemble it, and provide comments back. So I would ask you to think about a longer comment period.

**Ben Grumbles:** Thank you, Larry. Next on the list we have Roderic Dunn, Columbus Division of Power and Water. Mr. Dunn.

**Roderic Dunn:** I am Roderic Dunn. I supervise the water quality research section for the Columbus Division of Power and Water. Thank you for the opportunity to provide comments. I want to encourage the Task Force to use and involve drinking water utilities and the state and national organizations that represent drinking water utilities. Many of the water quality parameters that impact the hypoxia in the Gulf are important water quality parameters for drinking water treatment. Source water quality is our prime importance. What we “get in” determines how we treat the water to send out to our customers. For example, nitrogen and phosphorus increase algae, which increases the cost of treatment and produces disinfection by-products, as well as encourages blooms of toxic algae that require advanced treatment.

Nitrate, as you all know, is very important to us. The Safe Drinking Water Act has set a nitrate maximum contaminant level of 10 mg/L and this is to protect the health of our youngest citizens and customers—infants under six months of age. Many utilities do extensive source water monitoring, and the data collected can be used by your scientists and by the states who further implement your recommendations. This data can function as both a historic picture of the data as well as a source of future monitoring that can help evaluate the success of any water quality programs that we implement.

One modern trend in the drinking water industry is partnering with the agricultural community and watershed groups to provide monitoring, as well as in-kind and matching monetary contributions to provide incentives to landowners to implement conservation best management practices. This furthers our goal to improve water quality, which will also improve downstream water quality and assist in the Gulf hypoxia issue. I want to encourage you and complement you on your efforts toward this monumental task.

**Ben Grumbles:** Thank you. Next we have Nancy Erickson, Illinois Farm Bureau Federation.

**Nancy Erickson:** Good afternoon, my name is Nancy Erickson, and I am the Director of Natural and Environmental Resources with Illinois Farm Bureau, based in Bloomington, Illinois. We

appreciate this opportunity to provide comments this afternoon on issues being considered by the Task Force. The Illinois Farm Bureau is a voluntary, grassroots organization whose members consist of about three-fourths of the farmers in the state of Illinois. We support voluntary best management practices for agriculture to continue the positive natural resources trends that we have seen in the last few years. We have expressed many concerns with some of the direction taken by various reports through the years related to the Gulf of Mexico watershed, and we continue to urge that there really be recognition that voluntary incentive based programs work for agriculture.

The challenge that we see is historically, these programs have been underfunded and understaffed and it is not logical to assume that mandates in any form for agriculture are needed to address issues related to the Gulf. Farmers are interested and are on waiting lists for voluntary programs, but the programs are not adequately funded. Regardless of inadequate funding, Illinois agriculture has some great accomplishments. We have a positive story to tell.

Conservation tillage practices have reduced soil erosion by 35–40% on crop land in our state. Illinois landowners have planted more than 31 million trees from 1988–1997. Illinois farmers planted more than 35,000 miles of conservation buffer from 1997–2002. Farmers are making more efficient use of fertilizers, and from 1997 to 2001 about 181,000 acres of buffers were installed in Illinois. So it is a positive trend. We believe that future actions of the federal government and the Task Force should support increasing funds for states in locally lead watershed groups to increase the positive trends that we have seen. The Task Force should encourage the administration of conservation programs at the state or local watershed level, and states should be able to develop their own strategies. We really do not need heavy handed, one-size-fits all prescriptive approaches dictating to states where best management practices should be placed and conservation practices implemented. These statements go along with some of the comments that I have heard this afternoon.

Another recommendation for the Task Force would be to change the goals in the Action Plan. The goal of reducing the zone to 5,000 square kilometers by 2015 should be changed. It is not achievable. This Science Advisory Panel Draft Report states that it may no longer be possible to achieve the goal by 2015. This is the time to change the goal to better reflect information that we have gathered in the past several years that clearly point to the fact the simple solutions will not work in a very complex system. Goals that would reduce nitrogen and phosphorus by 45% are substantial and even more questionable given the fact that the report states that actions to meet the target will take decades and that significant uncertainties still remain.

An example of looking at the goals is the 20% loading to the Gulf of Mexico that we have seen and the lack of response to the zone to that reduction of 20%. Throughout this process, current reports or plans must fully recognize the detrimental economic impact that could be placed on production agriculture by unrealistic goals set in the midst of uncertainties. We believe policies that have far reaching impacts made to the Gulf of Mexico must be backed by sound scientific research. We urge that expectations and goals regarding the Gulf be realistic and address the concerns of those at the state and local level who actually have to implement these conservation practices, whether it would be local governing groups like the Soil and Water Conservation District, USDA, farmers, or agricultural groups. There also needs to be adequate time for review

and public comment of documents, and we do recommend that the Draft Action Plan has a comment period of 60 days. We can achieve much if we work together to address complex issues, such as the one that we have discussed here today. Thank you again for the opportunity to express our views.

**Ben Grumbles:** Thank you. Next we have Rick Robinson, of the Iowa Farm Bureau.

**Rick Robinson:** Thank you and good afternoon. I do have written comments that I submitted to Mr. Brown and so you can look at those and I also refer you back to comments we submitted earlier, August 9<sup>th</sup> to the Science Advisory Board that are in more detail. But I guess I wanted to share with you just a couple of other thoughts today. First of all, I am an environmental policy advisor for the Iowa Farm Bureau and I wanted to relate to your challenge of talking about the goals and the next Action Plan and around the science specifically around those goals. I want to draw your attention to a letter from Iowa State University's College of Agriculture and Life Science that is dated September 27<sup>th</sup>. You need to read this letter. It outlines many of the challenges around many of the goals that you are considering, the SAB and the science reassessment that they are considering, and how that relates to the realities of implementing this Action Plan.

This letter outlines 50 questions and 10 major areas of emphasis; there are nine scientists that have signed on to this letter from Iowa State University. I want to share just a couple of the highlights of this letter that relate to issues around the flow in the upper Midwest. They relate to the technology we have to deal with these issues, or the lack of technology in some cases, and the economics of it. I am afraid that if you do not consider very seriously the issues that are outlined in this letter, you run the risk of losing your credibility in the long run—especially in the agricultural community. The issues in this letter really need to be addressed, hopefully by the Science Advisory Board, but what I heard today is that not much change is expected in their final report—it is going to be up to you and it is going to be your responsibility to address these issues.

For example, the 2015 goal for reduction of hypoxia and the 45% reduction targets for nitrogen and total phosphorus—Iowa State University says, “Setting the year 2015—or any year in the next two decades—for reducing hypoxia to an average of 5,000 square kilometers seems to greatly increase the potential for failure and criticism.

*Issue: The need for expanded and improved monitoring.* Frankly there are a lot of good monitoring recommendations in the Science Advisory Board report. Part of the SAB panel's charge was to focus on evaluation, research and information gaps in monitoring, documentation of nutrient sources and impacts, and practices employed. While some recommendations for monitoring and research are found in nearly every section of the report, a greatly increased emphasis on expanding and improving monitoring is warranted given the complexity of the issue and the uncertainties that remain.

*Issue: Impact of cost and feasibility in policy.* The SAB panel was asked to discuss options for reducing hypoxia in terms of cost and feasibility. However, the panel failed to discuss impacts related to these costs or feasibility of its recommendations. Adding a table similar to Table 18 in

the SAB draft report—one that compares relative costs of the proposals—would have been informative.

*Issue: Limitations of water quality impacts of conservation practices.* The nutrient loss reductions subscribed to some of the practices may be overly optimistic because the practices are still in the experimental stage and have not been fully tested. Iowa State says that data are available to quantify the water quantity impact of many of these options at the watershed scale.

*Issue: Costs and risks of the recommendation to discontinue fall nitrogen application for corn.* The cost of this recommendation needs to be carefully considered. In Iowa, about a third of the total nitrogen fertilizer is fall applied. Due to a limited number of days suitable for field activities, moving to an all spring nitrogen application practice would result in late plantings and reduce crop yields. Also, if all nitrogen is applied in the spring, the fertilizer industry infrastructure would need to be greatly expanded to meet the transportation, storage, and delivery needs.

*Issue: Nutrient mass balances, limitations, and implications for soil and water quality.* While the SAB panel is correct that most soil/carbon studies have found little effect of near optimum nitrogen on soil organic carbon, the panel failed to recognize that the nitrogen imbalances computed are of such a magnitude to be below the accuracy of measurement for most soil organic carbon change studies.

*Issue: The basis of manure management in the Corn Belt.* The report misses the real basis of animal manure management problems in the Corn Belt. Unlike the East and Southeast, it is not a problem of excess on a large or regional scale. It is a local problem of applying manure in a manor that it can be efficiently utilized. In the Corn Belt, the challenges are associated with the ability to incorporate manure into the soil to avoid losses to air and water.

*Issue: Conclusions unsupported by science.* Iowa State says great care must be taken to accurately state the SAB panel's conclusions and interpretations of the science because statements from the document would be used by many without a clear understanding of the causes and uncertainties of the Gulf hypoxia issue. For example, on page six of the SAB draft report, the panel indicates that hypoxia in the Northern Gulf of Mexico may soon enter a point of no return. Nowhere in the discussion of Gulf science are data presented that indicate such a point either exists or will be reached in the foreseeable future. Phrases such as "point of no return" are inflammatory and may be used by casual readers to sensationalize the hypoxic issue.

*Issue: Relationships among variability in the Mississippi Basin hydrology and nutrient loads and causal factors of the Gulf hypoxia.* Specific charges of the SAB panel were to evaluate the changes in hydraulic process in the Gulf of Mexico and the Mississippi River Basin and to evaluate the importance of various processes and nutrient delivery and effects. Nutrient loads, concentration, seasonality, and bio-geochemical processes have been suggested as important causal factors in the development and persistence of hypoxia in the Gulf and a robust understanding of these relationships is important. Much is made of the fact that the Upper Mississippi and Ohio River Basins, for example, contribute to the majority of the nutrient loads, while representing only 32% of the drainage area. And while that is true, this comparison is

misleading because the Upper Mississippi and Ohio Basins also contribute 71% of the total flow. I come back to the slides I see of sources that are presented at this meeting and other meetings—and it is not so much about the source (I think we all know that). What do you do about it? What are the challenges and limitations and what do you do about these things? That is what this letter talks about.

If these kinds of things are not recognized very specifically in the next Action Plan, you lose the credibility that you may have right now in the agricultural community. The focus will be on some other issues, let's just leave it at that. I think the 60-day comment period is a very good suggestion. I think you should consider a little bit longer comment period on this given the holiday schedule. Again, I encourage you to look at this letter and take its recommendations seriously. Thank you.

**Ben Grumbles:** Thank you; appreciate that. And next on our list is John Torbert of the Iowa Drainage District Association. John.

**John Torbert:** Thank you and good afternoon. Good to be here today. The Iowa Drainage District Association is located in Des Moines, Iowa. We represent locally-led watershed management districts. In Iowa we have about 9 million acres of drained land. We have more than 3,000 drainage districts in the state. Most maps that you have all seen that talk about the sources of nitrogen have this northwest quadrant of Iowa that has that big red area—that is who I represent, that area of the state. That is where the big drainage areas and the high crop production areas in the state are.

I have a concern, looking at the Science Advisory Board report, about the timing and the reductions that are being talked about. I think it is possible to reduce nitrogen, I think it is possible to reduce phosphorus, but to do so on the scale mentioned, 45% by the year 2015, is not possible. 2015 is not going to happen given today's farming practices. I wish I could say otherwise, but it is not realistic and it is not going to work given the way that we grow crops today. The other thing that I want to point out that has been mentioned here is that for the first two years of the Task Force's existence, the sole focus was on nitrogen. All of the sudden we have phosphorus. Then, in the last two years or so, the attitude has become, "well we can do both." Well, as you all know, it is not that easy. From what I have learned, these substances appear different in terms of how they move and they are different in terms of how they have to be mitigated. You can do things about nitrogen on the landscape and you can do things about phosphorus on the landscape, but they are not necessarily the same things, and a lot of those things may work against each other. This is difficult stuff, and to say that we are going to do this by 2015 is just not going to happen.

I would also caution, I note that one of the presentations earlier this afternoon talked about shifting some focus away from the sub-basin teams and moving the control more to states. I would really take a very careful look at that. We believe that states do have a role in terms of providing information, providing support, and providing technical assistance, but we think that on a policy basis those decisions are best locally made. We know, on a local basis, what has to be done and a state often does not. Iowa is building wetlands on our landscape that have proven very significant nitrogen reducers. We have done this successfully through the CREAP Program.

We believe, at the Iowa Drainage Association, that this is the best thing going in terms of nitrogen reduction. It is a proven technology with very little, if any, negative environmental side-effects. But the problem, of course, is one of scale.

The CREAP Program, when it started, was to build 20 wetlands a year as a test or a pilot effort. Due to a number of different factors, we have not been able to meet that goal; as a matter of fact right now we have built 27 wetlands. We have more being looked at, which is well and good, but if you look at the numbers in terms of what we need to do, we really need somewhere between 3,000 and 10,000 of these wetlands to have the kind of scale that is necessary to get the reductions that are talked about in this report. We are trying to build 20 a year but we are not meeting that goal. Even if we were building 20 a month, I still think 2015 is unrealistic.

I will say in Iowa that we are working on this. The Iowa Drainage Association in concert with Iowa State University—some of the best drainage minds in the country—and in concert with the Iowa Department of Agriculture and Land Stewardship and other groups in the state have put together a plan that is looking at building wetlands at landscape scale in Iowa and incorporating those wetlands with the drainage infrastructure.

What we are trying to do is change the way farmers look at the landscape. Right now if you look at a drainage project, the basic question that is asked is “How do we move the water?” We want to change that equation to say, “How do we move that water in an efficient fashion and get it off the land so the crops grow—but how do we do that in the most environmentally friendly fashion possible?” What do we need to do in terms of moving that water, in terms of constructing a wetland, putting that wetland in a strategic place so that we can continue to raise crops to be the breadbasket of the world, but do so in a fashion that is more environmentally friendly? All of that is possible, given that we can get the regulatory community to sign off on it and given that we have time, and 2015 is not enough time. These are very complex issues and it has been cited before today that we have shown a 20% reduction over the past 5 years. The response to these efforts is shocking. This year, despite the great efforts in place, we had the 3<sup>rd</sup> largest hypoxic zone that we have ever had—this process is not as simple as cause and effect. We will learn more about this complexity as time goes on. We need more time to understand how these processes and forces work, and we need more time to get practices on the ground that will have an impact. The 2015 does not give us what we need to accomplish all this. Thank you.

**Ben Grumbles:** Thank you. The last person I have listed is Jean Payne with the Illinois Fertilizer and Chemical Association. Jean.

**Jean Payne:** I am Jean Payne. I am the President of the Illinois Fertilizer Chemical Association. Our organization represents the fertilizer dealers in the state, the people who distribute the fertilizer, apply the fertilizer, and work with the producers on the proper rates, timing, and application. Illinois seems to be one of those “I” states that gets a lot of the focus during hypoxia discussions because we have such tremendous crop production in the upper Midwest. But I want to just touch on a couple things build on what Larry from Ohio said.

There are a lot of positive things going on out there and I think sometimes in the context of this hypoxia debate, it gets lost. The fertilizer dealers I deal with on a daily basis know what is going

on in these meetings. If they are not here, they hear it from me, Nancy, Larry, or Rick. Everyone is very cognizant of what is going on in the field. I want to share a little bit with you here today that I have seen just in the years that I have been working in this industry—what I have seen going on in the dynamics of the fertilizer application marketplace particularly. Nitrogen crop fertilization has gone up over 200% and at an over 100% cost increase just in the last 10 years—that in and of itself entirely changes the dynamics of the application marketplace. Usually, when people see me at meetings their first question to ask if they are a farmer is “My God, what’s the price of nitrogen today and how much higher is it going to go?” That dynamic has changed the way that fertilizer is managed in the upper Midwest. Nobody, the dealers and even myself included, sees that backsliding. We are at a level where we know we need to conserve nutrients as much as possible because it is a tremendous financial outlay, not just for farmers but for the fertilizer dealers who have to stock that inventory and make it available.

One of the things that I want to tell you a little bit about is how things have changed in the minds of the people who apply the fertilizer. We started really focusing with our members on proper application (particularly fall application) procedures because it is a vital practice, as Rick had mentioned. Even if we could afford to build all of the inventory structure, buy more equipment, and build more fertilizer containers to hold the fertilizer (all of this we would need to do a spring application, which would need to be in a three week period)—even if we had the billions it would take to do that, we do not have the people in the industry to do it. I do not know how much it would cost to clone people to work in the fertilizer industry in the spring if we had no ability to get any of that work done in the fall. Fall application is a critical economic component of production agriculture in the upper Midwest.

Our members know that they have to do a better job with fall-applied nutrients, knowing that we can never predict what the weather is going to be, what the growing season is going to be, nor all of the dynamics that go in to the whole nutrient cycle. In the last couple of years, our guys have done a great job of paying attention to soil temperatures. I really enjoyed the drive over here from central Illinois because I have not seen one nurse tank in the field yet. And Nancy and Larry and Rick can tell you, 10 years ago we saw a lot of nurse tanks out in September—sometimes because people did not really understand the importance of top proper rate and timing, and the cost that is factored into that too. Those guys do not want to waste any of that fertilizer; they can not afford to do it anymore. The important point I want to make is that we have worked very hard to educate our members. The farmers themselves have seen the benefits of the best management practices in their own applications and in their own yield records, knowing that they can reduce their fertilizer rates and still have greater yields than they had in the past.

I want to give you just a couple of statistics from USDA about efficiency in our system. Our demand for nutrients in the United States has remained relatively flat compared to soaring demand overseas. Just in case no one realizes it, in the last two years the global agricultural community has added a nutrient demand equal to another United States of America—that is how much overseas demand for nitrogen, phosphorus, and potassium have increased just in the last three years. But our use in the United States has remained flat and declining, but our corn production has increased by 74% with less land in cultivation. Farmers’ use of nitrogen on corn has fallen 3% and phosphates have fallen 20%. We are farming less land using no additional

fertilizer, and yet producing more food. It is really a manufacturing model that we have pretty much built ourselves without a lot of government assistance or regulation, and I think most people would be really proud of it—I am proud of it for our members and all they have done in that aspect.

And so, as far as the recommendations side goes, when you think about human nature, when people are challenged to meet a goal of making themselves more efficient (in response to policy arguments, whether or not they actually believe that fertilizer contributes to the hypoxic zone), they recognize that it adds a challenge and they recognize that it is going to impact them. And I really think they are doing a tremendous job responding. But when you take a regulatory stick, or you set a goal that they know they can not achieve, then people have a tendency to just want to give up. You know, I can never do this. They think, “I cannot cut my nitrogen rates by 40%, my phosphate rates by 20%, so why should I bother even trying?”

We need to think about how to set policies that people out in rural America will embrace as a challenge because they are achievable. In our industry and the fertilizer industry we have a lot of certified crop advisors that go out and work with the farmers to develop nutrient management plans, keep the right records on rate and time and the application, and compare those with yield data. Each year they build on that record. We have not seen many federal programs that make that easy for us to do. You know, no offense to some of the people at the federal level, but we have had independent crop advisors competing with each of us and then RCS—there is kind of a power struggle to be the person to tell the farmer the right thing to do. That is when farmers throw up their hands and say, “You know what, this is too frustrating.”

So I think the government approaches it as Nancy said: we have farmers lined up to participate in these cost-share programs. I have a list back in my office, broken out by watershed, of people waiting to get into these programs. I have many, many fertilizer dealers that are more than eager to write nutrient management plans for a couple of hours an acre. And yet, we cannot get through the red tape to get it done. Anything you can do to make these kind of goals something people want to participate in—something that they think they can achieve—is going to improve some of the colors up on the screen. You know, we have a lot of people from Illinois, Chuck 12 million? We have 20 million acres in crop production so we have a very diverse state with a lot of challenges, but I really feel optimistic about this. I think that median can be met. I really appreciate the chance to give my two-cents on that. Thank you.

**Ben Grumbles:** Thank you. Well I just wanted to say that quality of the public comments is outstanding in terms of the articulate and thoughtful presentations made by all of commenters from the public. And so I know on behalf of the Task Force I just want to say thank you to those of you who traveled, those of you who came here and gave us your thoughts on some of these issues. A lot of conversation about goals and also a lot of comments about the SAB report and the timing of the Task Force comment period. But I would like to turn to see if there, as we approach the finish line here, in terms of today’s session if there are any Task Force members who have closing questions or comments.

**George Dunlop:** Thank you. I think that, you know in the 35 years or so that I have been involved with agriculture and natural resources both in and out of government, one of the

messages that I have heard today from all of the discussion, is, and particularly from the public comments, causes us to focus on what I am getting ready to say. I think all of us involved in these things need to put into perspective that when it comes to addressing these types of issues that involve the quality and condition of the resource that make up the things that we value, environmental quality. There are basically two philosophical ways to approach these things and I think we ought to be mindful of that. One, there is a compliance based approach. That is in which we identify the objectives and the goals and all the opportunities we have and anybody works and pulls together to help the different elements of the system, whether they are in the private sector, in the government sector, or the scientific sector to help one another come into compliance with these. Often times though, that is more difficult than the opposite of the compliance-based approach, which is the enforcement-based approach, and that is the easy way out sometimes. But the consequence of the enforcement-based approach is what we have heard today, I think from the public commenters, is that you will frustrate and drive away the people that you need to and want to participate in these things as willing partners. And so I would just ask all of us as we are contemplating these things to weigh where you come down on this—as a scientist or as a farmer or whatever other person you are that might use the resource or a government person that is helping people or as a regulator. Are we better off with a compliance-based approach or an enforcement-based approach? And that is the nature of the debate that goes on in public policy and I heard that today so I thought I would articulate it.

**Ben Grumbles:** Any other Task Force members? Bill.

**Bill Northey** I just want to add my thanks as well to the folks that commented. I think we are in interesting time certainly in this issue, as well as many others that are out there. There are so many opportunities for us to use these issues in a way to better understand our natural systems out there, to understand the efficiencies of those systems, and to be able to make more positive environmental impacts. I think these are all things that all of us in this room want to do, want to make happen. If we can continue to go down that road, we are going to get positive outcomes on the farm as far as the efficiencies of those systems, better understand how to be more profitable, and do the right things on the farm, but also understand the off-farm impacts of what we are doing, as well as better manage that. We can continue down this right and I think we have started down it; certainly some of the things we have done in Iowa and other states around the Midwest are showing us some of those pieces. We are understanding things just slightly better than we did five years ago and hopefully we will understand them much better five years from now, than what we do right now. To me this is an ongoing science-based process of what we need to learn and I do think and we will certainly have some discussion on the goals. I do think we need to be realistic about what can get done, but at the same token when we do that, when we talk about that, it still needs to be a motivating factor to continue to work and make progress. This is not about setting back efforts, motivations, or desires; this has to be about continuing to move. But it needs to be done in a way that has some basis in reality as well.

**Ben Grumbles:** I think those are very good comments. I know since I have been part of this Task Force effort I have seen a lot of evolution in thinking, very beneficial process to have the science symposia, to really focus in on phosphorus and the Atchafalaya, aspects that were not as much a part of the debate back in the first Action Plan, and also look at new issues or components that are part of the public discussion. As Bill said, I sense that on the Task Force our

mutually shared interest is to find ways to continue to motivate, to even accelerate the progress, and to discover and implement new tools (not necessarily regulatory tools). If they are regulatory tools, than not necessarily at the federal level, but also looking at market-based approaches. I, for one, am very optimistic about the future of making further progress but we have a lot of work to do among the Task Force members synthesizing the information we have heard today, continuing to move down the right track also to be wary of pit falls or taking steps that threaten the credibility of the overall effort and certainly could threaten the overall success. I know that it has been a long day for many of you and I do not think we do have any other comments, oh yes Jack.

**Jack Dunnigan:** For an old salt-water fish lover like me, I have learned tremendous amounts about the agricultural economy and the importance of the place to Americans, so my participation here is really very helpful to me. I cannot stay tomorrow Ben, and I just wanted to say thank you to you for leading the group and I know we are sort of like cats sometimes needing to be herded, but you and your staff does a very, very fine job for the Task Force and we all really appreciate their efforts too. So, thank you very much.

**Doug Daigle:** The point I wanted to make, I think it is very good what the public comment period, to let folks have their say and I am all for that. But because most of us on the Task Force had read the SAB report, it seemed like it might be useful to point out that it does not propose that farmers cut their use by 45% and it does not say that is necessary for the 2015 goal. So, that is such an important point for when we are all together and we have the opportunity to put it out there. There are other opportunities for response and I hope that they get their comments answered as the process goes on with the SAB.

**Ben Grumbles:** That is a fair point. There has been a lot of discussion, very good robust debate, scientific analysis, and policy discussion about management options, and that is certainly one of the really important parts of this dialogue and of the public comment process is to use this as an effort to explain what we are saying, or what is in the Action Plan, or what is in the revised Action Plan, or what is not in it, and that is a very good clarification to make. As we go through the rest of the meeting, we will be looking at very specific elements and revisions to the 2001 Action Plan based on what we have heard over the last several years and months and weeks and hours. I think there is a strong commitment from the Task Force to keep to a schedule, but it is very important to revise this Action Plan and we have some key issues that we are going to need to discuss further. Today's dialogue has been very enlightening and helpful. So I think without further adieu, I am going to adjourn the meeting today and thank all of you who participated in it and for the Task Force members and Coordinating Committee members we will see you later this evening and certainly tomorrow morning. Thank you.

## **Attachment A**

# Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

15<sup>th</sup> Public meeting

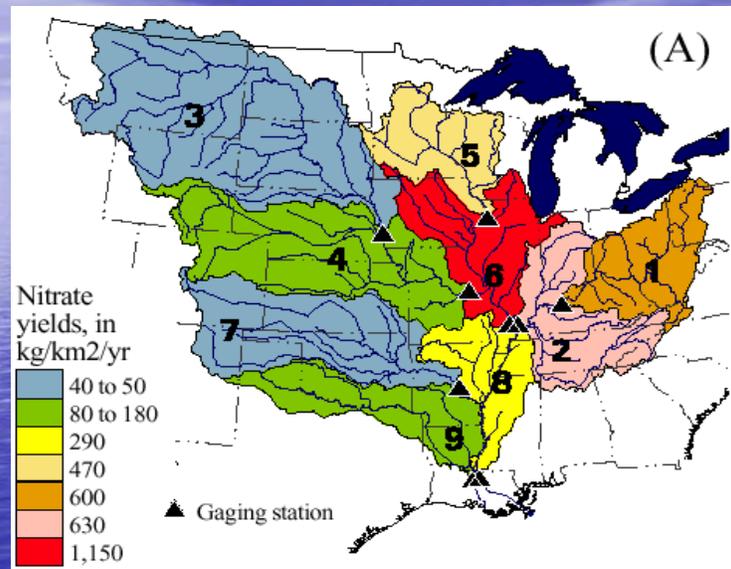
October 29, 2007

Cincinnati, Ohio

## On Behalf of the Ohio Department of Natural Resources, Welcome

- To Ohio and the Ohio River Basin
  
- Thanks to our partners and co-hosts
  - USEPA
  - ORSANCO
  - Ohio River Sub-basin Committee

## Nitrogen Source Distribution



Goolsby, et al

## The Ohio River Basin



Ohio River  
Sub Basin Committee will include  
states plus stakeholder  
representatives (developing).

Steering Committee consists of state  
agencies  
(established).

## Ohio River Basin Steering Committee Members

- Illinois Dept of Agriculture
- Indiana Dept of Environmental Management
- Kentucky Dept of Environmental Protection
- Kentucky Division of Conservation
- Ohio Dept of Natural Resources
- Ohio EPA
- Pennsylvania Conservation Commission
- Tennessee Dept of Environmental Cons
- West Virginia Conservation Agency
- West Virginia Dept of Agriculture
- West Virginia Dept of Environmental Protection
- ORSANCO

## Progress to Date

- Multiple Steering Committee meetings.
- Briefings on Gulf Hypoxia.  
(five participating states have not been Task Force members)
- Presentations on Nutrient Reduction efforts.
- Framework for Nutrient Reduction Strategy completed.
- Ohio elected chair state
- Makeup of Stakeholder Group determined.

## Framework of a Nutrient Reduction Strategy

1. The current situation
2. Sources of nutrients
3. Nutrient reduction targets and goals
4. Available tools for nutrient reduction
5. Identifying and involving stakeholders in strategy development and implementation
6. Next Steps

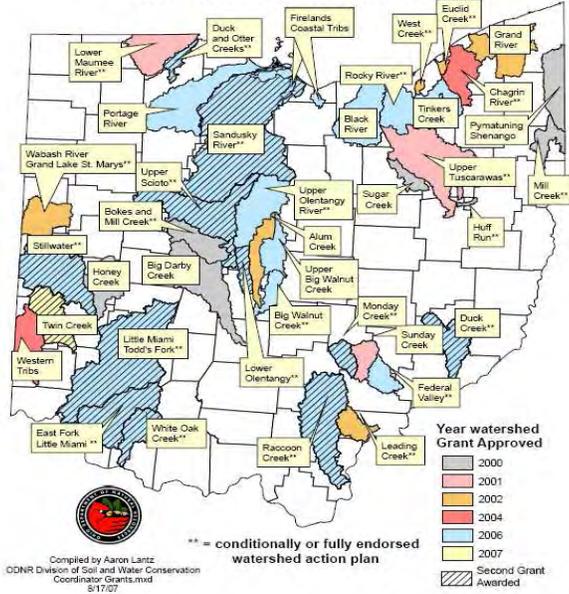
## Concept of Framework Document

- Reduction goals and approach for sub-basin and states are under development.
- Initial Nutrient Reduction Strategy will focus on protecting local waters per Action Plan Goal 2.
- Strategy should be adaptable to address emerging issues.

## What's happening on the ground?

- Some examples from Ohio
  - Rural
  - Urban
  - Nonpoint source
  - Point Source

## Ohio 2000-2007 Watershed Coordinator Grants



## Combinations of Practices



## Rural Drainage



## Rural Drainage



## Urban Storm Water BMP



## Scioto CREP practice



## Scioto CREP practice



## Scioto CREP practice



## WQ Trading Example (holding pond and plan needed)



## Urban CSO



## Urban CSO



## Public Treatment Works



## Nutrient Load Reductions 2006 Examples

- Scioto Watershed CREP
  - 57,000 out of 70,000 acres enrolled
  - 36,000 lb. P/yr
  - 73,000 lb. N/yr
  
- Great Miami Trading
  - 68,000 lb. P over 5 to 20 years
  - 176,000 lb. N over 5 to 20 years

■ Thank you

■ David Hanselmann

– Division of Soil and Water Conservation Chief

## **Attachment B**

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# Review of the Draft Gulf Hypoxia Action Plan (GHAP) 2008

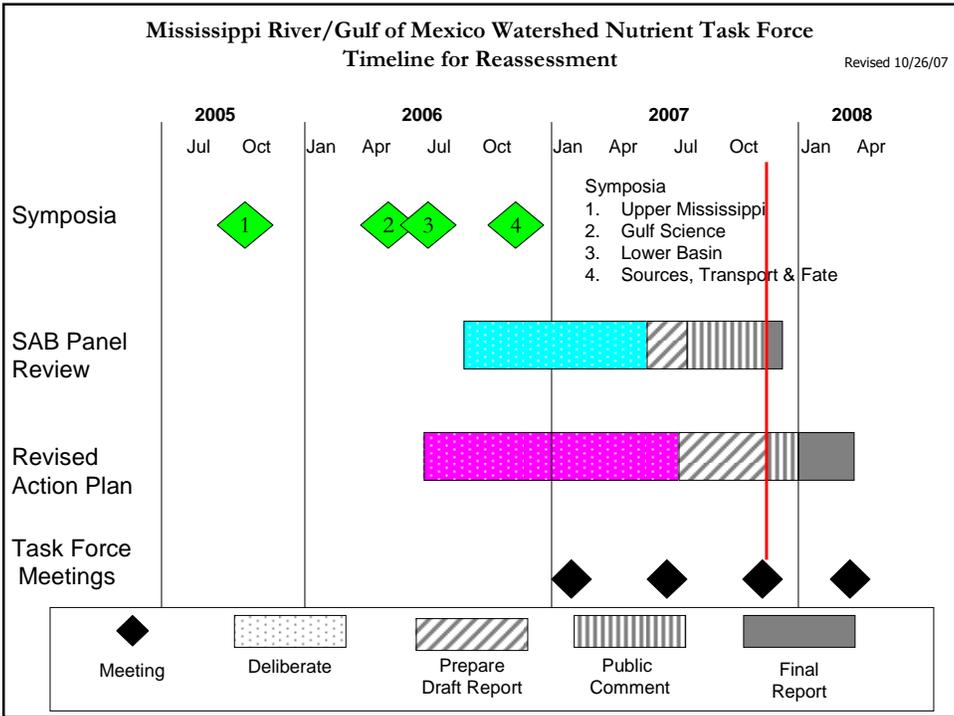
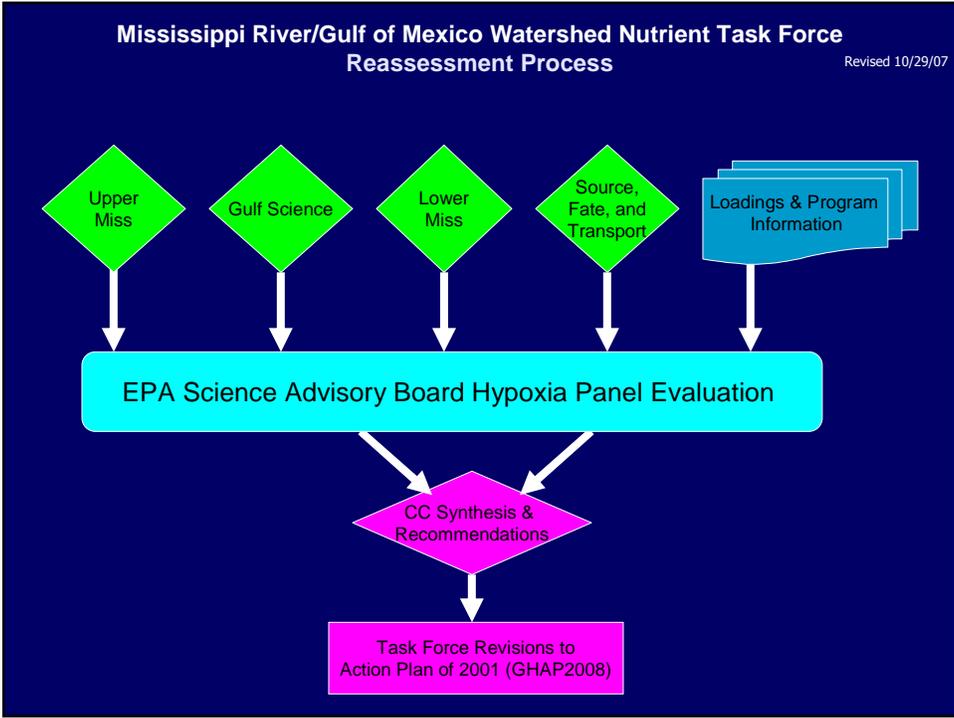
Darrell Brown  
October 29, 2007

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## Overview

- Reassessment Process
  - Content of Action Plan
    - Moving Forward on Gulf Hypoxia
    - Next Steps: Getting Results
  - Key Decisions
    - Release GHAP 2008 for Public Comment
    - Goals
    - Funding
    - Budget/Operating Plan
  - Process for Public Comment
-



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## Action Plan Content: Improvements

- ❑ Includes an action framework that increases accountability and specificity
  - ❑ Annual Operating Plan and Annual Report provide mechanisms for maintaining and tracking progress between reassessments
  - ❑ Shifts the lead for nutrient reduction strategies from sub-basin teams to the states and adds complementary Federal Strategy
  - ❑ Includes conclusions from major science reassessment
  - ❑ Includes communication/outreach plan to engage stakeholders
- 

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## Action Plan Content: Moving Forward on Gulf Hypoxia

- ❑ Four Key Points
    - Do we change the Goals?
    - “Critical Needs”
    - Is there a need for additional legislative authority?
    - Outcomes of the reassessment
      - Progress on actions
      - Reassessment of the science
-

---

## GHAP 2008 Content: Next Steps: Getting Results

- Actions are the “heart” of the plan
  - Actions to reduce N and P will have a direct effect on the size of the zone
    - Focuses on State nutrient strategies
    - Introduces the concept of Federal strategies
  - Optional actions presented for discussion
  - Gaps still exist in these actions
- 

---

## GHAP 2008 Content: Next Steps: Getting Results (2)

- Actions to Advance the Science, Track Progress, and Raise Awareness
    - Build on the adaptive management approach  
*“continual feedback between the interpretation of new information and improved management actions”*  
*(2001 Action Plan)*
    - Emphasize tracking progress, filling the still existing gaps in the science, and engaging our stakeholders
-

---

## Key Decisions for this meeting

- Release GHAP 2008 for Public Comment
  - Do we change the Goals?
  - How do we fund implementation?
  - What value is there in developing a Budget/Operating Plan?
- 

---

## Process for Public Comment

- Task Force Review of Draft Action Plan (GHAP 2008)
  - Federal Register notice of release for public review
  - 30 Day comment period
  - Coordinating Committee prepares final draft
  - Revised plan review at next TF meeting
-

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Thank You!

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## **Attachment C**

## Nitrogen and Phosphorus Delivery to the Gulf of Mexico from Sources and States in the Mississippi / Atchafalaya River Basins



15<sup>th</sup> Meeting of the  
Mississippi River/Gulf of  
Mexico Watershed  
Nutrient Task Force

Cincinnati, Ohio  
Oct. 29-30, 2007

R.B. Alexander<sup>1</sup>, R.A. Smith<sup>1</sup>, G.E. Schwarz<sup>1</sup>,  
E.W. Boyer<sup>2</sup>, J.V. Nolan<sup>1</sup>, and J.W. Brakebill<sup>1</sup>

<sup>1</sup> U.S. Geological Survey

<sup>2</sup> University of California-Berkeley



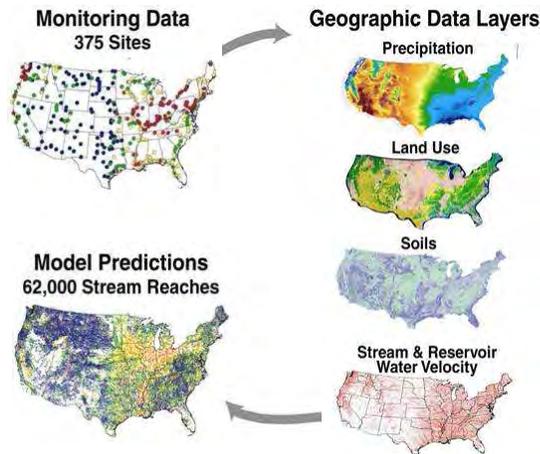
## Outline

- Brief overview of the modeling techniques
- Nitrogen and phosphorus delivery to the Gulf of Mexico:
  - Sources and land uses
  - Watersheds: processes and geography
  - State contributions
- Conclusions



# SPARROW Water-Quality Model

SPATIally Referenced Regression on Watershed Attributes  
<http://water.usgs.gov/nawqa/sparrow>; Smith et al. 1997



- Spatially explicit, data-driven model relates major pollutant sources to in-stream measurements
- Includes agricultural land uses and nutrient inputs from crop and livestock production, urban land uses, atmospheric deposition, forests
- Accounts for non-conservative transport in watersheds
- Predicts mean annual loads/concentrations (and uncertainties) in streams for 1992 and 2002



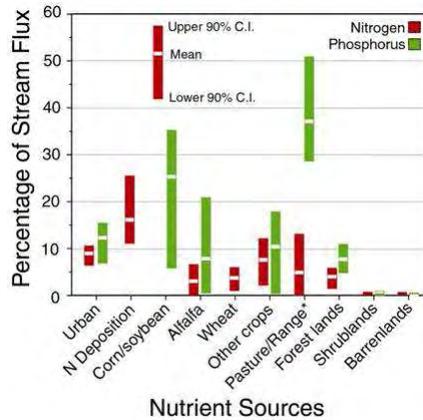
## Nutrient sources to the Gulf of Mexico

Nitrogen and phosphorus are affected by different sources and land uses

### Mississippi/Atchafalaya River Basin

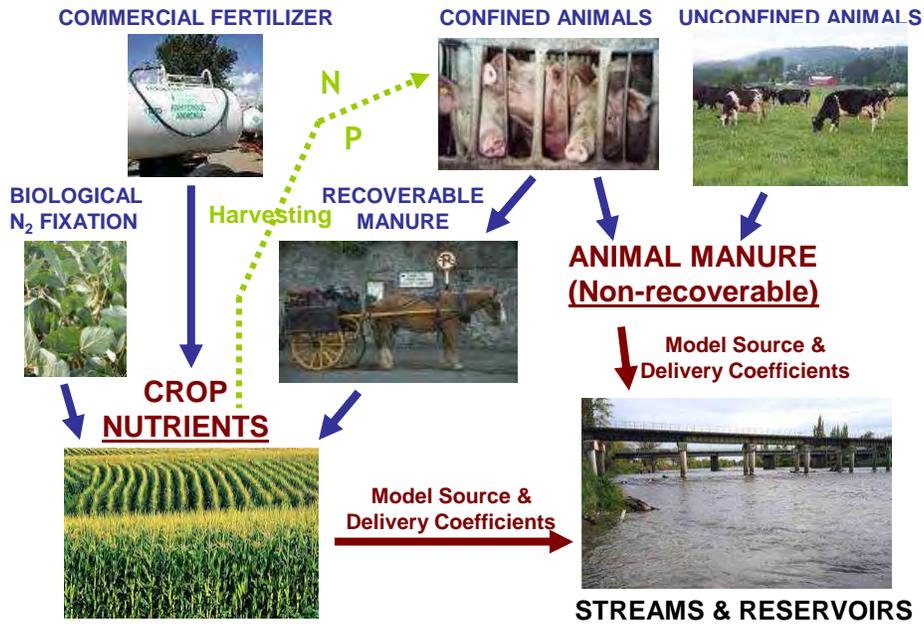


### Nutrients Delivered to the Gulf



\*Non-recoverable animal manure

## SPARROW Delivery of Agricultural Nutrients to Streams



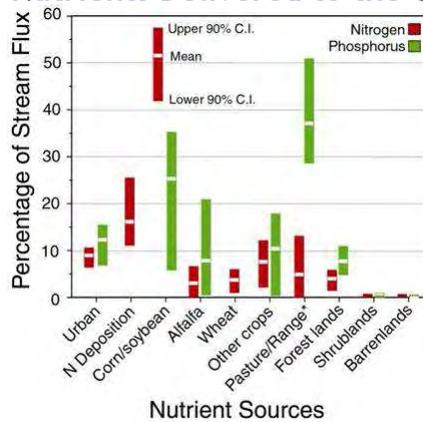
## Nutrient sources to the Gulf of Mexico

Nitrogen and phosphorus are affected by different sources and land uses

### Mississippi/Atchafalaya River Basin

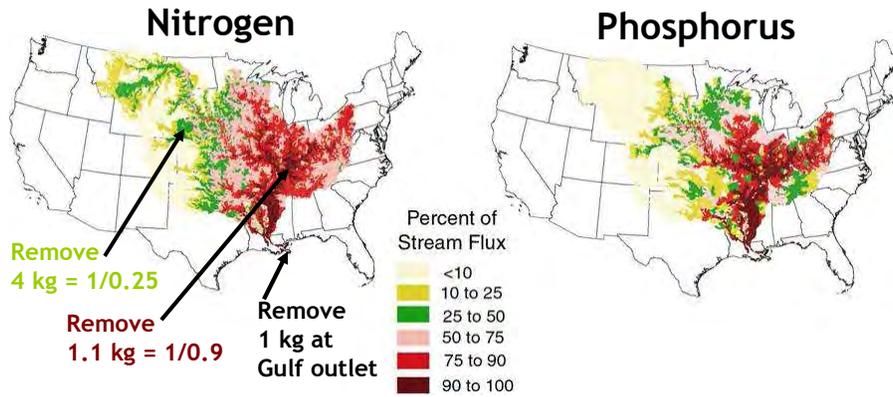


### Nutrients Delivered to the Gulf



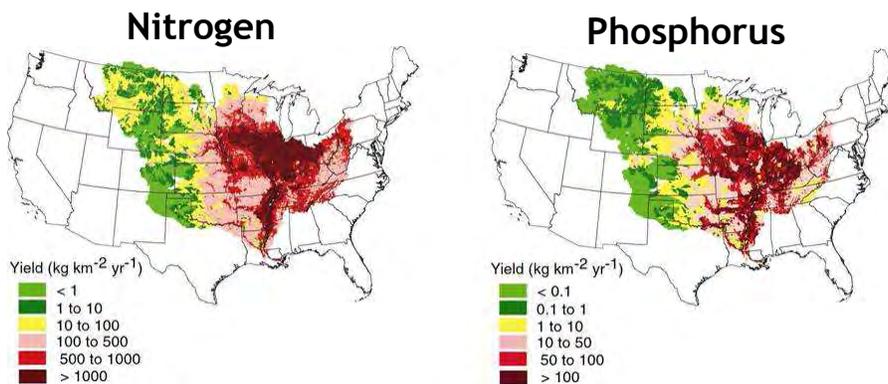
## Nutrient delivery to the Gulf of Mexico

### Effect of natural removal processes on the percentage delivery of the in-stream nutrients

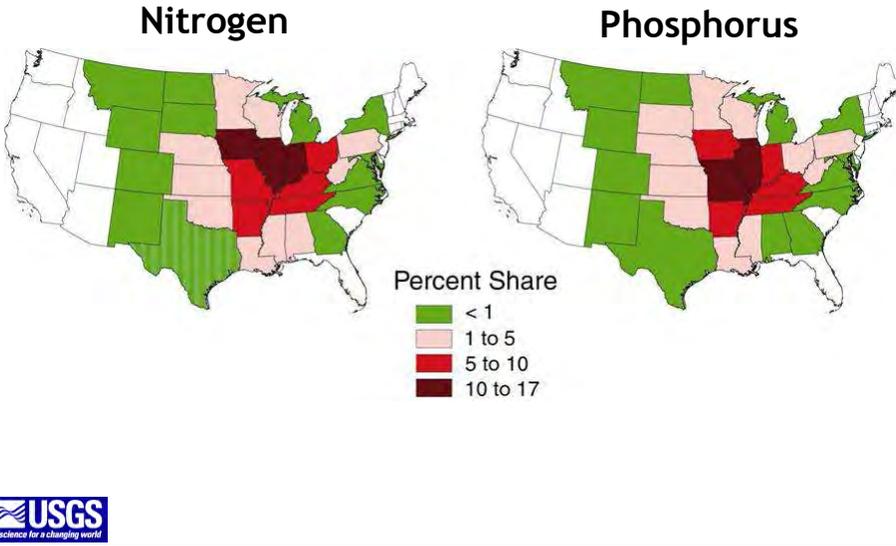


## Nutrient delivery to the Gulf of Mexico

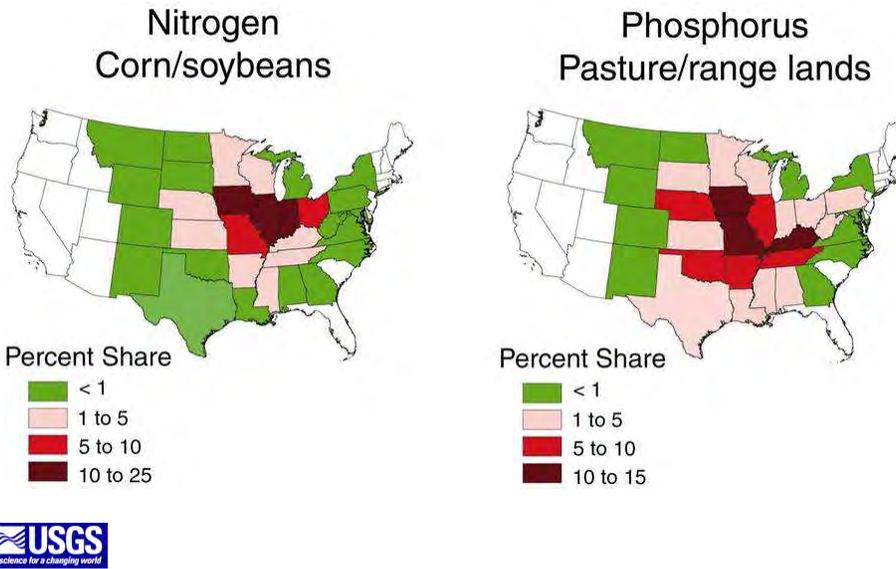
### Many Midwestern and Eastern watersheds have higher “delivered yields”



## Nutrient delivery to the Gulf of Mexico State shares of the total nutrient flux



## Nutrient delivery to the Gulf of Mexico State shares of the total nutrient flux by source



## Conclusions

- Spatially-explicit SPARROW model reveals key land uses and geographic areas that contribute nitrogen and phosphorus to the Gulf of Mexico
- A diversity of management approaches may be required to achieve efficient reductions in nutrient loads to the Gulf:
  - Recognition of different effects of agricultural production systems on N and P runoff, in-stream loads, and Gulf waters
  - Better control of both N and P in close proximity to large rivers
  - Attention to P sources downstream from reservoirs
  - Role of atmospheric N



## Questions?



<http://water.usgs.gov/nawqa/sparrow>



## **Attachment D**

# Mississippi River Water Quality and the Clean Water Act: Progress, Challenges, and Opportunities

National Research Council  
Water Science and Technology Board

THE NATIONAL ACADEMIES  
*Advisors to the Nation on Science, Engineering, and Medicine*

## Committee Membership

David Dzombak, *Chair*, Carnegie Mellon University  
H.H. Cheng, University of Minnesota  
Robin Craig, Florida State University  
Otto Doering, III, Purdue University  
William V. Luneburg, Jr., University of Pittsburgh  
G. Tracy Mehan, III, The Cadmus Group, Inc.  
James Park, consultant, Loami, Illinois  
Nancy Rabalais, Louisiana Universities Marine Consortium  
Jerald Schnoor, University of Iowa  
David Soballe, U.S. Army Corps of Engineers  
Edward Thackston, Vanderbilt University (Emeritus)  
Stanley Trimble, University of California, Los Angeles  
Alan Vicory, Ohio River Valley Sanitation Commission

Study Director: Jeffrey Jacobs, NRC Water Science and Technology Board

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## 10-state Mississippi River Corridor



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## Statement of Task

### 1) *Mississippi River Corridor Water Quality Problems*

Identify key water quality problems through 10-state MR system and northern Gulf of Mexico.

### 2) *Data Needs and System Monitoring*

Identify and discuss key water quality data needs with regard to CWA reporting requirements.

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## Statement of Task

### 3) Water Quality Indicators and Standards

Identify and discuss key challenges associated with establishing water quality indicators and standards in the 10 MR states.

## Statement of Task

### 4) Policies and Implementation

Identify and discuss challenges in administering CWA authorities and programs

How could collaborative efforts within federal agencies, between federal agencies, and between the 10 MR states, be strengthened to enhance implementation of CWA provisions?

## Statement of Task

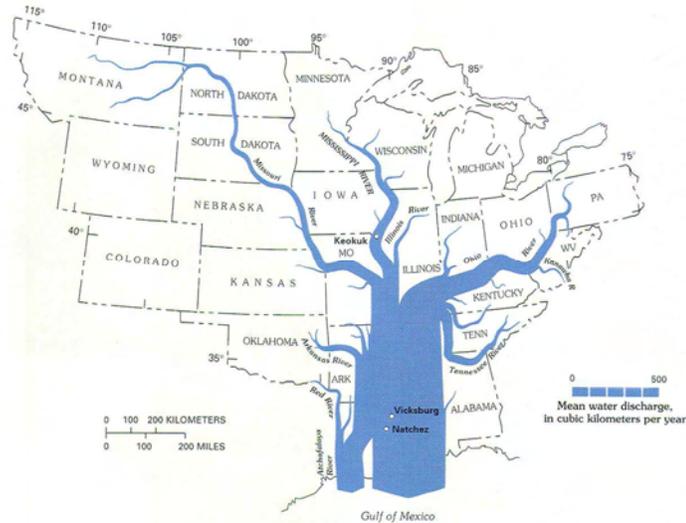
Note:

- Committee was not charged to consider possible changes in CWA
- Committee discussed and decided to work within framework of existing CWA

## Chapter 2 - Characteristics of the Mississippi River System

- Extensive modification of the basin (land cover and land use) and of the river over past 200 years.
- Construction of river control structures (levees, dams) and wetland loss influence water discharge and quality.
- UMR is much smaller river than LMR, different recreational and commercial values.

## Avg Water Discharge (km<sup>3</sup>/yr)



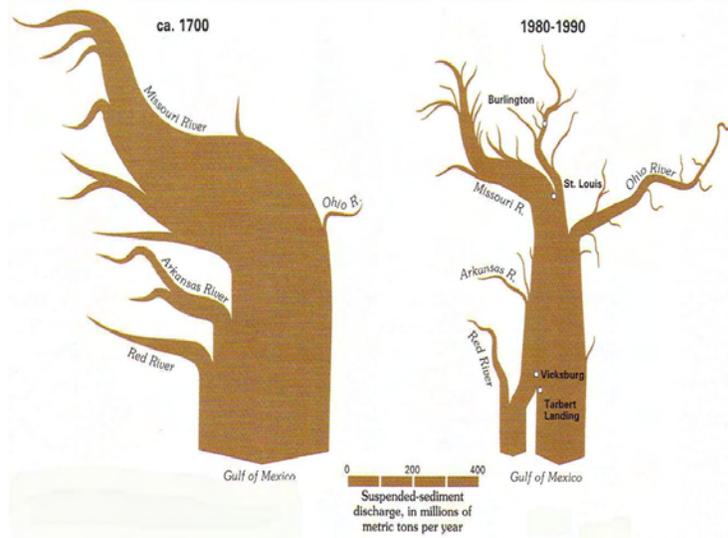
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## Historic Modifications

- UMR: locks, dams, and navigation pools
- LMR: large levees
- Entire river: draining of wetlands
- One impact – Levels of sediment transported by the MR have changed greatly

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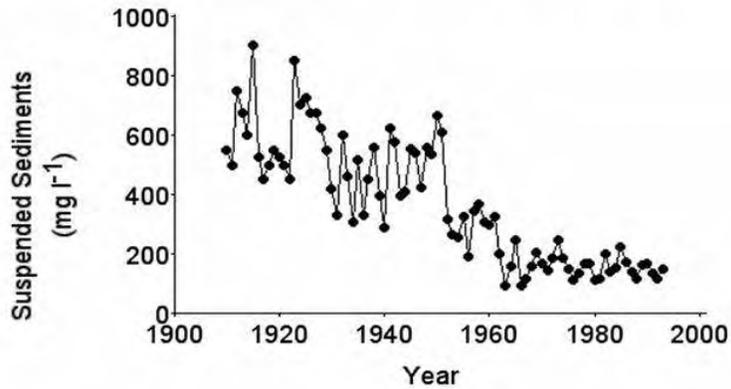
# Changes in Sediment Transport



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# Changes in Sediment Transport

Annual average suspended sediments at New Orleans



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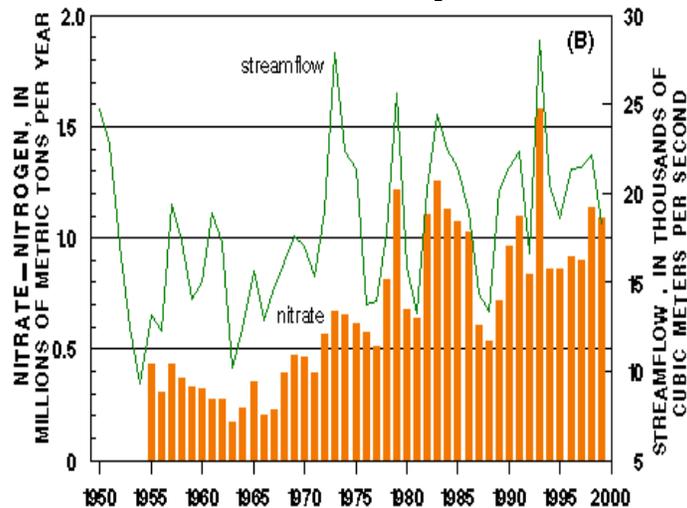
## Miss. River Water Quality Problems

Mississippi River affected by many water quality problems - three categories:

- contaminants with increasing inputs along the river and that accumulate downstream (e.g., nutrients, pesticides);
- legacy contaminants stored in the sediments (e.g., PCBs, DDT);
- “intermittent” contaminants (e.g., sediments, fecal bacteria).

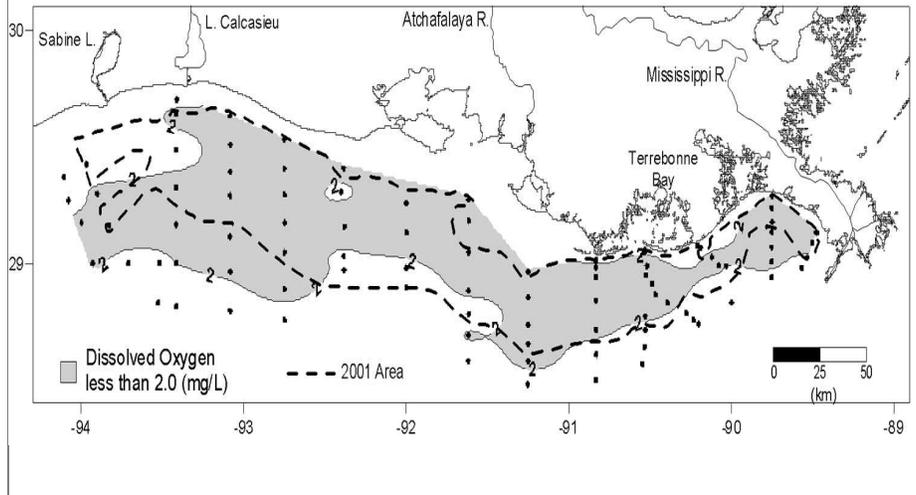
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## Nutrient Inputs



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## Hypoxic (low O<sub>2</sub>) Zone in Gulf



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## Primary Water Quality Problems

- At the scale of the entire river, **nutrients** and **sediment** are two primary water quality problems
- Nutrient and sediment inputs derive mostly from nonpoint sources, and mostly from agriculture
- Sediment: excess sediment loads in UMR, sediment deprivation in LMR.

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## Chapter 3 – The Clean Water Act

- Cornerstone of surface water quality protection in US; 35 years old
- Contains variety of regulatory and non-reg tools
- CWA has been effective in addressing point sources of water pollutants (tech-based standards for point sources)
- CWA addresses nonpoint source pollution only in a limited manner

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## Chapter 3 – The Clean Water Act

- Primary mechanism for nonpoint source control: total max daily load (TMDL) process to establish loads that will achieve water quality standards
- CWA requires states or EPA to establish water quality standards and develop TMDLs for water bodies that do not meet standards
- For water quality standards and TMDLs to be effectively implemented in interstate waters like the MR, essential that interstate pollutant loadings be fully considered

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## **Chapter 3 – The Clean Water Act**

- CWA cannot be the sole legal vehicle used to achieve water quality objectives for the MR (e.g., most agriculture discharges exempted).
- CWA provides a legal framework that, if comprehensively implemented, can achieve many aspects of interstate water quality management.

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## **Chapter 3 – The Clean Water Act**

- CWA directs EPA to stimulate and support interstate cooperation, assigning most interstate water quality coordination authority to EPA.
- CWA provides EPA with multiple authorities that would allow EPA to assume a stronger leadership role in addressing Mississippi River and Gulf of Mexico water quality.

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## **Chapter 4 – Implementing the CWA Along the Mississippi River**

- MR not monitored as single unit by any entity.
- States along the river devote varying levels of resources to its monitoring.
- Efforts to coordinate state efforts are spotty and vary along the river.
- MR is an “orphan” from a water quality monitoring and assessment perspective.

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## **Chapter 4 – Implementing the CWA Along the Mississippi River**

- EPA has failed to use its CWA authorities to provide adequate interstate coordination and oversight of state CWA activities
- EPA should act aggressively to ensure improved cooperation regarding CWA-related programs.

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## **Chapter 4 – Implementing the CWA Along the Mississippi River**

- EPA should develop water quality criteria for nutrients in the MR and northern Gulf of Mexico.
- EPA should ensure that states establish standards (designated uses and water quality criteria) and TMDLs to protect these waters from excessive nutrient pollution.
- EPA should develop a federal TMDL, or its equivalent, using a process similar to that developed for the Chesapeake Bay.

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## **Chapter 5 – Evaluating Mississippi River Water Quality**

- Lack of centralized Mississippi River water quality information system and data gathering program hinders effective CWA application.
- Clear need for federal leadership in system-wide monitoring of the Mississippi River.
- EPA should take the lead in establishing a water quality data-sharing system for the length of the Mississippi River.

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## **Chapter 6 – Agricultural Practices and MR Water Quality**

- Reduction in pollutant loadings from agriculture, especially nutrients, crucial for improving MR water quality.
- USDA has important role to play through its land and water conservation programs (CRP, EQIP, CSP).

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## **Chapter 6 – Agricultural Practices and MR Water Quality**

- Important that USDA conservation programs be aggressively targeted at areas of high sediment and nutrient input.
- EPA and USDA should strengthen their cooperative activities. For example, EPA can help USDA identify lands for priority attention for USDA conservation programs.

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## **Chapter 7 – Collaboration for Water Quality Improvement**

- Levels of interstate cooperation on water quality issues vary along the river.
- UMR states are members of the Upper MR Basin Association (UMRBA), which involves formal multi-state agreement and high-level state support.
- LMR states participate in the Lower MR Conservation Committee (LMRCC), which focuses on river biology and habitat restoration and does not have gubernatorial appointees like the UMRBA.
- LMR states should strive toward creating a better cooperative mechanism similar to the UMRBA.

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## **Chapter 7 – Collaboration for Water Quality Improvement**

- EPA should encourage and support better coordination among all 10 Mississippi River states and facilitate stronger integration of state level programs.
- EPA Administrator should ensure that the four EPA regions with jurisdiction over portions of the MR act consistently in regard to water quality issues along the river and the northern Gulf of Mexico.

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## Key Recommendations

- Better coordination among all 10 MR states is necessary to realize improvements in MR water quality and in monitoring activities.
- LMR states should work toward a better cooperative mechanism, similar to UMRBA.
- EPA should better coordinate efforts of the 10 MR states in water quality monitoring and planning.
- EPA should take the lead in coordinating data gathering and establishing a data sharing system for the entire river.

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## Key Recommendations

- USDA should target land and water conservation programs (CRP, EQIP, CSP) at critical areas.
- EPA and USDA should strengthen cooperative activities, e.g., EPA can help identify land to receive priority attention.

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## Key Recommendations

- EPA should develop water quality criteria for nutrients in the MR and northern Gulf.
- EPA should ensure that states establish standards and TMDLs to protect MR and Gulf from excessive nutrient pollution.
- EPA also should develop a TMDL, or its functional equivalent, for the MR and the northern Gulf.
- EPA should emulate the EPA-state cooperative model for Chesapeake Bay water quality and nutrient management.

## **Attachment E**



**Upper Mississippi River Basin  
Association**

## **UMRBA Organizational Overview and Water Quality Program Activities**

Presented to the 15<sup>th</sup> Public Meeting of the  
Mississippi River/Gulf of Mexico Watershed Nutrient Task Force  
October 29, 2007

Dave Hokanson  
UMRBA Water Quality Program Director  
[dhokanson@umrba.org](mailto:dhokanson@umrba.org)

## **Presentation Overview**

**UMRBA History, Structure, and Function**

**UMRBA Water Quality Activities**

**Recent Governors' Statement**

**Questions**



**Upper Mississippi River Basin**  
(image courtesy USGS)

## UMRBA Overview: Mission Statement

### **Purpose:**

- Facilitate dialogue and cooperative action regarding water and related land resource issues in the basin

### **More specifically:**

- Serve as a regional interstate forum for the discussion, study, and evaluation of river-related issues of common concern to the States
- Facilitate and foster cooperative planning and coordinated management
- Create opportunities and means for the States and federal agencies to exchange information
- Develop regional positions on river issues and serve as an advocate of the States' collective interests before Congress and federal agencies

## UMRBA Overview: History

### **Upper Mississippi River Basin Commission**

- |      |  |
|------|--|
| 1972 | Formed by Governors under the authority of Title II of the 1965 Water Resources Planning Act |
| 1981 | Terminated by Presidential Executive Order   |

### **Upper Mississippi River Basin Association**

- |           |  |
|-----------|--|
| Aug 1981  | Joint Governors' Resolution                                  |
| Dec 1981  | Articles of Association signed by Governors' representatives |
| 1983-1984 | Governors' Executive Orders                                  |
| 1986      | Congressional consent  |
| 1997      | Joint Governors' Resolution                                  |

## UMRBA Overview: State Representation (Governors' Appointees)

<b>Illinois</b>	<b>DNR</b> (Water Division)
<b>Iowa</b>	<b>DNR*</b> (Also departments of Trans, Ag, and Econ Dev)
<b>Minnesota</b>	<b>DNR</b> (Deputy Commissioner) (Chair of EQB by Law)
<b>Missouri</b>	<b>DNR*</b> (Water Resources Division)
<b>Wisconsin</b>	<b>DNR*</b> (Water Division)

*\*DNR has both natural resource and environmental quality functions*

## UMRBA Overview: Federal Advisory Members

Agriculture (*NRCS*)  
Army Corps of Engineers  
Environmental Protection Agency  
(*Regions 5 & 7*)  
Homeland Security (*FEMA & Coast Guard*)  
Interior (*Fish and Wildlife Service and USGS*)  
Transportation (*Maritime Administration*)

## UMRBA Overview: Primary Areas of Activity

### **Navigation and Ecosystem Restoration**

- Environmental Management Program (EMP)
- Corps of Engineers Navigation Study and NESP program

### **Water Quality**

- Water Quality Task Force
- Water Quality Executive Committee

### **Oil Spill Planning**

- Hazardous Spills Coordination Group
- Oil Pollution Act planning and mapping

### **Floodplain Management**

- Corps of Engineers' Comprehensive Plan and Flow Frequency Study

### **Water Supply**

- 1989 Interbasin Diversion Charter

### **Water Policy and Advocacy**

- Annual appropriations testimony

## UMRBA Overview: Strengths and Major Emphases

### **UMRBA focuses on:**

- Planning & coordination, helping States and Feds work together
- Evaluating policies, programs, and laws
- Building consensus among the States
- Promoting the States' interests

### **UMRBA is not involved in:**

- Regulation or land management
- Construction or operation of facilities
- Scientific research or expertise

## UMRBA Overview: Budget and Staffing

**FY 2008 Budget = \$459,000**

### FY 2008 Revenue Sources

- State Dues and WQ "Assessments" 59%
- Grants & Coop Agreements 34%
- Interest on Investments & Other 7%

### Staff

- 4 permanent staff (80 total years of experience)
- 2 project staff (mapping/Oil Pollution Act)

## UMRBA Water Quality Programs: Work Groups and Membership

### Water Quality Task Force (1999)

Illinois EPA                      US EPA Region 5  
Iowa DNR                         US EPA Region 7  
Minnesota PCA  
Missouri DNR  
Wisconsin DNR

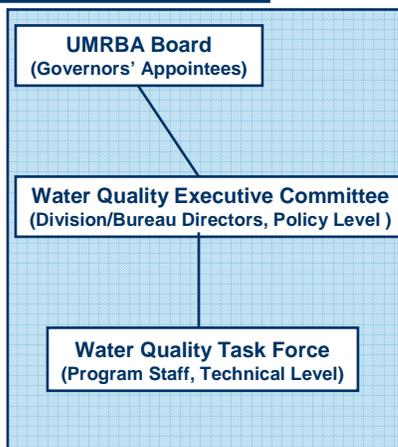
### Water Quality Executive Committee (2006)

#### State (Voting) Members

Illinois EPA (Marcia Willhite)  
Iowa DNR (Chuck Corell, Tim Hall)  
Minnesota PCA (Gaylen Reetz)  
Missouri DNR (Rob Morrison)  
Wisconsin DNR (Todd Ambs)

#### Federal (Non-Voting) Members

US EPA Region 5 (Tim Henry)  
US EPA Region 7 (Art Spratlin)

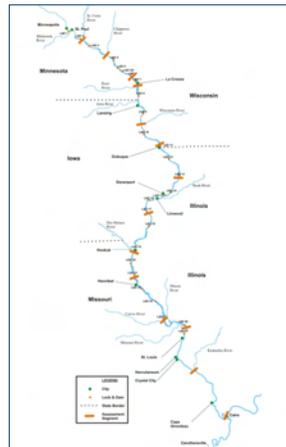


## UMRBA Water Quality Programs: Work Areas and Projects

- Generally: mainstem and Clean Water Act (CWA) focus, coordination/assistance for existing State and Federal programs
- Impaired waters listing consultation
- Uniform interstate assessment reaches
- Designated uses
- Sediment-related water quality criteria
- Fish consumption advisories
- Water quality web page (<http://www.umarba.org/wq.htm>)

## 13 Uniform Interstate Assessment Reaches (September 2003 MOU)

	River Miles	Old # of Reaches	New # of Reaches
IL	698	15	8
IA	313	14	5
MN	139	31	4
MO	366	2	5
WI	230	3	5



IOWA <sup>3</sup>			Lock & Dam 13	ILLINOIS <sup>4</sup>			
2002	2004	2006		2006	2004	2002	
Organic enrichment	Nutrients (localized)	Arsenic Nutrients (localized)	Quad Cities	PCBs Fecal coliform	PCBs	PCBs	
unlisted	unlisted					PCBs	
Arsenic	Arsenic					PCBs	
unlisted	unlisted					PCBs	
unlisted	unlisted	Arsenic	Iowa River	PCBs Manganese Fecal coliform	PCBs Manganese	PCBs Priority organics Organic enrichment Pathogens	
unlisted	unlisted					PCBs Priority organics Organic enrichment Pathogens	
unlisted	unassessed					PCBs Priority organics Organic enrichment Pathogens	
Arsenic	Arsenic					PCBs Priority organics Organic enrichment Pathogens	
MISSOURI <sup>5</sup>			Keokuk	Des Moines River	PCBs Manganese Fecal coliform	PCBs Manganese	PCBs Priority organics Organic enrichment
PCBs Chlordane	delisted		Quincy				
			Lock & Dam 21	PCBs Fecal coliform	PCBs	PCBs Priority organics Organic enrichment	
			Hannibal	PCBs Fecal coliform	PCBs	PCBs Priority organics Organic enrichment	
			Culvre River	PCBs Manganese Fecal coliform	PCBs Manganese	PCBs Nutrients Siltation Flow and habitat alteration	
			Illinois River	PCBs Manganese Fecal coliform	PCBs Manganese	PCBs Nutrients Metals Siltation Suspended solids Total ammonia-N Phosphorus Nitrates	
			Missouri River				

## UMRBA Water Quality Programs: Organizational Efforts

- Organizational Options Report (December 2006)
  - States recommended building on UMRBA to develop interstate water quality “agency”
- Outreach to U.S. EPA
- Outreach to elected officials
- Seeking stable funding source, initial funding request for FY 2008
- Governors’ Statement on Upper Mississippi River Water Quality

## UMRBA Water Quality Programs: Governors' Statement on UMR Water Quality

### Primary Messages

- Governors' commitment to coordinated Clean Water Act implementation, with the States and UMRBA in partnership
- Seeking federal support, specifically dedicated funding within U.S. EPA's budget

### Genesis

- Initiated by Water Quality Executive Committee
- Fills need in both communicating States' intent and requesting federal support

### Process

- Began process in March 2007, statement signed August 2, 2007
- Executive Committee worked with UMRBA Board, Governors' Offices, and National Governors' Association

### Next Steps

- UMRBA will continue to use the statement in future communications and requests for support

## UMRBA Water Quality Programs: Nutrients and Hypoxia

- While UMRBA recognizes that UMR water quality is tied to activity throughout the basin, it has tended to focus on mainstem issues
- Currently, no specific role for UMRBA in regard to hypoxia
- UMRBA has been interested in the issue, but has been peripheral involvement
- UMRBA water quality programs may help build a "framework" into which future nutrient-related CWA activities on the UMR could fit



**Upper Mississippi River Basin  
Association**

## Questions?

**For More Information, Contact:**

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