AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

RUNNING ROUGHSHOD OVER STATES AND STAKEHOLDERS: EPA'S NUTRIENTS POLICIES

(112–39)

HEARING

BEFORE THE

SUBCOMMITTEE ON
WATER RESOURCES AND ENVIRONMENT

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

JUNE 24, 2011

Printed for the use of the
Committee on Transportation and Infrastructure

Available online at: http://www.gpo.gov/fdsys/browse/committee.action?chamber=house&committee=transportation

U.S. GOVERNMENT PRINTING OFFICE

67–049 PDF WASHINGTON : 2012

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

JOHN L. MICA, Florida, *Chairman*

DON YOUNG, Alaska
THOMAS E. PETRI, Wisconsin
HOWARD COBLE, North Carolina
JOHN J. DUNCAN, JR., Tennessee
FRANK A. LOBIONDO, New Jersey
GARY G. MILLER, California
TIMOTHY V. JOHNSON, Illinois
SAM GRAVES, Missouri
BILL SHUSTER, Pennsylvania
SHELLEY MOORE CAPITO, West Virginia
JEAN SCHMIDT, Ohio
CANDICE S. MILLER, Michigan
DUNCAN HUNTER, California
ANDY HARRIS, Maryland
ERIC A. "RICK" CRAWFORD, Arkansas
JAIME HERRERA BEUTLER, Washington
FRANK C. GUINTA, New Hampshire
RANDY HULTGREN, Illinois
LOU BARLETTA, Pennsylvania
CHIP CRAVAACK, Minnesota
BLAKE FARENTHOLD, Texas
LARRY BUCSHON, Indiana
BILLY LONG, Missouri
BOB GIBBS, Ohio
PATRICK MEEHAN, Pennsylvania
RICHARD L. HANNA, New York
JEFFREY M. LANDRY, Louisiana
STEVE SOUTHERLAND II, Florida
JEFF DENHAM, California
JAMES LANKFORD, Oklahoma
REID J. RIBBLE, Wisconsin
CHARLES J. "CHUCK" FLEISCHMANN, Tennessee

NICK J. RAHALL II, West Virginia
PETER A. DEFAZIO, Oregon
JERRY F. COSTELLO, Illinois
ELEANOR HOLMES NORTON, District of Columbia
JERROLD NADLER, New York
CORRINE BROWN, Florida
BOB FILNER, California
EDDIE BERNICE JOHNSON, Texas
ELIJAH E. CUMMINGS, Maryland
LEONARD L. BOSWELL, Iowa
TIM HOLDEN, Pennsylvania
RICK LARSEN, Washington
MICHAEL E. CAPUANO, Massachusetts
TIMOTHY H. BISHOP, New York
MICHAEL H. MICHAUD, Maine
RUSS CARNAHAN, Missouri
GRACE F. NAPOLITANO, California
DANIEL LIPINSKI, Illinois
MAZIE K. HIRONO, Hawaii
JASON ALTMIRE, Pennsylvania
TIMOTHY J. WALZ, Minnesota
HEATH SHULER, North Carolina
STEVE COHEN, Tennessee
LAURA RICHARDSON, California
ALBIO SIRES, New Jersey
DONNA F. EDWARDS, Maryland

SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT

BOB GIBBS, Ohio, *Chairman*

DON YOUNG, Alaska
JOHN J. DUNCAN, JR., Tennessee
GARY G. MILLER, California
TIMOTHY V. JOHNSON, Illinois
BILL SHUSTER, Pennsylvania
SHELLEY MOORE CAPITO, West Virginia
CANDICE S. MILLER, Michigan
DUNCAN HUNTER, California
ANDY HARRIS, Maryland
ERIC A. "RICK" CRAWFORD, Arkansas
JAIME HERRERA BEUTLER, Washington, *Vice Chair*
CHIP CRAVAACK, Minnesota
LARRY BUCSHON, Indiana
JEFFREY M. LANDRY, Louisiana
JEFF DENHAM, California
JAMES LANKFORD, Oklahoma
REID J. RIBBLE, Wisconsin
JOHN L. MICA, Florida *(Ex Officio)*

TIMOTHY H. BISHOP, New York
JERRY F. COSTELLO, Illinois
ELEANOR HOLMES NORTON, District of Columbia
RUSS CARNAHAN, Missouri
DONNA F. EDWARDS, Maryland
CORRINE BROWN, Florida
BOB FILNER, California
EDDIE BERNICE JOHNSON, Texas
MICHAEL E. CAPUANO, Massachusetts
GRACE F. NAPOLITANO, California
JASON ALTMIRE, Pennsylvania
STEVE COHEN, Tennessee
LAURA RICHARDSON, California
MAZIE K. HIRONO, Hawaii
NICK J. RAHALL II, West Virginia *(Ex Officio)*

CONTENTS

Page

Summary of Subject Matter vii

TESTIMONY

Biggs, Barbara, Government Affairs Officer, Denver Metro Wastewater Reclamation District, representing the National Association of Clean Water Agencies (NACWA) 70
Budell, Richard J., Director, Office of Agricultural Water Policy, Florida Department of Agriculture and Consumer Services 70
Card, Bethany, Director of Water Quality Programs, New England Interstate Water Pollution Control Commission (NEIWPCC) 70
Elmaraghy, George, P.E., Chief, Division of Surface Water, Ohio Environmental Protection Agency 70
Opper, Richard H., Director, Montana Department of Environmental Quality, representing the Environmental Council of the States (ECOS) 70
Stoner, Nancy K., Acting Assistant Administrator, Office of Water, United States Environmental Protection Agency 70
Sullins, Coleen, Director, Division of Water Quality, North Carolina Department of Environment and Natural Resources, representing the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) 70

PREPARED STATEMENTS SUBMITTED BY MEMBERS OF CONGRESS

Mica, Hon. John L., of Florida 98

PREPARED STATEMENTS SUBMITTED BY WITNESSES

Biggs, Barbara 99
Budell, Richard J. 121
Card, Bethany 124
Elmaraghy, George, P.E. 130
Opper, Richard H. 137
Stoner, Nancy K. 141
Sullins, Coleen 170

SUBMISSIONS FOR THE RECORD

Bishop, Hon. Timothy H., a Representative in Congress from the State of New York, request to submit statements of additional testimony from the following organizations into the record:
- Surfrider Foundation 7
- Nine member organizations of the Mississippi River Cooperative 9
- Sierra Club 14
- Earthjustice 18
- East Coast Shellfish Growers Association 35
- Pacific Coast Shellfish Growers Association 38
- Puget Sound Restoration Fund 42
- Mr. Ben Williams, Owner, Fisherman's Dock Seafood Market in Florida 44
- Chesapeake Bay Foundation 46
- Des Moines Water Works 49
- Sixty-eight member organizations of America's Great Waters Coalition 55

Gibbs, Hon. Bob, a Representative in Congress from the State of Ohio, request to submit the following into the record:
- Statement of William Dever, President, Florida Gulf Coast Building and Construction Trades Council 60

Page

Gibbs, Hon. Bob, a Representative in Congress from the State of Ohio, request to submit the following into the record—Continued

Letter regarding numeric nutrient criteria to the Honorable Lisa Jackson, Administrator, U.S. Environmental Protection Agency, from 50 national and multistate organizations, and municipal, corporate, and regional entities, June 23, 2011 65

Stoner, Nancy K., Acting Assistant Administrator, Office of Water, United States Environmental Protection Agency, request to submit into the record the report entitled, "An Urgent Call to Action—Report of the State-EPA Nutrient Innovations Task Group," August 2009 72

United States Environmental Protection Agency, responses to questions from the Subcommittee on Water Resources and Environment 149

U.S. House of Representatives
Committee on Transportation and Infrastructure

John L. Mica
Chairman

Washington, DC 20515

Nick J. Rahall, II
Ranking Member

June 21, 2011

James W. Coon II, Chief of Staff

James H. Zoia, Democrat Chief of Staff

MEMORANDUM

TO: Members of the Subcommittee on Water Resources and Environment

FR: Bob Gibbs
Subcommittee Chairman

RE: Hearing on "Running Roughshod Over States and Stakeholders: EPA's Nutrients Policies"

PURPOSE OF HEARING

The Water Resources and Environment Subcommittee is scheduled to meet on Friday, June 24, 2011, at 10:00 a.m., in Room 2167 of the Rayburn House Office Building, to receive testimony from State Water Quality regulators, a State Department of Agriculture and Consumer Services, and a municipal wastewater reclamation utility on the U.S. Environmental Protection Agency's ("EPA") nutrients policies and quest for States to adopt numerical nutrient water quality standards under the Federal Water Pollution Control Act (commonly referred to as the "Clean Water Act").

BACKGROUND

Nutrients.

Nutrients, especially nitrogen and phosphorus, are essential for life, and important for natural plant and animal growth. In excessive concentrations, however, nutrients can adversely affect aquatic life or human health. For example, excessive nitrate in waterbodies used for drinking water can affect infants. Elevated nutrient concentrations in streams can result in excessive, often unsightly, growth of algae and other nuisance aquatic plants (eutrophication). These plants can clog water intake pipes and filters and can interfere with recreational activities, such as fishing, swimming, and boating. High nutrient concentrations also can cause growth of harmful algae, which can be potentially toxic to fish and other organisms, including humans.

Subsequent decay of algae can result in foul odors, bad taste, and low dissolved oxygen in water (hypoxia), which can harm fish and shellfish that are economically and ecologically important.

Nutrients occur naturally in the environment, including from wildlife and nitrogen-fixing plants. However, concentrations above naturally occurring levels could result from some human activities. Human-related sources of nutrients to waterbodies could include sewage treatment plants, industrial facilities, livestock and pet wastes, septic systems, and use of fertilizers.

Water Quality Standards Under the Clean Water Act.

Section 303 of the Clean Water Act ("CWA") calls on States to establish water quality standards for the waterbodies in their States. Water quality standards are to serve as a mechanism to establish goals for the quality of the nation's waters and as a regulatory basis when standardized technology controls for point source discharges are determined to be inadequate to meet the water quality standards for a waterbody and water quality-based controls are to be developed. States are to periodically (at least once each three years) review their water quality standards and, as appropriate, modify and adopt new standards.

Water quality standards define the goals for a waterbody by designating its uses, setting water quality criteria to protect those uses, and establishing general policy provisions to protect water quality. Water quality criteria may be expressed as "narrative" statements of water quality objectives, or "numerical" criteria representing acceptable concentrations of a pollutant that will not result in unacceptable water quality levels for the designated use(s) of the waterbody.

When a State adopts a new or revised water quality standard, the State is to submit such standards to EPA for review and approval/disapproval. EPA is to review and approve/disapprove the standards based on whether the standards meet the requirements of the CWA. As a result of the EPA review process, EPA may approve, disapprove, or conditionally approve in whole or in part the submitted State water quality standards. If a State does not revise disapproved or conditionally approved standards in a timely fashion that satisfies EPA, then EPA may initiate proceedings to promulgate Federal standards in place of the State standards in question. Federally-promulgated standards supersede those State standards.

Water Quality Standards for Nutrients.

Narrative Standards.

Every State has narrative standards that protect the State's waters from excessive nutrients. The narrative standards may protect waters generally from objectionable conditions or ecological problems, including those caused by excessive nutrients, or may directly require that eutrophication or stimulation of excessive algal or plant growth be prevented.

Many of these narrative standards take the form of a narrative statement along the lines of, for example: "All waters shall be free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae" (Ohio); or "Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that

would cause or contribute to impairment of existing or designated uses and shall not exceed the site-specific criteria developed in a TMDL [total maximum daily load, or amount of pollution that is acceptable] or as otherwise established by the Department" (Massachusetts).

Numerical Standards.

In addition, many States have adopted some specific numerical standards for one or more nutrient parameters (e.g., total nitrogen, total phosphorus, water clarity, chlorophyll *a*) aimed at addressing particular named waterbodies, waterbody types, or designated uses, where the States deemed having numerical standards was necessary to protect those waters in question. However, most States rely primarily on applying their narrative standards to protect their waters from excessive nutrients.

STRATEGIES FOR ADDRESSING NUTRIENT POLLUTION ISSUES

Nutrients Present Unique Challenges.

Nutrient pollution presents unique challenges that are difficult to remedy through the CWA's traditional water quality based management approach of setting numerical water quality standards. This traditional approach, designed to control typical pollutants, especially those which are toxic at determinable levels in the environment, is not universally appropriate for substances like nutrients that are both widely variable, naturally occurring, ubiquitous, and a natural and necessary component of healthy ecosystems.

One reason for this is that the relationship between nutrient concentrations in water and adverse impacts on aquatic life is neither direct nor consistent from waterbody to waterbody. Water quality standards for most traditional pollutants are based on a toxicity threshold, where higher concentrations of a pollutant can be demonstrated to be harmful, and acceptable concentrations can be established at a specific level below which adverse responses are not observed.

In contrast, nutrients do not have a well-defined concentration-response relationship. This is because nutrients, themselves, are not generally toxic, but overenrichment of nutrients in water can affect an aquatic system, such as by depleting oxygen levels, and thus can cause detrimental impacts on organisms. Nutrients are not only present naturally in aquatic systems, they are absolutely necessary for the proper functioning of biological communities, and are sometimes moderated in their expression by many natural factors.

The extent to which nutrients' adverse effects (e.g., excess algae growth, dissolved oxygen depletion, pH increases) occur within a waterbody depends on a wide range of other critical factors such as sunlight, optimal substrate, flow, temperature, and background water chemistry, factors which are all very site-specific. Therefore, States have found that nutrient levels that may cause impairments in one stream under one set of conditions will not have the same negative impact in a different stream.

Appropriate water quality standards for nutrients need to take these sorts of factors into account when applying the standards under the CWA's total maximum daily load ("TMDL") and National Pollutant Discharge Elimination System ("NPDES") permitting provisions, or else excessively stringent regulatory requirements could end up being imposed on the regulated community and creating unnecessary economic impacts. EPA often has not taken these sorts of factors into account.

In addition, the endpoint of defining what is a "healthy" waterbody is highly variable and site-specific. Since nutrient impacts are dependent on a number of factors, there is a range of what conditions constitute a "healthy" aquatic ecosystem. Depending on a waterbody's characteristics, one waterbody may have higher natural biological productivity and therefore be able to support higher nutrient levels without deleterious impacts as compared to another waterbody with lower natural productivity. Therefore, expending resources to achieve a lower level of nutrients in a waterbody that functions at a higher natural level of biological productivity and supports higher nutrient levels would be inefficient and provide little to no added water quality benefit.

A scientifically robust assessment of causality needs to be made to identify waters that may be undesirably affected by excessive levels of nutrients or to determine that nutrients are the primary cause of aquatic impairment. Many State programs are doing this on a watershed-specific basis.

Because an aquatic ecosystem can be healthy under a wide variety of nutrient levels, nutrients require different management approaches than toxic pollutants which, as noted earlier, generally have clear and consistent thresholds over a broad range of aquatic systems and conditions. As a result, many States generally prefer narrative nutrient standards because such standards give them flexibility in dealing, on a site-specific basis, with a variety of nutrient-related water quality issues as they arise.

Unless numerical nutrient standards have been set based on waterbody-specific water quality and biological data that evidence a definitive cause-and-effect relationship between nutrient levels and a resulting deleterious response in that waterbody, that standard will have no definable relationship between nutrient levels and biological health in the waterbody in question, and will be meaningless as to whether any water quality benefits will be achieved.

EPA's Quest for Numerical Nutrient Standards.

One-Size-Fits-All.

Despite the unique nature of nutrients and the challenges numerical nutrient standards pose in managing water quality, EPA seeks to have set, one-size-fits-all numerical nutrient water quality standards drive water quality assessments and watershed protection management in the States, even if no waterbody-specific cause-and-effect data is available on which to base those standards.

EPA appears to take the view that "the lower the standard, the better." In the absence of waterbody-specific cause-and-effect data, EPA is pressing States to adopt numerical standards that are based on historical, empirical ambient nutrient water quality data collected from other waterbodies around the nation that may not have sufficiently comparable characteristics. To account for the uncertainty in using other waterbodies' historical data from elsewhere, EPA is pressing States to take a very precautionary approach and adopt, as their own standard, some of the most stringent empirical data values from those other waterbodies. These values generally represent conditions in the most "pristine" of those other waters that may not reflect conditions in the waterbody in question.

This approach will result, in many instances, in standards being set at levels far below where actual water quality impacts may occur, and may result in numerous waters being labeled as "impaired," even though they are not in actuality. This approach also may result in standards being set at levels that are so stringent that they are not attainable. This, in turn, will trigger TMDL development and unnecessarily stringent water quality based NPDES permit limits being written, thereby resulting in unnecessary regulatory burdens and costs on States, municipalities, wastewater utilities, industry, farmers, and others in the regulated community.

Standards that are tailored to, and therefore reflective of, the characteristics of a particular waterbody would not raise these sorts of concerns.

EPA's National Nutrients Strategy and National Database.

EPA has developed a national nutrients strategy and guidance on developing numerical nutrient criteria for incorporation into States' water quality standards. Associated with the strategy and guidance, EPA has assembled a "National Nutrients Database" which stores and analyzes historical nutrient water quality data from waterbodies around the nation, and has developed recommended national nutrient criteria numbers (based on that historical data) for the States to use. (*See, e.g.,* http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/; http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/databasefacts.cfm.)

In developing this database, EPA intended for the States to use the recommended, statistically-derived criteria and set State standards by adopting EPA's numbers in the absence of other State-specific information or approaches for establishing their own criteria using other scientifically defensible methods. Unlike most other water quality criteria that EPA has developed for other pollutants, these nutrients criteria did not follow EPA's own normal criteria development protocols. It appears that EPA is trying to change the acceptable level of data for criteria derivation to allow criteria to be developed using "best available" information, regardless of the scientific sufficiency of that information. EPA's National Guidelines do not allow this approach. (*See Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (EPA, 1985).)

As early as 1998, during the Clinton Administration, EPA began pressing States to adopt numerical nutrient standards, and threatened to begin promulgating Federal numerical standards for nutrients. (*See Clean Water Action Plan: Restoring and Protecting America's Waters* (EPA, 1998); *National Strategy for the Development of Regional Nutrient Criteria* (EPA, 1998).)

EPA still continues to press States to set schedules for numerical nutrients criteria development, and even in the absence of site-specific data, to set numerical standards based on "best available information," including from EPA's National Nutrients Database. (*See Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions* (EPA, March 16, 2011).)

EPA points to regulatory and enforcement expediency as a prime reason for why the Agency seeks to have States adopt numerical standards. For example, EPA has stated that "Numeric nutrient standards will facilitate more effective and efficient program implementation," including "easier and faster development of TMDLs," and "easier to write protective NPDES permits." (*See Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions* (EPA, March 16, 2011); http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/memo2007.cfm (section on "Why Numeric Criteria are Important?").) EPA does not seem to be concerned that TMDLs and NPDES permits based on scientifically insufficient water quality standards will themselves be insufficient.

States understand the appeal of a simple numerical water quality standard for nitrogen and phosphorus in implementation. However, States are concerned that this approach does not acknowledge the need for a more flexible system, which allows nutrient standards to be tailored in order to work effectively in the wide number of applications (e.g., NPDES permit limits and TMDLs for impaired waters) and waterbody types in which they are used by permitting authorities. States are concerned that a single, one-size-fits-all number is not often an accurate indicator of adverse ecological or water quality effects.

EPA's Science Advisory Board Has Concerns.

EPA's Science Advisory Board ("SAB") has recognized shortcomings in EPA's approaches for deriving numerical nutrients criteria for use in water quality standards, including EPA's advocated approach of deriving criteria from empirical data from other waterbodies. The SAB expressed concerns that, among other things, large uncertainties in EPA's data and the fact that the approach of using empirical data do not prove cause and effect can be problematic if this approach is used in isolation as a stand-alone method to develop water quality criteria. (*See SAB Review of Empirical Approaches for Nutrient Criteria Derivation*, EPA Science Advisory Board, Ecological Processes and Effects Committee (FY 2009), Augmented for Review of Nutrient Criteria Guidance (April 27, 2010).) The SAB also observed that statistical associations may not be biologically relevant and do not prove cause and effect, and that without a mechanistic understanding and a clear causative link between nutrient levels and impairment, there is no assurance that managing for particular nutrient levels will lead to the desired water quality outcome.

The SAB found that improvements in the guidance were needed to enable development of technically defensible criteria and to make the document more useful to States. The SAB recommended that EPA address: how to establish cause and effect relationships; the utility and limitations of using statistical methods; the supporting analyses and data needed to correctly

identify predictive relationships; the need for more guidance and examples to describe when and how to use various methods and approaches; and the linkages between attaining waterbodies' designated uses and nutrient levels. The SAB also recommended that EPA use a tiered approach that recognizes the uncertainties in data, and provides a means for establishing causal relationships between nutrients and their effects to help confirm whether and what level a waterbody is impaired. EPA has not taken any concrete steps to address the SAB's concerns.

Recognizing the above challenges, and an unwillingness on the part of EPA to give the States sufficient flexibility in setting and applying their standards, many States have taken to a site-specific approach to assess and manage nutrient pollution. However, this approach is highly resource intensive, and is further confounded by State budget constraints. The disconnect between the States, EPA, and other stakeholders is complicating the development and implementation of effective and flexible nutrient management policies.

Florida: A Case Study.

Florida currently uses a narrative nutrient standard to guide the management and protection of its waters. The standard states, among other things, that "in no case shall nutrient concentrations of body of water be altered so as to cause an imbalance in natural populations of flora or fauna." (*See* Rule 62-302.530, FAC.) The State has relied on this narrative for many years "because nutrients are unlike any other 'pollutant' regulated by the [CWA]." (*See* http://www.dep.state.fl.us/water/wqssp/nutrients/.)

Nevertheless, in response to EPA's quest for States to develop numerical water quality standards for nutrients, the State of Florida initiated an effort in 2001 to develop numerical nutrient standards for Florida waters. The State did not want to use EPA's recommended national criteria, as the State concluded that EPA's nutrient criteria were scientifically indefensible. Rather, the State initiated its own scientific research effort to develop numerical nutrient standards that are reflective of Florida waters. EPA approved of Florida's numerical nutrient criteria development plan in 2004, and its revised plan in 2007. The revised plan included a timeline with an anticipated completion date in 2011.

In the meantime, in 2008, environmental activist groups filed a CWA citizen lawsuit against EPA, alleging that it had a mandatory duty to adopt numerical nutrient standards in Florida, even though work was well underway by the State to collect and analyze scientific data to identify a cause-and-effect or concentration-response relationship between nutrient concentrations and biological response variables. EPA initially defended the lawsuit, but later abandoned its defense, and issued a "Necessity Determination" (in January 2009) under the CWA declaring that numerical nutrient criteria were necessary for Florida waters, and settled the lawsuit.

As a result, EPA proposed Federal numerical nutrient water quality standards for lakes, rivers, and streams in Florida in January 2010, and promulgated final Federal standards in November 2010. These standards are scheduled to become effective in Florida in March 2012. These Federally-promulgated standards, which establish benchmark nutrient values that all covered waters need to meet, are not linked to a cause-and-effect relationship indicating

impairment. Florida is concerned that the EPA-set standards were set at levels more stringent than necessary to protect the State's waters. EPA also is committed to propose numerical nutrient water quality standards for Florida's estuarine, coastal, and southern inland flowing waters by November 2011, and establish final standards by August 2012.

Despite EPA's Federal promulgation of nutrient standards in Florida, the State is continuing its work to develop its own, scientifically defensible numerical nutrient standards for the State.

Since promulgation of the Federal nutrient standards in Florida, numerous lawsuits have been filed, appealing those standards. Among other things, the State and stakeholders are concerned that the EPA-set standards, which are not based on thresholds of impairment, were set at levels more stringent than necessary to protect most State waters, and will result in costs and economic impacts for the State and stakeholders to comply with the Federal standards that will be substantially more than is needed to protect water quality. The lawsuits are pending.

In addition, on April 22, 2011, the Florida Department of Environmental Protection ("DEP") filed a petition with EPA, requesting that EPA withdraw its January 2009 "Necessity Determination" that numerical nutrient standards are necessary in Florida waters, rescind its Federally-promulgated rules, and restore to Florida the State's responsibility for the control of excess nutrients, including the pursuit of nutrient standards.

The petition stated that Florida has one of the strongest nutrient reduction programs in the nation when measured against eight "elements," outlined in a March 2011 EPA Memorandum, which EPA believes are necessary for a State program to effectively manage nutrient pollution.[1] (*See Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions* (EPA, March 16, 2011) regarding the eight elements.) The State pointed out, in its petition, how EPA has acknowledged that Florida is one of the few States that have in place a comprehensive program to address excess nutrients pollution in its waters.

The petition outlined plans and a rulemaking schedule by which the Florida DEP would complete development of and adopt numerical nutrient standards. The petition also documented how Florida has comprehensively addressed EPA's eight elements, and contended that EPA

---

[1] The following are EPA's eight nutrient management program elements:

1. Prioritize Watersheds for Nitrogen and Phosphorus Loading Reductions.
2. Set Watershed Load Reduction Goals Based Upon Best Available Information.
3. Ensure Effectiveness of Point Source Permits in Targeted/Priority Sub-Watersheds.
4. Agricultural Areas - Target Most Effective, Innovative Practices.
5. Management of Stormwater and Septic Systems.
6. Accountability and Verification Measures.
7. Annual Public Reporting of Implementation Activities and Biannual Reporting of Load Reductions and Environmental Impacts Associated with Each Management Activity in Targeted Watersheds.
8. Develop Work Plan and Schedule for Numerical Criteria Development.

(*See Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions* (EPA, March 16, 2011).)

would not have made its original "Necessity Determination" if it had evaluated Florida's water quality program against those eight elements. If granted, this petition would enable Florida to return to developing scientifically defensible standards for the State. Florida requested a response from EPA within 30 days, by May 22, 2011.

After a period of negotiations between the State and EPA, EPA responded by letter to Florida's petition on June 13, 2011, calling it EPA's "initial response" to the petition. EPA said it was neither granting nor denying the petition, but said the agency is prepared to withdraw its Federal nutrients standards, and to delay promulgating estuarine criteria, in Florida if the State develops and adopts its own adequate standards. EPA said it was holding its final response to the petition "in abeyance," pending the outcome of the State's development of standards. EPA made it clear in its response that the agency "continue[s] to believe that numeric criteria are necessary." (*See* Letter, released June 13, 2011, from Nancy Stoner, EPA Acting Assistant Administrator for Water, to Herschel Vinyard, Jr., Secretary, Florida Department of Environmental Protection, responding to Florida's petition.)

Where Are We Headed?

EPA has received a lot of criticism from States and stakeholders for its decision to federally promulgate numerical nutrient standards in Florida. Since then, EPA has said the agency is not working to craft new numerical nutrient standards similar to the controversial measure the agency recently adopted for Florida waters. EPA Administrator Lisa Jackson told a House Agriculture Committee panel in March 2011 that EPA is not working on any Federal numerical nutrient limits, rejecting concerns that the agency is developing numerical nutrient limits to impose on other States as it has in Florida.

While EPA says it will not be imposing new nutrients standards on States as the agency did in Florida, EPA has begun pressing States in other ways to adopt numerical standards and translate narrative nutrient criteria into numerical limits in discharge permits. For example, in a March 2011 EPA guidance memorandum, EPA pressed the States to adopt a new "framework" for managing nutrients pollution, including crafting numerical nutrients criteria based on best available information, and setting strict numerical regulatory requirements, including numerical standards and TMDL load reduction goals. (*See Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions* (EPA, March 16, 2011).)

In addition, in New England, in Illinois and other States in the Mississippi River basin, and in other States, EPA has recently pressed the States to adopt stringent numerical nutrient standards and stringent effluent limits for nutrients in NPDES permits for municipal and other dischargers of nutrients, and in some instances had hinted that, if they do not, EPA may object to States' issuances of NPDES permits.[2]

---

[2] For example, early in 2011, EPA's Region V wrote to the State of Illinois, instructing the State that EPA is requiring Illinois to ensure that State-issued NPDES permits contain numerical limits sufficiently stringent to prevent excursions from the State's narrative criteria, and to reconsider 20 existing discharge permits to ensure they include numerical limits that attain the State's narrative water quality criteria for nutrients. EPA also called on the State to provide EPA with copies of any permits it issues so EPA can ensure the permits include adequate numerical limits. EPA reminded the State of its position that States with delegated

Meanwhile, as EPA pushes States to address nutrient pollution through a variety of methods, including the adoption of numerical nutrient standards, environmental activists appear to be intensifying their efforts to press EPA to set numerical nutrient standards and to sue dischargers of nutrients in citizen suits. Not only have environmental activists sued EPA to set numerical standards for nutrients in Florida, discussed above, but activists filed at least one similar suit in Wisconsin, which was dropped when the State adopted EPA-approved numerical criteria in 2010. Additionally, several activist groups have separately petitioned EPA to set similar standards, as well a TMDL, for the Mississippi River and the Gulf of Mexico.

The activists' Mississippi River/Gulf petition was originally filed in July 2008. In April 2011, the activists sent a letter to EPA in followup to the petition, noting that EPA has not responded to the activists' 2008 petition within a reasonable amount of time, and threatened that if "EPA fails to respond to the petition by June 30, 2011, a full three years after it was filed, we will be forced to pursue legal remedies." (*See* Letter, dated April 11, 2011, from the Minnesota Center for Environmental Advocacy and eight other environmental groups, to Lisa Jackson, Administrator, EPA.)

Where Do We Need to Go?

Traditional water quality-based strategies rely on the development of numerical water quality standards, TMDLs, and related implementation plans. While this approach has proven effective for reducing non-stormwater point source loading of pollutants that have a demonstrable cause-effect relationship where a threshold can be established above which water quality impairment occurs, this approach may not be the quickest, most reliable, or most cost-effective path to nutrient reductions.

As already noted, the link between nutrient levels and adverse aquatic life impacts is complex, and even within a bioregion a range of nutrient loadings and ambient concentrations may be acceptable, or even natural. Hence, a single number or threshold criterion approach, unless derived on a site-specific basis (which is very resource intensive), can lead to endless debates about the scientific credibility of the number and can lead to erroneous regulatory decision-making.

Many States and other stakeholders believe that reliance on methods that do not account for the varying ecological effects of nutrient enrichment in waters, including misguided

---

Clean Water Act permitting authority cannot issue permits in the face of an agency objection. (*See* Letter, dated Jan. 21, 2011, from Tinka Hyde, Director, Water Division, EPA Region V, to Marcia Willhite, Chief, Bureau of Water, Illinois EPA.)

In addition, in March 2011, EPA's Acting Assistant Administrator for Water wrote to the New England Interstate Water Pollution Control Commission ("NEIWPCC"), making it clear that EPA considers State adoption of numerical criteria for both nitrogen and phosphorus "a priority." EPA also said that State adoption of numerical standards based solely on waterbody-specific causal, response-based determinations of impairment may not be enough, and States may need to adopt still more stringent numerical standards in order to receive EPA's approval. EPA disagreed with NEIWPCC'S proposed approaches for developing numerical nutrients standards that are tailored to particular waterbodies' characteristics based on response-based determinations. (*See* Letter, dated March 1, 2011, from Nancy Stoner, EPA Acting Assistant Administrator for Water, to Ronald Poltak, Executive Director, NEIWPCC, responding to NEIWPCC letter to EPA expressing concern about EPA's emphasis on state adoption of numerical nutrient criteria for both nitrogen and phosphorus and EPA's position on independent applicability versus use of site-specific cause-and-effect data when assessing for use attainment and listing waters for nutrient impairment.)

standards development efforts and one-size-fits-all technology fixes, will result in major expenditures for pollutant sources with minimal or no improvement to water quality for many waters. Rather, they believe nutrient management and control call for a variety of solutions, and a comprehensive set of tools is needed in order to give States flexibility and equip them to achieve reliable reductions from pollutant sources in the shortest reasonable timeframe. States are currently using a variety of CWA tools to achieve nutrient reductions. Beyond water quality standards and TMDLs, these tools include best management practices (BMPs), nutrient trading, controlling other water quality parameters, and many innovative approaches.

Any strategy for controlling nutrient pollution needs to be flexible, needs to recognize the presence of human economic activity, and needs to recognize the ability of States and stakeholders to manage, and afford to manage, nutrients.

With the ongoing debate surrounding the development of nutrient criteria and the frustration with current efforts felt by stakeholders, a number of recommendations are being made regarding where future nutrient control efforts should be directed. Some of these recommendations include:

- Greater emphasis must be placed on evaluating the attainability and refinement of the designated uses of States' waterbodies, if needed, before criteria are developed and controls imposed.

- Water quality assessment and monitoring programs must be sufficiently comprehensive and robust to provide the information needed to support criteria development and document the need for controls to the extent any are required.

- Numerical nutrient water quality standards must be technically and scientifically defensible, developed to reflect the full range of biological, chemical, and physical properties of the waterbody, and protect designated uses.

- Numerical nutrient water quality standards must be based on a demonstrated and quantified cause-and-effect relationship and appropriately qualified by the uncertainty in those relationships.

- Numerical nutrient water quality standards must not be used as the basis for imposing nutrient controls unless a nutrient-caused biological impact has been confirmed or a potential for impact can be demonstrated through a nutrient-specific, technically/scientifically defensible reasonable potential evaluation.

- Flexibility, both in developing water quality standards and their implementation (e.g., better use of existing CWA tools like variances and permit expressions such as longer averaging periods), is needed to account for the uncertainty due to the unique ecological interactions between nutrients and designated uses.

- An adaptive, watershed management approach must be used to ensure continued progress toward long-term water quality goals.

- Any required nutrient controls must be technically and economically achievable, ensure that required investments are sustainable, and provide measurable benefit to the community.

- Water-quality based State strategies already being implemented should not be preempted by EPA.

- Cost-effectiveness should be a key consideration in developing a national strategy for nutrient reductions within the nation's watersheds. Long term sustainability and ease of implementation also need to be recognized.

WITNESSES

Ms. Nancy Stoner
Assistant Administrator, Office of Water
United States Environmental Protection Agency

Mr. Richard Opper
Director, Montana Department of Environmental Quality
Representing the Environmental Council of the States (ECOS)

Ms. Coleen Sullins
Director, Division of Water Quality
North Carolina Department of Environment and Natural Resources
Representing the Association of State and Interstate Water Pollution Control Administrators (ASWIPCA)

Ms. Bethany Card
Director of Water Quality Programs
New England Interstate Water Pollution Control Commission (NEIWPCC)

Mr. George Elmaraghy
Chief, Division of Surface Water
Ohio Environmental Protection Agency

Mr. Richard Budell
Director, Office of Agricultural Water Policy
Florida Department of Agriculture and Consumer Services

Ms. Barbara Biggs
Government Affairs Officer
Denver Metro Wastewater Reclamation District
Representing the National Association of Clean Water Agencies (NACWA)

RUNNING ROUGHSHOD OVER STATES AND STAKEHOLDERS: EPA'S NUTRIENTS POLICIES

FRIDAY, JUNE 24, 2011

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES
AND ENVIRONMENT,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:38 a.m., in room 2167, Rayburn House Office Building, Hon. Bob Gibbs (Chairman of the subcommittee) presiding.

Mr. GIBBS. We will start the hearing for the Water Resources and Environment Committee of T&I today, a hearing regarding nutrient management and nutrient policies of the EPA.

I would like to welcome everyone to the hearing today. We are meeting to examine the Environmental Protection Agency's policies for controlling nutrient pollution in water bodies. The focus of this hearing is not about whether nutrients may be a problem in some water bodies around the Nation. It is well documented that nutrients can change conditions in some waters. Rather, the focus of this hearing is on the process, specifically how the Federal EPA is addressing the issue of nutrients in consultation with the States under the Clean Water Act. I really want to emphasize this is really about the process and the collaboration between the Federal Government and State governments.

Congress wrote the Clean Water Act almost 40 years ago with the vision that the Federal Government and the States would be equal partners in solving the Nation's water pollution problems, and for many years the Federal and State partnership has worked well in addressing issues under the Clean Water Act. However, most recently we have seen a substantial change in the approach by EPA. This heavy handed approach is now jeopardizing the balance between the Federal and State partnership that had long existed under the Clean Water Act.

EPA is now insisting on imposing its Federal will on States with a Federal, top down, one-size-fits-all approach to water quality regulation that is taking away the flexibility that States need to address their water quality issues. EPA's continued insistence on pursuing its own radical agenda is once again evident as it bullies States to adopt extreme and arbitrary nutrient policies. A one-size-fits-all approach is not workable or reasonable for different waters in an individual State, much less 50 States with their own unique biology, environmental characteristics.

Washington, DC, cannot and should not decide what is best for the States. The Clean Water Act calls on States to establish water quality standards for their water bodies. The standards that States adopt are subject to approval or the disapproval of the EPA, giving the Agency the final word in their adequacy.

States traditionally have adopted narrative standards that would give them flexibility in protecting is State waters from excessive nutrients. However, EPA has begun pressing States to adopt a one-size-fits-all numerical nutrient water quality standards for their waters, which will take away the flexibility that States need to address the various water quality issues.

The EPA's nutrient policies will subject waters all across the Nation to rigid, scientifically questionable standards that are set at levels more stringent than necessary to protect most State waters and will result in cost and economic impacts for the States and the regulating community to comply with the standards that are substantially more than are needed to protect the water quality.

The subcommittee today will hear about the efforts many States have undertaken to address excessive nutrients in their waters, review how the EPA recently second-guessed the State of Florida's work to develop numerical nutrient standards for the State's waters when the EPA promulgated Federal nutrient standards in Florida, and examine the impacts that the EPA's policies are having in Florida and the other States.

In a departure from typical subcommittee hearings today's witness panel all come from the public sector. These public sector entities are at times the regulator and at other times are the regulated. Most are speaking not just for their own State or local public utility but for national associations and for all who hold similar positions in other States and localities.

It is not big oil, it is not big coal or even big enviro or any other big business. Many of our witnesses today work directly for Governors, both Democrat and Republican, who are elected by the people of their State to look after their welfare and the State's resources, including the quality of their State's waters.

I think it is important to note that those who are tasked most directly with protecting the waters of the United States are represented here today, and they are saying that in some respects their ability to do their job is being threatened by the policies of the Federal EPA.

We need to restore the partnership of the States and the EPA. That is why I am pleased to join Chairman Mica and Ranking Member Rahall and other Members from both parties in introducing H.R. 2018, the Clean Water Cooperative federalism Act of 2011. This bill preserves the role and the rights of States as they make important decisions of land and water use within their jurisdictions.

I was surprised that the so-called legal analysis that the EPA provided on H.R. 2018, first that it read more like an advocacy piece than a legal analysis, and second how it illustrated what little regard the EPA has for the Army Corps of Engineers. Clearly the EPA doesn't care any more for its sister agencies than it does for the States. This is just another example of dysfunctional administration and an EPA that is out of control.

I especially would like to welcome George Elmaraghy, who is the Chief of the Ohio Environmental Protection Agency's Division of Surface Water. He is a professional engineer and has more than 30 years' experience in water quality development and implementation. We welcome you to today's hearing, and I welcome you first because I am from Ohio and you are from Ohio, so great to have another Buckeye here.

Now I yield to Ranking Member, Mr. Bishop, for any remarks you may have.

Mr. BISHOP. Thank you, Mr. Chairman, and thank you very much for holding this very important hearing today, shining a spotlight on the significant impacts cause by nutrient pollution in the United States. High nitrogen and phosphorus loading, otherwise known as nutrient pollution, is a widespread problem with severe economic and public health repercussions. Virtually every State and territory in the United States is impacted by a nutrient-related degradation of their waterways. These impacts include harmful algal blooms, reduced spawning grounds and nursery habitats for many of our important fisheries, frequent fish kills, dead or hypoxic zones that are starved of oxygen and devoid of marine life, and public health concerns related to nutrient contaminated drinking water sources and increased exposure to toxic microbes.

In fact in many areas of the country States are forced to issue warnings to prevent any contact with nutrient polluted waters. In the St. John's River in Florida, for example, nutrient pollution results in swaths of green slime that fill back channels and blanket miles of shoreline, devastating aquatic life. Fishermen on the river report that the seafood they can catch is often shunned by customers concerned about safety. At the same time homeowners and recreational boaters have no interest in swimming or boating in this green slime, nor should they.

Or as our witness from the Ohio EPA can no doubt talk about today, the largest inland lake in the State, Grand Lake St. Mary's, is a popular State park for fishers and boaters. Nutrient pollution has become so severe there that last July his Agency issued a warning against all contact with the lake by people, pets and even boats. In addition, the Agency recommended that no fish from the lake be consumed. These warnings were reissued in May of this year.

Even more well-known is the Gulf of Mexico dead zone which affects a stretch of ocean from the mouth of the Mississippi to Texas and is also caused by excessive nutrients. Earlier this month the United States Geological Survey estimated that the dead zone in the Gulf from nutrient pollution would measure between 85 and 9,400 square miles, the largest to date.

To someone from New York such as me, these are all too familiar stories. The most serious water quality problem in the Long Island Sound is hypoxia, resulting from excessive nitrogen runoff. In 2007 hypoxia in the Sound lasted for 58 days and at its peak effected 162 square miles. While the size of the hypoxic zones fluctuate from year to year, its duration appears to be getting longer, not shorter, with significant impacts to fisheries, fishermen, and our water quality.

The problems of nutrient pollution are not unique to these regions. As I mentioned, all but two States have waters that are impacted by nutrient degradation and more than 15,000 such waters had been identified nationwide.

In short, Mr. Chairman, the scope and severity of nutrient pollution cannot be over emphasized. For all of these reasons in May of 2007 Benjamin Grumbles, then the EPA Assistant Administrator for Water in the Bush administration, issued a memo regarding nutrient pollution and numeric water quality standards while recognizing that many States and territories had made significant progress in establishing numeric nutrient standards. He also called upon the States and territories to take bold steps to, "Accelerate their efforts and give priority to adopting numeric and nutrient standards."

Since then the EPA has collaborated with the States on a nutrient task force to evaluate the science, sources and economic impacts of nutrient pollution and develop recommendations for controlling the impacts on our economy and on our water sources.

In March of this year EPA issued a memo regarding additional efforts planned to work in partnership with the States—let me say that again—in partnership with the States to address these problems. In addition, Administrator Jackson stated quite definitively that contrary to the claims that had been made by some that the EPA is not working—again I will repeat—not working on Federal numeric nutrient limits that it plans to impose as a mandate on the States.

I support these collaborative efforts and appreciate the Administrator's comments. I believe it is critical that the EPA and the States continue to move forward together in their efforts to address the growing public health risks and economic impacts of nutrient pollution. In my view, this is not about either the EPA on the States being good actors or bad actors, but about finding the right balance between the science, the implementation of effective and reliable nutrient controls, and ensuring the highest level of protecting human health and the environment. That is the charge this Congress gave the Agency and the States almost 40 years ago and one that the American public continues to support today.

I also believe we in the Congress have a role to play. For that reason I and many of my colleagues from the region recently reintroduced H.R. 2110, the Long Island Sound Improvement Act Amendments of 2011. That bill is intended to improve the water quality of Long Island Sound with a particular focus on reducing nutrient pollution using a wide range of innovative tools and approaches.

So again, Mr. Chairman, thank you for highlighting the very serious and growing problems of nutrient pollution in U.S. waters. I look forward to hearing from our witnesses on their plans to address this problem and how we can all collaboratively support these efforts.

Before I yield back, I ask unanimous consent to enter into the record statements of additional testimony from the following organizations: The Surfrider Foundation; the nine member organizations that joined with the Mississippi River Cooperative; the Sierra Club; Earthjustice; East Coast Shellfish Growers Association; the

Pacific Coast Shellfish Growers Association; the Puget Sound Restoration Fund; the testimony of Mr. Ben Williams, Fisherman's Dock Seafood Market in Florida; the Chesapeake Bay Foundation; the Des Moines Water Works; and the 68 member organizations that joined with the America's Great Waters Coalition.

Mr. GIBBS. So ordered.

[The information follows:]

STATEMENT OF THE HONORABLE TIMOTHY H. BISHOP, RANKING MEMBER SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT

UNANIMOUS CONSENT REQUEST FOR SUBMISSION OF ADDITIONAL TESTIMONY TO THE RECORD

Mr. Chairman, I ask unanimous consent that the statements of the following individuals and organizations be made part of today's hearing record:

- The Surfrider Foundation;
- The 9 Member Organizations that joined with the Mississippi River Collaborative;
- The Sierra Club;
- Earthjustice;
- The East Coast Shellfish Growers Association;
- The Pacific Coast Shellfish Growers Association;
- The Puget Sound Restoration Fund;
- The Testimony of Mr. Ben Williams, Fisherman's Dock Seafood Market, Florida;
- The Chesapeake Bay Foundation;
- The Des Moines Water Works; and
- The 68 Member Organizations that joined with the America's Great Waters Coalition.

June 16, 2011

Subcommittee on Water Resources and Environment
Committee on Transportation and Infrastructure
B-375 Rayburn House Office Building
Washington, DC 20515

RE: Supports for numeric nutrient criteria for Florida's waters

Dear Chairman Gibbs, Ranking Member Bishop and members of the Sub-committee:

The Surfrider Foundation, a non-profit grassroots organization dedicated to the protection and preservation of our world's oceans, waves and beaches, requests your *support* for the numeric limits on "nutrients" in Florida waters set by the Environmental Protection Agency and your *opposition* to the efforts to derail this long-overdue EPA action. The targeted pollutants are the nitrogen and phosphorus found in fertilizer, sewage and animal manure that trigger algae outbreaks in Florida's lakes, rivers and bays.

The Surfrider Foundation has over 50,000 members nationwide, with over 3000 members organized into 11 separate chapters in the State of Florida. As you can imagine our constituents are true watermen and women of Florida. Clean water is necessary for recreation (fishing, swimming, boating, diving, etc) and recreation-based businesses. Exposure to toxic algae can cause staph infections, rashes, skin and eye irritations, allergic reactions and gastrointestinal upset. Swimming can cause serious illness or even death if water is ingested. Some algae are known tumor promoters, producing "neurotoxins" which interfere with nerve cell function and "hepatoxins" which attack the liver.

The Treasure Coast and Suncoast Chapters specifically hope you have not forgotten the horrifying events of 2005 in the St. Lucie Estuary when the entire estuary was filled with foul-smelling toxic green algae and on the Gulf Coast where Red Tide chased residents and tourists away from our beaches. These events caused environmental carnage and severe economic losses. The same problem is appearing more frequently elsewhere in the state, with large

Global Headquarters P.O. Box [illegible] San Clemente, California [illegible]
tel [illegible] fax [illegible] email info@surfrider.org www.surfrider.org

sections of the St. Johns River and Tampa Bay as examples of such outbreaks in 2009.

Many other states have already established numeric standards. Florida had gathered a great deal of information and had made some tentative proposals but enthusiastically welcomed the EPA initiative. While EPA used a significantly different scientific method to establish the limits, EPA's limits are very similar to those under consideration by the Florida Department of Environmental Protection. That fact that different approaches produce similar conclusions confirms the validity of EPA's approach.

Florida desperately needs limits on pollution that triggers algae outbreaks. The outbreaks are becoming more frequent and more serious. Apart from causing fish kills and making lakes and rivers too dangerous to use for recreation, the green slime outbreaks are damaging our economy, depressing property values and threatening our drinking water supplies. And as in most water pollution disputes, the polluters assert impossibly huge costs for compliance.

What is "too costly" when it comes to our children's and our retirees' health? What is "too costly" when it is our coastal tourism economy that is at risk? The economic arguments being used by special interests to raise political opposition to EPA's nutrient standards should not play a role in setting water quality standards. There are already numerous ways under the law to take economic factors into account in permitting and designing the program for meeting attainable standards. Any impacts along our coasts would be detrimental to a multitude of industries. Florida's tourism numbers show that in 2008, visitors spent $65.2 billion, and Florida collected $3.9 billion, in total tourism sales tax revenues.

The Surfrider Foundation supports the implementation of the new numeric nutrient criteria to improve and protect Florida's waters and asks the Sub-committee to do the same. Thank you for considering the perspective of our members who swim, surf, and recreate in Florida's inland and coastal waters.

Sincerely,

Chad Nelsen
Environmental Director, Surfrider Foundation

MISSISSIPPI RIVER COLLABORATIVE

MISSISSIPPI RIVER COLLABORATIVE

June 23, 2011

The Hon. Bob Gibbs
Chairman
Committee on Transportation
and Infrastructure
Subcommittee on Water
Resources and Environment
U.S. House of Representatives
Washington, DC 20515

The Hon. Timothy H. Bishop
Ranking Member
Committee on Transportation
and Infrastructure
Subcommittee on Water
Resources and Environment
U.S. House of Representatives
Washington, DC 20515

Re: Nitrogen and Phosphorus Pollution

Dear Representatives Gibbs and Bishop:

Thank you for allowing our organizations - members of the Mississippi River Collaborative (MRC) - to provide our perspective on the urgent issue of controlling nitrogen and phosphorus pollution.

For reasons well documented in reports by the National Research Council, including the landmark review titled, "Mississippi River Water Quality and the Clean Water Act: Progress, Challenges and Opportunities," as well as the June 30, 2008 Petition for Rulemaking of our groups to the United States Environmental Protection Agency (USEPA), and other attached documents, it is vital to protect drinking water, the economy and the aquatic environment through the prompt establishment of numeric nutrient criteria for all of the waters of the United States. As part of a broader effort to control nitrogen and phosphorus pollution that uses many legal and technological tools, USEPA must continue to urge states to develop numeric criteria and, where necessary, must step in to do so itself.

The effects of nitrogen and phosphorus pollution are dire and well-known. Nitrogen and phosphorus pollution has:

- Fueled algae blooms that filled water supplies with toxic cyano-bacteria and total organic carbon which requires costly treatment that itself can create carcinogenic by-products;
- Created serious health hazards to swimmers and illness and death of house pets that come into contact with harmful algal blooms in water polluted by nitrogen or phosphorus;
- Ruined recreational opportunities and tourist experiences in many areas of the country, undercutting important sources of jobs;
- Contributed to the formation of a huge summer "dead zone" in the Gulf of Mexico and other waters, killing aquatic life and endangering the livelihoods of fishermen and others who depend on healthy coastal waters; and
- Exacerbated conditions that harm fish and wildlife in numerous rivers, lakes and streams throughout the Mississippi Basin and across the country.

It is clear that the efforts of the states and federal agencies have not been adequate to date. Indeed, as summarized by the State-EPA Nutrient Innovations Task Group:

> [T]he spreading environmental and drinking water supply degradation associated with excess levels of nitrogen and phosphorus in our nation's waters has been studied and documented extensively. Current efforts to control nutrients have been hard-fought but collectively inadequate at both a statewide and national scale. Concern with the limitations of current nutrient control efforts is compounded by the certain knowledge that as the U.S. population increases by more than 135 million over the next 40 years, the rate and impact of nitrogen and phosphorus pollution will accelerate - potentially diminishing even further our progress to date.

State-EPA Nutrient Innovations Task Group, An Urgent Call to Action (Aug. 2009).

Despite repeated urgings by EPA under both Republican and Democratic administrations, states have failed to develop standards and criteria sufficient to protect the Mississippi River, the northern Gulf of Mexico and other valuable waters from worsening nutrient impairments. For example, in 2007, the EPA Assistant Administrator for Water under President Bush wrote:

> Today, EPA is encouraging all States, Territories and authorized Tribes to accelerate their efforts and give priority to adopting numeric nutrient standards or numeric translators for narrative standards for all waters in States and Territories that contribute nutrient loadings to our waterways.

Memorandum of Benjamin H. Grumbles, Nutrient Pollution and Numeric Water Quality Standards, (May 25, 2007).

EPA found in 1998 that numeric nutrient standards are needed for the states. Specifically, the agency stated that "States should have adopted nutrient criteria that

support State designated uses by the end of 2003." For those states that failed to adopt needed numeric criteria, the agency warned: "EPA will initiate rulemaking to promulgate nutrient criteria values that will support the designated use of the waterbody and are appropriate to the region and waterbody types." (USEPA, National Strategy for the Development of Regional Nutrient Criteria June 1998.)

The decade following 1998 proved beyond a doubt that EPA must play a lead role in addressing the problem. EPA's Scientific Advisory Board called for direct action "as soon as possible" to reduce both nitrogen and phosphorus loadings "before the system reaches a point where even larger reductions are required to reduce the area of hypoxia." USEPA, Science Advisory Board, Hypoxia in the Northern Gulf of Mexico (2008). Likewise, the National Research Council has pressed EPA to take a more proactive role, recommending that the agency:

- "develop water quality criteria for nutrients in the Mississippi River and the Northern Gulf of Mexico";
- "ensure that states develop water quality standards (designated uses and water quality criteria) and TMDLs such that they protect water quality in the Mississippi
- River and northern Gulf of Mexico from excessive nutrient pollution"; and "develop a federal TMDL..."

National Research Council, Mississippi River Water Quality and the Clean Water Act: Progress, Challenges and Opportunities (2008).

In short, EPA's actions to date have hardly amounted to "riding roughshod" over states, as the title of the subcommittee's hearing suggests. To the contrary, despite years of study, conferences and action plans, the states and EPA have, to date, failed to effectively address nitrogen and phosphorus pollution. The latest example of this pattern is a March 16, 2011 Memorandum from EPA's Acting Assistant Administrator for Water Nancy Stoner to Regional Administrators; this document acknowledges the costly consequences of nutrient pollution and the urgent need to reduce nitrogen and phosphorus loading. Yet, like previous such memos, it fails to establish concrete and enforceable requirements for developing numeric criteria and TMDLs that will maintain and restore water quality. Instead, the Memorandum offers EPA's encouragement and assistance "where states are willing to step forward." We suggest that EPA's faith in state action is misplaced. The Stoner Memorandum itself, for example, cites 1998, 2001, and 2007 studies and memos in which EPA concluded that numeric water quality criteria are necessary to ensure water quality in the Mississippi and northern Gulf waters. Yet, in 2011 not a single state bordering the Mississippi River is calculating permit limits for nutrients based on numeric criteria designed to protect against downstream impacts in the Mississippi River and the Gulf. Few of the states are even calculating nitrogen or phosphorus limits needed to protect the immediate receiving water body of the discharge.

Development of numeric criteria is essential. Total maximum daily load calculations (TMDLs), when fully implemented, can be very useful but TMDLs require a target which will almost always be a numeric water quality standard. NPDES permits must control all pollutants that regulated sources discharge, but writing NPDES permits

can be difficult without some sort of numeric target. As history has abundantly shown, this simply cannot effectively be done on case-by-case basis in many cases.

Even control of nitrogen and phosphorus pollution from agriculture is greatly advanced through establishment of numeric nitrogen and phosphorus standards. While pollution from agriculture is largely outside of federal regulatory control (33 USC 1362(14)), state and voluntary programs to control nitrogen and phosphorus pollution from agriculture would greatly benefit from having a numeric target.

Finally, nitrogen and phosphorus control can be accomplished at reasonable cost, despite some estimates. The idea that reverse osmosis or other costly processes will be required of municipalities is absurd – for instance, EPA concluded that it "does not believe that this type of treatment technology for [wastewater treatment plants] in Florida has been demonstrated as practical or necessary." 75 Fed. Reg. 75,762 75,795 (Dec. 6, 2010). Moreover, the law is clear that criteria may be changed for water bodies where it can be shown that applying existing requirements would result in substantial and widespread economic impact. 40 CFR § 131.10(g). Moreover, there are numerous other vehicles under the existing regulations to avoid imposing unreasonable costs. Beyond the inherent flexibility in the law, we urge you to bear in mind the huge cost imposed on the nations' waters and economy by nitrogen and phosphorus pollution.

Last month, the following story appeared regarding what has been a treasured recreational lake in Ohio near which many people live:

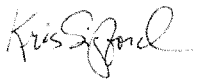
> Last updated: May 19, 2011 4:49 p.m.
>
> **Grand Lake St. Marys warning: Don't swim, wade or touch algae**
>
> Associated Press
> ST. MARYS, Ohio – Water warnings are going up again at Ohio's largest inland lake after another algae outbreak.
>
> The state is telling visitors at Grand Lake St. Marys not to swim or wade in the lake because of the algae. It's the same kind that can produce toxins that shut down the lake last summer.
>
> They're also warning against touching any of the algae on the water.
>
> Officials say the algae bloom is visible across the western Ohio lake.
>
> The state is planning to treat the water this summer in hopes of improving quality.
>
> Marinas, campgrounds and other places that count on tourists lost much of their business last year after the state warned against swimming, boating and fishing.

Finally, just last week scientists released a prediction of the size of this year's Gulf of Mexico Dead Zone, stating that it may be 9,421 square miles, or "about the size

of the combined land area of New Jersey and Delaware, or the size of Lake Erie...if the [Dead Zone] becomes this large, then it will be the largest since systematic mapping of the [Dead Zone] began in 1985." Also according to the forecast, the Dead Zone "continues to threaten living resources including humans that depend on fish, shrimp and crabs. Excess nutrients, particularly nitrogen and phosphorus, cause huge algae blooms whose decomposition leads to oxygen distress and even organism death in the Gulf's richest waters."

We pray that Congress not take any action that will make such reports still more prevalent. Instead, the Committee should urge EPA to redouble its work to control nitrogen and phosphorus pollution generally and to develop numeric nitrogen and phosphorus standards for states and tribes that fail to do so.

Sincerely,



Kris Sigford
Minnesota Center for
Environmental Advocacy

Albert Ettinger
Counsel for the
Mississippi River Collaborative

On behalf of:
Environmental Law & Policy Center, Chicago, IL
Gulf Restoration Network, New Orleans, LA
Iowa Environmental Council, Des Moines, Iowa
Kentucky Waterways Alliance, Louisville, KY
Minnesota Center for Environmental Advocacy, St. Paul, MN
Missouri Coalition for the Environment, St. Louis, MO
Natural Resources Defense Council Midwest Office, Chicago, IL
Prairie Rivers Network, Champaign, IL
Tennessee Clean Water Network, Knoxville, TN

Attachments
Petition for Rulemaking Under the Clean Water Act - Numeric Water Quality Standards for Nitrogen and Phosphorus and TMDLS for the Mississippi River and the Gulf of Mexico, June 30, 2008

Memorandum, Nutrient Pollution and Numeric Water Quality Standards, Benjamin H. Grumbles

An Urgent Call to Action - Report of the State-EPA Nutrient Innovation Task Group, August 2009

Letter of Kris Sigford to Administrator Lisa M. Jackson, March 31, 2009

SIERRA CLUB
FOUNDED 1892

June 22, 2011

The Honorable Bob Gibbs
Chairman
Committee on Transportation
and Infrastructure
Subcommittee on Water
Resources and Environment
U.S. House of Representatives
Washington, DC 20515

The Honorable Timothy H. Bishop
Ranking Member
Committee on Transportation
and Infrastructure
Subcommittee on Water
Resources and Environment
U.S. House of Representatives
Washington, DC 20515

RE: Running Roughshod Over States and Stakeholders: EPA's Nutrient Policies

Dear Chairman Gibbs and Ranking Member Bishop:

Sierra Club respectfully requests that you include this letter in the hearing record of your June 24, 2011 hearing entitled, "Running Roughshod Over States and Stakeholders: EPA's Nutrient Policies." Thank you for your consideration.

In 2008, Sierra Club joined Florida Wildlife Federation, Sierra Club, Conservancy of Southwest Florida, Environmental Confederation of Southwest Florida, and St. Johns Riverkeeper in litigation to require U.S. EPA to set numeric nutrient standards to protect Florida's waters from pollution. We took this step because wastewater discharges and runoff of fertilizers and manure had created widespread pollution problems. Testing by the Florida Department of Environmental Protection revealed that 1,000 miles of the state's rivers and streams, 350,000 acres of Florida's lakes and 900 square miles of its estuaries were contaminated by nutrient pollution from sewage discharges and fertilizer or manure runoff. This pollution jeopardizes the health of aquatic ecosystems and fisheries, public health, the ability to swim and boat in lakes and rivers, and Florida's most important industry – tourism. Algae outbreaks plague many lakes, rivers and springs. The outbreaks can make boating and swimming dangerous or impossible, result in massive fish kills, and reduce waterfront property values.

Yet despite these well-documented problems, the Florida Department of Environmental Protection had failed to set effective, enforceable water quality standards. Florida's DEP had ample opportunity to solve these problems but instead chose to allow nutrient pollution to fester for many years. Far from running roughshod, U.S. EPA's intervention is essential to solving a problem that the state had abetted by its failure to properly carry out the Clean Water Act. Earthjustice, which represents the Sierra Club and other litigants in this case, has submitted testimony for the hearing record, and we fully support its statement.

50 F ST NW, Washington, DC 20001 TEL: (202) 547-1141 FAX: (202) 547-6009 www.sierraclub.org

Nutrient pollution is not limited to Florida; it is a serious nationwide problem. Excessive nutrients cause many water pollution problems:[i]

- 78% of assessed coastal waters exhibit eutrophication (low oxygen levels due to nutrient pollution)
- 50% of U.S. streams have medium-to-high levels of nitrogen and phosphorus
- States have listed more than 10,000 nutrient and nutrient-related impairments of water quality
- Nitrate drinking water violations have doubled in eight years

The incidence of 'dead zones' devoid of oxygen has increased almost 30-fold in the U.S. since 1960, affecting more than 300 systems, including, for example, the Gulf of Mexico, Long Island Sound and Chesapeake Bay.[ii] The National Oceanic and Atmospheric Administration has predicted that the dead zone in the Gulf of Mexico in 2011 will be the largest on record, perhaps encompassing more than 9,400 square miles, in part due to the increased nutrient runoff caused by flooding.[iii]

Harmful algal blooms, fed by nutrients, appear to be increasing, according to NOAA.[iv]

- Humans who drink or swim in water with high levels of cyanobacteria (blue-green algae) may experience gastroenteritis, skin rashes, allergic responses, or liver damage. Exposure to blue-green algae has killed pets.
- Harmful marine algae, such as red tide, can contaminate shellfish and cause neurological symptoms in people who eat it. Breathing air that contains toxins from algae associated with red tide can trigger asthma attacks.

Unfortunately, Florida is not alone in failing to act. Under pressure from polluting industries and agribusiness, many states have failed to tackle this problem.

In Kansas, for example, nutrient pollution was the leading cause of impaired waters in 2010, accounting for 798 impaired waterbodies.[v] In Ohio, nutrients impaired 113 waters, the fifth leading cause of impairment.[vi]

Ohio has also experienced many incidents of harmful algae blooms in recent years, the most notorious being Grand Lake St. Marys, Ohio's largest inland lake. Water quality sampling and fishkills have shown that algal blooms are harmful to humans and wildlife.[vii] The algal blooms has such a negative impact on recreational, tourism and other businesses in the area that the Small Business Administration declared a disaster in ten counties in Ohio and Indiana, making available low-interest federal loans.[viii] Ohio EPA declared harmful algal bloom advisories in 22 state parks and reservoirs in 2010. Several of these advisories were declared in Representative Gibbs's own Congressional District. At Blue Rock State Park, a "no contact" advisory was declared, equivalent in seriousness to the advisory at Grand Lake St. Marys. Other advisories in the district were issued for Burr Oak State Park and Lake Alma State Park.[ix]

The problem is not getting better. The USGS National Water Quality Assessment Program's nationwide study of nutrient pollution released in September 2010 found that:

> "...excessive nutrient enrichment is a widespread cause of ecological degradation in streams and that nitrate contamination of groundwater used for drinking water, particularly shallow domestic wells in agricultural areas, is a continuing human-health concern. Finally, <u>despite major Federal, State and local nonpoint-source nutrient control efforts for streams and watersheds across the Nation, USGS trend analyses for 1993–2003 suggest limited national progress to reduce the</u>

> impacts of nonpoint sources of nutrients during this period. Instead, concentrations have remained the same or increased in many streams and aquifers across the Nation, and continue to pose risks to aquatic life and human health." [emphasis added][x]

One barrier to progress is many states' "narrative" water quality standards, which say in essence, nutrient levels cannot be so high as to cause water quality standards. Such subjective standards are difficult to enforce and don't enable states to set effective limits in discharge permits, develop cleanup programs for waters that have been polluted, or measure progress.

Beginning in 1998, the EPA asked states to adopt effective, enforceable standards to protect against nutrient pollution. Even during the Bush administration, the EPA repeatedly urged states to set numeric nutrient standards. In a 2007 memo, then Assistant Administrator for the Office of Water Benjamin Grumbles wrote,

> "...some States and Territories have made notable progress in establishing numeric nutrient standards – most recently in connection with the Chesapeake Bay and Tennessee streams. However, overall progress has been uneven over the past nine years. Now is the time for EPA and its partners to take bold steps, relying on a combination of science, innovation and collaboration."[xi]

Characterizing progress as "uneven" is an understatement. Based on the EPA's 2008 status report (the latest available), 25 states had no numeric criteria in 2008 (compared with 37 states that had no numeric criteria in 1998). Thirty-six states still had no numeric criteria for rivers and streams and 31 had no numeric criteria for lakes and reservoirs.[xii] Staff at EPA have reported informally that three years after the 2008 report, the situation remains substantially the same.

The evidence suggests that the longer we wait for the states to solve this problem, the worse the problem is likely to become. Rather than browbeat EPA for its all-too-timid efforts – as the title of the hearing suggests is its purpose – this committee should urge the EPA to do more.

Thank you for considering our views.

Sincerely,

Ed Hopkins
Director, Environmental Quality Program

---

[i] U.S. EPA Memorandum, "Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions," March 16, 2011. Available athttp://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/memo_nitrogen_framework.pdf

[ii] Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health, "Scientific Assessment of Hypoxia in U.S. Coastal Waters," September, 2010. Available at http://www.whitehouse.gov/sites/default/files/microsites/ostp/hypoxia-report.pdf

[iii] National Oceanic and Atmospheric Administration, "Major Flooding on the Mississippi River Predicted to Cause Largest Gulf of Mexico Dead Zone Ever Recorded," June 14, 2011. Available at http://www.noaanews.noaa.gov/stories2011/20110614_deadzone.html

[iv] Centers for Disease Control and Prevention, "Harmful Algal Blooms (HABs)." Available at http://www.cdc.gov/hab/default.htm
[v] U.S. EPA Surf Your Watershed. Available at thttp://iaspub.epa.gov/waters10/attains_state.report_control?p_state=KS&p_cycle=2010&p_report_type=T
[vi] U.S. EPA Surf Your Watershed. Available athttp://iaspub.epa.gov/waters10/attains_state.report_control?p_state=OH&p_cycle=2008&p_report_type=T
[vii] Ohio Department of Natural Resources, "Distressed Watershed Designation Analysis Grand Lake St. Marys Watershed, January 18, 2011. Available at http://www.ohiodnr.com/portals/12/water/watershedprograms/GLSM/Distressed_Watershed_Designation_Analysis_Grand_Lake_St_Marys.pdf
[viii] U.S. Small Business Administration, Disaster Declaration #12359. Available at http://www.sbaonline.sba.gov/idc/groups/public/documents/sba_homepage/serv_recent_oh_12359_scan.pdf
[ix] Ohio EPA, "Harmful Algal Bloom Advisories in 2010." Available at http://www.epa.state.oh.us/LinkClick.aspx?fileticket=hVW3RnXIGBI%3d&tabid=4802
[x] National Water Quality Assessment Program, "Nutrients in the Nation's Streams and Groundwater: National Findings and Implications," U.S. Geological Survey Fact Sheet 2010-3078, September, 2010. Available at http://water.usgs.gov/nawqa/nutrients/pubs/circ1350/
[xi] U.S.EPA Memorandum, "Nutrient Pollution and Numeric Water Quality Standards," May 25, 2007. Available at http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/memo2007.cfm
[xii] U.S. EPA, State Adoption of Numeric Nutrient Standards (1998-2008), December, 2008. Available at http://iaspub.epa.gov/waters10/attains_state.report_control?p_state=OH&p_cycle=2008&p_report_type=T

House Of Representatives Committee on Transportation and Infrastructure

Subcommittee on Water Resources and Environment

Hearing Entitled: Running Roughshod Over States and Stakeholders:

EPA's Nutrients Policies

June 1, 2011

Testimony Submitted by Earthjustice

David G. Guest, Attorney

Earthjustice, Florida Office

and

Joan Mulhern, Senior Legislative Counsel

Thank you for the opportunity to provide written testimony for this hearing.

This summer, as in many past years, Florida is facing a serious public health and economic crisis. All over the state, nasty toxic algae will break out on lakes, rivers, springs, and beaches, as it has in past summers. Health officials will have to post signs, warning residents and tourists to stay out of the water (and keep pets and children away) to avoid contact with potent liver and nerve toxins in algae.

These toxic algae outbreaks are caused by sewage, fertilizer, and manure runoff, which bring excess phosphorus and nitrogen into the public's waters.

The toxic algae pollution has become so serious that The Florida Department of Health now hands out educational materials that ask people: "Have You been Slimed?" Callers to the state's Aquatic Toxins Hotline hear a recording which warns: "It is very important that pets, livestock and small children are kept out of water suspected of having a blue green algae bloom since there have been many reported animals dying after drinking highly contaminated water."

This clearly jeopardizes the tourist-dependent economy of America's fourth-largest state – a place that draws visitors from around the globe.

This serious pollution is poisoning the rivers, lakes and streams that supply drinking water for Floridians' taps. A toxic algae outbreak shut down a drinking water plant that served 30,000 people on the Caloosahatchee River in 2008. In fact, the plant is currently shut down due to algae and high salt levels.

Clearly, the Clean Water Act intends for tourists and residents to enjoy clean drinking water and waters safe for recreation, not water polluted with sewage, fertilizer and manure runoff. It is disturbing that people all over Florida have ended up at emergency rooms with breathing problems, rashes and sores just because they went to the beach, rode in a boat, jumped into a cool river, or allowed their toddler to splash in a sandy lake.

As Congress hears testimony about toxic algae outbreaks in Florida waters, it is important to realize that this public health crisis is preventable. The new limits for pollution from sewage, manure and fertilizer developed by the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection will go a long way toward preventing these harmful algae outbreaks by controlling pollution at its source.

No private party has the right to contaminate the public's water, and this is why standards must be set to protect everyone's health and safety.

Areas in Southwest Florida, including Sanibel Island tourist beaches, have suffered repeated noxious outbreaks of toxic green algae and red tide in recent years. The dirty outbreaks fouled drinking water supplies, killed fish, closed popular tourist beaches, and devastated the local economy. Visitors to Daytona Beach in 2007 saw lifeguards wearing face masks because algae toxins in the air made them cough and causes respiratory problems. Other popular beach areas will suffer the same fate if the EPA does not set these limits to stop water pollution. During a red tide outbreak in Jacksonville in 2007, the local health department received 15 to 20 reports every day of respiratory illness from beachgoers.

The famous St. Johns River outside Jacksonville was closed to fishermen last summer because a 100-mile long, disgusting toxic green slime outbreak poisoned fish, making them unsafe to catch or eat. The chief investigating scientist told the *Florida Times-Union* that in some fish, "Their eyes are bloody, their livers are bloody, their internal tissues are bloody." Toxin levels were recorded at 50 – 140 times higher than the World Health Organization's recommended limits and many people reported respiratory problems, raw throats, and irritated eyes.

This runoff will continue to poison Florida's waters and ruin the state's economy unless we establish firm standards for the public good.

It is past time to take action on behalf of the public's health. Florida's Department of Environmental Protection first issued a major report documenting the dangers of toxic algae blooms eleven years ago -- in 2000.

In 2001, The *Orlando Sentinel* reported on the health threat:

"Dangerous amounts of toxic algae -- one sample showed 354 times the level considered safe -- infest popular Central Florida lakes where people spend weekends swimming, fishing and skiing.

Twenty of the 23 lakes tested in a joint investigation by the Orlando Sentinel and Central Florida News 13 turned up enough of the toxic algae to cause vomiting, bloody diarrhea, trouble breathing, skin rashes, mouth ulcers, blisters and eye irritations in people who play in the water.

Accidentally swallow some of it -- and swimmers do ingest several mouthfuls on average -- and the risk widens to include damage to the liver or nervous system, and cancer."

In 2005, the St. Lucie River and estuary in Southeast Florida was covered with bright green slime and it wasn't safe to even touch the water. Waterfront property values in the area suffered a permanent decline of a whopping $500 million after the outbreak.

In 2006, testing by DEP scientists revealed that half of Florida's rivers and more than half of the state's lakes had poor water quality and sewage, fertilizer and manure pollution was the major concern. "The actual number of miles and acres of waters impaired [by these pollutants] is likely higher," the DEP noted, "as many waters that have yet to be assessed may also be impaired."

As it stands now, Florida has an unenforceable "narrative" nutrient standard that merely says that nutrients can't cause a biological "imbalance." This is like posting a speed limit sign on I-75 that reads "Drive At A Reasonable Speed Considering Weather, Traffic and Lighting Conditions As Well As Other Relevant Factors." Numeric standards, on the other hand, are precise and enforceable -- like speed limit signs that clearly say "SPEED LIMIT 55 MPH."

In 2008, after watching algae outbreaks threaten water bodies across Florida and uncovering EPA documents which stated explicitly that numeric nutrient standards for phosphorus and nitrogen pollution were necessary under the Clean Water Act, Earthjustice filed suit against the EPA on behalf of Florida Wildlife Federation, Sierra Club, Conservancy of Southwest Florida, Environmental Confederation of Southwest Florida, and St. Johns Riverkeeper. The suit sought to require the EPA to promptly set numeric standards.

After extensive negotiations, the EPA entered into a settlement agreement. Finding that sewage, fertilizer, and animal waste pollution have worsened or not been reduced from unacceptably high levels, the federal court found that Florida's "narrative" standards had not solved the problem. The federal court entered a Consent Decree, meaning that it approved the settlement as fair, reasonable and in the public interest. EPA's final numeric standards for inland lakes and streams will take effect in March 2012. Standards for Florida's estuaries and for South Florida canals and streams will be finalized by August 2012.

Opposition from Florida's leaders to the EPA's numeric standards is a new political phenomenon.

Just two years ago, then-Florida DEP Secretary Michael W. Sole acknowledged the state's serious problem with the so-called "nutrients" phosphorus and nitrogen in this press release:

"Numeric nutrient criteria will significantly improve Florida's ability to address nutrient pollution in a timely and effective manner. The State of Florida recognizes that more needs to be done to address nutrient pollution in our rivers, streams, lakes and estuaries … Excess nitrogen and phosphorus levels (nutrient pollution) in water bodies can cause harm to aquatic ecosystems and threaten public health.

Nutrient pollution can lead to water quality problems such as harmful algal blooms, low-oxygen "dead zones" in water bodies and declines in wildlife habitat. These effects also disrupt recreational activities and pose threats to public health."

The new standards have been carefully developed. EPA and DEP scientists jointly reviewed 13,000 water samples at 2,200 sites around the state. This is not a "one size fits all approach" as has been claimed by some – the limits are specifically crafted to consider the needs of different types of waterways in the state.

Unfortunately, much misinformation is being circulated about the cost of complying with the new standards. The opponents of the pollution limits have inflated their cost estimates by falsely claiming that all Florida sewer plants would have to treat water by reverse osmosis — the pricey method Saudi Arabia uses to convert seawater to fresh water. It's not true: No plants in Florida would be required to use reverse osmosis to meet the new pollution limits. The EPA explicitly says that on the Frequently Asked Questions section of its website. (http://water.epa.gov/lawsregs/rulesregs/upload/floridafaq.pdf, page 2)

Most sewage plants will need add-ons that use chemical treatment or biological uptake systems. The EPA's fiscal impact review concluded that pollution prevention measures will cost each Florida household 11 to 20 cents per day. (http://water.epa.gov/lawsregs/rulesregs/upload/florida_econ.pdf) At the request of Florida Sen. Bill Nelson, the National Academy of Sciences is now reviewing those economic calculations as well.

The public is firmly in support of the new standards. When the EPA asked the public to comment on the new water pollution limits, the agency received 22,000 comments, with 20,000 in support of the new standards.

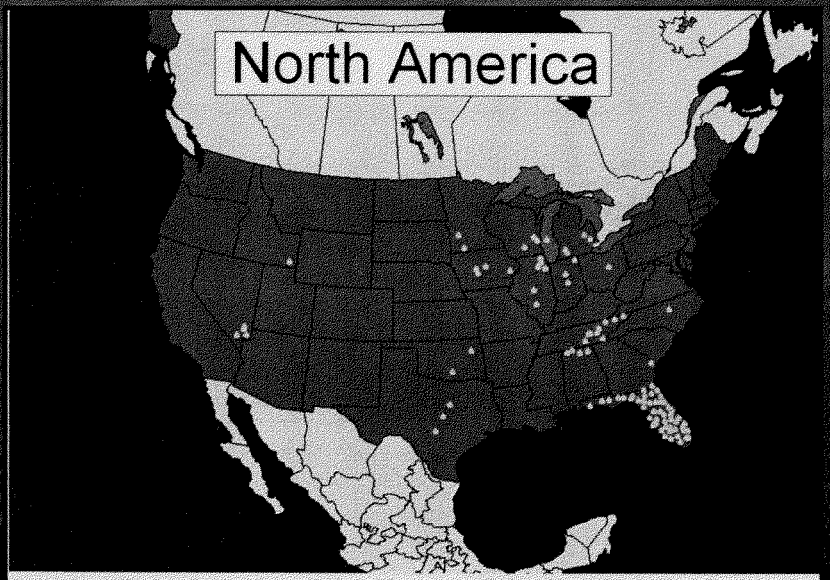
The bottom line is that we know much more than we used to about the damage that this pollution causes to Floridians and the water they drink and use for recreation. Now that we know more, it is time to implement the pollution limits and prevent this public health threat from continuing.

Photos of algae outbreaks are available at:
http://www.earthjustice.org/library/background/photos-florida-nutrient-pollution-and-algae-blooms.html

We appreciate the opportunity to submit this testimony to the subcommittee. We respectfully request that this statement, along with the attachments including photographs that document this problem, be included in the hearing record.

Thank you.

Cyanobacteria: *Cylindrospermopsis*



Map of select sites in the United Sates where Cylindrospermopsis raciborski has been encountered. from: Wayne W. Carmichael; Wright State University

Freshwater HABs

Blue Green Algae (Cyanobacteria)

Microcystis

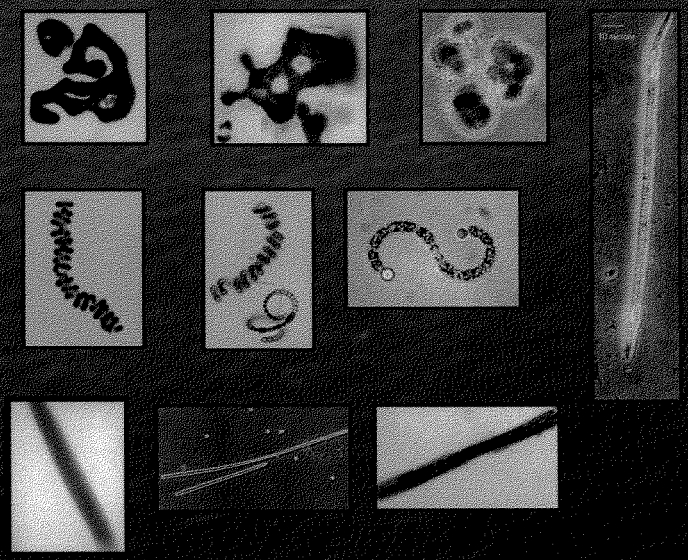
Cylindrospermopsis

Anabaena

Planktothrix

Aphanizomenon

Lyngbya wollei



Have you been "slimed"?

Contact with blue-green algae can make you sick.

When blue-green algae (cyanobacteria) form "blooms" in lakes, ponds or rivers, these organisms can release toxins which can make people and animals sick. These large mats of algae can form underwater, rising to the surface overnight, and they sometimes have a bad smell. These "blue-green" algae also can be brown or red in color and can sometimes look like thick paint spilled in the water.

Swimming in water with a toxic blue-green algae bloom can cause:

- skin rash
- runny nose
- irritated eyes

Swallowing such water can:

- cause vomiting or diarrhea
- affect your liver
- poison pets

How To Protect Yourself From Blue-Green Algae Toxins:

- **Avoid contact with large mats of blue-green algae.**
- **NEVER allow children or pets to play in or drink scummy water.**
- **Do not waterski or jet ski over algae mats.**
- **Do not use scummy water for cleaning or irrigation.**
- **If you accidentally come into contact with a blue-green algae bloom, wash thoroughly, paying special attention to the swimsuit area and pets' fur.**

If you think you have symptoms that may be related to contact with blue-green algae, contact your doctor or the Poison Information Hotline at (888)232-8635.

This poster was developed by the Florida Harmful Algal Bloom Task Force in cooperation with the Florida Fish and Wildlife Conservation Commission.

For more information about blue-green algae, visit the Florida Marine Research Institute at www.floridamarine.org.

What Florida's Newspapers Say About the EPA's New Limits for Sewage, Manure and Fertilizer Pollution

"Florida has spent years defining dirty in lakes and rivers all over the state, working in concert with the very industries that dump poop and fertilizer in them.

I can assure you of one thing. Having spent my entire life in this state, this ain't working. I've watched Lake Butler, Crystal River and Weeki Wachee Springs all turn green, green and green.

That's just to name a few… Florida can challenge EPA's numbers. It can challenge EPA's approach.

But nobody can challenge what is happening to our water."

- Orlando Sentinel metro columnist Mike Thomas, May 18, 2011

"A few years ago, residents along the eastern St. Lucie River watched in disgust as the waterway turned green with a foul slime that wouldn't go away.

Health officials warned people to stay away from the river. Birds and fish got sick. Property values dived to new lows, while politicians holding jarfuls of crud grimaced for the TV cameras and vowed to take action.

The mystery ooze was caused by nutrients dumped into Lake Okeechobee from farms, groves and ranchlands, churned by hurricanes and then pumped out by state water managers at the rate of 26,000 gallons per second.

It was a suffocating act of pollution that could easily happen again…

In a state that relies so heavily on tourism and outdoor recreation, dirty water is major job killer. This was painfully evident throughout the Panhandle after the BP oil spill, but memories are very short in Washington.

While some agricultural operations in Florida have taken important steps to reduce harmful runoff, others haven't. More destructive algae blooms are a certainty.

And nothing says "Welcome to Florida!" like aerial video of a scum-filled river or a beach plastered with rotting fish."

- Miami Herald columnist Carl Hiassen, March 5, 2011

"The arguments against the plan for clean water in Florida don't hold water.

The state's lakes, rivers and streams and coastal waters… support the tourism, fishing and recreation industries. They raise the state's quality of life. Are sick lakes draws for business?"

- Palm Beach Post editorial, April 3, 2011

"We aren't just talking about recreational use of water or the aesthetics of water: this is our drinking water. When it comes to cleaning it up, Floridians are presented with choices: big profits for the few or general welfare for the many."

- St. Petersburg Times columnist Diane Roberts, Feb. 20, 2011.

"So, the argument by the lawmakers is that the regulations will cost much-needed jobs in the state? Rubbish.

The fact is that agriculture and other business interests would rather continue polluting state waters with toxic nutrients that already exceed acceptable levels in an estimated 60 percent of those waters than having the added costs of reducing that pollution. They'd rather residents and taxpayers suffer the consequences of that pollution.

And, as far as killing jobs, how about the jobs that will be lost as toxic levels of sewage, fertilizer and manure bring about algae blooms, as we've experienced here on the Treasure Coast, causing beaches to be closed, fish kills and the health of people and animals jeopardized? Will tourists flock here to experience for themselves the green slime that covers our waters?

Much of Florida's economy is based on the environment and, especially, our beaches, rivers and bays. If they continue to be polluted by greedy business interests, the costs to the economy will be far worse than any costs the businesses may incur by following the new law."

-Treasure-Palm Coast newspaper editorial, March 18, 2011

"State officials have contrived a controversy to run out the clock. Much of the data the EPA has used comes from the state's own environmental agency. It is time the federal government moved ahead. Allowing more sewage, fertilizer and other pollution into the state's waterways only harms public health and the economy and makes the cleanup more expensive. Somebody has to protect Floridians from the indifference to the environment and clean water in Tallahassee."

- St. Petersburg Times editorial, May 21, 2011

"Despite the opposition of a coalition of agriculture and business groups, state residents should support the EPA's proposals. It's in the interests of every Floridian to have healthy estuaries, rivers, lakes, streams and canals, which not only are used for recreation but also supply some communities' drinking water. Polluted streams and rivers can contaminate offshore fish hatcheries, too, threatening commercial and recreational fishing industries."

- Miami Herald editorial, Jan. 20, 2010

"A Florida Department of Environmental Protection report last year found half of the state's rivers and more than half of its lakes had poor water quality. Many of the state's fabled springs, including Wakulla and Silver springs, are fouled by nutrients.

"This widespread contamination is a far bigger threat to Florida's economy than water-quality rules. And the feds would not have gotten involved if the state had addressed the situation."

- Tampa Tribune editorial, Dec. 3, 2009

"In a state much favored with surface water, citizens shouldn't have to sue their government to assure those waters run clean. Florida's commerce can prosper without destroying its springs, lakes, rivers and estuaries. That is the point of the federal (Clean Water) Act. It should be the result of strict EPA standards and welcome compliance by Florida's business and agricultural community."

- Daytona Beach News Journal editorial, Dec. 8, 2009

"Floridians can't afford clean water? That depends on whose estimates you choose to believe... But the notion that Floridians simply can't afford clean water is spurious on its face."

- Gainesville Sun editorial, Jan. 20, 2010

"...the EPA action will help protect our greatest natural resource, the St. Johns River, and finally force polluters to clean up their acts instead of treating the river as a sewer."

- Florida Times-Union columnist Ron Littlepage, Nov. 17, 2009

"A wheezing stroll down an algae-covered beach won't appeal to most tourists."

- The Independent Florida Alligator editorial, Nov. 22, 2009

Testimony Submitted by Joan Mulhern, Senior Legislative Counsel, Earthjustice

This summer, Florida is facing a serious public health and economic crisis. All over the state, nasty toxic algae will break out on lakes, rivers, springs, and beaches, as it has in past summers. Health officials will have to post signs, warning residents and tourists to stay out of the water (and keep pets and children away) to avoid contact with potent liver and nerve toxins in algae.

These toxic algae outbreaks are caused by sewage, fertilizer, and manure runoff, which bring excess phosphorus and nitrogen into the public's waters.

The toxic algae pollution has become so serious that The Florida Department of Health now hands out educational materials that ask people: "Have You been Slimed?" Callers to the state's Aquatic Toxins Hotline hear a recording which warns: "It is very important that pets, livestock and small children are kept out of water suspected of having a blue green algae bloom since there have been many reported animals dying after drinking highly contaminated water."

This clearly jeopardizes the tourist-dependent economy of America's fourth-largest state – a place that draws visitors from around the globe.

This serious pollution is poisoning the rivers, lakes and streams that supply drinking water for Floridians' taps. A toxic algae outbreak shut down a drinking water plant that served 30,000 people on the Caloosahatchee River in **2008. In fact, the plant is currently shut down due to algae and high salt levels.**

Clearly, the Clean Water Act intends for tourists and residents to enjoy clean drinking water, not water polluted with sewage, fertilizer and manure runoff. It is disturbing that people all over Florida have

ended up at emergency rooms with breathing problems, rashes and sores just because they went to the beach, rode in a boat, jumped into a cool river, or allowed their toddler to splash in a sandy lake.

As Congress hears testimony about toxic algae outbreaks in Florida waters, it is important to realize that this public health crisis is preventable. The new limits for pollution from sewage, manure and fertilizer developed by the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection will go a long way toward preventing these harmful algae outbreaks by controlling pollution at its source.

No private party has the right to contaminate the public's water, and this is why standards must be set to protect everyone's health and safety.

Areas in Southwest Florida, including Sanibel Island tourist beaches, have suffered repeated noxious outbreaks of toxic green algae and red tide in recent years. The dirty outbreaks fouled drinking water supplies, killed fish, closed popular tourist beaches, and devastated the local economy. Visitors to Daytona Beach in 2007 saw lifeguards wearing face masks because algae toxins in the air made them cough and causes respiratory problems. Other popular beach areas will suffer the same fate if we don't set these limits to stop water pollution. During a red tide outbreak in Jacksonville in 2007, the local health department received 15 to 20 reports every day of respiratory illness from beachgoers.

The famous St. Johns River outside Jacksonville was closed to fishermen last summer because a 100-mile long, disgusting toxic green slime outbreak poisoned fish, making them unsafe to catch or eat. The chief investigating scientist told the *Florida Times-Union* that in some fish, "Their eyes are bloody, their livers are bloody, their internal tissues are bloody." Toxin levels were recorded at 50 – 140 times higher than the World Health Organization's recommended limits and many people reported respiratory problems, raw throats, and irritated eyes.

This runoff will continue to poison Florida's waters and ruin the state's economy unless we establish firm standards for the public good.

It is past time to take action on behalf of the public's health. Florida's Department of Environmental Protection first issued a major report documenting the dangers of toxic algae blooms eleven years ago -- in 2000.

In 2001, The *Orlando Sentinel* reported on the health threat:

> "Dangerous amounts of toxic algae -- one sample showed 354 times the level considered safe -- infest popular Central Florida lakes where people spend weekends swimming, fishing and skiing.
>
> Twenty of the 23 lakes tested in a joint investigation by the Orlando Sentinel and Central Florida News 13 turned up enough of the toxic algae to cause vomiting, bloody diarrhea, trouble breathing, skin rashes, mouth ulcers, blisters and eye irritations in people who play in the water.
>
> Accidentally swallow some of it -- and swimmers do ingest several mouthfuls on average -- and the risk widens to include damage to the liver or nervous system, and cancer."

In 2005, the St. Lucie River and estuary in Southeast Florida was covered with bright green slime and it wasn't safe to even touch the water. Waterfront property values in the area suffered a permanent decline of a whopping $500 million after the outbreak.

In 2006, testing by DEP scientists revealed that half of Florida's rivers and more than half of the state's lakes had poor water quality and sewage, fertilizer and manure pollution was the major concern. "The actual number of miles and acres of waters impaired [by these pollutants] is likely higher," the DEP noted, "as many waters that have yet to be assessed may also be impaired."

As it stands now, Florida has an unenforceable "narrative" nutrient standard that merely says that nutrients can't cause a biological "imbalance." This is like posting a speed limit sign on I-75 that reads "Drive At A Reasonable Speed Considering Weather, Traffic and Lighting Conditions As Well As Other

Relevant Factors." Numeric standards, on the other hand, are precise and enforceable -- like speed limit signs that clearly say "SPEED LIMIT 55 MPH."

In 2008, after watching algae outbreaks threaten water bodies across Florida and uncovering EPA documents which stated explicitly that numeric nutrient standards for phosphorus and nitrogen pollution were necessary under the Clean Water Act, Earthjustice filed suit against the EPA on behalf of Florida Wildlife Federation, Sierra Club, Conservancy of Southwest Florida, Environmental Confederation of Southwest Florida, and St. Johns Riverkeeper. The suit sought to require the EPA to promptly set numeric standards.

After extensive negotiations, the EPA entered into a settlement agreement. Finding that sewage, fertilizer, and animal waste pollution have worsened or not been reduced from unacceptably high levels, the federal court found that Florida's "narrative" standards had not solved the problem. The federal court entered a Consent Decree, meaning that it approved the settlement as fair, reasonable and in the public interest. EPA's final numeric standards for inland lakes and streams will take effect in March 2012. Standards for Florida's estuaries and for South Florida canals and streams will be finalized by August 2012.

Opposition from Florida's leaders to the EPA's numeric standards is a new political phenomenon.

Just two years ago, then-Florida DEP Secretary Michael W. Sole acknowledged the state's serious problem with the so-called "nutrients" phosphorus and nitrogen in this press release:

> "Numeric nutrient criteria will significantly improve Florida's ability to address nutrient pollution in a timely and effective manner. The State of Florida recognizes that more needs to be done to address nutrient pollution in our rivers, streams, lakes and estuaries ... Excess nitrogen and phosphorus levels (nutrient pollution) in water bodies can cause harm to aquatic ecosystems and threaten public health.

> Nutrient pollution can lead to water quality problems such as harmful algal blooms, low-oxygen "dead zones" in water bodies and declines in wildlife habitat. These effects also disrupt recreational activities and pose threats to public health."

The new standards have been carefully developed. EPA and DEP scientists jointly reviewed 13,000 water samples at 2,200 sites around the state. This is not a "one size fits all approach – the limits are specifically crafted to consider the needs of different types of waterways in the state.

Unfortunately, much misinformation is being circulated about the cost of complying with the new standards. The opponents of the pollution limits have inflated their cost estimates by falsely claiming that all Florida sewer plants would have to treat water by reverse osmosis — the pricey method Saudi Arabia uses to convert seawater to fresh water. It's not true: No plants in Florida would be required to use reverse osmosis to meet the new pollution limits. The EPA explicitly says that on the Frequently Asked Questions section of its website. (http://water.epa.gov/lawsregs/rulesregs/upload/floridafaq.pdf, page 2)

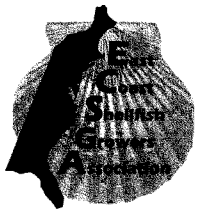
Most sewage plants will need add-ons that use chemical treatment or biological uptake systems. The EPA's fiscal impact review (http://water.epa.gov/lawsregs/rulesregs/upload/florida_econ.pdf) concluded that pollution prevention measures will cost each Florida household 11 to 20 cents per day. At the request of Florida Sen. Bill Nelson, the National Academy of Sciences is now reviewing those economic calculations as well.

The public is firmly in support of the new standards. When the EPA asked the public to comment on the new water pollution limits, the agency received 22,000 comments, with 20,000 in support of the new standards.

The bottom line is that we know much more than we used to about the damage that this pollution causes to Floridians and the water they drink and use for recreation. Now that we know more, it is time to implement the pollution limits and prevent this public health threat from continuing.

Photos of algae outbreaks are available at: http://www.earthjustice.org/library/background/photos-florida-nutrient-pollution-and-algae-blooms.html

ECSGA
1623 Whitesville Rd.
Toms River, NJ 08755
www.ECSGA.org



Mike Peirson, Ph.D.
President
Tom Kehoe
Vice President
Ed Rhodes, Ph.D.
Secretary
Gef Flimlin
Treasurer

Honorable Robert Gibbs
Chairman of the House Subcommittee on Water Resources
Honorable Timothy Bishop
Ranking Member of the House Subcommittee on Water Resources

June 21, 2011
Re: June 24th House Water Resources Subcommittee Hearing: "Running Roughshod Over States and Stakeholders: EPA's Nutrients Policies"

I am writing to inform this subcommittee about the shellfish aquaculture industry and the importance of water quality to our members and their ability to produce shellfish. The East Coast Shellfish Growers Association represents over a thousand shellfish farms from Maine to Florida. Primarily small farms, these producers collectively harvest over $100 million worth of sustainably-produced, nutritious shellfish while providing jobs for thousands of rural families.

These proud stewards of the marine environment would like this committee to understand that shellfish farms tangibly improve water quality and provide superior habitat for a diverse array of other important commercial and recreational marine species. Many of our farms have been producing shellfish for decades, and we hope we can continue to increase our production to enhance food security and reduce our national 10 billion dollar seafood trade deficit while providing green jobs and safe local seafood for our nation's consumers.

The shellfish aquaculture industry requires clean water to produce a wholesome product, and we hope congress will refrain from weakening our Clean Water Act or the EPA's authority to regulate nutrients in our nation's estuaries and coastal waters. We hope you will carefully consider our comments in the constructive light in which they are intended.

Since the passage of the Clean Water Act (CWA) we have experienced a steady improvement in the quality of many of our rivers and coastal waters opening more areas for shellfish production. While the progress has been good, the process is not yet complete, and now is not the time to stop working towards the goal of recovered ecosystems.

Thanks to the legal authority of the CWA and the regulatory actions of the EPA, hydrocarbons, metals and toxic chemicals have been greatly reduced in most of our coastal waters. According to a recent NOAA report[1], the primary threat to the health of our nation's coastal waters is now excessive nutrient inputs. In a process known as eutrophication, excessive nutrients cause the explosive growth of marine plants and the bacterial decay of these plants strips sensitive coastal waters of life-sustaining oxygen. Nutrient-related eutrophication can lead to "dead-zones", areas that cannot sustain life. Fish kills are usually the only visible impacts to the casual observer, but surveys of the diversity and abundance of life forms in our bays have revealed that two-thirds of our estuaries are currently being impacted by excess nitrogen[1].

My own experiences growing oysters in a coastal estuary in Narragansett, Rhode Island provide insight into the nature of the problem. I started growing oysters in 1986 and over the

intervening twenty-five years I witnessed dramatic increases in coastal development that led to increases in fertilizer runoff and septic system failures, the two leading sources of nitrogen to this particular estuary. Phytoplankton blooms became more intense each year and eelgrass steadily declined. The loss of precious eelgrass habitat has been conclusively related to excessive nitrogen and shading by phytoplankton blooms[2]. In late summer oxygen levels in my growing area would drop to zero each night, often remaining there for weeks. Oysters are quite tolerant of hypoxia, but there are limits to what even well-adapted hardy organisms can tolerate. My crop would stop growing for several weeks, and seed oyster often suffered heavy mortalities. Successive years of such mortalities eventually forced me out of the business.

Our industry strongly supports efforts to reduce nutrient inputs to our watersheds so that we can preserve coastal water quality and continue to provide green jobs and sustainable seafood for our nation. We acknowledge that some measures (such as denitrifying sewage treatment plant upgrades) to reduce nitrogen inputs can be costly, but if we don't remove this nitrogen from the wastewater we can expect continued deterioration of our water quality with devastating impacts to our industry, commercial and recreational fisheries and public health.

We believe we can also be part of the solution and help reduce costs to taxpayers. Studies have demonstrated that shellfish improve water quality through their filter feeding activity and their harvest leads to the direct removal of tons of nitrogen from coastal waters each year[3].

I am currently participating in a study to examine whether mussel rafts in the Bronx River might be an affordable nutrient remediation tool after all the other affordable solutions have been exhausted. Similar work in Sweden demonstrated that mussel farms could be a cost effective nutrient remediation tool[4]. Nutrient credit trading should be examined as a method to provide incentives for nutrient reduction.

Since the passage of the Clean Water Act we have achieved substantial improvements in coastal water quality with dramatic impacts on public health and our commercial and recreational fisheries. We have achieved substantial reductions in the quantities of nutrients entering many of our watersheds. By some estimates we are well on our way towards target nutrient reductions in many sensitive estuaries, but lets not stop short of our goal. Too many jobs are dependent on clean, vibrant coastal waters, and too many families will suffer if we cannot staunch the flow of nutrients to our coastal waters.

The shellfish aquaculture industry provides thousands of green jobs and we are counting on this body to maintain our coastal water quality so we can pass these farms on to the next generation. We support the Clean Water Act and EPA's authority to regulate nutrients in our nation's waters and we will continue to do our part in reducing nutrient levels through our shellfish farming activities.

Please don't hesitate to contact me if you require further information.

Sincerely,

Robert B. Rheault, Ph.D.
Executive Director, East Coast Shellfish Growers Association
bob@ECSGA.org (401) 783-3360

1) Effects of Nutrient Enrichment In the Nation's Estuaries: A Decade of Change. (2007) Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner. NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Silver Spring, MD. 328 pp.

2) Water-column nitrate enrichment promotes decline of eelgrass Zostera marina: evidence from seasonal mesocosm experiments. (1992) Burkholder, J.M.; Mason, K.M. and H.B. Glasgow, Jr.; Mar. Ecol. Prog. Ser. 81: 163-178

3) Role of oysters in maintaining estuarine water quality. (1999). Newell, R. I. E., J. C. Cornwell, M. Owens and J. Tuttle, J. Nat. Shellfish. Assoc. 18(1):300-301.

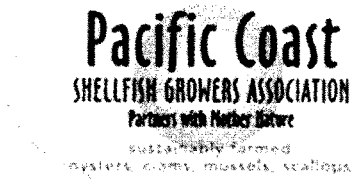
4) Improving marine water quality by mussel farming: a profitable solution for swedish society. (2005) Lindahl, O., R. Hart, B. Hernroth, S. Kollberg., L-O. Loo, L. Olrog, A-S. Rehnstam-Holm, J. Svensson, S. Svensson, and U. Syversen. . Ambio. 34(2)131-137.

HOUSE HEARING

U.S. HOUSE OF REPRESENTATIVES
Committee on Transportation & Infrastructure
Subcommittee on Water Resources & the Environment

Friday, June 24, 2011, 10:00 a.m.
Room 2167 of the Rayburn House Office Building

STATEMENT OF MARGARET P. BARRETTE
EXECUTIVE DIRECTOR,
PACIFIC COAST SHELLFISH GROWERS ASSOCIATION



Honorable Robert Gibbs,
Chairman of the House Subcommittee on Water Resources
Honorable Jaime Herrera Beutler,
Vice Chair of the House Subcommittee on Water Resources
Honorable Timothy Bishop,
Ranking Member of the House Subcommittee on Water Resources

Dear Chairman Gibbs, Vice Chair Herrera Beutler, and Representative Bishop:

I am the Executive Director of the Pacific Coast Shellfish Growers Association ("PCSGA"), located in Olympia, Washington. PCSGA, founded in 1930, represents over 150 shellfish growers in Alaska, Washington, Oregon, California and Hawaii. Members of PCSGA grow a wide variety of healthful, sustainable shellfish including oysters, clams, mussels, scallops and geoduck. These dedicated shellfish growers pride themselves on the quality and freshness of their shellfish, their role as environmental stewards, and their contributions to local economies.

Shellfish farming is critical to coastal counties along the Pacific Coast, providing much needed family-wage jobs and local tax revenue. Additionally, the production of American shellfish helps reduce the amount of foreign seafood entering our markets. Our country's current shellfish production cannot meet our nation's demand for shellfish. This unfortunately means that an increasing amount of foreign seafood is being imported into the United States – seafood produced often without high standards for human health or environmental sustainability.

Healthy water is the lifeblood of the shellfish industry. South Puget Sound is home to an annual shellfish harvest of over $100 million. However, it is also home to a summer die-off of oysters that in some years has reached 50 to 60 percent in some growing areas. Spikes in nutrient levels in South Puget Sound contribute to this summer mortality, stressing oysters with too much food at the same time they are trying to reproduce. The increased algal blooms in the late summer resulting from increased nutrients in the waters also smother and suffocate animals dwelling on the bottom of intertidal zones (benthic organisms), including clams and oysters. Fertilizers and animal wastes contribute to this nutrient pollution. In some parts of South Puget Sound, however, close to 20 percent of introduced nitrogen comes from septic systems.

The reduction of nutrients entering the Puget Sound and the nation's other high-producing shellfish estuaries is crucial to the survival of the commercial shellfish industry. Weakening water quality standards and discharge requirements might save upstream industries some of the environmental cost of doing business, but it threatens downstream industries dependent on reasonably clean water. The commercial shellfish industry can be a part of the solution within the existing framework of the Clean Water Act. To the shellfish industry, nutrient bioextraction provides a significant opportunity for existing shellfish growers to expand their existing operations and to introduce new growers to shellfish aquaculture, while at the same time mitigating nutrient pollution. Nutrient bioextraction essentially provides a win-win situation wherein small businesses can both create new jobs and restore degraded waterways. This can be accomplished without expending significant taxpayer dollars.

Although bivalves are dependent on clean water for their survival, they also play a critical role in keeping their environment clean. Bivalve species such as clams, oysters and mussels are renowned efficient filter feeders that remove excess plankton and solids from coastal marine waters. Bivalves concentrate suspended materials contained in the water column, ingesting a portion of the material as nutrition, and helping to transfer the load of suspended materials from the water column to the benthos. Unlike other forms of aquaculture, shellfish aquaculture does not require the addition of feed or other organic materials to the water column. Bivalves therefore have the potential to greatly improve the quality of the overlying seawater by reducing the organic load associated with runoff from upland development. They do this by grazing down plankton that have grown in excess due to high nutrient loading associated with urban runoff, developed shorelines, inadequately treated sewage, and pet waste. The presence of shellfish aquaculture in the Puget Sound, for example, serves as a primary deterrent to further degraded water quality due to large assemblages of bivalves serving as a functional filtration system for some components associated with nitrification of urbanized shorelines by human development.

Harvesting these filter-feeding organisms can therefore be a sustainable method for producing food of high nutritional value while simultaneously recycling nutrients from sea to land. Nutrient bioextraction is commonly defined as an environmental management strategy by which nutrients are removed from an aquatic ecosystem through the harvest of enhanced biological production, including the aquaculture of suspension-feeding shellfish or algae. The ability to remove nitrogen from coastal waters with the harvest of bivalves is unquestionable. One study found that the harvest of 2800 tons of mussels would result in the removal of 28 tons of nitrogen. (Lindahl et al. 2005). Another study concluded that a weekly harvest of approximately 200 oysters can compensate for the nutrient inputs of a typical waterfront homeowner on a properly functioning septic system. (Rice et al. 2001). And in a recent study funded by the EPA and administered by the National Fish and Wildlife Foundation, researchers estimated that the harvest of 1 million eastern oysters results in the removal of 132 kg of total nitrogen. The study concluded that in terms of nutrients removed per unit area, "oyster harvest is an effective means of nutrient removal compared with other nonpoint source reduction strategies." (Higgens et al. 2011).

Commercial shellfish growers currently benefit society by removing nutrients from coastal waters without being compensated for providing that benefit. Although advantageous for society, it presents a lost economic opportunity. Given the right incentives and regulatory environment, commercial shellfish growers could expand the scale of their operations, increase revenues and create jobs, while at the same time removing even greater amounts of nutrients from coastal waters. Those incentives can be established by incorporating commercial shellfish farming into a nitrogen TMDL (Total Maximum Daily Loads) implementation plan, or by creating a nutrient trading regime through which commercial growers are compensated for the environmental offsets their harvests provide.

Further, commercial shellfish aquaculture has the potential to be a tremendous growth industry in the United States. Approximately 84 percent of all seafood consumed by Americans is imported from foreign countries, contributing to a $9 billion trade deficit in seafood. The domestic aquaculture industry currently supplies only 5 percent of the seafood consumed in the

United States. More than an adequate demand for shellfish aquaculture products exists, coinciding with the need to manage and reduce nutrient pollution. Nutrient bioextraction incentives could be the catalyst to expanding a sustainable United States food industry with multiple social benefits.

Thank you for considering this important matter and its impact on the commercial shellfish aquaculture industry.

Respectfully submitted,

Margaret P. Barrette

U.S. House of Representatives
Committee on Transportation & Infrastructure,
Subcommittee on Water Resources

Testimony of Betsy Peabody, Executive Director of Puget Sound Restoration Fund

June 24, 2011

Thank you, Mr. Chairman and members of the Committee, for the opportunity to testify before you today. My name is Betsy Peabody. I am executive director of Puget Sound Restoration Fund, a nonprofit organization dedicated to restoring marine habitat, native species and water quality in Puget Sound, Washington.

I speak today in support of the role that shellfish play in maintaining clean and healthy estuaries, and providing important nutrient removal services.

Nutrient pollution in Puget Sound affects many of our collective efforts to restore healthy ecosystems and productive waters. Efforts to rebuild native oyster populations in Puget Sound provide an illustration of this. Historically, inlets in South, Central and North Puget Sound supported core populations of native oysters that in turn supported a host of other species. Healthy, dense assemblages of native oysters provided natural filtration and habitat that contributed to a healthy ecosystem. Over time, nutrient pollution from surrounding development contributed to the loss of these once-productive habitats by fueling large algae blooms that later decomposed and settled as silt on the bottom. Layer upon layer of silt effectively softened the substrate, making it unsuitable for native oyster settlement. In this way, nutrient pollution from human activities has damaged the natural processes and habitat features that are essential to native species.

Moving forward to the present, natural and cultivated shellfish populations throughout Puget Sound provide filtration and nutrient cycling services that are particularly helpful in combating increased nutrient pollution associated with a growing human population. Oysters and other bivalve shellfish are filter feeders. When they feed on phytoplankton they remove nutrients and increase light penetration. People contribute vastly more nutrients than most marine systems can handle, which leads to excess algae growth, oxygen depletion and clouded waters. Without shellfish in these waters, we would be hard pressed to manage the effects of excess nutrient input.

As we look to the future, it will become increasingly important to reduce nutrient pollution, since it appears to be amplifying the effects of ocean acidification. Puget Sound is at the center of an emerging scientific investigation into the effects of ocean acidification on shellfish communities.

The phenomenon was first observed by the shellfish industry. Larval mortalities in select hatcheries and natural set failures in Hood Canal and Willapa Bay over the past five years have created growing alarm over the potential effects of corrosive seawater. Studies reveal that seasonal upwelling of deep oceanic waters is bringing carbon-rich, low pH water to the surface, which may be adversely affecting molluscan bivalve larvae reared in hatchery facilities.

To investigate this further, the Puget Sound Partnership funded a 2-year ocean acidification monitoring project to examine whether or not changing water conditions were affecting natural shellfish populations in Puget Sound. In 2009, a cross-disciplinary team, including Puget Sound Restoration Fund, NOAA, University of Washington, Taylor Shellfish, Baywater, Inc., Pacific Shellfish Institute and Pacific Coast Shellfish Growers Association, established field stations at two important shellfish growing areas in Puget Sound – Big Cove, Totten Inlet in southern Puget Sound and Dabob Bay in Hood Canal. During the 2009 and 2010 growing seasons, partners collected weekly samples of planktonic larvae, seawater, and natural spatfall from Olympia oysters (Totten Inlet) and Pacific oysters (Dabob Bay). These data were correlated with oceanographic measurements to determine the effect of high CO2 and low pH on larval abundance and oyster settlement.

The 2-year ocean acidification monitoring project was completed in October, 2010. Initial findings include: 1) Seawater chemistry is changing in Puget Sound as a result of ocean acidification. 2) The mechanisms driving more acidic conditions appear to be different at the two stations. Low pH in Dabob is tied to upwelling events; low pH in Totten seems more associated with decomposition. 3) Human-driven activities, such as nutrient loading, seem to be amplifying the effects of changing water conditions in Puget Sound. We are feeding our bays and inlets with nutrients that fuel algae growth. When this organic material breaks down, bacteria release CO2 through respiration, which lowers pH and creates more acidic conditions. The biological responses to these chemical changes are not yet completely understood, especially since oyster recruitment is driven by a suite of factors and naturally variable from year to year. But acidic conditions, as measured at the two field stations, lend urgency to our collective efforts to reduce nutrient pollution in Puget Sound and address global CO2 emissions.

The ocean acidification monitoring program was intended as a long-term study, pending additional funding. Adverse effects of corrosive seawater on bivalve populations have potential wide-ranging effects. Shellfish production has long played an important role in local economies. Shellfish populations throughout Puget Sound provide many important ecosystem services that help restore balance to a system that is being affected by a growing human population. Additionally, efforts to rebuild native oyster habitat depend on natural reproduction. If increasingly acidic water begins to affect shellfish production, natural filtration and ecological restoration efforts, this could eventually result in fewer locally grown shellfish, increasingly eutrophic waters and troubled local economies. These are not desired outcomes.

Over nitrification of Puget Sound and other estuaries needs to be addressed; maintaining and rebuilding shellfish populations can play an important role in these efforts.

Testimony of Ben Williams
Owner, Fisherman's Dock Seafood Markets
Jacksonville and Orange Park Florida

Before the House Committee on
Transportation and Infrastructure's Water Resources
and the Environment Subcommittee

June 24, 2011

Mr. Chairman, members of the Committee, my name is Ben Williams. I have been in the seafood business for almost 30 years in Northeast Florida.

I've commercial crabbed on the St. Johns, fished gill nets back when they were legal, owned a shrimp boat, and for the last 25 years or so, my wife, Louann, and I have operated a wholesale/retail seafood operation called Fisherman's Dock. We have two shops in Jacksonville, and Orange Park, Florida, and we service restaurants over a 4 county area. We directly employ over 25 people along with supporting, through our purchases, more than few local fishermen.

In addition, we live on the river, and have done so for over 20 years. We both fish the St. Johns River recreationally. In fact, we were on the river last week for three days, joining more than eight hundred (yes, that is 800!) other anglers fishing in a charity bass tournament located in Palatka, a community 40 miles south of Jacksonville. We fished well enough to get a check!

With that background, we can tell you in no uncertain terms that there are economic consequences to the decisions you are to discuss in this subcommittee. Nutrient pollution is harming the St. Johns River. The Florida Department of Environmental Protection (FDEP) lists the St. Johns as "impaired" for nutrient pollution. Impaired is a bureaucratic word which we fishermen, and the consumers of our products, know full well means polluted.

Since 2005, we've seen toxic algae blooms turn the St. Johns River green. We've heard customers question the safety of what we sell as a result of their concerns associated with blue green algae blooms. We've listened as our customers say that they, "...Don't want anything that comes out of the St. Johns River."

This nutrient pollution's impacts goes beyond our storefront. We buy blue crabs from local fishermen. Their primary season is summer, which is precisely the time the algae blooms occur. Their inability to sell their catch coincides with the very time of the year they should make the bulk of their yearly income. No one wants to eat crabs from a river that is bright green and has been posted against contact by the local health department. Simply put, this is a prime example of real economic harm that results from "impaired waters".

Algae blooms' impacts extend beyond the seafood business. As recreational fishermen, we've seen the river devoid of boats on summer weekends when there should have been hundreds

between Lake George and Jacksonville either fishing, skiing, tossing nets for shrimp, or simply enjoying being on the water.

And let us be clear, when all those folks, some of whom come to Florida form other states, leave their boats and PWCs and kayaks and canoes in the garage it hurts businesses that sell all manner of stuff, from bait, which we sell, to fuel, to ice .....well, you get the picture.

Let me backtrack to the shrimp for a moment. You have no idea how important a clean healthy properly functioning St. Johns River is to both the commercial and the large recreational shrimp industries here in Northeast Florida. In the late spring, actually it's been going on for a few weeks now, the Atlantic White Shrimp, Northeast Florida's most important commercial species and the species thousands of recreational fishermen call "River shrimp", will start dropping eggs along our coast.

Once hatched the juvenile shrimp will work their way up the St. Johns as far as Crescent Lake and Lake George. That is more than 80 miles from the ocean. They'll spend the summer there feeding and growing. In the fall, they will start making their way back to the ocean.

The point being that the St. Johns, and for that matter all the smaller rivers along the S.E. U.S. Coast, are nurseries, nurseries that nurture not just the shrimp but also the economic activity that surrounds them. When nitrogen and phosphorus pollute our estuaries, it harms both our environment and our economy.

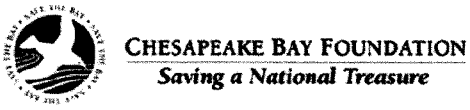
Now, I would be remiss if I did not acknowledge that as small business owners, we are very sympathetic to the arguments posed by the opponents of EPA's proposed nutrient standards. We're quite familiar with useless burdensome "nanny state" government regulations. We know how they can sap energy and reduces a business's productivity.

Trust me in that we do not support the promulgation of any new regulations lightly. But, in this case it is our well considered judgment that they are necessary. They are necessary to protect, and keep viable, an important and traditional part of Florida's economic life.

It is quite clear to us that to allow other segments of Florida's economy to reduce their cost of production by letting them continue to degrade our waterways, instead of cleaning up their acts, is not a sound long-term economic plan.

It's way past time to get on with this thing. We support the EPA's numeric nutrient standards, and ask that this committee take no action that will postpone their implementation.

Thank you for allowing me to comment.



June 24th, 2011

The Honorable John Mica, Chairman
The Honorable Nick Rahall, Ranking Member
Committee on Transportation and Infrastructure
US House of Representatives
Washington DC 20515

Dear Chairman Mica and Ranking Member Rahall,

I write on behalf of the Chesapeake Bay Foundation to offer brief comments pertaining to the Clean Water Act and numeric nutrient criteria, the subject of the committee's June 24th, 2011 hearing entitled "Running Roughshod over States and Stakeholders: EPA's Nutrient Policies." I respectfully request that this letter be included in the hearing record.

The Chesapeake Bay Foundation emphatically does not agree with the committee's characterization of the Environmental Protection Agency's nutrient policies as "running roughshod over states and stakeholders." Rather, we believe that EPA's longstanding policy of encouraging states to develop numeric rather than narrative nutrient and other pollution standards is essential to the restoration and maintenance of clean water in the United States. We strongly urge the Transportation and Infrastructure Committee to adopt a broader and less provocative view of the essential role of the EPA in addressing the nation's water quality challenges.

Section 101 of the Federal Water Pollution Control Act defines Act's objective to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 101 continues to list several national goals, three of which are:

(1) "that the discharge of pollutants into the navigable waters be eliminated by 1985";

(2) "that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983"; and

(7) "that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution."

Clearly, the Clean Water Act has not succeeded in accomplishing these national goals. 2011 is the 26th year of failure to end the discharge of pollutants into the navigable waters of the United States. Thirty nine years after the passage of the Federal Water Pollution Control Act, it still cannot be honestly said that effective programs to control point sources of pollution have been developed and fully implemented, and virtually no effective programs to control the nation's enormous nonpoint source challenges are in place. This failure comes with a high price. The most recent available survey data shows that for the nation as a whole, 50% of assessed river and stream miles continue to be "impaired", as are 66% of assessed lake and pond acres, 64% of assessed bays and estuaries, 82% of near coastal areas, 94% of Great Lakes shoreline, and 100% of Great Lakes open water. These percentages have grown significantly with each new assessment.

Many, perhaps most, of the nation's rivers and coastal estuarine areas are subject to pollution emanating from more than one state. Downstream impacts negatively affecting a particular state or local jurisdiction often occur through the failure – often expressly political – of upstream jurisdictions to control pollution. The Chesapeake Bay is a prime example. Pollution that affects the water quality of the Chesapeake Bay flows off the land from six states and the District of Columbia, and is directly deposited from the air after travelling from more distant "air-shed" states such as Kentucky and Ohio. These upstream sources of pollution have severely diminished the Chesapeake Bay's natural bounty and negatively affected the economies of Maryland and Virginia, devastating coastal communities that have for literally hundreds of years depended on harvesting the Bay's resources that depend on clean water.. The Chesapeake Bay and its watershed is a unified, natural ecological system and must be managed as such. The federal government must play a key role in the management of such systems.

With specific regard to numeric nutrient criteria and the Chesapeake Bay, scientists have recognized for decades that excess nutrients and sediment in the Bay's tributaries cause serious seasonal reduction in the Bay's dissolved oxygen, leading to "dead zones" that have in the recent past affected up to one-third of the Bay's volume. Voluntary efforts to reduce nutrient and sediment sources by the six Bay watershed states and the District of Columbia did not come close to addressing these well-recognized challenges. It was only after adoption of consistent state water quality criteria for dissolved oxygen, water clarity and chlorophyll a in the past decade that mechanisms could be put into place to begin to reduce both point and nonpoint sources of pollution to the point where there is some hope that the Chesapeake Bay may some day be able to rebound to

a semblance of its former biological wealth. These consistent state criteria were strongly encouraged and initially developed by the EPA before being adopted by the states.

Air and water pollution know neither property lines nor political boundaries. While substantial progress have been made in reducing the harmful biological and economic effects of water pollution over the past four decades – even as population, automobile use, industrial agriculture and other sources of pollution grew – the federal government's efforts to control pollution across the nation have not been nearly as successful as the writers of the Clean Water Act intended. Effective pollution control efforts by state and local jurisdictions are essential to achieve the goals of the Act, but so are strong efforts by the federal government to encourage, facilitate, and at times, compel the states to achieve national clean water objectives. We view both the recent efforts of Congress to stop implementation and enforcement of EPA's Florida nutrient standards, and the provisions of H.R. 2018 giving the states veto power over EPA Clean Water Act's implementation and enforcement decisions, as misguided policy that cannot help but to further set back efforts to achieve clean water in America.

In conclusion, we urge the House Transportation and Infrastructure Committee to aggressively encourage effective local, state, and federal pollution control programs to address the nation's water pollution challenges. It is only in so doing that we will fulfill – albeit decades late – the vision and national objectives so eloquently expressed by the authors of the Clean Water Act.

Sincerely,

Doug Siglin
Federal Affairs Director

DES MOINES WATER WORKS
Board of Water Works Trustees

Des Moines Water Works
Water You Can Trust for Life

2201 George Flagg Parkway | Des Moines, Iowa 50321-1190 | (515) 283-8700 | www.dmww.com

May 27, 2011

RE: Congressional Testimony – Nutrient Criteria

Des Moines Water Works (DMWW), located in Des Moines, IA is a public drinking water utility owned by the citizens of Des Moines and governed by a board of trustees. These citizens have entrusted the utility with the protection of their infrastructure and to diligently operate the utility in a manner that provides safe drinking water to approximately 500,000 people in Central Iowa. Contaminates of concern to the utility are nutrients, bacteria, algae blooms and cyanobacteria. These contaminants challenge our treatment process, increase the cost of treatment for our customers, and have the potential to put public health at risk.

Primary water sources for DMWW are the Raccoon and Des Moines Rivers. (Watershed map-Appendix 1) Land use in the Raccoon and Des Moines River Watersheds is overwhelmingly agricultural. About 1.7 million of the 2.3 million acres in the Raccoon watershed is cultivated for corn and soybeans. Land covered by perennial vegetation is nearly non-existent outside urban areas. Animals have been moved from pasture to concentrated feeding systems, and the cover crops of alfalfa and oats have largely been replaced by corn and soybeans. Much of the corn-soybean system requires constructed drainage (agricultural tile drainage) to maximize yields. Farm subsidies perpetuate the crop monoculture in Iowa. All of these factors have resulted in various consequences for water quality and water quantity.

We believe source water challenges from agricultural sources are not concerns unique to DMWW, but concern a large segment of the drinking water industry. The availability, quality and quantity of the sources of water used for drinking water are challenges we as an industry face in varying degrees. The drinking water industry ensures that all Americans have access to a safe and secure supply of drinking water. We believe every American who drinks a glass of water should recognize the importance of water resources to sustaining life and the critical connection between our water resources and food production.

Below are the challenges, expectations and goals we have identified, and realize that while many of these are universal in the drinking water industry, there will be other unique concerns from various communities and regions of the country.

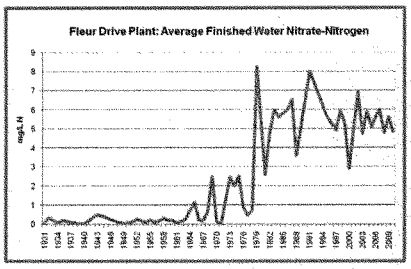
Challenges

Customer water quality expectations

Customers demand more from their tap water than ever before. According to the US Census, American Fact Finders, pollution of drinking water is Americans' top environmental concern, while pollution of rivers, lakes, and reservoirs is third. People want clean water. Not only do they want drinking water that meets regulatory requirements, they want water of consistent quality that meets aesthetic standards. Customers no longer tolerate bad-tasting or bad smelling water due to spring runoff or summertime algae blooms.

Nutrients

High nitrate levels are a concern in drinking water because nitrates can cause methemoglobinemia-blue baby syndrome, a condition found especially in infants less than six months of age.

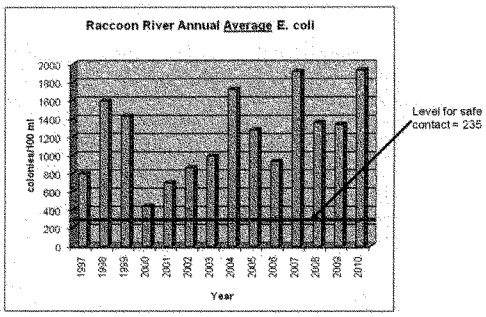


Increased Nitrates in Finished Drinking Water
1931 - 2009

Nitrate and phosphorous also promote blooms of harmful algae and cyanobacteria. These organisms impart taste and odor to the treated drinking water, produce substances known to be toxic to human beings, and increase the organic carbon content of the treated water. Organic carbon reacts with chlorine during disinfection to produce compounds that are regulated contaminants and may have deleterious health effects. Algae and cyanobacteria can penetrate sand filters during treatment, increasing treated water turbidity, which is a regulated contaminant. (River nitrates-Appendix 2)

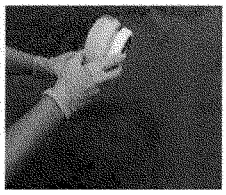
Bacteria

Bacteria are easily removed and killed during conventional water treatment. However, unnaturally high levels of fecal organisms (*E. coli*) in our rivers and streams is a sign of an unhealthy system, and an indicator that other pathogenic organisms, like *Giardia* and *Cryptosporidium*, may be present. (The percent of days above the recreation standard for E.coli-Appendix 3)



Sedimentation and eutrophication of lakes

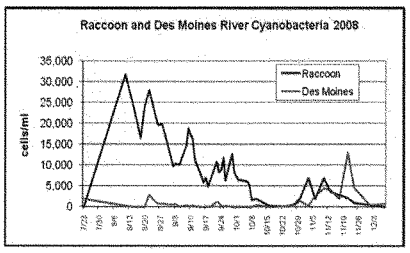
Both natural and man-made lakes are plagued by sedimentation resulting from field and stream bank erosion. This reduces habitat for native species, diminishes available volume for flood storage, and diminishes the recreational value of the lake. Excessive nutrient loads delivered to lakes in sedimentation promotes the growth of algae and cyanobacteria, which reduces water clarity, diminishes species diversity, and devalues the recreational quality of these systems.

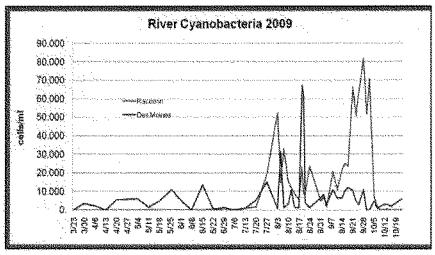


Dripping algae leaves an impact — A USGS scientist collecting a sample of algae for analysis. The divots left from the algae dripping from the sampler shows how thick these accumulations can be. *Microcystins sp.* dominated this accumulation at Binder Lake, IA

Harmful algae blooms

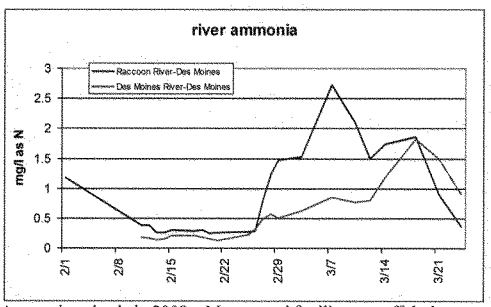
Phytoplankton (green algae and cyanobacteria) can densely populate river and lake water that contains elevated nutrient levels. These organisms impart tastes and odors to the treated drinking water, produce substances known to be toxic to human beings, and increase the organic carbon content of the treated water. Organic carbon reacts with chlorine during disinfection to produce compounds that are regulated contaminants and may have deleterious health effects. Algae and cyanobacteria also can penetrate sand filters during treatment, increasing treated water turbidity, which is a regulated contaminant. In Iowa these blooms are not only occurring in lakes, but free flowing streams.





Ammonia and Organic matter from manure

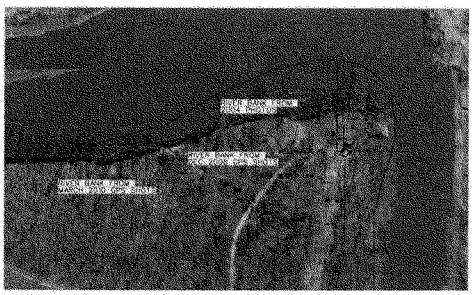
Ammonia consumes 7 to 10 times its weight in chlorine. This presents multiple problems: increased use of chlorine, difficulty maintaining adequate disinfection levels, objectionable tastes and odors, and elevated levels of disinfection byproducts, which are regulated contaminants. Organic matter also reacts with chlorine, increases levels of disinfection byproducts, and imparts objectionable tastes and odors.



River Ammonia episode in 2008 – Manure and fertilizer runoff during snowmelt

Emerging Contaminants

It is not clearly understood what the cumulative health effects are of exposure to antibiotics, hormones, and endocrine disruptors in drinking water. Their presence in rivers and streams is another indication that water quality may be compromised. These compounds are known to have serious effects on aquatic life, which further deteriorates a healthy aquatic ecosystem that is important for water supply. Many customers are concerned about the presence of these materials in their drinking water, and this can further erode customer confidence in the water supply. These compounds excreted in animal and human waste also contaminate water resources.



Flooding

In 1993 DMWW lost the ability to provide water to their customers in Central Iowa when the treatment plant was inundated with flood water. Following the flood of 1993 a second treatment plant was constructed to provide redundancy in the system. The wells at the second facility are now being compromised due to the loss of 65 feet of river bank. The river bank erosion

is caused by erosion during flood events. Flooding due to changes in weather patterns, increased flows, and the increased velocity of flows.

The Rebuild Iowa Commission paper*, *Facts and More*, states that, "more fatalities occur in the United States each year due to flooding than from any other thunderstorm-related hazard because people underestimate the force and power of water." The best way to reduce the risk of flooding is to focus more on watershed solutions that work with nature, and less on solutions like flood barriers that are simply a response to changes that have occurred in the watershed, and it exacerbates problems downstream. It is also not realistic to move large sections of cities out of the flood plain. Total damage costs caused by the 2008 flooding in Iowa are estimated, by the Rebuild Iowa Commission to be, between $8 and $10 billion dollars. To date, $3.6 billion has been allocated in state and federal funding. Protecting the river environment and managing flood risk is a shared responsibility.

* The Rebuild Iowa Office was formed in 2008 to provide recovery assistance to individuals and communities devastated by a flooding event. They were also charged with making recommendations to the state legislature that could potentially reduce flooding events and loss.

Livestock—trending from pasture to feedlots or confinements yielding greater animal density and greater risk of polluted runoff

The total number of animal units in Iowa has not increased dramatically in recent decades, although hog numbers the last couple of years are near record highs. However, animals now are raised in concentrated systems where management of their waste can become problematic. This also has consequences for water quality: excess nutrients, fish kills, pathogenic organisms, and harmful algae blooms, to name four.

Lack of political will

There is an urgent need for civil conversations and positive political will amongst federal, state, and local government leaders on water resource management in our country. This includes implementation of targeted funding on watershed-based solutions that provide better living conditions for ordinary citizens. There needs to be a clear vision of what is conducive for all citizens.

The absence of strategic planning and water resource management backed by laws and the political will to enforce them leaves the country and its citizens vulnerable to disasters. Issues of water quality and quantity are inseparable from the social, economic and political challenges.

Sustainable water management policy development is a long-term process, and one that requires foresight and commitment. The time parameters of such development often exceed the time parameters of political office. Decisions are sometimes difficult and costly. Political determination and vision is required to ensure development of a sustainable water management system.

Expectations

These are the expectations of our drinking water customer, the customer who through rates, fees, or taxes own and operate the drinking water utility. Through comprehensive watershed planning, the drinking water customer's expectations include:

- A recognition and commitment of our collective responsibility to protect public health by improving and protecting our limited natural resources for the benefit and use of all citizens today and in the future.
- Reduced risk of flooding,
- Improved water quality,
- Citizen participation and input as a holistic watershed community.
- Civility in conversations and actions.

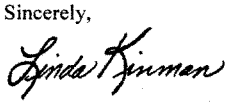
- A renewal of American values that allows neighbors to work together to solve problems and implement policy decisions that are equitable, rational, and proportional.
- Accountability for all decisions and expenditures of public money (federal, state, and local) and that they are fair, balanced, and comparative.
- Influence change to our country's landscape by challenging traditional approaches, diversifying crops, promoting innovative management of livestock waste, and land use planning.
- Encourage people to get back outside to swim, boat, and fish in the country's rivers, lakes and streams.
- Attainability should not be a consideration in the process for establishing goals, standards, and rules. If meaningful improvements are not attainable via voluntary approaches, a regulatory approach may be the only alternative.
- Funding and enforcement of current regulations and development of new regulations to address those who choose to be non-compliant. For example: Require accountability for the management of soil and water resources on a property as a prerequisite to receiving any federal or state funding.

Goals:

- Reverse the trend of source water degradation
- Adopt and enforce numeric water quality criteria that support the designated use as a drinking water source, destination for recreation, and to protect native species.
- Reach consensus that finds the achieved state of water, soil, energy, and biodiversity acceptable.
- Institutionalize the understanding that water quality, food production, and environmental sustainability are not mutually exclusive.
- Reach consensus that voluntary actions are preferred, but that legislative, regulatory or civil actions are necessary to protect against egregious violations of the law and environmental standards.
- Achieve public engagement that generates the "political will" to protect natural resource systems holistically.

Thank you for considering our testimony. As part of the drinking water industry we look forward to working with all entities to have our voice heard on these critical issues to preserve and protect the country's water resources.

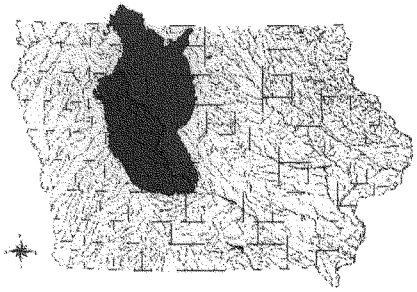
Sincerely,



Linda Kinman
Public Policy Analyst/Watershed Advocate

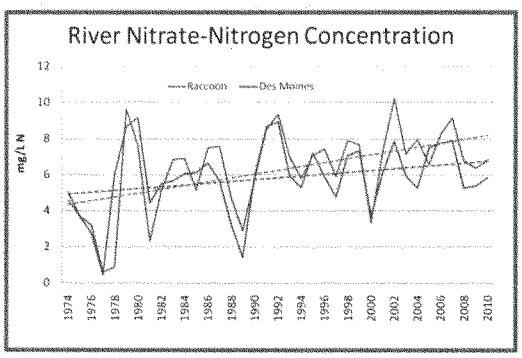
On behalf of:
Randy Beavers, P.E.
CEO and General Manager

Appendix 1

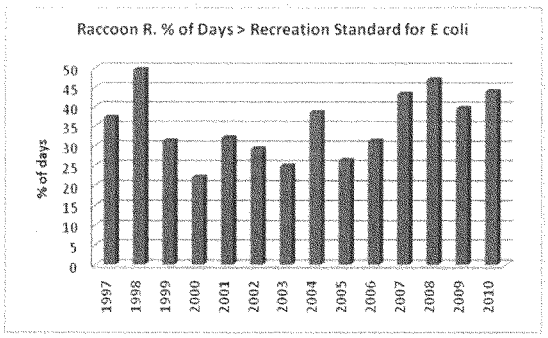


Raccoon and Des Moines River Watersheds

Appendix 2



Appendix 3



AMERICA'S GREAT WATERS COALITION

The Honorable Bob Gibbs
Chairman
Subcommitee on Water Resources
329 Cannon H.O.B.
Washington, DC 20515

The Honorable Tim Bishop
Ranking Member
Subcommitee on Water Resources
306 Cannon H.O.B.
Washington, DC 20515

June 23, 2011

Dear Congressman Gibbs and Congressman Bishop:

America's Great Waters Coalition is an alliance of national, regional, state and local organizations joined together to protect, preserve, and restore our nation's Great Waters. And while the majority of our member organizations are focused on the restoration of their local water, we all agree that any action that threatens one Great Water constitutes a threat to all Great Waters. For if innovative and ambitious restoration initiatives are stymied, there is little hope that these initiatives will spread to others that desperately need them. If Clean Water Act tools are not allowed to be implemented in one case, they likely will suffer the same fate at a later date in another watershed. It is for this reason that America's Great Waters Coalition submit this statement regarding the Transportation and Infrastructure Committee's hearing on the implementation of Numeric Nutrient Criteria.

Nutrient pollution is one of the most significant threats to waters all across the country. Excess nitrogen and phosphorus from sources such as sewage, animal manure, and fertilizer enter water bodies and have significant negative impacts on water quality. A 2009 report from a Task Group of senior state and EPA water quality and drinking water officials and managers found that 50 percent of U.S. streams have medium to high levels of nitrogen and phosphorus, 78 percent of assessed coastal waters exhibit eutrophication, nitrate drinking water violations have doubled in eight years, and that algal blooms are steadily on the rise. Nutrient pollution also impacts almost all of our nation's Great Waters, including the Chesapeake Bay, Great Lakes, Long Island Sound, Puget Sound and the Gulf of Mexico.

EPA acknowledged the national extent of this problem, when in its 1998 "National Strategy for the Development of Regional Nutrient Criteria," EPA encouraged every state to develop numeric nutrient criteria to protect waters from this source of pollution and meet water quality standards under the Clean Water Act. The report reflected an understanding that numeric nutrient criteria can be an effective way to prevent nutrient pollution and to help states comply with the Clean Water Act. In 2008, an EPA status report found that 19 states have adopted numeric nutrient

standards for some or all of their lakes and reservoirs, and 14 states have adopted numeric nutrient standards for some or all of their lakes and streams.

And in the recent years, nutrient pollution in Florida hit record levels. According to Florida's Integrated Water Quality Assessment, conducted by the Florida Department of Environmental Protection in 2010, 1,918 square miles of the state's rivers and streams and 378,435 acres of Florida's lakes were contaminated by nutrient pollution from sewage discharges and fertilizer or manure runoff. These numbers represented a three percent increase in nutrient impairment compared with the 2008 Water Quality Assessment. In rivers and streams, nutrients were the fourth most significant source of impairment, and they were the most significant source of impairment in lakes. All across the state, this pollution jeopardizes the health of aquatic ecosystems and fisheries, public health, the ability to swim and boat in lakes and rivers, and Florida's most important industry, tourism. Algae outbreaks plague many lakes, rivers and springs. These outbreaks can make boating and swimming dangerous or impossible, result in massive fish kills, and reduce waterfront property values.

Recognizing the significance of this problem, the EPA began the rulemaking process to develop Numeric Nutrient Criteria to limit the amount of nutrient pollution entering Florida's waters during the Bush Administration. Stephen Johnson, the EPA Administrator under President Bush, authorized his Assistant Administrator for Water to make a formal determination as to whether, under the Clean Water Act, numeric limits for "nutrients," such as sewage, fertilizer and animal manure pollution of water, were needed in Florida. The state's standard was vague and unenforceable, as it is based on a narrative standard to determine when a water body is "impaired," stating that nutrients can't cause a biological "imbalance," without specifying what levels of nutrients can be released into water bodies to avoid this. Often, the result is impairment of the water body before the nutrient level that causes harm is determined.

In January 2009 the EPA took action and determined that numeric nutrient limits were necessary This decision was endorsed by the head of the Florida Department of Environmental Protection (FDEP). In August of that year, the FDEP announced its proposal of numeric nutrient limits for the state. EPA also proposed standards five months later, in mid-January of 2010, and these numbers were very similar to the numbers proposed by the state of Florida. EPA released their final numeric nutrient criteria rule for the state in November 2010, and the rule is scheduled to take effect in March, 2012.

These new criteria are scientifically based and will result in the restoration of Florida's waters, including the Florida Everglades. As such America's Great Waters Coalition applauds EPA's action and recognizes that this is an important step towards the restoration of the health and vibrancy of our nation's waters. We also recognize that EPA's ability to review and update Numeric Nutrient Criteria is a necessary tool to protect and restore aquatic ecosystems.

Where states have failed to develop standards and criteria to protect their waters, nutrient impairment has worsened and overall water quality is diminished. In the Mississippi River and the Gulf of Mexico, nitrogen and phosphorus pollution has contaminated water supplies, created serious health hazards to swimmers and pets that come into contact with algal blooms, tourism and recreational opportunities have diminished, and many fish and wildlife have died in oxygen-

deprived water. Despite these problems, no state in the Mississippi River has calculated numeric nutrient criteria, and the problem continues to worsen.

As noted earlier, the success of EPA's initiative to work with the state of Florida to reduce nutrient pollution may foretell the fate of future generations. If this initiative is stymied delayed or stymied, the repercussions could impact more that those that live in or visit Florida. It could ultimately impact every American whose local water body is impaired by nutrient pollution.

A recent article in the Environmental Law Reporter summed this up best, stating, "The CWA, with multiple paths to its destination, is reinventing itself once more. Enacted in modern form in 1972, the next quarter century saw EPA focused on the development of technology standards for industrial and municipal point sources. In the mid-1990s, prodded forward by a stream of citizen suits, the Agency started to address nonpoint sources of pollution through water quality standards and the TMDL program. This movement stalled from 2000-2009 and the current revival raises the question whether EPA, at last, can make nonpoint and ambient-based controls effective. The answers are being tested in two venues where the problems are among the most acute and their solutions the most resisted: the Chesapeake Bay and Florida. ***As go the Chesapeake and the Sunshine State, so will go the future of clean water for years to come.***[1]"

In the interest of the Everglades, water quality throughout the state of Florida and all of the waters impaired by nutrients throughout the country, we urge the committee to recognize the importance and necessity of the promulgation of numeric Nutrient Criteria, in Florida and wherever else nutrient pollution threatens rivers, lakes and streams. Finally, we urge you to support the EPA as it works to ensure that all American's enjoy healthy and pollution free waters.

---

[1] Houch, Oliver A.The Clean Water Act Returns (Again): Part I, TMDLs and the Chesapeake Bay. Environmental Law Reporter. March, 2011.

America's Great Waters Coalition Members

- Alliance for the Great Lakes
- America's Wetland Foundation
- American Bottom Conservancy
- American Rivers
- Arthur R. Marshall Foundation
- Audubon Connecticut
- Audubon New York
- Biodiversity Project
- Business Alliance for a Clean Lake
- Chesapeake Bay Foundation
- Citizens Campaign for the Environment
- Clearwater
- Coalition to Restore Coastal Louisiana
- The Colorado Watershed Assembly
- Committee on Middle Fork Vermilion River
- Corsica River Conservancy
- Endangered Habitats League
- Environment America
- Environmental Defense Fund
- Everglades Foundation
- Everglades Law Center
- Florida Wildlife Federation
- Freshwater Future
- Friends of the Upper Delaware River
- The Freshwater Trust
- Friends of Ballona Wetlands
- Friends of the Chemung River Watershed
- Friends of Northern Lake Champlain
- Galveston Bay Foundation
- Gulf of Maine Restoration and Conservation Initiative
- Gulf Restoration Network
- Indiana Wildlife Federation
- Illinois Council of Trout Unlimited
- Izaak Walton League of America
- Kentucky Resources Council
- Lake Champlain Committee
- Lake Erie Region Conservancy
- League of Conservation Voters
- Michigan United Conservation Clubs
- Michigan Wildlife Conservancy
- Milwaukee Riverkeeper
- Narragansett Baykeeper
- National Association of Clean Water Agencies
- National Audubon Society
- National Parks Conservation Association
- National Wildlife Federation
- National Wildlife Federation
- New Jersey Audubon Society
- North Carolina Coastal Federation
- Ohio Environmental Council
- Ohio River Foundation
- Passaic River Coalition
- PennFuture
- People for Puget Sound
- Planning and Conservation League
- Prairie Rivers Network
- Restore America's Estuaries
- St. Johns River Alliance
- Save The Bay – San Francisco
- Save the Dunes Conservation Fund
- Spokane Riverkeeper
- Tip of the Mitt Watershed Council
- Trout Unlimited
- Upstate Forever
- Washington Wildlife Federation
- The Watershed Center - Grand Traverse Bay
- Western Lake Erie Waterkeeper Association
- The Wetlands Initiative

Mr. BISHOP. Thank you very much, Mr. Chairman, I yield back.

Mr. GIBBS. Before I introduce the witnesses, I ask unanimous consent that Mr. Southerland and Mr. Guinta be allowed to sit on the committee today and participate, full members of the T&I.

And also I want to ask unanimous consent the statement of William Dever of the Florida Gulf Coast Building and Construction Trades Council be included in the record for today's hearing. Mr. Dever's testimony expresses the affiliated unions' opposition to EPA's costly numeric nutrient criteria for Florida.

[The information follows:]

FLORIDA GULF COAST BUILDING AND CONSTRUCTION TRADES COUNCIL

IN AFFILIATION WITH

BUILDING TRADES DEPARTMENT-AFL-CIO

5621 Harney Road, Tampa, FL 33610
Phone: (813) 621-6451 • Fax: (813) 623-1623

For Immediate Release:
June 23, 2011

Contact: William Dever
(813) 621-6451

Statement of William Dever
President of the Florida Gulf Coast Building & Construction Trades Council
On the EPA's Numeric Nutrient Criteria in Florida

"Today, the affiliated unions of the Florida Gulf Coast Building & Construction Trades Council are urging President Obama to oppose the Environmental Protection Agency's costly "numeric nutrient criteria" rulemaking standard. Our state is facing unprecedented economic challenges, and implementing this rule would only further stifle job creation and growth. We respectfully ask the President and members of the Florida Congressional Delegation to join us in opposition to the implementation of this unprecedented federal rule.

"Our unions represent thousands of working men and women whose jobs often depend on investment in construction and maintenance in Florida's Gulf Coast region. Based on projections made by Florida agencies and private sector industries, we are extremely concerned that the high cost of implementing these new regulations will lead directly to a reduction in new investment and construction jobs in our state."

"We urge the EPA to work in cooperation with the State of Florida to address these serious concerns. Working together, we believe that achievable solutions can be crafted that will not harm jobs and investments which the people of Florida need."

FLORIDA GULF COAST BUILDING AND CONSTRUCTION TRADES COUNCIL

IN AFFILIATION WITH

BUILDING TRADES DEPARTMENT-AFL-CIO

5621 Harney Road, Tampa, FL 33610
Phone: (813) 621-6451 • Fax: (813) 623-1623

PRESIDENT
William Dever

VICE PRESIDENT
James Barnes

SECRETARY/TREASURER
James Yohn

AFFILIATES

Boilermakers Local No. 433
Tampa-(813) 626-4105

Bricklayers Local No. 1
Tampa-(813) 876-4738

Carpenters Local No. 140
Tampa- (813) 985-5555

Electricians Local No. 108
Tampa- (813) 621-2418

Electricians Local No. 915
Tampa- (813) 621-6451

Elevators Constructors Local No. 74
Tampa- (813) 988-0950

Insulators Local No. 67
Tampa-(813) 985-3067

Iron Workers Local No. 397
Mango- (813) 623-1515

Laborers Local No. 517
Orlando- (407) 299-4000

Millwrights Local No. 1000
Tampa- (813) 626-1119

Operating Engineers Local No. 925
Tampa- (813) 626-4161

Operative Plasterers' & Cement Masons' Local No. 148
Atlanta- (404)-696-9500

Painters & Allied Trades DC 78/LU88
Tampa- (813) 672-9518

Pipefitters Local No. 123
Tampa- (813) 636-0123

Roofers Local No. 6
W. Palm (877) 467-6637

Sheet Metal Workers Local No. 15
Tampa- (813) 628-0021

Sprinklers Fitters Local No. 821
Royal Palm Beach (561) 422-9821

Teamsters Local No. 79
Tampa- (813) 621-1391

June 23, 2011

Members of the Florida Delegation
United States Senate & United States House of Representatives
Washington, DC

Re: *Florida Gulf Coast Building Trades Council* Opposes *EPA's "Numeric Nutrient Criteria" Rule for Florida Waterways*

Dear Member:

The affiliated unions of the Florida Gulf Coast Building & Construction Trades Council **oppose** the implementation of the U.S. Environmental Protection Agency's "numeric nutrient criteria" rulemaking standard for Florida waterways. Please join us to **oppose** the implementation of this new and unprecedented federal rule.

Our unions represent thousands of working men and women whose jobs often depend on investment in construction and maintenance in Florida's Gulf Coast region. Based on projections made by Florida agencies and private sector industries, we are extremely concerned that the high cost of implementing these new regulations will lead directly to a reduction in new investment, construction and jobs in our state.

Already, a climate of uncertainty has been created by the possibility that this incredibly expensive, technically challenging rule could be imposed on Florida in less than a year. This uncertainty is already affecting the consideration of productive new investments that would create badly-needed jobs in our state.

- In August 2010, a bipartisan coalition of Florida's congressional delegation asked EPA to delay finalization of the nutrient criteria rule until EPA provided an independent review of the economics and science it used. The coalition was acting in response to the concerns expressed by state agencies, businesses, agriculture, water utilities, our affiliated Building Trades unions, and the United Food and Commercial Workers among others. At that time, EPA did not agree to provide an independent review. However, a delay of the rule was subsequently put in place until March 2012.

Continued

- Initially, EPA had maintained that the total cost of the rule to Florida would be between $135 million - $206 million annually. Estimates provided by Florida agencies and private sector industries have painted a vastly different picture. The Florida Department of Environmental Protection estimates that the EPA rule would impose *$5.7- 8.4 billion in annual costs* on Floridians -- a cost that will largely be paid for via increased water and sewer utility bills. The Florida Department of Agriculture and Consumer Services has projected that Florida agriculture alone will *lose over 14,500 jobs* at a cost of *over $1 billion annually* if the rule is implemented. As one example of a state industry impact, Florida's phosphate industry has projected its capital costs to comply at *$1.6 billion* with $59 million a year in added operating and maintenance costs to comply with the rule for its operations alone.

Faced with ongoing calls to provide an independent review – especially recent communications from Senator Bill Nelson calling attention to the vast discrepancy in cost estimates – we now understand that EPA has agreed to provide the review. It will be conducted by the National Academy of Sciences (NAS). We further understand that the NAS review is to be completed before March 2012 when the new rule is set to take effect.

Agreeing to provide this independent assessment is an essential step. However, in the interim, the prospect of having massive new regulatory costs imposed on Florida government, business and workers will continue to chill the climate for new investment in facilities and jobs. We will continue to oppose implementation of U.S. EPA's Florida-only nutrient rules until EPA adopts a new collaborative strategy with Florida to create rules that successfully balance jobs and environmental goals.

Respectfully,

Trade Affiliates:

Bricklayers Local 1

Mark Peterson 6-8-2011
Signature Date

Operating Engineers Local 925

Dennis E. Stanard 6/1/11
Signature Date

Boilermakers Local 433

6-6-11
Signature Date

Operative Plasterers' and Cement Masons' Local 148

June 7, 2011
Signature Date

Carpenters Local 140

Robert McCoy 6/1/11
Signature Date

Sheet Metal Workers Local 15

Patrick K. O'Day 6-7-11
Signature Date

Electricians Local 915

6/1/11

Sprinkler Fitters Local 821

Ed Sz 6-7-11
Signature Date

Continued

Page 3

Elevator Constructors Local 74

6/1/11

Signature Date

Millwrights Local 1000

6-7-11

Signature Date

Insulators Local 67

6/15/11

Signature Date

Laborers Local 517

6-15-11

Signature Date

Iron Workers Local 846

6-14-11

Signature Date

Pipefitters LU 123

6/13/2011

Signature Date

CC: President Barack Obama
Governor Rick Scott, State of Florida
The Honorable, Lisa Jackson, Administrator, U.S. Environmental Protection Agency
The Honorable Herschel Vinyard Jr., Secretary of Florida Department of Environmental Protection
The Honorable Pam Bondi, Florida Attorney General
The Honorable Adam Putnam, Commissioner, Florida Department of Agriculture & Consumer Affairs
The Honorable Mike Haridopolos, President, Florida Senate
The Honorable Nan Rich, Democratic Leader, Florida Senate
The Honorable Dean Cannon, Speaker, Florida House of Representatives
The Honorable Ron Saunders, Democratic Leader, Florida House of Representatives
Energy & Commerce Committee, U.S. House of Representatives
Transportation & Infrastructure Committee, U.S. House of Representatives

Mr. GIBBS. In addition, I have a letter signed by 50 State municipal industry and agricultural representatives that express deep concerns about the direction EPA is taking regarding numeric nutrient criteria. I ask unanimous consent that it be made part of the record for the hearing today. So ordered.

[The information follows:]

June 23, 2011

The Honorable Lisa Jackson
Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 1101A
Washington, D.C. 20460

Re: Numeric Nutrient Criteria

Dear Administrator Jackson,

The undersigned organizations are all partners and stakeholders committed to addressing nutrient loadings to our nation's waters. We would like to commend the U.S. Environmental Protection Agency (EPA) for acknowledging in the March 16, 2011 Memorandum from Nancy Stoner, Acting Assistant Administrator, Office of Water, to the EPA Regional Administrators, that states must take the lead in addressing nutrients and that: "states need room to innovate and respond to local water quality needs, so a one-size-fits-all solution to nitrogen and phosphorus pollution is neither desirable nor necessary."

We are concerned, however, that a March 1, 2011 letter from Acting Assistant Administrator Stoner responding on the issue of nutrients to a letter from the New England Interstate Water Pollution Control Commission, as well as the Office of Water's draft 2012 National Program Guidance, and language in the March 16, 2011 memorandum itself, undermine the important principle highlighted above. Rather than giving states room to innovate and respond to local water quality needs, the Agency appears to reinforce a more inflexible and counterproductive EPA position which has been held since 1998[1] and advanced more aggressively in recent years. This position is that states must adopt numeric nutrient criteria (NNC), in all water bodies, for both nitrogen and phosphorus which are "independently applicable" (i.e., apply regardless of actual observed and documented water body biology and in-stream impairment) even in the absence of a cause and effect relationship between nutrient levels and regardless of achievement of designated uses.

In the most public example of this dichotomy, EPA promulgated federal NNC for Florida lakes and flowing waters that are independently applicable. Thus, a water body is considered impaired even if it is otherwise healthy or if the biological impairment is related to a different factor (such as habitat alteration). Likewise, more restrictive numeric limits are then required in permits and dischargers will be required to install controls for one nutrient, such as nitrogen, when another nutrient, such as phosphorus, may be the most limiting.

---

[1] National Strategy for Development of Regional Nutrient Criteria, 1998.

Without question, nitrogen and phosphorus pollution is a serious water quality problem in our nation. States are working hard to develop and implement a variety of approaches to control nutrients from both point and non-point sources. Some states have put considerable effort and resources into the process of developing NNC. However, given the difficulty of establishing scientifically defensible NNC under certain conditions, other states are:

- Focusing efforts on balancing biological, causal, and environmental response variables;
- Directly improving water quality by taking actions to reduce nutrient loadings;[2]
- Setting response criteria at levels to protect all designated uses;[3]
- Taking steps to control nutrients to protect downstream uses, such as monitoring to ensure uses are maintained, setting permit limits that ensure upstream discharges do not cause exceedances of downstream criteria, and applying antidegradation rules at upstream sites;
- Applying NNC only after verifying that nutrients are the cause of adverse water quality impacts in a water body;
- Adopting criteria for response variables, such as chlorophyll *a* or dissolved oxygen, instead of NNC;
- Using other indicators of adverse water quality impacts in a water body to direct reduction activities;
- Controlling both N and P, or only one, depending on the water body needs.

EPA's Science Advisory Board encourages these "weight of the evidence" approaches.[4] EPA's insistence that states must ultimately develop independently applicable NNC for all water bodies, even in the absence of a cause and effect relationship between the nutrient level and achievement of designated uses, is not scientifically defensible and is undermining innovative state approaches to reducing nutrient pollution. Continued controversy among EPA, states, and the regulated community over EPA's approach to nutrients is slowing progress towards reducing impairments associated with excess nutrients.

The undersigned organizations request that EPA take meaningful public steps to support innovative approaches for reducing nutrient loadings and, where a state believes NNC are appropriate, innovative approaches for developing scientifically defensible NNC.

---

[2] Where progress is being made, the March 16 Memorandum appears to support a state focus on load reductions.

[3] The use of response criteria does not mean that no action will be taken before impairment occurs – rather, it means that actions can be taken at the appropriate point so that designated uses are maintained; change will be detectable before impairment occurs.

[4] See *SAB Review of Empirical Approaches for Numeric Nutrient Criteria Derivation*, EPA-SAB-10-006 (April 27, 2010).

Sincerely,

NATIONAL AND MULTI-STATE ORGANIZATIONS

Association of State and Interstate Water Pollution Control Administrators
National Association of State Departments of Agriculture
National Association of Conservation Districts
National Association of Flood & Stormwater Management Agencies
National Water Resources Association
Western Coalition of Arid States
Agricultural Retailers Association
American Chemistry Council
American Farm Bureau Federation
American Forest & Paper Association
American Sugar Alliance
CropLife America
Edison Electric Institute
Federal Water Quality Coalition
National Alliance of Forest Owners
National Cattlemen's Beef Association
National Chicken Council
National Corn Growers Association
National Council of Farmer Cooperatives
National Pork Producers Council
Responsible Industry for a Sound Environment
The Fertilizer Institute
United Egg Producers
Utility Water Act Group

MUNICIPAL, CORPORATE & REGIONAL ENTITIES

Aurora Water, CO
City of Pueblo, CO
City of Yuma, AZ
Colorado River Water Conservation District
East Bay Dischargers Authority, CA
Georgia Association of Water Professionals
Littleton/Englewood Wastewater Treatment Plant, CO
San Juan Water Commission, NM
Virginia Association of Municipal Wastewater Agencies
Wyoming Association of Conservation Districts
Alcoa
Florida Pulp & Paper Association
GROWMARK

PotashCorp
Rayonier Corporation
Delaware Maryland Agribusiness Association
Tennessee Paper Council
US Steel
Virginia Agribusiness Council
Virginia Grain Producers Association
Virginia Poultry Federation
Wyoming Ag-Business Association
Wyoming Crop Improvement Association
Wyoming Farm Bureau Federation
Wyoming Stock Growers Association
Wyoming Wheat Growers Association

cc: Nancy Stoner, Acting Assistant Administrator, Office of Water

Mr. GIBBS. Let me read one section of the letter: "EPA's insistence that the State must develop independently applicable numerical nutrient criteria for all water bodies, even in the absence of cause and effect relationship between the nutrient level and achievement of decimated uses. It is not scientifically defensible and is undermining innovative State approaches to reducing nutrient pollution. Continued controversy among EPA, States and the regulatory community over EPA's approach to nutrients is slowing progress towards reducing impairments associated with the excess nutrients."

That is a quote from this letter. Today we are going to hear about these innovative State approaches that may be stymied by EPA's inflexible approach.

I want to introduce our witnesses. I will go through and introduce them and start at the end. Today I welcome Ms. Nancy Stoner, who is the Assistant Administrator of Office of Water, the U.S. EPA.

Next to her is Mr. Richard Opper, Director of the Montana Department of Environmental Quality and also representing the Environmental Council of States.

To his left is Ms. Coleen Sullins, Director of Division of Water Quality, North Carolina Department of Environmental and Natural Resources, representing the Association of State and Interstate Water Pollution Control Administrators.

Ms. Bethany Card, Director of Water Quality Programs in New England Interstate Water Pollution Control Commission.

Mr. George Elmaraghy—I am going to struggle with that—Chief, Division of Surface Water, Ohio Environmental Protection Agency.

Mr. Richard Budell, Director, Office of Agricultural Water Policy at Florida Department of Agriculture and Consumer Services.

And finally, Ms. Barbara Biggs, Government Affairs Officer of the Denver Metro Wastewater, representing the National Association of Clean Water Agencies. Well, welcome and thank you for coming today and traveling all the way to DC.

Ms. Stoner, welcome, and the floor is yours.

TESTIMONY OF NANCY K. STONER, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF WATER, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY; RICHARD H. OPPER, DIRECTOR, MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY, REPRESENTING THE ENVIRONMENTAL COUNCIL OF THE STATES (ECOS); COLEEN SULLINS, DIRECTOR, DIVISION OF WATER QUALITY, NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, REPRESENTING THE ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS (ASIWPCA); BETHANY CARD, DIRECTOR OF WATER QUALITY PROGRAMS, NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION (NEIWPCC); GEORGE ELMARAGHY, P.E., CHIEF, DIVISION OF SURFACE WATER, OHIO ENVIRONMENTAL PROTECTION AGENCY; RICHARD J. BUDELL, DIRECTOR, OFFICE OF AGRICULTURAL WATER POLICY, FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES; AND BARBARA BIGGS, GOVERNMENT AFFAIRS OFFICER, DENVER METRO WASTEWATER RECLAMATION DISTRICT, REPRESENTING THE NATIONAL ASSOCIATION OF CLEAN WATER AGENCIES (NACWA)

Ms. STONER. Good morning, Chairman Gibbs, Ranking Member Bishop, and members of the committee. I am Nancy Stoner, Acting Assistant Administrator for Water at U.S. EPA.

Nutrient pollution is one of the greatest water pollution challenges being faced by communities across the country. Nutrients such as nitrogen and phosphorous pollution pollute the waterways in which our families fish and swim, contaminate our drinking water supplies, and cause illness and impact the economic health of businesses across the Nation that rely on clean and safe water.

We all recognize the value of clean water. Clean water is not simply a resource and asset to be passed on to our children, but is an essential part of life. Clean water is an essential component of public health. Our drinking water supplies and the welfare of our families and communities whether in large cities, small towns or rural America.

The economic health and growth of businesses, large and small, and the jobs they create rely upon a high-quality and sustainable source of clean water. The range of businesses include tourism, farming, fishing, beverage production, manufacturing, transportation and energy generation, to mention a few.

Nutrient pollution is having significant impacts on our Nation's economies and the health of our communities. Let me provide a few examples.

In Ohio, Grand Lake St. Mary's, a large drinking water supply and historically popular recreation area, has suffered over the last several years from harmful algal blooms caused by increasing loads of nitrogen and phosphorous. As a result small businesses like marinas and restaurants are closing, the local tourism economy has suffered, and local small businesses have become eligible for low-interest disaster loans.

This summer pollution again threatens the health of the lake's visitors and economy. The Ohio Department of health issued a warning on May 19th to community residents and visitors against

using the lake because of harmful algal booms known to produce toxins.

EPA through the 319 9-point source program is working closely with the State of Ohio on a restoration plan for the lake.

In the State of Florida, the Caloosahatchee River, which runs less from Lake Okeechobee to Fort Myers, is currently suffering from dangerous algal blooms caused by excess levels of nutrients. Residents complained of noxious odors. The local health department is warning residents not to swim in the river or eat fish caught from the Caloosahatchee.

Red tides, blue green algae, dead zones. We are seeing problems like these, graphic examples in the U.S. every summer. In many of these water bodies not only is it not safe to swim, it isn't safe to let your dog swim.

Nutrient pollution can also pose a risk to the water we drink. High levels of nitrate in drinking water have been linked to serious illness in infants and other human health affects. Reported drinking water violations for nitrates have doubled in the last 8 years. Some public water systems have had to install costly treatment systems to reduce nitrate levels. These systems can cost millions of dollars.

A 2010 study by the U.S. Geological Survey identified particularly high levels of nitrates in shallow drinking water wells in agricultural areas in the United States. Twenty-two percent were above the maximum contaminant level for drinking water quality.

High nitrate levels are expected to represent a continuing public health concern in these areas and elsewhere in the United States. Recognizing the need for a coordinated effort to reduce nutrient pollution, the EPA is renewing its commitment to work with States and other stakeholders to achieve progress. States do the majority of the hard, on the ground work to address nutrient pollution, and we work closely with our State and local partners to aid their efforts.

I recently issued a directive to our regional offices making it clear that reducing nitrogen and phosphorous pollution is best addressed by catalyzing and supporting actions by States, relying on a range of regulatory and nonregulatory tools, including proven conservation practices.

As I stated in that memo from March, States need room to innovate and respond to local water quality needs. So a one-size-fits-all solution to nitrogen and phosphorous pollution is neither desirable nor necessary. My directive builds on the principle that the EPA had previously articulated and reaffirms the EPA's commitment to foster partnerships with States and collaboration with stakeholders.

In conclusion, Mr. Chairman, the threat posed by nutrients in our Nation's waters is perhaps the most serious water pollution problem faced by our communities nationwide. We are committed to working with States, with other Federal agencies, our Nation's farmers, industries and other stakeholders to identify ways to tackle the nutrient problem in a way that protect our Nation's waters, sustains our economy, and safeguards the health and well-being of all Americans who depend upon clean and safe water.

EPA is committed to working with States to find solutions to achieve our common goals. I ask to be able to put in the record a report from the State-EPA Nutrient Innovations Task Group called "An Urgent Call to Action" from August of 2009.

Mr. GIBBS. So ordered.

[The information follows:]

The report is available online at: http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/2009__08__27__criteria__nutrient__nitgreport.pdf.

Ms. STONER. Thank you.

Mr. GIBBS. Thank you. Mr. Opper.

Mr. OPPER. I think my 5 minutes are up already.

Good morning, Mr. Chairman, members and staff of the subcommittee, thank you for the chance to talk about what is fast becoming one of my favorite topics, numeric nutrient standards.

Again my name is Richard Opper. I am here representing the States and territories responsible for implementing the environmental laws of the States and Nation, on behalf of ECOS, the Environmental Council of States. I am also lucky enough to be the Director of the Montana Department of Environmental Quality. And Mr. Chairman, I look forward to hosting you in my fair State one of these days. I hope you do come out sometime and visit.

Nobody disputes the fact that nitrogen and phosphorous, which is euphemistically referred to as nutrients, are polluting this Nation's waterways. Everybody really is on board with the fact that they are serious pollutants and we need to do a better job of controlling those nutrients. I think there is no dispute over that fact.

Representative Bishop, you already referred to the Gulf hypoxia zone. I think it was that particular issue that triggered, largely triggered EPA in 1998 to direct the States to develop the numeric nutrient standards for nitrogen and phosphorous. Generally the States don't even object to developing numeric nutrient standards, because they are easier to administer if you have to manage to a number rather than the narrative standards that are hard to interpret. I think regulated communities like the concept generally of having a number to manage to because there is not as much danger of regulator creep and they at least have the certainty they need in order to operate. So again to this point I don't think there's a lot of dispute.

The dispute is how much leeway the States are going to have to develop and implement these standards once they are developed.

So I am going to give you an example from my State of Montana, briefly some of the issues we are having with EPA and I am hopeful that we are going to be able to work things out and common sense will prevail, but we have had some issues so far.

So Montana is one of 10 States roughly that actually have developed numeric nutrient standards. Nobody questions the science we used in developing these standards. I think we did a very good job at developing these. I think EPA is largely supportive of the numeric standards we developed. The environmental community is supportive, the industry is supportive of the science we used to develop these standards, but we haven't adopted them yet. We haven't adopted them because of one simple reason, which is that they can't be achieved. They are too stringent. At this point, given

the limits of technology and the expense that would be required, they are not achievable.

So the question becomes how are we going to implement these numeric standards once we adopt them? And we have been working with a group of municipalities, industries, the environmental community for a couple of years to develop an implementation plan, and what we came up with is a bill that was passed by our recent legislature which thankfully is no longer in session. This was one of the bills that I actually liked that came out of this session but it allowed for a variance, a general variance for people who applied for discharge permits from Montana.

Now, this variance would require about 70 percent of our permitted dischargers to make improvements to the way they operate their water treatment facilities or to make actual improvements to their plants in order just to meet the variance. So the result is some immediate improvement to water quality, which is a good thing.

Everybody that worked with us on this is on board. It was a near unanimous bill that was passed out of our legislature, which was unheard of this session. Everybody is on board. The only potential opposition to this approach we have to implementation is EPA, whose reaction to the variance is tepid. And I have to add it took a lot of work to move them from antagonistic to tepid, so we are headed in the right direction here.

So I think EPA was having a difficult time seeing past the word "variance" to the benefits that this bill would provide the State which are immediate improvements to water quality, continual tightening of the standards every 3 years when they come up for renewal, and a 20-year timeframe when the strict standards will be met by all of our dischargers. So it provides the kind of flexibility, innovation and consensus among the State that I think EPA would like to see. And I am very hopeful that common sense is going to prevail here. I think EPA will ultimately be on board with this. I have seen some hopeful signs lately.

So that is it, Mr. Chairman. I will be available for questions, thank you.

Mr. GIBBS. Thank you. Ms. Sullins.

Ms. SULLINS. Good morning, Chairman Gibbs, Ranking Member Bishop and members of the committee. My name is Coleen Sullins. I am testifying today on behalf of the Association of State and Interstate Water Pollution Control Administrators, where I serve on the Board of Directors. I am responsible for North Carolina's Division of Water Quality in the State Department of Environment and Natural Resources. I have more than 25 years' experience in implementing the Clean Water Act programs in multiple States and in local government.

Today I am testifying on behalf of ASIWPCA and not the State of North Carolina, although I will use some North Carolina examples to illustrate our points.

Celebrating its 50th anniversary this year, ASIWPCA is the national voice of State, interstate and territorial officials responsible for implementation of programs that protect surface waters across the Nation.

ASIWPCA's membership consists of State, interstate officials who administer the Clean Water Act programs on the ground. ASIWPCA's members work closely with the Environmental Protection Agency as the coregulators responsible for implementing this critical regulation in a way that makes good sense and yields the most beneficial environmental results.

The Clean Water Act has allowed us to successfully reduce many sources of pollution to our Nation's waters. The mechanisms we have used in the past do not always work with the issues that we face today, including problems such as nutrient pollution. Today nutrient pollution is the leading cause of the water quality impairments across the Nation, as you heard Ms. Stoner say, and causes adverse impacts for drinking water, aesthetics, recreational uses, and aquatic life.

While 21 percent of the impairments documented in EPA's database is nutrient related, 18 percent of the TMDLs that have been developed were developed specifically to address nutrient impairment. The bottom line is the States are taking action to address a complicated and important issue.

So why is nutrient pollution control so difficult? Because the traditional approaches have not worked and they will not work related to nutrients. Our traditional approaches have been to identify the pollutant at a level at which it is too toxic in the environment and then set water quality-based numeric and or narrative standards to keep that pollutant below the toxic level.

Nutrients are different. There isn't a consistent definitive level which we can say across an entire State or even across a water body or a watershed that this level is too much.

Nitrogen and phosphorous are widely variable, naturally occurring and necessary components of healthy ecosystems, and ecosystems can be healthy under a wide variety of nutrient levels. Just as the amount of calories a person needs changes based on the individual's height, weight and metabolism, percent of body fat, exercise, et cetera, an ecosystem's need for nitrogen and phosphorous depends on many factors. So the extent to which the nutrients' adverse effects occur within a water body depends on a wide range of other very site specific factors.

States have found that nutrient levels that may cause impairment in one system under one set of conditions will not have the same negative impact on a different stream. Since nutrient impacts are dependent on the presence of other factors, many States are finding that a weight of evidence approach is needed to identify waters that may be undesirably affected by high levels of nutrients or to determine that nutrients are key to biological impairment. States are generally doing this on a watershed basis. For example, the high levels of nutrients are present in a water body where high cholorophyll A, a measure of algae, high light levels, low nighttime dissolved oxygen levels are observed, State biologists may conclude that the biological impairments noted are due to the influence of excessive anthropogenic nutrients.

In contrast, some streams may exhibit high nutrient levels that have no deleterious affect on the stream's biology. Simply stated, a single number for nitrogen or phosphorous is not an accurate indicator of adverse ecological or water quality effects.

We have another complicating factor that I need to touch on, and that is under the Clean Water Act, States only have direct authority over point source discharges, leaving most States in a position to only incentivize and encourage non-point source reductions. In many watersheds non-point sources may account for a large percentage of nutrient loads; therefore, expenditures aimed at achieving reductions at the end of the pipe may produce little overall gain where non-point sources contribute the bulk of nitrogen and phosphorous.

In North Carolina we have performed indepth analysis of our estuarine systems and multiple significant reservoirs in the State that are impaired by nutrients. What we have found in almost all situations is that the non-point source contributes greater than 70 percent of the nutrients of those impaired waters.

States are using a wide variety of tools to achieve nutrient reductions, beyond nitrogen and phosphorousstandards and TMDLs. These tools include individual permit levels, wastewater treatment plant optimization, best management practices, nutrient trading, control of other water quality parameters, voluntary nutrient coalitions and other innovative approaches.

States understand the appeal of the single water quality standard for nitrogen or phosphorous and implementation. However, this approach does not acknowledge the need for a more flexible system which allows the States to work effectively on nutrient issues and a wide array of applications used by permitting authorities.

As Nancy indicated, she documented in a memo recently that innovation and flexibility is necessary. The States, however, are concerned that this memorandum still establishes the expectation of the numeric nitrogen and phosphorous standards.

I would like to offer a few examples from North Carolina. North Carolina has proactively adopted and maintained a suite of both numeric and narrative nutrient criteria for many years. For more than two decades the State has implemented a statewide chlorophyll A water quality standard for all surface waters.

Other examples include the phosphate detergent ban that went into place in the late 1980s and the required monitoring of nitrogen and phosphorous in the effluent from wastewater treatment plants. These actions resulted in a statewide reduction of phosphorous, plus an understanding of the level of contribution from point sources.

In conclusion, States share the administration and Congress' concern about nutrients and have adopted a variety of approaches, including narrative standards, response variables, weight of evidence approaches, and in some cases nitrogen and phosphorous standards.

In my own State we have developed a variety of approaches because nutrient issues are dependent on many site specific issues. State economies are already under stress and are facing additional losses if we don't continue to reduce nutrient impairments. We agree with EPA that it is imperative to prevent additional nutrient impairments from developing, as it is much more economical to prevent impairments than it is to restore a system once it is impaired.

We need room to innovate and respond to local water quality needs, and we believe that the States have shown the initiative to do so. We encourage EPA to work with the States to continue to develop and implement the most appropriate tools.

Mr. Chairman, members of the committee, thank you for this opportunity to share ASIWPCA's thoughts on the importance of the States' role in nutrient pollution and control.

Mr. GIBBS. Thank you. Ms. Card, welcome. The floor is yours.

Ms. CARD. Good morning, Chairman Gibbs, Ranking Member Bishop and members of the subcommittee. My name is Bethany Card, and I am the Water Quality Division Director for the New England Interstate Water Pollution Control Commission.

I have been working with our compact member States, which includes the six New England States and New York on their Clean Water Act programs for 12 years. During that time we have worked with our member States on water quality standards development and implementation specifically related to nutrients.

The Northeast States are focused on nutrient management; it is a high priority. The States are keenly aware that nutrient pollution is a significant environment problem and every day they are working through various initiatives to address this issue. It is clear that the States and EPA are committed to resolving this problem together. There are many strong examples of that partnership. For well over a decade, States, EPA and stakeholders have been working on the development and implementation of multistate total maximum daily loads to address phosphorous in Lake Champlain and nitrogen in Long Island Sound.

In the Commonwealth of Massachusetts there has been an ongoing comprehensive project that has been designed to protect the ecological health of 89 different coastal embayments, and these are just a few examples.

At the same time the Northeast States have put significant resources into the process of developing numeric nutrient criteria, and because of the important connection between established criteria and ability to make water quality management decisions the States have no intention of abandoning these efforts. Yet when it comes to establishing the criteria themselves, there are two specific areas where the States take issue with the EPA's preferred approach, which calls for independent applicability of numeric nutrient criteria and the need for nitrogen and phosphorous criteria for all waters, fresh and marine.

The technical approach favored and intended to be used by many States bases criteria on strong scientific evidence using stressor-response relationships where nitrogen and phosphorous are the stressors and environmental indicators are the response.

The relationship between nutrients and environmental response is influenced by any site specific factors, light, temperature and depth. And these factors must be taken into consideration in order to apply criteria efficiently. The stressor-response analysis is the most appropriate indicator of water body impairment status and paints the whole picture regarding the health of the watershed.

In the Northeast our experience has been that there are distinctions between the State and EPA approaches on how to assess support for designated uses. In Maine and Vermont, for example, they

have been proposing criteria for freshwater that are based on a decision framework that takes into account both stressor variables and environmental response to each water body. Yet EPA has argued that single numbered criteria approaches should be used. However, no such uniformity exists in the natural world. Nutrients are not toxic contaminants with threshold responses. And when you consider the distinction, it becomes more clear why conditions demonstrated by acceptable environmental responses are the most appropriate way to determine if designated uses are being supported.

Evaluating nitrogen and phosphorous may be helpful in screening potential impairments, but even still under the States' preferred approach a water body would be considered impaired only if one or more of the measured environmental response criteria did not meet limits. In the case where all measured environmental response criteria are met, the water body would not be considered impaired even if nitrogen or phosphorous concentrations were above the States' numeric criteria.

Based on the criteria established by EPA for the State of Florida and feedback provided to our member States by EPA, we understand that the Agency is not supportive of the response-based approaches I have described unless they include numeric nutrient criteria for both nitrogen and phosphorous, where each criterion must be applied independently from any environmental response criteria in order to determine a water body's impairment status.

The Northeast States are concerned that by requiring both nitrogen and phosphorus criteria to be incorporated into State water quality standards and applied independently, technological controls could be required to remove both nutrients even though the production of growth in most water body systems is controlled by the most limiting nutrient, typically phosphorous in fresh water and nitrogen in marine.

If the States are forced to deviate from their preferred approach, the consequences could be that water bodies would be inaccurately categorized as impaired. The result and outcome could mean requiring more advanced wastewater treatment processes that increased sludge production, require additional energy usage and most certainly inflate overall costs.

In summary, the approach designed by the States which looks at environmental responses tells the story about the health of the water body, and therefore the States feel it is the most accurate and efficient way to figure out if designated uses are being supported. States have demonstrated that using environmental response variables to develop nutrient criteria is a scientifically valid approach that is highly protective of water quality.

In the Northeast the States are very appreciative of the assistance provided by the EPA regional staff and intend to continue working with them on innovative approaches to protecting water quality from nutrient pollution like the TMDL process, the permitting programs and adopted watershed management. At the same time they intend to proceed with the scientific work that will build the foundation of their numeric nutrient criteria.

Water quality protection is of the utmost importance to our State environmental agencies. Therefore, we encourage EPA to embrace

a more flexible path towards development and implementation of numeric nutrient criteria so that the States will be empowered to use the most appropriately targeted tools to implement these important criteria in earnest.

Mr. Chairman, Ranking Member Bishop, and members of the committee, thank you for your time today. I am happy to answer if I questions you may have.

Mr. GIBBS. Mr. Elmaraghy, welcome.

Mr. ELMARAGHY. Good morning, Chairman Gibbs, Ranking Member Bishop, members of the committee. I am grateful for the opportunity to speak on the issue of nutrient standards. I am George Elmaraghy, Chief of Division of Surface Water at the Ohio EPA and longstanding member of ASIWPCA. Ohio is a water rich State. We have lake Erie in the north, we have Ohio River in the south, we have 87,000 miles of streams and rivers. Also, we have 58,000 lakes and small ponds.

Lake Erie was declared dead in the 1960s. The problem was greatly abated, thanks to the Clean Water Act and the Bi-National Water Quality Agreement of 1978. Lake Erie became known as the walleye capital of the world. Unfortunately, due to excessive nutrients, Lake Erie has greatly changed, nuisance algal bloom returned in the mid-90s and continued to worsen. Grand Lake St. Mary's, the largest lake in Ohio, experienced very high levels of algal toxins last summer and this summer too. Ohio issued a no-contact advisory, essentially closing the lake.

Regulating nutrients in streams is very challenging. Unlike other parameters, we cannot accurately predict a dose-response relationship. As a result nutrient water quality standards must be based on the weight of evidence approach that consider other factors besides the nutrient concentrations.

For more than 12 years Ohio has been developing tools to predict the relationship between nutrient concentrations and biological health. Using the weight of evidence approach, we identify factors that we should consider to determine the stream response, such factors as chlorophyll A, biological health, nutrient concentration, dissolved oxygen and so on. These factors distilled into a multimetric scoring system known as Trophic Index Criteria, or TIC. This unique index accurately will predict a stream response to specific nutrient concentrations and stream habitat conditions. The TIC will be used to develop the 303(d) list, prepare the TMDL and to determine if nutrient limits should be included in a discharge permit.

Ohio's approach received positive feedback from USGS and other organizations. Ohio currently is working with U.S. EPA Region 5 to finalize this concept. The staff in Region 5 is receptive to Ohio's approach. Industries are faced with a wide variety of regulatory requirements. We shouldn't require them to meet stringent nutrient limits unless we simultaneously address nutrient load from nonplant sources and we are sure that imposing these stringent limits will result in significant water quality improvement.

The States need flexibility in developing numerical standards and, more critically, on how to implement these standards, to protect our streams without wasting valuable resources. Eliminating nutrient impairment in streams may take several decades. There-

fore, regulations should call for a phased approach and utilization of adaptive management techniques.

Mr. Chairman and members of the subcommittee, thank you for the opportunity to share Ohio's thoughts on the importance of flexibility in developing and implementing nutrient standards. Thank you.

Mr. GIBBS. Thank you. Mr. Budell.

Mr. BUDELL. Chairman Gibbs, Ranking Member Bishop, committee members, good morning. My name is Richard Budell, I am the Director of the Office of Agricultural Water Policy with the Florida Department of Agriculture and Consumer Services. I am pleased to have the opportunity to share with you my department's perspective on several key aspects of the U.S. EPA's final numeric nutrient water quality criteria for Florida springs and inland waters that were finalized this past December.

In EPA's own words, and I quote, Florida has developed and implemented some of the most progressive nutrient management strategies in the Nation, end quote. The EPA has repeatedly acknowledged Florida for the substantial emphasis it has placed on monitoring and assessing the quality of its water. As a result of this commitment, Florida has collected significantly more water quality data than any other State in the Nation.

More than 30 percent of the entire EPA national water quality database comes from Florida. Florida was the first State in the Nation to develop comprehensive urban storm water regulatory programs. Our wastewater treatment and reuse program is a model for the rest of the country. Our agricultural best management practices programs are firmly based on State law and science. They have been implemented on more than 8 million acres of agricultural lands and commercial forest lands across the State.

By targeting its efforts and resources, Florida has made significant progress in nutrient reduction across the State. Examples range from Tampa Bay where sea grass populations have risen to levels not seen since the 1950s and now cover 30,000 acres of the bay, to Lake Apopka where over the last 8 years phosphorous concentrations have been reduced by 56 percent and water clarity increased by 54 percent. Despite these glowing reviews and Florida's demonstrated commitment to water resource protection, EPA, we believe in direct response to litigation, determined in January of 2009 that Florida had not done enough and mandated that we develop numeric nutrient criteria within 1 year.

Before that year was up, however, EPA entered into a settlement agreement with the litigants and agreed to a time schedule to implement Federal rules that essentially usurped the State's effort to move forward with its own. EPA subsequently developed and released their own draft numeric criteria for Florida in January of 2010 and finalized those criteria last December.

In our view, if this takeover wasn't bad enough, we believe the methods used by EPA to develop its rules were inconsistent with its own guidance documents and the advice it received from its Science Advisory Board.

Furthermore, we believe they compounded the situation by improperly applying the methods they did use, which in many cases would deem healthy waters in Florida as impaired. In response to

these issues, Florida's Attorney General and the Commissioner of Agriculture filed a complaint in Federal court challenging the rule. Subsequently over 30 additional entities, both public and private, in Florida have filed similar complaints against EPA and their criteria, citing the same shortcomings.

Florida believes strongly any nutrient reduction strategy should focus on measurable, environmental, and biological improvement while optimizing cost and efficiency. In the preamble to their rule EPA admits they are unable to find a cause and effect relationship between nutrient concentration and biological response for flowing waters like streams and rivers.

In the absence of that cause and effect relationship there can be no certainty that the money and human resources devoted to reduce nutrient concentration in a stream or river will result in any measurable improvement in the biological condition of that stream or river. As stated previously, Florida believes that because there are so many natural factors like stream size and flow velocity and light penetration that impact how nutrients impact ecosystems, nutrient standards are best developed on a site specific basis. It is important to recognize, as also stated previously, that nitrogen and phosphorous are naturally occurring in the environment. They are necessary for the normal biological productivity of all water bodies. Determining when too much human induced nitrogen or phosphorous is present is very, very difficult.

In other words, Florida believes it is important to link nutrient concentration with an assessment of the biological health of the water body before requiring the implementation of costly nutrient reduction strategies. Without this linkage, implementation of the EPA criteria would have Florida businesses, wastewater and storm water utilities, and agricultural producers spending time and money attempting to reduce nutrient concentrations, in some cases, to levels below natural background.

In all estimations the implementation of these criteria is going to be expensive. It doesn't matter whether Florida develops them or EPA develops them, it is going to cost a lot of money. And there is a lot of dispute about the costs associated with the implementation of these criteria. EPA's estimates are much lower than the estimates that have been generated by my agency and other public and private entities in Florida.

We are pleased that EPA has engaged the National Research Council in seating a panel to review these economic analyses and come up with an opinion of what we really think it will cost.

In closing, Florida believes that Florida is best positioned to assess the health of its waters and establish associated water quality criteria for their protection and restoration. We believe that our track record for the implementation of progressive and successful water resource management programs is one of the best in the country. We have earned the right to exercise the authority envisioned by the Clean Water Act to develop our own water quality standards and implement them through an EPA-approved and predictable process governed by existing State law.

Thank you.

Mr. GIBBS. Thank you. Ms. Biggs.

Ms. BIGGS. Chairman Gibbs, Ranking Member Bishop, and members of the committee, I thank you for the opportunity to testify today on policies to reduce nutrients in our waterways. My name is Barbara Biggs, and I am the Governmental Affairs Officer for the Metro Wastewater Reclamation District in Denver, Colorado. In addition to my duties at the metro district, I also serve as the Chair of the Water Quality Committee for the National Association of Clean Water Agencies. It is my pleasure to testify on NACWA's behalf today.

Nitrogen and phosphorous are unlike any pollutants we have dealt with under the Clean Water Act. As such, they demand an approach that will result in verifiable and sustainable water quality improvement through an equitable cost effective implementation of nutrient controls by all sources of nutrient loading, including agriculture.

The subcommittee's focus on nutrient criteria is very timely and all stakeholders involved in this issue should agree that criteria development is a complex, strategic endeavor. Nutrient-related impacts are the water quality challenge of our time. NACWA members understand that clean water agencies need to be an equitable partner in the solution to this challenge. We are ready to do our fair share.

However, the nutrient challenge won't be fully addressed until agricultural sources, which are the dominant source in many watersheds, are asked to do their part in reducing nutrients as well.

The existing Federal model for numeric criteria development and implementation is not working for all water bodies. The delay in implementing controls is largely due to the fact that we are trying to use a system that was designed for more traditional toxic pollutants.

A number of States are exploring new approaches, but more needs to be done to ensure these approaches are embraced by EPA and that other States have the flexibility to undertake similar efforts. New and innovative approaches for expressing nutrient water quality criteria or goals instead of independently applicable total nitrogen and total phosphorous concentrations must be develop and encouraged.

Colorado has taken steps to develop a unique approach to reducing nutrient concentrations and surface waters. A large group of stakeholders, including POTW, publicly owned treatment works, have been working for almost 2 years on an approach that includes scientifically derived nutrient numeric values for nitrogen and phosphorous, as well as an adaptive implementation plan that ensures nutrient reductions in priority watersheds, including those where point sources are a significant contribution.

There is no singular national model for addressing nutrient-related water quality impacts, and what Colorado is doing may not work everywhere. The Colorado approach, however, does serve as an important model in terms of collaboration between stakeholders and regulators, which is the key to any successful approach.

The elements of the Colorado approach include the adoption of enforceable water quality standards for high-quality waters and protected water supplies, a nutrient control regulation that would require implementation of biological nutrient removal for existing

and new POTWs with appropriate off ramps for small, disadvantaged communities and situations where the POTW contribution is de minimis, and a monitoring program to quantify sources of nutrients by watershed to ensure controls will be effective.

Implementation of nutrient removal even in priority watershed is not a small investment, as shown by the color coded maps attached to our written testimony. While wastewater treatment plans accounts for a very small portion of the nutrient load statewide in Colorado, the metro district and the Greater Denver Metropolitan Area are nearly 50 percent of the phosphorous flow to the South Platte River. And we recognize that as a significant contributor of nutrients we must do our fair share.

The district has identified a capital improvement program to meet the proposed numeric value for phosphorous and to treat to the limits of achievable technology for nitrogen that will involve the investment of $965.5 million over the next 20 years. EPA Region 8's reaction to Colorado's proposal has not been encouraging. They have raised concerns over the lack of enforceable standards for more waters and have threatened to object to permits that do not address nutrients. Though EPA continues to underscore that States should have a lead on nutrient control efforts, Colorado and other States continue to face significant hurdles.

In conclusion, we have seen that the flexibility to explore new and innovative approaches to nutrient control as exemplified in Colorado can be a key element in any effort to address our national nutrient load challenge. Given the unique characteristics of each waterway, the multiple sources of nutrient loading as well as the varying effects nutrients have on aquatic life, it is clear that a suite of approaches is needed.

Utility managers must be able to demonstrate that the investment they are being required to make will have an impact on water quality, are a cost effective way of addressing the problem, and will be sustainable over time. All of these considerations can only be achieved if at the end of the day point sources are not the only actors on the hook for controlling nutrients. Recently agricultural organizations signed on to a letter to EPA stating that they are partners and stakeholders committed to addressing nutrient loadings in our Nation's waters. NACWA stands ready to join these organizations to undertake meaningful actions to address the nutrient issue because ultimately comprehensive reforms are needed to put in place an equitable framework for ensuring all sources of nutrients held accountable for their fair share of the problem.

Thank you for the opportunity to be appear before you today. I look forward to any questions the subcommittee may I have.

Mr. GIBBS. Thank you, Ms. Biggs. Just for the record, these are opening statements, and all the witnesses have written testimony that will be submitted for the record. And also, committee members, if you have opening statements, submit them for the record.

Also, we are not going to have time today to get through all our questions, so we are going to have written questions for all the panelists to get back, because I know we are going to have votes soon, and I know Ms. Stoner has to leave at noon, correct?

Ms. STONER. Yes.

Mr. GIBBS. So I am going to start out here on the first question. To me it is kind of an obvious question. We are all concerned about clean water and clean air, and enhancing and protecting the environment. And all our panelists here are what I would call are part of that team. And I hear, from the panelists from the States, major concerns about the relationship with the U.S. EPA and how we address this. Because obviously, phosphorous, nitrogen, nutrients are a problem and an issue, and it is a challenge we need to address, but the process seems to be the problem.

And I know, Ms. Stoner, you referred to you strongly believe that States should lead the effort to reduce nutrient pollution, and the EPA is committed to finding collaborative solutions.

In light of these statements and what we heard today, I am struggling with that. If the EPA is so collaborative and willing to work with the States to lead the effort, why are so many States that are here today—and we heard from other States—have so many issues with what they are hearing? It is kind of like we are all part of the team, and you call a team meeting, and you bring all the team members to the meeting, and you say we are going do this, we are going to fix the problem here, here is our challenges, but here is what you are going to do.

Is that how you see it? What is going on here? Your mic is not on.

Ms. STONER. Does it work? Excellent. I think you are certainly hearing that there are some issues that we are continuing to discuss, and people have different views on. I think there are some complexities associated with nutrient pollution that reasonable people of good faith, working together, can have different views on.

We are guided by the law and the science. And we have boxes and boxes of scientific studies showing the relationship between nutrients and plant growth, which of course is why we put fertilizer on the ground, is to grow plants.

We see the same relationship in water. And there is lots of different factors that affect how it operates in different kinds of water bodies. You are hearing that. People are trying to figure out different ways of dealing with those complexities. And we are in discussions, and I personally have been in discussions with many of the members of the panel and lots of other States, trying to figure out the best way forward.

Mr. GIBBS. Let me just stop you there. You know, your own EPA's Science and Advisory Board has recognized the shortcomings in using the numerical approach because of the differences going on in different localities; you know, flow, light, the biological conditions we heard.

How do you address your own Advisory Board that has serious concerns about this one-size-fits-all approach that you are pushing off onto the States?

Ms. STONER. The Science Advisory Board has actually indicated a lot of support for the approaches that we are using. We recently have taken their recommendations in a guidance document that we put out. We are consulting with them now on the Florida coastal standards. We are working very closely with them to make sure we are using the best science. That is what we are doing to address this.

And I would be happy to submit additional scientific studies for the hearing for the record to show you the scientific support on which U.S. EPA is relying.

Mr. GIBBS. Mr. Budell from Florida, would you like to respond to that?

Mr. BUDELL. There is no question there is a lot of science out there, and there are clear cases where cause-and-effect relationships can be established in lakes, for example, and springs. I think we largely agree with EPA that you can establish a cause-and-effect relationship.

In flowing waters, I don't think there is very much data that would reflect that you can clearly establish a cause-and-effect relationship between nutrient concentration and biological response. You can do it on a site-specific basis if you work very hard at it.

I think the TMDL program, at least as it has been implemented in Florida, is an example that if you work hard enough at it, you can establish a relationship between concentration and biological response. It takes time. It takes money. It takes effort. But it results in a better end product, something that the participants, the stakeholders in the watershed, those that discharge, both point and nonpoint source, can embrace because it is a cause-and-effect relationship. There is some certainty that the money and effort that you implement——

Mr. GIBBS. Let me just interject because time is limited. Any others on the panel like to add something in this regard? Yes.

Mr. ELMARAGHY. I hear from everybody here and feel like the difference is very clear. We believe like weight of evidence is the way to go. And U.S. EPA is still kind of thinking like independent applicability is the way to go. We need to resolve this issue before any other discussion.

Mr. GIBBS. You are addressing cause and effect, you know, what is going on in those streams.

Mr. ELMARAGHY. Yeah. There is no doubt the streams react differently to the same——

Mr. GIBBS. But for Washington EPA to come out and set a number and put that across the country, it creates serious problems. You can't address it; right?

Mr. ELMARAGHY. It will not work. And definitely we need to develop different number for different streams. And the more importantly. Like how to apply the standards. It is not like you need to apply it immediately; and the same way we apply it for zinc, you put number in the permit and within 5 years you meet this number. We have to develop the adaptive management approach to attaining nutrient standards.

Mr. GIBBS. Thank you. My time is up. I yield to Mr. Bishop.

Mr. BISHOP. Thank you very much, Mr. Chairman.

Ms. Stoner, is there any effort on the part of the EPA to establish a set number and mandate it across the country?

Ms. STONER. No, sir.

Mr. BISHOP. Thank you very much.

Mr. Budell, in your testimony you state that Florida has earned the right to develop its own water quality standards and implement them through an EPA-approved and predictable process. I am quoting you precisely, right?

Mr. BUDELL. That is correct.

Mr. BISHOP. With respect, isn't that essentially what is happening now? I mean aren't the nutrient standards that the EPA promulgated in December of 2010 virtually identical to the standards that Florida suggested in the fall of 2008, and in some cases, actually 7 of 10 cases as it relates to streams, that the EPA standards are less stringent than the Florida standards? Isn't that the case?

Mr. BUDELL. The numbers that EPA promulgated were based largely on the work that Florida did. Florida had been working cooperatively with EPA on a strategy and a timeline to develop water quality numeric criteria for years. We don't understand why EPA stepped in and adopted——

Mr. BISHOP. May I interrupt you there, sir? Isn't it the case that EPA was brought in as the result of a lawsuit, and there was a consent decree entered into in settlement of that lawsuit by the State of Florida, by the EPA, and by the environmental groups that brought the lawsuit? Isn't that the case?

Mr. BUDELL. I don't believe the State of Florida was a member to that consent decree.

Mr. BISHOP. I have a press release that was issued by the State of Florida, January 16, 2009, quotes DEP Secretary Michael—is it Solé or Sole?

Mr. BUDELL. Michael Sole was then Secretary.

Mr. BISHOP. I am quoting. The State of Florida recognizes that more needs to be done to address nutrient pollution in our rivers, streams, lakes, and estuaries. And these actions, that is, the actions of the EPA, will help our State and all of our stakeholders prevent and better manage sources of nitrogen and phosphorous from entering our waters.

Mr. BUDELL. That is in January of 2009; that is correct. That was when EPA determined that Florida needed to develop numeric nutrient criteria within 1 year.

Mr. BISHOP. Again, I am not trying to be difficult. I think it is important for the record. Wasn't EPA's involvement, though, brought about by the lawsuit? It wasn't as if EPA was——

Mr. BUDELL. That was what my testimony was, yes, they were sued in August or July of 2008.

Mr. BISHOP. And then when EPA in effect established the nutrient standards pursuant to the consent decree, isn't it the case that those standards are A, not one-size-fits-all standards; but B, aren't they less stringent in the majority of cases than the very standards that the State of Florida proposed?

Mr. BUDELL. The numbers vary. Yes. Some of them are less.

Mr. BISHOP. Seven of the ten as it relates to streams are less.

Mr. BUDELL. OK.

Mr. BISHOP. I guess what I am trying to get at is——

Mr. BUDELL. The issue isn't the number. The issue that we differed with, and EPA, is the way we would implement those. Florida never had a chance to bring those standards to the Agency and propose them, that would have included the implementation strategies for the adoption of them.

Mr. BISHOP. Didn't the existence of the lawsuit preclude Florida from bringing those standards to EPA?

Mr. BUDELL. No. Not at all. In fact, the determination letter that EPA gave to Florida in 2009 gave Florida 1 year to develop the standards.

Mr. BISHOP. Has not the EPA said to the State of Florida that if Florida wants to take the lead on this, be our guest, go ahead and do it? Is that not the case, Ms. Stoner?

Ms. STONER. We have indicated to the State of Florida that we would welcome their moving forward with standards. They are actually working to do so in the State of Florida right now. And we have said if they complete those standards they can replace the Federal standards. Yes, sir, we have said that.

Mr. BISHOP. And they would be responsible for the implementation of those standards. Is that not correct?

Ms. STONER. That is correct. We also gave them a 15-month extension on the standards we have already done to work on implementation strategies together, and have offered to help them to do that, including site-specific criteria as appropriate.

Mr. BISHOP. Thank you. I don't want to cut you off, but I am running out of time.

I want to go to Ms. Card, if I could. There is a very profound suggestion that with respect to enforcing the Clean Water Act that we return to pre-Clean Water Act days of where State-by-State enforcement, State-by-State standards and a go-it-alone approach.

Now, I represent a district that has extensive coastline along Long Island Sound. Long Island Sound has in many ways been restored as a result of cooperative efforts between the State of New York and the State of Connecticut. If we were to adopt a go-it-alone approach, if, for example, Connecticut were to drop out—I don't believe that they will, don't get me wrong—but if they were to decide that they are going to drop out, that they are not really that concerned about the Sound, what impact do you think that that would have on the health and the vitality and really the economic benefits provided by the Sound?

Ms. CARD. Mr. Bishop, I believe that the States, as you have heard today, are the primary implementers of the Clean Water Act. However, I think that the success that they have in implementing the Clean Water Act successfully and in accordance with the law is very much related to the partnership between the States and EPA, and that without that partnership the success is not possible. In my experience, this is even more true with multistate or interstate watersheds like Long Island Sound. And I think that any one of the partners pulling out of that process could certainly have an impact on the water quality protection, and certainly the economy that takes place in that watershed. And in Long Island Sound it would be shell fishing and——

Mr. BISHOP. A go-it-alone approach could be detrimental to water quality. Is that your conclusion?

Ms. CARD. I agree with that statement, yes.

Mr. BISHOP. I yield back, Mr. Chairman. Thank you.

Mr. GIBBS. Thank you. Mr. Harris.

Dr. HARRIS. Thank you very much, Mr. Chairman. And I will try to be brief.

Ms. Stoner, thank you for appearing before the subcommittee again today. I have got a problem in Maryland. The problem is that

just last week it was announced that Maryland was 50 out of 50 States in job creation, and private job creation. And then 2 weeks ago or 3 weeks ago Allen Family Foods, you know, a large poultry producer on the Delmarva Peninsula filed for Chapter 11 bankruptcy. And one of the driving forces behind that is the uncertainty with regards to the future for the agriculture and poultry industry on the Eastern Shore of Maryland because of the pending—looming, I should say—TMDL regulations that are working their way through the system.

I am just going to ask a couple of questions. First of all, given the fact that the economic environment in the country is not improving, in fact it is worsening, especially in my district on the Eastern Shore of Maryland, with a rising unemployment rate, and which is reflective of the national situation as you know, is there a move within the EPA when they come up with these kind of regulations that I think everyone agrees they are going to economically adversely impact areas that are agriculturally dependent, or in our case dependent on an industry like the poultry industry, is there going to be a move in the EPA to take economic and job creation—or job destruction, I should say—factors into account when going forward with these regulations?

Ms. STONER. Congressman, EPA does consider job creation, economic issues associated with implementation of water quality standards. States also look at those issues with respect to the uses that they set. There are, as you know, huge economic benefits associated with clean water and jobs associated with that, including those for agriculture, which is heavily dependent upon having clean water for irrigation and for feeding animals.

Dr. HARRIS. Ms. Stoner, I only have a few minutes. I appreciate that sentiment that somehow the farmers on the Eastern Shore of Maryland are really thankful to the EPA for giving them—somehow making them able to have clean water for crops. But that is not what they are telling me. They are telling me they are afraid of what the EPA is going to do. They are afraid it is going to increase costs.

Our poultry producers—again, this is the second major poultry producer in the United States to go bankrupt. Is the EPA going to change their modeling into what they should do with regards to the fact that now we have actual proof that there are businesses going out of business because of the uncertainty with regards to environmental regulations? And it is a simple question.

Is the EPA going to change the way they look at regulations based on the worsening economic environment in the country, especially with regards to the effect on the agriculture and poultry raising industry from the regulatory environment?

Ms. STONER. We already consider those——

Dr. HARRIS. Is the EPA going to change it? Is it going to enhance it? Ms. Stoner, you have a job, I have a job, but 2,400 people working for Allen Family Foods no longer have a job. And it is serious to them. It is dead serious.

The unemployment rate in the country is up to 9.1 percent. The job creation in the last statistics only created 56,000 new jobs, when we should create 200,000 new jobs. We have to stop destroy-

ing jobs. And the Federal Government role in destroying jobs is a worrisome factor in my congressional district.

So is your answer that the EPA is not going to change its attitude and increase its sensitivity to job destruction with regards to promulgating new regulations?

Ms. STONER. The EPA believes, and I personally believe, that the policies we proceed with are to the economic benefit of the country as a whole.

Dr. HARRIS. Well, Ms. Stoner, it is not to the economic benefit of my congressional district. I don't represent the country as a whole. I represent the Eastern Shore of Maryland. And the EPA is destroying the economy on the Eastern Shore of Maryland.

A final question to you. Has the EPA prepared any response at all to the controversy regarding the modeling in the Chesapeake Bay between the USDA and the EPA in coming up with their draft load estimates?

Ms. STONER. My understanding is we are working closely with USDA on that.

Dr. HARRIS. This is dated December 8, 2010. Now, it is now June. Jobs are being destroyed on the Eastern Shore because of the uncertainty with regards to regulations. It is now 6 months. Can you give me an idea how many more months it is going to take?

Ms. STONER. I would have to get back to you on that.

Dr. HARRIS. Please do.

Thank you very much. Thank you, Mr. Chairman.

Mr. GIBBS. Thank you. Ms. Edwards.

Ms. EDWARDS. Thank you very much, Mr. Chairman. And thank you to the panel. And I just want you to know, Ms. Stoner, not everybody in Maryland shares my colleague's viewpoints about the role of the EPA, the importance of the role that the EPA plays in making sure that all of us enjoy clean water. And even those of us who are in the more urban-suburban areas of Maryland, who know that the things that we do also contribute to the health of the Chesapeake Bay, really value the role that the EPA has played.

And most importantly, and I wonder if you would share with me—a couple of things. I want to make sure that the panel understands that Maryland's unemployment is 6.8 percent, which is well below the national average, and that in fact we are in the business of creating jobs in our State. And as well, I know that our Governor has signed into law a law that limits the use of lawn fertilizer to address nutrient pollution in the Chesapeake Bay.

And I wonder if you could tell me your relationship with the Chesapeake Bay watershed States and the role that the EPA in fact plays with the States in helping them figure out what their responsibilities are in meeting the prescriptions of the Clean Water Act.

Ms. STONER. Thank you. We are working closely with the States through their watershed——

Ms. EDWARDS. Is your microphone on?

Ms. STONER. It is supposed to be on. Can you hear me? Through the watershed implementation plan process to have State-led plans to achieve nutrient reductions that will not only clean up the Chesapeake Bay, but actually waters throughout the watershed,

and provide all the economic, recreational, public health benefits that you refer to. That process is ongoing.

And you know, I would just say that the water quality of the United States is only as well protected as the least protected State. So we feel like it is very important that Americans can go anywhere in the United States and know that they have safe water to drink, and fish that they can eat, and waters they can recreate in. That is very important to the EPA.

And that is one of the components we bring to the process in our work with the States. We recognize that States have tremendous expertise as well. And as I said, they do most of the hard work. So it is very important that we support them and that Congress supports them in their efforts to do that. Resources are a huge issue for States, as you know. They are very important to make sure that we can all do these things together. And we appreciate the support that Congress has given to States and to EPA in moving forward with these programs.

Ms. EDWARDS. And Ms. Stoner, just to finish up, I just want to be clear then in terms of your relationship with just, say, one of the States in the Chesapeake Bay watershed, in Maryland, and Governor Martin O'Malley, and the work that our State and our State legislature, with full accord, have actually given to the standards that have been placed in terms of looking at nutrients in the Chesapeake Bay, that you have been working in partnership with the State to ensure that those standards are ones that over time are going to reduce the high level of nutrients and nutrient pollution in the Chesapeake Bay watershed; isn't that correct?

Ms. STONER. That is correct. And there were several States that put out statements to that effect in December, when we finished the TMDL and began the additional work on the watershed implementation plans with those States.

Ms. EDWARDS. And just as we conclude here, I just have a little bit of time, in H.R. 1, which was a bill that was championed by the majority in this House, including my colleague from the Chesapeake Bay, that there were cuts both to the SRF and the State 106 programs. The SRF program actually lost two-thirds of its funding from the previous year, and the 106 programs lost about half of their funds.

Would you say that significant increases in funding will be needed, and not the cuts proposed in H.R. 1, for both the SRF and the 106 programs to ensure that collaborative efforts to reduce nutrient pollution and address other water pollution challenges would be successful?

Ms. STONER. Those programs are very important to support the State work, the permitting programs, the State standards programs and so forth. The 106 program is the principal source of funding for those. The clean water and drinking water SRF, that is the way we pay for water and wastewater infrastructure in this country to ensure everyone has clean and safe waters, and, Congressman Harris, to create jobs for people in doing that for people across the country.

Ms. EDWARDS. And do any of the other witnesses have a contribution to that? Thank you.

Mr. GIBBS. The committee is going to recess here for about 15, 20 minutes, more or less. Votes have been called. It is a little less than 8 minutes yet on the vote call. So we will come back here in about 20 minutes. And we also have to dismiss Ms. Stoner. She has another commitment. Thank you for being here today.

Ms. STONER. I appreciate that.

Mr. GIBBS. And we will have some written questions we will submit.

[Recess.]

Mr. GIBBS. The committee will reconvene. Thank you for your indulgence. At this time, Mr. Bucshon, questions.

Dr. BUCSHON. Thank you, Mr. Chairman. A couple comments first. It is unfortunate Ms. Stoner couldn't stay. But I mean the result of this hearing today continues to confirm my opinion that there is a philosophical difference that we have here concerning the direction of Government, and my view that the current administration believes in central Government control of most things. And again, the testimony today just continues to confirm that.

It seems in the face of a nationwide concern about EPA overreach, we continue to hear justification from the administration for their environmental policies, which appear to be somewhat extreme. Of course we have seen this before, I think, with the way the Affordable Care Act was passed. I would like to go on record saying that I am hearing from my constituents in my district in southwestern Indiana that these policies will definitely kill jobs, and especially in the area of the coal industry, which is critical to the State of Indiana and to my district.

So with that said, I really ask this question of really the entire panel. Does what you heard today from Ms. Stoner from the EPA at all change your view that you have given in your testimony of the interaction between the Federal Government and your State? Start at the end and go down.

Mr. OPPER. Thank you, Representative. I appreciate the question.

The States implement almost all of the environmental programs that are handed down to EPA from Congress through the delegation process. EPA delegates the implementation of those programs to the States. They have a legitimate role in oversight. There is always going to be creative tension, and at times issues come up where the tension really flares. The numeric nutrient criteria is one where it flares particularly. So we are used to the tension between the State agencies and the Federal Government.

As bad as things get, usually common sense prevails. I certainly hope that it does here, and expect that it will, but it is going to take a while.

Dr. BUCSHON. OK. Thank you.

Ms. SULLINS. Thank you, Representative. I don't know that I can add a lot to what Mr. Opper has had to say. I believe that this issue is a significant issue in terms of the water quality and the need to protect water quality and address nutrient issues. And I believe that if we do not address nutrient issues that it will have an economic impact on our States.

Dr. BUCSHON. I guess I would agree with that opinion. The question is who should be primarily doing that? Can the States ade-

quately do that? Should the Federal Government set a one-size-fits-all? I mean that is the discussion here today at our committee.

Ms. SULLINS. And no, sir, I don't think a one-size-fits-all is an answer to this particular issue. And I think that is where the struggle is. And we continue to work with EPA to try to specifically address our concerns. And I believe the March memo that was issued specifically did come closer to addressing our concerns. However, there was a final statement in it that implied we all needed to adopt end stream nitrogen and phosphorous standards. And that, I believe, is where the tension lies, is that we do not believe that is necessarily appropriate in all cases. And it is necessary for the States to be able to address their watershed-specific issues.

Dr. BUCSHON. Thank you. I only have a limited amount of time, so if you could limit your answer to maybe 10, 20 seconds.

Ms. CARD. Sure. I would just agree that I believe the States and EPA do have a common understanding of the problem, yet the States have yet to hear EPA state that they are open to a more flexible approach that incorporates environmental response criteria as opposed to nitrogen and phosphorous criteria. And we need that flexibility.

Mr. ELMARAGHY. Thank you, Representative. U.S. EPA has a role to play in adopting the standards, but they are not very flexible in allowing the State to consider our local conditions and allowing us to give the flexibility in order to achieve the same goal. Our goal is to eliminate impairment. Every State can deal with in different way.

Dr. BUCSHON. Thank you.

Mr. BUDELL. Congressman, nothing Ms. Stoner said here today in any way changed my perception of the relationship, the strained relationship, that exists right now between EPA and Florida relative to numeric nutrient criteria.

Ms. BIGGS. Congressman, my concern—thank you for your question—my concern is that EPA continues to be more focused on a number than on meaningful reductions and meaningful improvements in water quality.

I think what you are seeing in Montana, what you are seeing in Colorado, are attempts to make meaningful improvement while we keep talking about the number. This problem has to be dealt with on a watershed-wide basis. You can't just go after, for example, the clean water utilities, because we are the easiest, and there is a section in the Clean Water Act that gives you the authority to go after that one sector of the source.

Dr. BUCSHON. OK. Thank you all. Yield back.

Mr. GIBBS. Thank you. Mr. Bishop?

Mr. BISHOP. Thank you, Mr. Chairman. I just have one question, but I am going to ask it of each of the panelists. I want to read a quote. And Ms. Sullins, I am going to start with you. It is OK.

I want to read a quote from an August 2009 report entitled, "An Urgent Call to Action" that was prepared with the participation of EPA and ASIWPCA. Is that how you say it? You need fewer letters in this, OK?

Ms. SULLINS. ASIWPCA.

Mr. BISHOP. OK. Thank you. The report states, and I am quoting, Establishing a cross-State enforceable framework of responsibility

and accountability for all point and nonpoint pollution sources is central to ensuring balanced and equitable upstream and downstream environmental protection. It is also essential to strengthen the ability of any single State to demand environmental accountability, without jeopardizing the loss of economic activity that might shift to another State with less rigorous standards, close quote. Is that a statement that your organization still agrees with?

Ms. SULLINS. Yes.

Mr. BISHOP. OK. May I ask each of the panelists? May I start with you, sir?

Mr. OPPER. Yes. We do agree with that. And we do see some need for unanimity among standards. But there still has to be flexibility worked into the equation. So I don't disagree.

Mr. BISHOP. OK. Ms. Card?

Ms. CARD. Yes, we agree with that statement.

Mr. BISHOP. Mr. Elmaraghy?

Mr. ELMARAGHY. You pronounced it perfectly.

Mr. BISHOP. Thank you.

Mr. ELMARAGHY. I agree with the statement.

Mr. BISHOP. Thank you. Mr. Budell?

Mr. BUDELL. I agree with it as well, but implementation flexibility is the key.

Mr. BISHOP. OK.

Ms. BIGGS. Congressman Bishop, I also agree with the statement. I have to agree with Mr. Budell that implementation is the key. And I have to reiterate that it has got to be a watershed-wide solution.

Mr. BISHOP. But that would certainly suggest, if it is a watershed-wide solution, that would certainly suggest, if not mandate, cooperation among the States. Correct?

Ms. BIGGS. Yes.

Mr. BISHOP. OK. Thank you. I yield back, Mr. Chairman.

Mr. GIBBS. Thank you.

Mr. Budell, I think in the last round of questioning you didn't have a chance to maybe finish what you wanted to say. I want to give you the opportunity to maybe finish your thought, what your thought process was there.

Mr. BUDELL. Well, sure. It was that the series of questions that Congressman Bishop asked about the litigation and the impact of the litigation on Florida's involvement in numeric criteria. What I was going to say is that, yes, there was a lawsuit against EPA that resulted in EPA determining that Florida needed to develop numeric criteria. And we were on a schedule, working cooperatively to develop those criteria with EPA, on their timeline, when they independently, without consultation with the State, entered into a settlement agreement with the litigants. And that settlement agreement specifically replaced our effort with their own.

In the settlement agreement, they agreed that they would take over the process of developing the numeric criteria, even though they had been working with us cooperatively during the period of the 9 months since they made the determination. And that settlement agreement we were not a partner to, we were not privy to, we were not consulted in any way, shape, or form. It was a complete surprise to us, the State, and particularly the Department of

Environmental Protection, that that settlement agreement was entered into in August.

Mr. GIBBS. So much for working together collaboratively.

Mr. BUDELL. Not so collaborative.

Mr. BISHOP. Would the gentleman yield?

Mr. GIBBS. Yes, go ahead.

Mr. BISHOP. Is it not fair, though, to at least assume that if the EPA had not entered into a settlement, that a settlement or a finding would have been imposed by the judge or by the courts?

Mr. BUDELL. There was no court date scheduled. The department—the State is on a schedule.

Mr. BISHOP. Are you suggesting that the case could have gone forward with no resolution?

Mr. BUDELL. No. I am suggesting that we were agreeing and working cooperatively with EPA on a schedule to develop nitrogen and phosphorous numeric criteria to be submitted to EPA for approval by January of 2010. The determination letter was January of 2009. They gave us 1 year to develop those criteria. Before that year was up, they entered into a settlement agreement with the litigants and usurped our ability to complete that process. That settlement agreement was not a requirement of the court.

Mr. GIBBS. So they entered—the U.S. EPA entered into a settlement agreement with the litigants and didn't consult with Florida?

Mr. BUDELL. There was no consultation with Florida at all.

Mr. GIBBS. OK. To me that kind of possibly raises a red flag about the motive of the lawsuit and who was directing it. But we will let that go at that.

Mr. Opper, can you talk a little bit about the variances? And apparently in your testimony you talked about that the technology doesn't really exist to get there. So can you just elaborate a little bit more on variances and my understanding that the opposition from the U.S. EPA regarding the variances?

Mr. OPPER. Thank you, Mr. Chairman. I wouldn't say the opposition at this point is adamant. I understand EPA's heartburn with variances if a variance is a "get out of jail" free card, because EPA wants to see some immediate progress made. I can understand EPA's hesitation over a variance if the variance isn't strengthened over time—the variance is diminished over time, so you get stronger standards over time as the technology develops. However, Montana's variance does both of those things, sets a 20-year timeframe, it results—when the standards have to be met it results in immediate improvement to water quality, significant progress. And it is ratcheted down, so it is tighter and tighter, the standards are, over time.

I think it should be a model for the rest of the country, because as you know, Montana tends to be a trendsetter when it comes to things like fashion and standards. So I think EPA again will get to that point where they will accept our variance. But they have heartburn because they are worried it will set precedence with other States whose variances aren't thought through maybe as well.

Mr. GIBBS. But your point is if a State is making progress and has a program in place that is ratcheting down and getting to where reducing the nutrient loads and improving the environment

in the streams and all that, they should be allowed to proceed that way.

Mr. OPPER. Mr. Chairman, we are demonstrating the immediate improvements to water quality, the flexibility, the innovation, and the collaborative work that EPA called for in Nancy Stoner's March 11 memo. They should be standing up and applauding Montana's work.

Mr. GIBBS. Great. Mr. Elmaraghy, in Ms. Stoner's testimony she mentioned the great Lake Saint Mary's in Ohio. Can you elaborate a little bit what the State of Ohio is doing to work to correct the problem at Lake Saint Mary's?

Mr. ELMARAGHY. Thank you, Mr. Chairman. The State of Ohio enacted some rules last year, last December, that require farmers and the watershed to adopt some kind of best management plans and submit these plans to the Ohio Board of Natural Resources for their approval. Also by 2012, a farmer will not be allowed to apply manure on frozen land or during the winter. In addition to that is the State of Ohio directed, so far, around maybe $8 million to help in resolving this issue. This month we started to treat the lake with alum, at a cost of about $3.5 million. We add alum in order to precipitate the phosphorous, the dissolved phosphorous, and make it not available for algae.

It will be a long struggle. I am not expecting this problem will be resolved overnight. But we need to get the local people to start to take the lead in dealing with this issue.

Mr. GIBBS. Great. It is great to hear that States are addressing it.

Now, one concern that came up in the full Transportation hearing earlier this week was that States aren't set up to address nutrient issues. I know we had quite a little debate. And one of the arguments I heard was because States didn't do it before, prior to 1972 with the Clean Water Act. By all your testimonies today and what we are seeing, in my opinion the States are geared up and willing and are addressing the issue. And this is a really tough issue because phosphorous and nitrogen loads, basically a lot of it is, as I think we heard today—nonpoint source pollution is a challenge.

And I just have serious reservations when the U.S. EPA is going to come out and take away the flexibility, especially when you have had programs that have already been approved by them, and try to do your work. So I am going to praise what you are trying to do. And it is my commitment to try get as much flexibility to institute your programs.

I think what has happened in Florida, for example, is a serious concern that needs to be addressed. Because phosphorous is an important nutrient for American agriculture. And most of it comes from Florida. So there could be serious ramifications if we shut down the phosphorous mining industry in Florida for American agriculture and our food supply.

So I commend you for the work you are doing to protect the environment and work to also create and enhance that industry sector and the jobs.

I would like to get clarification. I will just open it up I guess to everybody. Is the EPA proposing a single number standard by

ecoregion? And I had notes, and I am glad my staffer reminded me of that. It is under my impression, and I remember Ms. Stoner testified they weren't. But I think they have their database and setting up by ecological regions. Is that true? Anybody want to go first?

Mr. BUDELL. Mr. Chairman, the EPA criteria, as they have been adopted for Florida, do establish numbers for nitrogen and phosphorous by ecological region. They have broken the State up. So it is not a one-size-fits-all, but it is a one-size-fits-all for each ecoregion. And our position is that even within those ecoregions there is significant variability between the water bodies that exist in those regions.

Mr. GIBBS. How vast is an ecoregion?

Mr. BUDELL. It is dependent on geology, soils, geography to some extent, weather. There are criteria that go into establishing different ecoregions. I just named a few. But it doesn't necessarily mean that all streams within an ecoregion are identical and have the same exact nutrient regime. And that is why—I can understand numbers, single numbers being used as a guidance, as a guide for an ecoregion.

But before you would actually require landowners within a particular stream reach or watershed to implement costly nutrient reduction strategies, you need to confirm that those reduction strategies are actually going to result in environmental benefit.

I think one of the earlier speakers said that nutrient content in one stream may result in some kind of impairment. The same nutrient content in an adjacent stream would support a perfectly healthy biological community. And that is what we encounter in the real world out there. That is what Mother Nature gives us.

Mr. GIBBS. I think Mr. Bishop wants——

Mr. BISHOP. Just to be clear, was it not Florida that proposed an ecoregion approach, Panhandle East, Panhandle West, Bone Valley West?

Mr. BUDELL. And we are not opposed to an ecoregion approach.

Mr. BISHOP. But in Florida there is an ecoregion approach that Florida at least initially endorsed. Is that correct?

Mr. BUDELL. That is correct. If I could——

Mr. BISHOP. Of course.

Mr. BUDELL. Yes. I just point out that, yes, we were going to use those numbers as a guide. And we were always going to pair the evaluation of the nutrient content in a water body with a biological assessment of the health of that water body. That was what we were going to submit to EPA for approval. Not just you have to meet the number that is in the ecoregion regardless of the health of the water body that is in that.

Mr. BISHOP. And can you still not do that?

Mr. BUDELL. That is what we are struggling with. We gave EPA the opportunity, we believe, to back out gracefully and let us pursue and submit that to them for approval. That was the petition that we sent to the Agency in——

Mr. BISHOP. Which they have not either approved or denied.

Mr. BUDELL. Well, that is——

Mr. BISHOP. Is that not the case?

Mr. BUDELL. We are dissatisfied with the response that we got from the Agency. Let me just say that.

Mr. BISHOP. OK. I yield back, sir.

Mr. GIBBS. And I do believe that they are trying to set a number from a numerical standard what the phosphorous and nitrogen load can be, and not factoring in the biological conditions that might exist in specific locales.

Mr. BUDELL. That is correct.

Mr. GIBBS. And I think that is really the big issue here.

Mr. BUDELL. That is the major issue in Florida.

Mr. GIBBS. And obviously to me, I think the local States, or localities and States, would have the best hands-on knowledge to address that than to have set parameter tight numbers.

Mr. BUDELL. I think Mr. Elmaraghy recognizes the value of these trophic State indices, various tests that can be made. We have a stream condition index that is a very, very robust test of the biological health of water bodies. That was what we had proposed to use as a confirmatory tool when using these nitrogen numbers as guidelines. And the response was less than warm I will just say.

Mr. GIBBS. Now, just a quick follow-up on my thought. Are there some areas where the number that has been proposed or set by the U.S. EPA for, say, phosphorous that is—even if there was no human activity in that system that the number would still be higher, especially in phosphorous, than the number they are setting?

Mr. BUDELL. That is correct. I mean the process that they used by using the 90th percentile or the 75th percentile of a reference-stream approach invariably results in unimpacted waters not being able to meet their numeric criteria. So you have got standards that even Mother Nature can't meet in a certain subset of the water bodies. That is correct.

Mr. GIBBS. Mr. Elmaraghy.

Mr. ELMARAGHY. You got it right. Thank you, Mr. Chairman.

Ohio spent about 5 years period, studied in detail about 50 streams. And the reason we find like every stream is kind of unique. You cannot really say because of the concentration of phosphorous at this level you would have impairment. And as a result, we developed this trophic index criteria, which include all the variables in one index. And we are testing it on other streams to be sure, like this index, can be predictive of impairment in the stream. And so far we are getting some indications this index is workable, and we are getting endorsement from USGS and the other scientific organizations. My feeling is this approach should consider one parameter.

Considering all the factors is a good approach to proceed on, because like there is no one number will be acceptable for all the streams. The important thing really, instead of concentrating on the number for phosphorous and nitrogen, is how to implement this number. It seems like that is a key for approaching the nutrients.

The Ohio approach, like when we develop our standards, will include in our standards implementation strategies. So everybody knows this number is not exactly a final number, it is a target. We need to use adaptive management technique. We may try something first and see how the stream will respond. And if it didn't respond appropriately, we have to do something different until we

meet attainment in the stream. Our way of assessment attainment of the stream is using the biology of the stream. Ohio is kind of very unique. We have biological standards for the streams. So we can tell, like if we go and do biological survey of the stream on attainment or no, and we can also tell if the impairment is coming from nutrient or from other parameters.

Mr. GIBBS. That is a good point. I think it is possible to have a stream not in impairment, but maybe the phosphorous level might be higher than the numeric set standard and it still be a stream that is functioning biologically right; correct? I don't know how to say it.

Mr. ELMARAGHY. Absolutely. Nutrients is different.

Mr. GIBBS. Pardon?

Mr. ELMARAGHY. Nutrients is completely different than other parameters like zinc or copper.

Mr. GIBBS. Anybody else want to comment on this? Ms. Card.

Ms. CARD. If I might, I just wanted to emphasize something that I said in my testimony that is critical to the issue that we are having with EPA is that regardless of whether nitrogen or phosphorous are established in guidance or are incorporated as part of the water quality standards themselves, the sticking point for us is that they should not be applied independently of what the environmental response is telling us. And that the environmental response, whether it be the biological response, the clarity of the water body, dissolved oxygen, that is what makes the determination of whether designated uses are being supported, and not the nitrogen or phosphorous criteria as the case may be. Those numbers should not be applied in and of themselves, absent the consideration of the environment.

Mr. GIBBS. That gets back to my point I just made. It may be possible to have a stream not in impairment that could have a high numerical phosphorous because of other things going on in that stream, and it is not a problem, and you have aquatic life and everything is functioning well.

Ms. CARD. Yes, sir.

Mr. GIBBS. Anybody else want to respond?

I sincerely want to thank you for making the trip into DC and suffering through all the humidity in this town. Have a safe trip back to your respective States, and keep up the good work.

Thank you very much. At this time the committee is adjourned.

[Whereupon, at 12:56 p.m., the subcommittee was adjourned.]

CHAIRMAN JOHN L. MICA TALKING POINTS

HEARING ON "RUNNING ROUGHSHOD OVER STATES AND STAKEHOLDERS: EPA'S NUTRIENT POLICIES"

JUNE 24, 2011

- When I look at just some of the recent EPA actions –
  - usurping the States' role in Clean Water Act decisions,
  - invalidating legally issued permits,
  - imposing costly nutrient standards on cities that may not benefit water quality, and
  - requiring new and expensive regulatory regimes for sewage waste incineration and for coal ash disposal, with questionable environmental benefits

- I worry for the economies of our States and cities and Americans should question the Federal government's ability to rationally address environmental problems.

- The irrational exuberance of EPA will destroy credibility in the agency that will last far beyond this Administration and make true environmental gains much harder to accomplish.

- Unfortunately, this EPA is not the solution to our environmental troubles; this EPA may be our biggest environmental problem.

- EPA's regulatory jihad is strangling economic recovery.

- Its costly, burdensome policies will double struggling families' water bills while providing little to no benefit to water quality.

- I would like to give a special welcome to Richard Budell. He has been involved in agricultural water resource protection and restoration programs in Florida for 26 years.

- He has advised Florida's Governor and Department of Environmental Protection on issues ranging from the protection of Florida's coastal waters and estuaries to the designated use classification of Florida's surface waters.

NACWA
A Clear Commitment to America's Waters

Testimony of:

Barbara Biggs

Government Affairs Officer
Metro Wastewater Reclamation District
Denver, Colorado

Water Quality Chair
National Association of Clean Water Agencies
1816 Jefferson Place, NW
Washington, DC

Subcommittee on Water Resources and Environment
House Transportation and Infrastructure Committee
U.S. House of Representatives
June 24, 2011

Introduction

Chairman Gibbs, Ranking Member Bishop and members of the Subcommittee, thank you for the opportunity to appear before you today and for your leadership and commitment to ensuring that the growing problem of nutrient pollution is dealt with in a responsible and pragmatic manner that will result in real water quality improvements. My name is Barbara Biggs and I am the Government Affairs Officer for the Metro Wastewater Reclamation District in Denver, Colorado. It is a great privilege to be here to testify on the issue of nutrient pollution.

In addition to my duties at the Metro District, I also serve as the Chair of the Water Quality Committee for the National Association of Clean Water Agencies (NACWA) and it is my pleasure to be testifying on NACWA's behalf today. As background, NACWA is the only organization whose primary mission is to advocate on behalf of the nation's publicly owned wastewater treatment works (POTWs) and the communities they serve. NACWA public agency members collectively treat approximately 80 percent of the nation's wastewater flow and whose employees are the true environmentalists tasked with ensuring the Nation's waters are clean, safe, and meet the strict requirements of the Clean Water Act (CWA).

Background

NACWA has been deeply involved in nutrient pollution issues for decades. Most recently, NACWA joined with other public water sector and non-governmental organizations (NGOs) in developing effective principles of watershed management, underscoring the importance of controlling all sources of nutrients. Last fall, NACWA convened a nutrient summit in Chicago, Illinois where representatives from the clean water community came together to explore more rational, science-based approaches to addressing nutrient pollution. Outlined in "*NACWA's Nutrient Summit Outcomes and Issue Paper*" (attached) are several guiding principles for nutrient criteria development, and recommendations for improving implementation of nutrient controls.

In addition to these efforts, NACWA recently intervened in the *American Farm Bureau, et al v. EPA* case to ensure the Chesapeake Bay total maximum daily load (TMDL) is effective in achieving nutrient reduction, is based on principles of sound science, and ensures that all sectors bear their fair share of responsibility for necessary nutrient reductions. NACWA also recently helped to organize the *Healthy Waters Coalition*. The coalition represents a range of interests including the municipal water sector, conservation organizations, regulatory agencies, sustainable agriculture groups and smart growth organizations. Together these groups will work to pursue legislative changes in the upcoming Farm Bill reauthorization with a goal of strengthening the links between farm policy and water quality improvement.

Challenge of Nutrient Pollution

These efforts are intended to underscore that nitrogen and phosphorus are unlike any pollutants we have dealt with before under the CWA and demand an approach that will result in verifiable and sustainable water quality improvement through the equitable and cost-effective implementation of nutrient controls by all sources of nutrient loadings, including agriculture.

The Subcommittee's focus on nutrient criteria is timely and all stakeholders involved in this issue should agree that criteria development is a complex, strategic endeavor. One cannot divorce it from controversial political and economic considerations. For example, in nutrient-impacted watersheds where point sources are a *de minimis* contributor to nutrient loadings, it will be exceedingly difficult for clean water utilities to garner community support and funding for expensive treatment technologies that result in little to no improvement in overall water quality. Further, these costly point source controls should not be considered in a vacuum as the nation's clean water utilities already have many pressing and competing regulatory requirements, as outlined in NACWA's *Money Matters – Smarter Investment to Advance Clean Water™* campaign, which emphasizes that utilities should be able to prioritize requirements, such as nutrient reduction, with other required investments based on the water quality improvements they will likely achieve. This is especially important as clean water agencies are not only entrusted with the responsibility of protecting the environment but also must act as stewards of public funds ensuring that a community's limited resources are deployed in a manner that will result in maximum environmental improvement.

It is clear that nutrient-related impacts have quickly become the water quality challenge of our time. According to state water quality reports, 80,000 miles of rivers and streams are impaired by nutrients. In addition, 2.5 million acres of lakes, reservoirs and ponds, 78 percent of assessed coastal areas and one third of the nation's estuaries are nutrient impaired. The Gulf of Mexico and Chesapeake Bay are two of the most well-known nutrient-impacted water bodies. In these water bodies, and in many others, nutrient loadings from point sources are a fraction of the total share of nutrient pollution. In fact, POTWs account for less than 10 percent of nutrient loadings in the Gulf of Mexico and only 20 percent in the Chesapeake Bay watershed.

NACWA's members understand that clean water agencies need to be an equitable partner in any solution to this growing challenge, and we are ready to do our fair share. This is clear in the Chesapeake Bay watershed where POTWs have already decreased their nitrogen and phosphorous loadings by 40 percent and 65 percent respectively. However, while these actions will help our efforts to control nutrient pollution, we know that without meaningful involvement from the non-point sector we will have great difficulty attaining significant reductions in nutrient loadings and subsequent water quality improvements. This is especially evident in the Gulf of Mexico and Chesapeake Bay watersheds where agricultural sources account for approximately 80 percent of the nitrogen and 70 percent of the phosphorous loadings in the Gulf, and 40 percent of the total nutrient loadings in the Chesapeake Bay. It is clear that addressing nutrient related water quality impacts will require new, more holistic approaches in which all sources are equitably included in the solution.

Since 1998, EPA has been urging states to develop numeric nutrient criteria both to facilitate restoration efforts and to ensure protection of pristine or minimally impacted waters. While EPA has generally maintained a hands-off approach, preferring – appropriately – to let the states take the lead on criteria development, EPA has been under pressure from some NGO groups to promulgate numeric nutrient criteria. Some states have made progress in developing numeric nutrient criteria for lakes but many states have had difficulty developing these numeric criteria, especially for flowing waters like rivers and streams. The resulting delay in implementing the CWA

water quality-based programs, including the development of TMDLs, has led some stakeholders to suggest that the water quality approach be abandoned in favor of technology-driven nutrient controls for point sources.

Suggested Approaches

NACWA strongly believes that reliance on approaches that do not account for the varying ecological effects of nutrient pollution, including misguided criteria development efforts and one-size-fits-all technology fixes, will result in major expenditures for point sources with minimal or no improvement to water quality for many waters. These approaches will also fail to solve the problems associated with controlling non-point sources. How water quality impacts from nutrients are assessed and addressed must ensure that management actions will result in water quality improvements, provide lasting benefits, and be affordable and sustainable.

Developing meaningful water quality goals and criteria are an essential step in making progress on the nutrient issue. As the level of attention being placed on nutrients continues to increase, however, federal, state and local water quality managers are realizing the true magnitude of the challenges that lie ahead. The unique and complex relationships between nutrients and potential impacts in any given water body require that we use new approaches to establish nutrient goals and control nutrient impairments.

Understanding the biology of the individual waterway we are trying to protect is essential to developing effective nutrient goals and controls. For nutrients, there is often no 'bright line' level below which aquatic ecosystems will be protected and the use of such levels could result in undesirable impacts on organisms that may thrive under different conditions. Other environmental stressors including sediment loads, habitat destruction and hydro-modification resulting from dams/impoundments can have as much or more of an impact on the health of an aquatic ecosystem than nutrients and can affect how these systems respond to varying nutrient loads.

The existing federal model for numeric criteria development and implementation is not working for nutrients in all water body types. The delay in implementing nutrient controls is largely due to the fact that we are trying to use a system that was designed for more traditional toxic pollutants – a system that assumes targeting specific levels of 'pollutants' (nitrogen and phosphorus in this case) will improve water quality and prevent pristine waters from becoming impaired. A number of states are already exploring new approaches, but more needs to be done to ensure these approaches are embraced by EPA and that other states have the flexibility to undertake similar efforts.

Instead of the current model, NACWA believes numeric nutrient water quality criteria must:

- Be technically and scientifically defensible, and adequately reflect the full range of biological, chemical, and physical properties of the waterway, ultimately protecting the designated use;

- Be based on a demonstrated and quantified cause and effect relationship and appropriately qualified by the uncertainty in that relationship; and

- Not be used as the basis for imposing nutrient controls unless the weight of the evidence indicates that impacts have or will result from excess nutrients.

Ultimately, new and innovative approaches for expressing nutrient water quality criteria or goals, instead of independently applicable total nitrogen and total phosphorus concentrations, must be developed and encouraged.

Colorado Example

One state that has taken steps to develop its own unique approach to reducing concentrations of nutrients in surface waters is Colorado. In Colorado a large group of stakeholders, including POTWs, have been working for almost two years on an approach that includes scientifically-derived numeric values for nitrogen (N) and phosphorus (P) as well as an implementation plan that ensures nutrient reductions in priority watersheds, including those where point sources are a significant contribution. It is important to remember, however, that what Colorado is proposing to do may not work effectively in other states. Despite EPA's insistence to the contrary, there is no singular national model for addressing nutrient-related water quality impacts.

The Colorado approach, however, serves as an important model in terms of its collaboration between stakeholders and state regulators. The success of the Colorado approach and any other approaches states may pursue, will hinge on securing the support of all the key stakeholders. The elements of the Colorado approach include the adoption of:

- Scientifically-derived, enforceable water quality standards for high quality waters and protected water supply reservoirs;

- Implementation of biological nutrient removal for existing and new domestic wastewater treatment works with appropriate "off-ramps" for small, disadvantaged communities and situations where the POTW contribution is *de minimis*; and

- A monitoring program to assess reductions from point sources and to identify other potential sources of nutrient loading.

As the attached maps illustrate, POTWs are not the major source of nutrients in much of Colorado and the adaptive implementation plan proposed in Colorado recognizes this fact. While this approach does not fit EPA's mold of developing enforceable total nitrogen and total phosphorus criteria for all waters, it does provide several advantages, including:

- Offering rational levels of treatment for key point sources that will provide immediate water quality benefits.

- Establishing a monitoring program to help quantify the relative contributions from non-point sources and regulated point sources in each watershed allowing controls to be more effective. Monitoring can also identify those POTWs that contribute a *de minimis* nutrient

load to the watershed and avoid investment in costly upgrades that will result in no water quality benefit.

- Allowing nutrient reductions to be undertaken in a "phased" approach that includes enough time for affected entities to secure adequate funding and construct capital improvements.

- Incorporating an adaptive framework that secures significant, cost effective nutrient reductions early in implementation and provides an ample time window for nonpoint source controls to be put in place before additional point source controls are imposed.

Implementation of nutrient removal even in priority watersheds is not a small investment. As the attached maps indicate, while wastewater treatment plants account for a very small portion of the nutrient loads statewide, the Metro District in Denver is nearly 50 percent of the phosphorus load to the South Platte River and, as such, recognizes that it must do its fair share for that watershed. The District has identified a capital improvement program to meet the proposed numeric value for phosphorous and to treat to the limits of achievable technology for nitrogen that will involve the investment of $965.5million over the next 20 years. The 20-year timeframe is necessary to ensure upgrades are constructed in phases while the treatment plant continues to operate and to allow the District to raise rates in a steady, predictable manner.

EPA Region VIII's reaction to Colorado's proposal has not been encouraging. Their objections include:

- These measures may not meet CWA requirements;

- The measures would result in too few water bodies with enforceable water quality standards to protect uses and would understate the scope of nutrient problems in Colorado; and

- If Colorado is not going to adopt enforcement standards for nitrogen and phosphorous for all water bodies, EPA will review all new and renewal discharge permits to ensure appropriate nitrogen and phosphorous effluent limits have been included.

Though EPA continues to underscore that states should have the lead on nutrient control efforts, including statements in a March 16 memorandum from EPA's Office of Water on the need to make additional progress on nutrients, efforts to make progress in Colorado and other states continue to face significant hurdles from the Agency.

Conclusion

In conclusion, we have seen that flexibility to explore new and innovative approaches to nutrient control, as the Colorado example illustrates, should be a key element in any effort to address our national nutrient loading challenge. Given the unique characteristics of each waterway, the multiple sources of nutrient loadings, and the varying effects nutrients have on aquatic life, it is clear that a suite of approaches is needed.

Again, nitrogen and phosphorus are unlike any pollutants we have dealt with before under the CWA and they demand that we not simply apply existing approaches in a 'business as usual' manner. Utility managers must be able to demonstrate that the investments they are being required to make will have an impact on water quality, are a cost-effective way of addressing the problem, and will be sustainable over time.

All of these considerations can only be achieved if, at the end of the day, point sources are not the only actors on the hook for controlling nutrients. Ultimately, more comprehensive change will be needed to put into place an equitable framework for ensuring all sources of nutrients are held accountable for their fair share of the problem.

Thank you for the opportunity to appear before you today, I look forward to any questions the Subcommittee may have regarding my testimony.

NACWA

Nutrient Summit Outcomes and Issue Paper

March 2011

©2011, National Association of Clean Water Agencies
1816 Jefferson Place, NW
Washington, DC 20036
www.nacwa.org

Executive Summary

NACWA convened a Summit of representatives from its public agency and private affiliate members last Fall to outline the essential elements of an effective and equitable national nutrient control framework. NACWA understands the need to make continued headway on controlling nutrient pollution and used the Summit to discuss new approaches to nutrient goal development, state programs that are making real progress, and what the clean water community can do to help improve the country's efforts to address nutrients. Given the ongoing debate surrounding the development of nutrient criteria and the frustration with current efforts felt by all stakeholders, NACWA is committed to using the discussions at the Summit as a starting point for a reinvigorated dialogue with EPA and the states on rational approaches for addressing nutrients.

During discussions at the NACWA Nutrient Summit, a series of Guiding Principles for a rational and scientifically-sound approach to controlling nutrient impacts emerged. In addition to outlining the Guiding Principles, Summit participants worked to develop several key recommendations for improving current nutrient control efforts. While considerable attention was placed on what the 'ideal' program would look like, Summit participants highlighted where existing realities and the need to make additional progress, in some cases where the underlying scientific basis for controls may still be uncertain, were both important considerations.

Elements of the top four recommendations detailed in this paper are new or different from the 'current business as usual' approaches, but NACWA believes they have significant promise in potentially breaking the current logjam on nutrient issues in many parts of the country. The remaining recommendations outline where additional work is needed to make better use of existing tools and develop equitable control programs.

Though the Summit's ground rules limited discussions to changes and actions that could be accomplished using current Clean Water Act (CWA) authorities, Summit participants continually raised the issue that more comprehensive change, potentially to the CWA itself, is needed to fully embrace a holistic watershed-based approach in which all sources are equitably included and ensure the most effective solutions to impacts are implemented.

Introduction and Purpose

NACWA convened a Summit of representatives from its public agency and private affiliate members in September 2010 to outline the essential elements of an effective and equitable national nutrient control framework. NACWA understands the need to make continued headway on controlling nutrient pollution and used the Summit to discuss new approaches to nutrient goal development, state programs that are making real progress, and what the clean water community can do to help improve the country's efforts to address nutrients. Given the ongoing debate surrounding the development of nutrient criteria and the frustration with current efforts felt by all stakeholders, NACWA is committed to using the discussions at the Summit as a starting point for a reinvigorated dialogue with EPA and the states on rational approaches for addressing nutrients.

This issue paper outlines a series of Guiding Principles that Summit participants felt were essential for a nutrient control program to succeed and a set of recommendations that complement the Guiding Principles and provide more detail on what can be done to better address the Nation's nutrient challenges.

Complexity of Nutrient Issues Requires Scientific, Data-Driven Approaches

Summit discussions ranged from broad thematic concepts to more specific and potentially viable control frameworks for nutrients. Summit participants recognized that some of the Nation's waterbodies are suffering from excess levels of nutrients and that public agencies need to be an equitable partner in any solution to this growing challenge. The Gulf of Mexico and Chesapeake Bay are two of the most well-known impacted waterbodies, but nutrients are impacting waters of all types and sizes across the United States. In addition, population growth, changing land use patterns, and other drivers are threatening those waters that to date have only been minimally impacted by human activity.

Action is needed, but as the level of attention being placed on the nutrient issue continues to increase federal, state and local water quality managers are realizing the true magnitude of the challenges that lie ahead. The unique and complex relationships between nutrients and potential impacts in any given waterbody require that we use new approaches to establish nutrient goals and control nutrient impairments. For example, reduced nutrient levels are not always better for an aquatic ecosystem and there are numerous confounding factors that impact how a particular organism or ecosystem responds. These issues are even more complex when evaluating nutrient impacts on flowing waters, such as rivers and streams, or in coastal areas.

Understanding the biology of the waterways we all want to protect is essential to developing effective nutrient goals and controls. For nutrients, there is often no 'bright line' level of nutrients below which aquatic ecosystems will be protected and the use of such bright-line levels could result in undesirable impacts on organisms that may thrive under different conditions. Other environmental stressors including sediment loads, habitat destruction and hydromodification resulting from dams/impoundments can have as much or more of an impact on the health of an aquatic ecosystem than nutrients and can affect how these systems respond to varying nutrient loads.

Efforts at State Level Offer Promising Examples of a Potential National Approach

Since 1998, EPA has been urging states to develop numeric nutrient criteria both to facilitate restoration efforts and to ensure protection of pristine or minimally impacted waters. While EPA has generally maintained a hands-off approach, preferring – appropriately – to let the states take the lead on criteria development, environmental NGOs, dissatisfied with the pace of existing efforts, have petitioned or taken initial steps to petition EPA to promulgate numeric nutrient criteria (e.g., Florida, Wisconsin, Kansas, and the Mississippi River Basin). Some states have made progress in developing numeric nutrient criteria for lakes but many states have had difficulty developing numeric criteria linked to in-stream responses for flowing waters. The resulting delay in implementing the Clean Water Act's (CWA) water quality-based programs, including the development of total maximum daily loads (TMDLs), has led some stakeholders to suggest that the water quality approach be abandoned in favor of technology-driven nutrient controls for point sources.

NACWA strongly believes that reliance on approaches that do not account for the varying ecological effects of nutrient pollution, including misguided criteria development efforts and one-size-fits-all technology fixes, will result in major expenditures for point sources with minimal or no improvement to water quality for many waters. These approaches will also most likely fail to solve the problems associated with controlling nonpoint sources. How water quality impacts from nutrients are assessed and addressed must ensure that management actions will result in water quality improvements, provide lasting benefits, and be affordable and sustainable. At the same time, there is increasing interest in making progress in the interim, while additional data are collected and the uncertainty surrounding control efforts is addressed.

Recent efforts at the state level provide promising examples of how we may best make additional progress on the challenge of controlling nutrients. As discussed during the Summit, where dischargers have worked cooperatively with state environmental agencies, nutrient control efforts have been developed that provide the necessary environmental protections, while affording the flexibility needed to ensure those programs can be implemented in a more cost-effective, targeted fashion. While not using the same model in every case, other states have developed or are proposing approaches that better reflect the unique properties of nutrients. Some of these programs use a more iterative approach to addressing the nutrient challenge - making progress in the near-term despite uncertainty, but providing flexibility to ensure resources are only expended where they are most needed. Given the current limitations under the federal CWA to address nonpoint sources of nutrient pollution, some of these state efforts have also been more effective at leveraging state authorities to address nonpoint contributions. More work is definitely needed, but these cooperative, state-level successes can serve as a model for additional progress.

Creative, Long-Term Solutions Also Vital to Address Nutrient Challenges

NACWA is also working on a parallel track at the federal level to explore potential legislative solutions that support a watershed-based approach to water quality improvement and address all sources of nutrient pollution. Discussions at the Summit focused primarily on those actions that can be taken now, using existing authorities under the Clean Water Act and state law. Nevertheless, Summit participants underscored that for real progress to be made on the nutrient issue in the long-term, more comprehensive changes are needed to ensure all sources of nutrients are equitably incorporated into any viable solution.

Guiding Principles for a More Rational National Approach to Addressing Water Quality Impacts

During discussions at the NACWA Nutrient Summit, a series of Guiding Principles for a rational and scientifically-sound approach to controlling nutrient impacts emerged. The Guiding Principles and much of the discussion at the Summit were prefaced on the conclusion that a new, novel approach to developing and implementing nutrient criteria in the U.S. is needed.

The existing federal model for numeric criteria development and implementation is not working for nutrients in all waterbody types. The delay in implementing nutrient controls is largely due to the fact that we are trying to use a system that was designed for more traditional toxic pollutants – a system that assumes targeting only the levels of 'pollutants' (nitrogen and phosphorus in this case) will improve water quality and prevent pristine waters from becoming impaired. A number of states are already exploring new approaches, but more needs to be done to ensure other states can benefit from this work. Discussions at the Summit also recognized that in some parts of the country, where nutrient controls will clearly be needed, action may be appropriate in the near-term despite ongoing efforts to further reduce the uncertainty surrounding the necessary controls.

The Guiding Principles include:

- Water quality assessment and monitoring programs must be sufficiently comprehensive and robust to provide the information needed to support criteria development and document the need for controls to the extent any are required.

- Greater emphasis must be placed on evaluating use attainability and use refinement, if needed, before criteria are developed and controls imposed.

- Numeric nutrient water quality criteria must:

  - Be technically and scientifically defensible, developed to reflect the full range of biological, chemical, and physical properties of the waterway, and protect designated uses;
  - Be based on a demonstrated and quantified cause and effect relationship and appropriately qualified by the uncertainty in those relationships; and
  - Not be used as the basis for imposing nutrient controls unless a nutrient caused biological impact has been confirmed or a potential for impact can be demonstrated through a nutrient-specific, technically/scientifically defensible reasonable potential evaluation.

- New and innovative approaches for expressing nutrient water quality criteria or goals, instead of simple expressions of total nitrogen and total phosphorus concentrations, must be developed and encouraged.

- The sources of nutrients and their relative contributions in a particular watershed should drive the selection of control options; there should be flexibility to consider a range of point source control options, including water quality and technology-based approaches.

Option selection should be a state-driven effort and include the development of an accountability framework that ensures equitable reductions from all sources.

- Flexibility, both in developing water quality criteria and implementation (e.g., better use of existing CWA tools like variances and permit expressions such as longer averaging periods), is needed to account for the uncertainty due to the unique ecological interactions between nutrients and designated uses.

- An adaptive, watershed management approach must be used to ensure continued progress toward long-term water quality goals.

- Any required nutrient controls for point sources must be technically achievable, ensure that required investments are sustainable, and provide measurable benefit to the community.

Recommendations for Improving Current Approaches

In addition to outlining the essential elements of any nutrient control program (the Guiding Principles above), Summit participants worked to outline several key recommendations for improving current efforts. While considerable attention was placed on what the 'ideal' program would look like, Summit participants highlighted where existing realities and the need to make additional progress, in some cases where the underlying scientific basis for the level of control needed may still be uncertain, were both important considerations.

Many of the recommendations outlined below are already components of the national CWA water quality program to one degree or another, or have been proposed as elements in state programs. In many cases Summit participants highlighted that what was most needed was increased use of existing tools.

Though the Summit's ground rules limited discussions to changes and actions that could be accomplished using current CWA authorities, Summit participants continually raised the issue that more comprehensive change, potentially to the CWA itself, is needed to fully embrace a holistic watershed-based approach in which all sources are equitably included and ensure the most effective solutions to impacts are implemented.

The first four recommendations listed below, Range of Control Approaches, Adaptive Implementation, Flexible Permit Expression, and Effective Incorporation of Costs and Benefits, were the focus of significant attention from Summit participants. Elements of these recommendations are new or different from the 'current business as usual' approaches, but NACWA believes they have significant promise in potentially breaking the current logjam on nutrient issues in many parts of the country. The remaining recommendations outline where additional work is needed to, for example, make better use of existing tools and develop more guidance and equitable control programs.

1) Range of Approaches for Establishing Criteria and Selection of Controls Must Be Available
Probably the most controversial issues surrounding nutrients are the establishment of appropriate CWA 304(a) criteria and the use of those criteria to select the control measure(s) that may be needed. During the Summit, participants discussed the need for ensuring that a range of criteria development and control approaches be available in light of the substantially different local conditions and needs.

To date, the point source community has largely insisted that EPA and the states establish a clear causal link between nutrient concentrations and water quality impacts before establishing a water quality criterion and before imposing control requirements. Summit participants discussed the reality that in some parts of the country, where point source contributions comprise a larger portion of the total nutrient load and where water quality conditions are obviously impacted by nutrient over-enrichment, action may be necessary despite uncertainty in the underlying scientific information regarding causal links.

Discussions addressed the situations in which each of these approaches below may be appropriate, but focused on the need for options. NACWA envisions that the point source community would work collaboratively with the states to determine what combination of these approaches may be appropriate for particular states and waterbodies.

Overall, three approaches were discussed:

- Use of special studies to develop site-specific criteria, considering the full suite of potential criteria expression options (beyond TP and TN). Necessary point source controls would be established based on reasonable potential determinations (for un-impaired waters) and based on total maximum daily load (TMDL) waste load allocations for impaired waters. While site-specific criteria development is resource-intensive, new, lower cost modeling and analysis tools are becoming more available to better enable this mechanistic approach. More specifically, mechanistic approaches such as modeling could serve to assess the "effect" of nutrients on certain end-points (e.g., seston algal densities, attached periphyton, dissolved oxygen levels, etc.). Dischargers, regulatory agencies, and other stakeholders would need to work together to agree upon a common set of end-points and target values that the site specific criteria (and associated nutrient reductions) would be designed to achieve. This site-specific approach would be most appropriate where the point source community is willing and able to make significant resource investments and ensure there is adequate data and information to support modeling and develop the site-specific criteria. The approach is also likely to be more effective where there is greater uncertainty regarding the contribution of point sources to impairment.

- A collaborative effort between the discharger community and the state to develop state-wide nutrient criteria using a scientifically-defensible approach[1]. Again, criteria developed through this approach should consider the full suite of criteria expression (i.e., beyond TP and TN concentration levels) and dischargers still need the option to develop site-specific

[1] EPA generally refers to three approaches for developing nutrient criteria – stressor response, mechanistic modeling, and the reference condition approach. NACWA generally believes that the reference condition approach is not a scientifically defensible method for developing water quality criteria that adequately reflect the unique properties of nutrients and protect the full range of potential designated uses.

if they choose. This option could be appropriate when a site-specific approach is deemed too costly and where a significant point source contribution is better established. While it may be possible to establish a clear cause and effect relationship using this approach (e.g., for lakes), the level of uncertainty associated with the linkage between the criteria and the potential for water quality impacts using state-wide criteria will necessitate more flexible implementation provisions. *See* Flexible Permit Expression below. Recent efforts in Wisconsin, during which criteria were developed in tandem with flexible implementation procedures, illustrates how this type of approach can be successful.

- Use of technology-based effluent limits for point sources, as appropriate, considering local water quality conditions, relative source contributions and facility size. A reasonable level of technology-based control (e.g., biological nutrient removal to levels such as 8 mg/L TN and 1 mg/L TP) may be appropriate for some point sources – in waters where point sources are dominant contributors of nutrients and where nutrient levels are so high that controls will obviously be necessary. NACWA continues to believe that this is not a viable option nationwide, but something that could be considered at the state and watershed levels as either the framework for a nutrient control program or an interim step to be used as the state continues to develop water quality criteria. Summit participants indicated that the clean water community would need to be directly involved in the selection of any technology-based option. The approach currently employed by the State of Kansas is likely a good example for this type of nutrient control approach. The use of a technology based approach would not be appropriate in cases where dischargers are willing to invest and collaborate with regulatory agencies in the development of other options such as site-specific or state-wide criteria as previously described.

In many cases a hybrid of the above options would be appropriate. For example, in some states a technology-based approach is being explored for the near term while efforts continue to refine the science necessary to establish nutrient criteria. For all of these approaches, Summit participants recognized that impacts on downstream waters would need to be considered as well.

2) Goal Implementation Should Be Achieved Through Adaptive Management

Where nutrients are contributing to water quality impacts, Summit participants indentified the need for a true adaptive management approach to ensure that necessary control efforts are done in an economically efficient manner and to ensure that equitable controls are developed to address nutrient contributions from both point and nonpoint sources in a watershed. The State of Wisconsin included an adaptive management approach in recently adopted rules that could serve as a starting point for other adaptive management efforts.

Through adaptive management, collaboration between point and nonpoint sources is encouraged. Flexible approaches for meeting water quality criteria can be pursued, including water quality trading and offsets. Adaptive management demands longer implementation horizons, recognizing that it takes time to develop and implement a coordinated nutrient control strategy within a watershed, and for the resulting water quality benefits to be realized. This is particularly true where water quality trading or the purchase of offsets is part of the implementation strategy. Establishing interim water quality goals will ensure that adequate progress is being made to meet the final water quality criteria. This would need to be supported by water quality monitoring within the watershed and an evaluation process to monitor progress.

In general, with nutrient-related water quality impacts longer implementation horizons, potentially 15 to 20 years or more, are needed. EPA recognized this when it requested comment on a restoration standard concept in its recent proposal of numeric nutrient criteria for Florida. A single five year permit term for point sources is insufficient time to allow controls on nonpoint sources to be put in place and begin to work. Through the establishment of an adaptive management framework, with interim goals and accountability, progress will be assured while enabling the use of more cost effective approaches.

3) Flexible Permit Limit Expression Needed

Expression of discharger permit limits for nutrient-related parameters should be flexible and recognize the unique characteristics of nutrient impacts that set them apart from other pollutants such as metals. Setting permit limits based on short-term periods such as weekly or monthly averages and establishing daily maximum limits is inappropriate for the vast majority of surface waters. Nutrient impacts are generally realized on a much larger time scale and use of annual averaging periods is appropriate when setting permit limits for many waters.

Beyond the averaging period, permit limits may also need to consider seasonal variability and be more dynamic than typical pollutant limits to better connect them to in-stream conditions like flow. There are also new, more innovative approaches to establishing permit limits for nutrients under consideration like the use of nutrient assimilation zones and load duration curves to better account for the behavior of nutrients once discharged. EPA should better explore these innovative approaches and ensure the states receive information and guidance on their use. NACWA's members are working on many of these new approaches and can provide additional information on how they may improve our current efforts to address nutrients.

4) Cost and Benefit Considerations Must Be Effectively Incorporated

A top concern for utility managers at the Summit was the need to strike an appropriate balance between their commitment to protecting the environment and their commitment to provide cost-effective service to their ratepayers. Clean water agencies have been entrusted with the responsibility to spend their communities' limited resources in a manner that will provide the appropriate level of service, ensure compliance with all necessary regulations, and ultimately result in an improved environment. In this capacity, utilities have a responsibility to ensure the investments they make will actually improve water quality.

Establishing a clear causal link between nutrients being discharged from the wastewater treatment plant and designated uses and water quality is critical in demonstrating the need for a particular investment to ratepayers. Securing the necessary funding to install and operate nutrient controls in watersheds where point source reductions will have little or no measurable benefit will be difficult and in some communities impossible given the political realities of how rate increases or bond issuances are approved. While the current water quality-based programs of the CWA do not expressly include cost-benefit considerations, the implementation of water quality criteria, TMDLs, and the imposition of water quality-based effluent limits must acknowledge the importance of these cost-related challenges at the local level.

In addition to the importance of establishing a causal link when evaluating cost-benefit, the issue of how much treatment should be required of a point source must also be considered. While the CWA's water quality programs provide no off-ramp for point sources to avoid technology controls

at or beyond the limits of technology (including reverse osmosis), EPA's final rule establishing numeric nutrient criteria for Florida recognizes that implementation of such controls "has not been demonstrated as practical or necessary." This reflects the fact that forcing utilities beyond a certain level will cost much more than the benefits received and result in major increases in power consumption and greenhouse gas emissions. EPA's statements to the contrary, however, do not remove the potential CWA mandates (e.g., TMDL wasteload allocations) that could impose these excessive levels of control.

Consideration of cost-benefit, clear causal links, and the appropriate level of treatment are even more critical where point sources are di minimis contributors to nutrient impairment and where there is no program in place to ensure that equitable controls from all sources are imposed. As evidenced by EPA's proposed TMDL for the Chesapeake Bay, where controls on nonpoint sources are not in place, point sources will continue to bear the brunt of the responsibility for reducing nutrient loads, without regard to cost or benefit.

5) Know Your Waters – Monitoring Programs Must Be Sufficiently Robust

Summit participants felt that monitoring programs should be sufficiently robust to potentially support the development of site-specific criteria for nutrients and include information on biological, chemical and physical waterbody characteristics. Monitoring programs should be equipped to assess for biological impact as well as take stock of the full range of stressors that could influence the level of nutrient impairment (e.g., habitat loss, tree canopy, flow modifications). Ultimately these monitoring and assessment programs should be able to characterize any causal links between nutrient loads and water quality impacts.

Recognizing the limits of existing state budgets and the potential for cuts into the future, Summit participants highlighted the important leadership role that clean water agencies (and presumably other dischargers) would need to play to support this level of water quality monitoring. Where water quality programs are lacking, it was presumed that the clean water community would work to ensure that the appropriate data were collected or that the resources needed to conduct the monitoring were available to support defensible and responsible decision making.

6) Uses of Waterbodies Must Be Evaluated

Second only to monitoring, Summit participants felt that ensuring water quality efforts are working toward the correct endpoint is a top priority. Too often use attainability analyses (UAAs) are seen as efforts undertaken to downgrade a use. EPA has provided insufficient guidance on the appropriate use of UAAs and done little to address the stigma now associated with this important tool. Getting uses right is essential for ensuring that the CWA water quality-based programs are effective.

For nutrients, the question of designated use is even more critical because the link between nutrients and uses is often not clear. In many cases, all that is needed is simple refinement of an established use to more accurately reflect the different conditions that may support acceptable, desired uses and ensure that the goals of the CWA are met. For example, an aquatic life use that may otherwise seem unattainable may be refined to indicate that the actual goal is sustaining a warm-water fishery, which would add significant clarity to the level of protection that was necessary. EPA must do more to increase the refinement of uses and the utilization of UAAs.

Another important element of ensuring that management efforts are working toward the right targets is to conduct more thorough reviews of state water quality standards via the existing triennial review process.

7) Existing Tools Need Added Clarity and Improvement

Summit participants agreed that many of the tools needed to better address nutrient issues and the complexity associated with implementation are already available. These tools include variances, compliances schedules, watershed-based permitting, and UAAs. However, EPA needs to do more to ensure these tools are more widely used and accepted and needs to provide additional clarity on when and how they can be used. New approaches, including the restoration standard concept contemplated by EPA in its proposal for Florida, may be needed, but more can be done with existing tools as well.

In exploring the use of these tools, NACWA believes that more thoughtful consideration should be given to defining the nature of any relief that may be needed for a set of local conditions. For example, is there a need for more time to meet an attainable limit? Is the limit one that cannot be met from a technological or economic impact standpoint or is the designated use unattainable? The State of Montana, for example, is exploring an approach to nutrient control that incorporates existing variance authorities, an evaluation of attainability, and an affordability component to determine how to impose controls on point sources.

The current TMDL program provides a powerful tool through which an adaptive management framework can be applied and the use of longer-term implementation timeframes, variances, watershed-based permitting, and other existing tools can be coordinated. NACWA believes that additional guidance from EPA on TMDLs would be helpful, especially in the area of establishing among watershed stakeholders the principles (including cost and equity) that will guide decision making.

8) Nonpoint Sources Must Participate in a Meaningful Fashion

While Summit discussions did not address broader policy issues associated with potential changes to the CWA, significant focus was placed on the need for an equitable accountability framework to ensure that all sources of nutrients are considered and controlled accordingly. While authority is lacking at the federal level to directly control nonpoint source contributors, several states, including Wisconsin, have developed programs for addressing nonpoint sources that could serve as models for other state and national efforts. NACWA believes that the establishment of accountability frameworks at the state level must be a top priority. These frameworks would include a quantitative allocation process for all sources, performance standards (to enable progress monitoring), and implementation drivers (e.g., loss or redirection of funding for nonpoint source management to the extent possible under current law).

Other Important Considerations

Beyond the recommendations above, Summit participants identified other considerations that will need to be factored into future efforts to address nutrient-related water quality impacts.

Though there is no established methodology for doing so, Summit participants recognized that efforts on nutrient control must consider near and far field impacts. Protection of downstream waters is a crucial issue and one that EPA is now aggressively pursuing with its work on downstream protection values in Florida. NACWA believes that more work is needed in this area. How potential downstream impacts are addressed, especially when local waters may not require nutrient controls, will need to be considered further. Ignoring the health of local biological systems and installing treatment to protect downstream, far-field impacts will be a major challenge for utility managers who must demonstrate to their ratepayers the benefits gained from their investments.

Summit participants also highlighted the importance of education and outreach as an element of future work on nutrient controls. Specifically, EPA, states and the discharger community must work to increase the level of awareness regarding the complexity of nutrient impacts and the flexibility currently available under the CWA to address them. In this context, Summit participants emphasized the need to conduct community and advocacy group outreach to develop a common understanding of nutrient challenges, state regulator outreach to raise awareness of existing CWA flexibility, and public outreach to inform about the relative importance, value, and budget requirements for nutrient management investments.

States play a key role in CWA implementation. Given the current limitations of the CWA's statutory reach, many see the states playing an even more integral role in efforts to address all sources of nutrients, including nonpoint sources. But states will no doubt face tremendous obstacles to addressing nutrient contributions from agriculture. Addressing interstate water issues, such as the hypoxia in the Gulf of Mexico, will further complicate a state-by-state approach. States will need to maintain or develop certain capacities to enable site-specific criteria development, the use of adaptive management approaches, and the increased use of existing CWA tools such as UAAs and variances. The clean water community will need to support and encourage states to invest in the tools and talent needed to enable this level of management and advocate for federal money to support states' capacity needs. The clean water community should also actively engage states in support of criteria development.

Conclusions and Next Steps

NACWA understands that continued efforts are needed to address nutrient-related water quality impacts nationwide. NACWA's September 2010 Nutrient Summit was convened to explore new approaches to nutrient goal development, cite programs that are making real progress, and determine what the clean water community can do to improve the country's efforts to address nutrient impairments. NACWA strongly believes that reliance on criteria development and permit implementation approaches that are poorly linked to the ecological effects of nutrient pollution will result in major expenditures for point sources with possibly no or minimal improvement to water quality for many waters. How nutrient water quality impacts are assessed, criteria are set, and controls are implemented must ultimately result in water quality improvements, provide lasting benefits, and be affordable and sustainable.

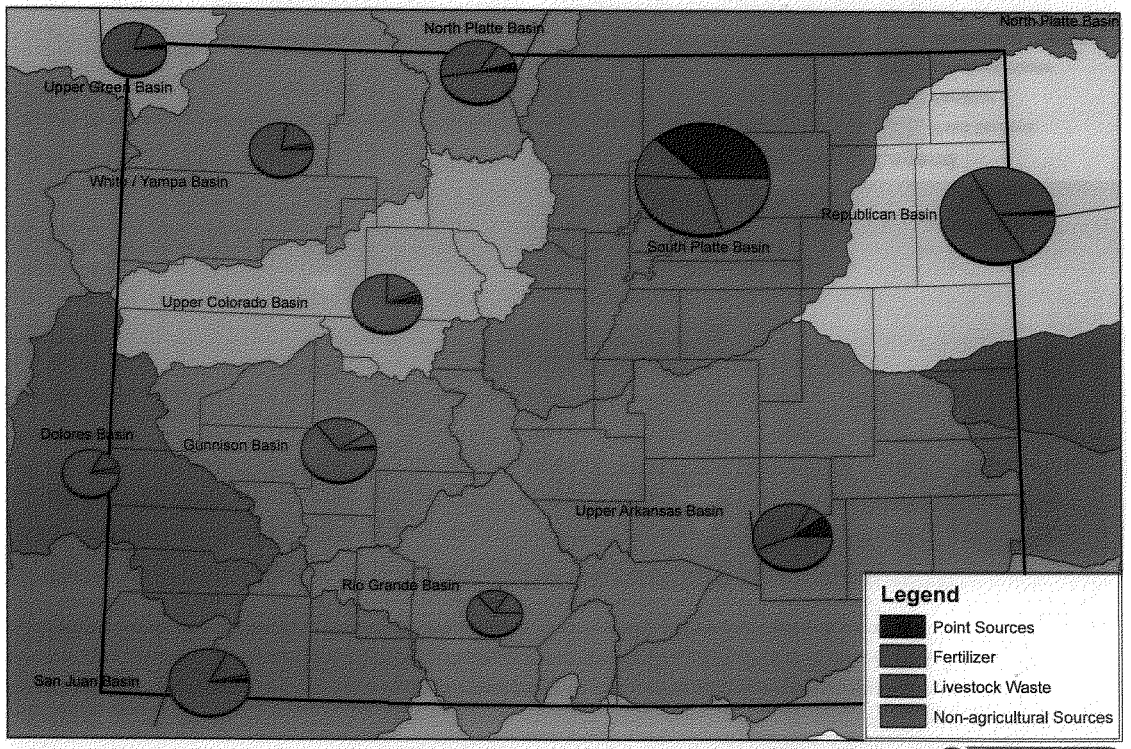
At the same time, there is increasing interest in making progress in the interim, while additional data are collected to help resolve some of the uncertainty surrounding control efforts. Proceeding in the absence of a clear causal link, however, necessitates significant flexibility in implementation.

NACWA believes that a range of control approach options combined with better reliance on existing CWA tools will accelerate current efforts to address nutrient-related water quality impacts.

NACWA's Nutrient Summit was only the first step in what NACWA hopes will be an active and sustained dialogue among EPA, the states, and the clean water community on these issues. NACWA has already had preliminary discussions with both EPA and the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) and plans to use this issue paper to guide these discussions going forward.

Watershed Phosphorus Yield From 4 Sources in Colorado

Adapted from: Smith, R. A., G. E. Schwarz, et al. (1997). "Regional interpretation of water-quality monitoring data." Water Resources Research 33(12): 2781-2798.

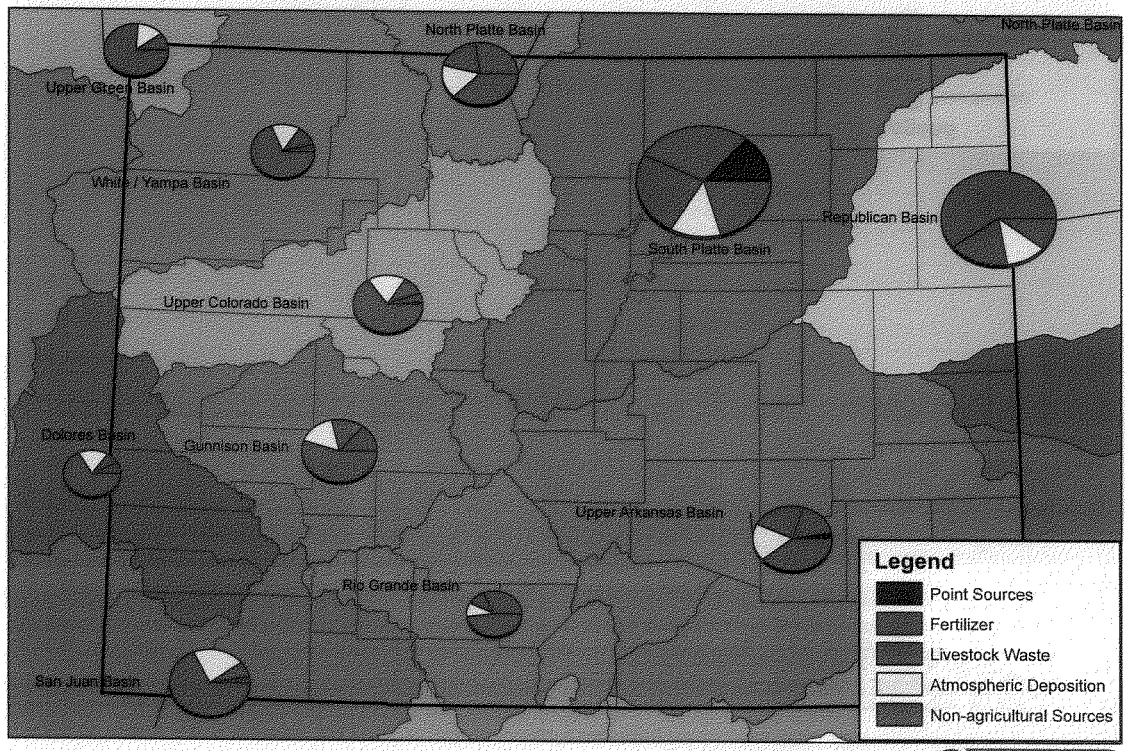


Created by Julie Stahli
January 2011

METRO WASTEWATER RECLAMATION DISTRICT

Watershed Nitrogen Yield From 5 Sources in Colorado

Adapted from: Smith, R. A., G. E. Schwarz, et al. (1997). "Regional interpretation of water-quality monitoring data." Water Resources Research 33(12): 2781-2798.



Created by Julie Stahli
January 2011

METRO WASTEWATER RECLAMATION DISTRICT

Written Testimony of
Richard J. Budell
Director, Office of Agricultural Water Policy
Florida Department of Agriculture and Consumer Services
As submitted to the
U. S. House Committee on Transportation and Infrastructure
Subcommittee on Water Resources and Environment
June 24, 2011

Chairman Gibbs, Ranking Member Bishop and Committee members: Good morning: my name is Richard Budell. I am the Director of the Office of Agricultural Water Policy with the Florida Department of Agriculture and Consumer Services. I have been involved in the development and implementation of agricultural water resource protection and restoration programs in Florida for 26 years. I have chaired the Scientific Advisory Group for the Everglades and Florida's Pesticide Review Council. I have advised Florida's Governor and Department of Environmental Protection on issues ranging from the protection of Florida's coastal waters and estuaries to the designated use classification of Florida's surface waters. I recently concluded service on a National Research Council Committee evaluating the nutrient reduction strategies being employed to improve water quality in the Chesapeake Bay. I am pleased to have the opportunity to share with you my Department's perspective on key aspects of the U.S. Environmental Protection Agency's (EPA) final Numeric Nutrient Water Quality Criteria for Florida Springs and Inland Waters that were adopted this past December.

In the EPA's own words, "Florida has developed and implemented some of the most progressive nutrient management strategies in the Nation." Florida is one of the few states that has implemented a comprehensive framework of accountability that applies to both point and non-point sources and provides authority to enforce nutrient reductions. The EPA has also acknowledged that Florida has placed substantial emphasis on the monitoring and assessment of its waters and, as a result of this commitment, has collected significantly more water quality data than any other state. Greater than 30% of all water quality data in the EPA's national water quality database comes from Florida. Florida was the first state in the nation to implement comprehensive urban storm water management regulations. Florida's treated waste water reuse program is a model for the rest of the country. Our agricultural Best Management Practices program is firmly rooted in state law, is backed by sound science and is a critical component of Florida's overall water resource management programs. These practices have been implemented on over eight million acres of agricultural and commercial forest lands in Florida.

By targeting its efforts and resources, Florida has made significant progress in nutrient reduction water resource restoration. Examples range from Tampa Bay, where sea grasses have returned to levels not seen since the 1950s and now cover 30,000 acres, to Lake Apopka, where phosphorous levels have been reduced by 56% and water clarity increased by 54%.

Despite these glowing reviews and Florida's demonstrated commitment to water resource protection and restoration, EPA, in response to litigation, determined in January of 2009 that Florida had not done

enough and mandated the prompt promulgation of numeric nutrient water quality criteria within one year. Before that year was up, EPA entered into a settlement agreement with the plaintiffs and agreed to deadlines for federal rule adoption that, for all practical purposes, usurped Florida's ongoing efforts to develop its own standards. EPA subsequently developed and released their own draft numeric criteria for Florida in January of 2010 and finalized criteria in December of 2010.

This takeover of Florida's efforts was further aggravated by EPA's rulemaking process. Florida stakeholders were not accustomed to the manner in which EPA develops rules. Under State law, rulemaking provides much more opportunity for input, discussion and dialogue. While the State convenes Technical Advisory Committee meetings and public workshops open to public dialogue and interaction, EPA holds public hearings where the public can make comments to silent, nodding representatives while a giant five minute timer counts down. While Florida's sunshine laws make all data and information available to the public throughout the rulemaking process, EPA restricts the amount of information available to the public and doesn't make all relevant analyses available for comment. Finally, many stakeholders invested significant time and money providing detailed comments regarding the technical basis for the EPA draft rule only to receive an unsatisfactory and vague response akin to, "EPA's criteria are based on sound science."

Outside of the process concerns, the methods used by EPA to construct its rules are inconsistent with EPA's own guidance documents and the advice of EPA's Science Advisory Board. EPA compounded this situation by improperly applying the methods it did use. As a result, in many cases the rule would deem healthy waters as impaired. In response to these issues, Florida Attorney General Pam Bondi and Commissioner of Agriculture Adam Putnam filed a complaint in Federal Court challenging the rule. Over 30 other entities, both public and private, have subsequently filed similar Federal complaints against the EPA and their Florida numeric nutrient criteria, citing the same shortcomings.

Florida believes strongly that any nutrient reduction strategy should focus on measurable environmental and biological improvement, while optimizing cost and efficiency. In the preamble to their rule, EPA admits that they were unable to find a cause-and-effect relationship between nutrient concentration and biological response for flowing waters like streams and rivers. In the absence of that cause-and-effect relationship, there can be no certainty that the money and human resources devoted to reduce nutrient content in a stream or river will result in any measurable improvement in the biological condition of that stream or river. Florida believes that, because so many other natural factors (e.g., stream size and velocity, light penetration) affect how nutrients impact ecosystems, nutrient management decisions are best determined on a site-specific basis. It is important to recognize that nitrogen and phosphorous are naturally occurring and necessary for the normal biological productivity of water bodies. Determining when too much human-induced nitrogen or phosphorous is present is difficult. In other words, Florida believes that it is very important to link numeric criteria with an assessment of the biological health of a water body before requiring the implementation of costly nutrient-reduction strategies. Without this linkage, implementation of the EPA criteria would have Florida citizens, businesses, waste water and storm water utilities and agricultural producers spending time and money attempting to reduce nutrient concentrations, in some cases, to levels below natural background. In all estimations, implementation of numeric criteria

is an expensive proposition; care must be taken to avoid unnecessary efforts that do not add measurable value to water resource protection and restoration.

I just mentioned cost of implementation – this is an issue around which there is considerable debate. EPA estimated the range of total costs to implement the Florida nutrient criteria at between $135 million and $236 million annually. The Florida Department of Agriculture and Consumer Services, working in cooperation with The University of Florida Agricultural Resource Economics Department, estimated the implementation costs just for agricultural land uses at between $900 million and $1.6 billion annually. Preliminary estimates from the Florida Department of Environmental Protection peg the implementation costs for urban storm water upgrades alone at nearly $2 billion annually. A study commissioned by a large coalition of Florida-based public and private entities estimated the total implementation costs at between $1 billion and $8.4 billion annually. The wide variability in this latter estimate is, in part, due to the uncertainty associated with not yet knowing the rule requirements. During EPA's rulemaking effort, the Agency did not address implementation expectations. However, in their cost estimates, they assumed future Agency and Florida rules would be issued that provide relief. While the final rule did not grant the relief itself, their reliance on future rulemaking allowed the publication of a low cost estimate.

From an agricultural perspective, I can tell you without question that virtually no sector of Florida agriculture can comply with the final EPA nutrient criteria without the implementation of costly edge-of-farm water detention and treatment. Construction of these facilities takes land out of production and requires ongoing operation and maintenance. None of these costs can be passed on by the producer. Few growers can afford to implement this kind of practice without the support of Farm Bill or state-derived cost-share program payments.

Florida waste water utilities believe that expensive reverse osmosis technologies will have to be employed in order for them to comply with the requirements of their point-source discharge permits. These technologies are not only costly to implement and maintain, but they require an enormous amount of energy to operate.

Florida is pleased that the EPA has agreed to request that the National Research Council convene a panel to review all of the economic studies and render an opinion on the likely costs of implementation.

In closing, Florida believes that Florida is best positioned to assess the health of its waters and establish associated water quality criteria for their protection and restoration. We believe that our track record for the implementation of progressive and successful water resource management programs is one of the best in the country, and demonstrates the commitment and determination to further its comprehensive program through the development and implementation of state-derived numeric nutrient criteria. Florida has earned the right to exercise the authority envisioned by the Clean Water Act to develop its own water quality standards and implement them through an EPA approved and predictable process governed by existing state law. Thank you.

Fostering Collaboration on Water Issues

Training Environmental Professionals

Coordinating Water Research

Educating the Public

June 24, 2011

Testimony of Ms. Bethany Card
NEIWPCC – Director of Water Quality Programs

United States House of Representatives
Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment
Regarding
Development and Implementation of Numeric Nutrient Criteria Under the Clean Water Act and State Water Quality Standards Programs

Good Morning Chairman Gibbs and Members of the Subcommittee:

My name is Bethany Card and I am the Water Quality Division Director for the New England Interstate Water Pollution Control Commission (the Commission). I have been working with our compact member states, on their Clean Water Act Programs for 12 years. I am also the co-chair of the Association of State and Interstate Water Pollution Control Administrators' (ASIWPCA) Legal Affairs Task Force. The Commission has been a long standing member of ASIWPCA and has frequently served a leadership role for the Association.

Established by an Act of Congress in 1947, the New England Interstate Water Pollution Control Commission is a not-for-profit interstate agency that utilizes a variety of strategies to meet the water-related needs of our member states—Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. NEIWPCC serves and assists our states by coordinating

Connecticut
Maine
Massachusetts
New Hampshire
New York
Rhode Island
Vermont

116 John Street
Lowell, Massachusetts
01852-1124

mail@neiwpcc.org
www.neiwpcc.org

p: 978-323-7929
f: 978-323-7919

activities and forums that encourage cooperation among the states, developing resources that foster progress on water and wastewater issues, representing the region in matters of federal policy, training environmental professionals, initiating and overseeing scientific research projects, educating the public, and providing overall leadership in water management and protection.

NEIWPCC is a leader in forming strong bonds between the New England and New York state environmental agencies, and is unique in its ability to bring diverse interest groups together, create forums for collaboration, and educate with innovative products. For well over six decades, the Commission has managed interstate water conflicts by means of sound science, coordination, and adaptation. I am pleased to provide testimony to you today on the great progress the Northeast states have made in incorporating nutrient management efforts and criteria into their water quality standards initiatives.

The Northeast states recognize that nutrient pollution is a significant environmental problem that impacts many waterbodies in our region and nationwide. Initiatives such as the Long Island Sound and Lake Champlain Total Maximum Daily Loads (TMDLs) and the Massachusetts Estuaries Project provide concrete examples of our commitment to reducing nutrient inputs to our waters. We appreciate EPA's continued focus on this issue and fully support EPA Regions 1 and 2 and their attention on how nutrient issues in the Northeast are distinct from those in other parts of the country. Furthermore, all of our states have put significant effort and resources into the process of developing numeric nutrient criteria and the states have no intention of abandoning their efforts to develop and establish these criteria. However, we have continuing concerns with the direction EPA is taking regarding two components of the nutrient criteria development process: independent applicability of numeric

nutrient criteria and the necessity of nitrogen and phosphorus criteria for all waters. I'd like to elaborate on these two areas for you now.

A number of Northeast states have advanced numeric nutrient criteria development to the point of initiating the rulemaking process within their state to establish these criteria as part of their Water Quality Standards. The technical approach favored by many states bases criteria on strong scientific evidence using stressor-response relationships, where nitrogen and phosphorus are the stressors and environmental indicators are the response (e.g. chlorophyll-a, water clarity, and indices of biological health). The relationship between nutrients and environmental responses is based on many site-specific factors and varies from waterbody to waterbody. Environmental responses consolidate the many site-specific factors that must be considered for efficient application of criteria, and therefore are the most appropriate indicators of a waterbody's impairment status.

Because of the story that can be told by environmental response indicators, both Maine and Vermont are proposing criteria for freshwater that are based on a decision framework that takes into account both causal variables (nitrogen and phosphorus) and environmental responses relevant to each waterbody. While EPA has argued that single number criteria approaches should be used, no such uniformity of condition exists in the natural world. Because nutrients are not toxic contaminants with threshold responses, conditions demonstrated by acceptable environmental responses that are reflective of a range of nutrient conditions are the most appropriate way to determine if designated uses are being supported, and therefore are the most appropriate way to apply criteria. While ambient concentrations of phosphorus and nitrogen may be helpful in screening potential impairments, under this preferred approach, a waterbody would be considered impaired only if one or more measured environmental response criteria did not

meet limits, regardless of whether the established phosphorus or nitrogen criteria were exceeded. In the case that all measured environmental response criteria are met, the waterbody would not be considered impaired, even if nitrogen or phosphorus concentrations were above the state's numeric criteria.

Based on the final criteria established by EPA for the state of Florida, and feedback provided to the states of Maine and Vermont by EPA Region 1, we understand that EPA is not supportive of response-based approaches unless they include numeric nutrient criteria for both nitrogen and phosphorus where each criterion must be applied independently from any environmental response criteria in order to determine a waterbody's impairment status. By taking this position, a waterbody could be determined to be in violation of water quality standards even when a biological impairment does not exist. In addition, by requiring both nitrogen and phosphorus criteria to be incorporated into state water quality standards and applied independently, technological controls could be required to remove both nutrients even though the production of growth in most water body systems are controlled by the most limiting nutrient (i.e., typically phosphorus in freshwater and nitrogen in marine waters). This added burden could result in significant increases in sludge production, treatment, energy usage and increased overall costs, despite not being necessary to control eutrophication in most cases. We recognize that there are some publicly owned treatment works (POTWs) that discharge to both freshwater and marine systems, but this is the exception and not the rule.

Last year, EPA Region 1 suggested a framework that allows for a waterbody exceeding a numeric causal criterion but meeting acceptable levels for environmental response variables to be listed as "indeterminate" for its attainment status. The states appreciate the Region's continued dedication to finding a solution that is workable for both parties, but still have the same

fundamental objection that a waterbody that is meeting environmental response criteria should not be listed as impaired even if it exceeds a numeric nutrient criterion. We understand that EPA has concerns about implementing response-based criteria, but we believe this is best addressed through permitting, not standards development. Further, the Northeast states have solid experience in crafting defensible and robust permits with effluent limits derived from these same response-based criteria. We are committed to working with both of our EPA regions to continue implementing these valid and defensible limits using already endorsed EPA methodologies.

In summary, the scientific and environmental communities have not agreed that there is sufficient scientific evidence or a viable legal or policy basis for the imposition of independent applicability of numeric nutrient criteria. In addition, the Northeast states do not agree that numeric criteria for both nitrogen and phosphorus are necessary for all waterbodies. Numeric criteria should only be required for the limiting nutrient in a system unless dual limitation is demonstrated. Lastly, the Northeast states have amply demonstrated that using environmental response variables to develop nutrient criteria is a scientifically valid approach that is highly protective of water quality. Many years of data collection and analysis have gone into development of these criteria. Furthermore, in their review of EPA's *Technical Guidance on Empirical Approaches for Numeric Nutrient Criteria Development,* EPA's Scientific Advisory Board (SAB) recognized that a stressor-response approach is a legitimate, scientifically-based method for developing numeric nutrient criteria when it is applied appropriately, such as part of a tiered weight-of-evidence approach. The approaches being proposed by the Northeast states fall in line with this recommendation by the SAB, especially with respect to the potential range of acceptable nutrient concentrations, and their site-specificity, that a weight-of-evidence approach supports.

The Northeast states are very appreciative of the assistance provided by EPA Regions 1 and 2 throughout the nutrient criteria development process and have every intention of continuing to be innovative in their efforts to protect water quality from nutrient pollution while also proceeding with the scientific work that will build the foundation of their numeric nutrient criteria. Our states also plan to continue to address nutrient impairments through NPDES permitting, TMDLs, and adaptive watershed management, while criteria are being developed and put in place.

To further demonstrate their commitment to this effort, the New England States and New York have been using a workgroup process to more clearly articulate their individual and collective positions regarding the areas of concern that I have shared with you today. It is our intent to reach out to our EPA Regions 1 and 2 counterparts to continue the dialogue on how best to incorporate response variables into numeric nutrient criteria, determine how and when phosphorus and nitrogen criteria are needed for fresh and marine waters respectively, while remaining diligent and cautious about impacts to downstream waters. Water quality protection is of the utmost importance to our state environmental agencies. We believe that EPA should embrace a more flexible path for developing and implementing numeric nutrient criteria so that states will be empowered to use the most appropriately-targeted tools to begin implementing these important criteria in earnest.

Ohio | Environmental Protection Agency
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

June 24, 2011

Testimony of George Elmaraghy, P.E.
Chief, Ohio EPA Division of Surface Water

United States House of Representatives

Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment

Regarding

Ohio's Nutrient Approach

Good morning Chairman Gibbs and Members of the Subcommittee. I am grateful for the opportunity to speak on an issue of great importance to the state of Ohio.

My name is George Elmaraghy and I am Chief of the Ohio Environmental Protection Agency's Division of Surface Water. I have more than 30 years of experience in water quality development and implementation. I am also a long standing member in the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). Developing nutrient criteria has been one of the most difficult and debated water quality issues that I have seen in my career.

Ohio Environmental Protection Agency (Ohio EPA) has the delegated authority from the U.S. Environmental Protection Agency (U.S. EPA) to implement the federal Clean Water Act programs in the State of Ohio. Since 1972, Ohio EPA has built a nationally recognized chemical and biological water quality monitoring program. This work serves as a strong foundation to develop new Ohio water quality standards.

Today I would like to discuss Ohio's experience with nutrient pollution and our state's development of water quality standards to address this challenge (which is referred to technically as an "impairment" in a water body). I will highlight the benefits of our approach and stress the need for U.S. EPA to support states' ability to constructively implement defensible nutrient criteria in a targeted and reasonable manner.

Ohio is a water-rich state bounded on the south by the Ohio River and the north by Lake Erie with approximately 58,000 miles of rivers and streams. In addition, Ohio is a populous and heavily industrialized state with a strong agricultural sector. We also have a long history with nutrient pollution. In the late 1960s, Lake Erie was declared "dead"

50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

614 | 644 3020
614 | 644 3184 (fax)
www.epa.ohio.gov

because of nutrient over enrichment. The problem was greatly abated thanks to the bi-national Great Lakes Water Quality Agreement of 1978 and passage of the federal Clean Water Act. In response to dedicated management efforts the water quality of Lake Erie – as measured visually, chemically and biologically – greatly improved and Lake Erie subsequently became known as the walleye capital of the world. Ohio's clean water and excellent fishing brought economic benefit to the state. The Lake Erie fishing industry is valued at $800 million annually, contributing to the $10.7 billion fishing and tourism economy of the Lake Erie region.

Unfortunately, conditions in Lake Erie have markedly changed again, for reasons we do not completely understand. We do know, since the mid-1990s, concentrations of dissolved phosphorus has increased in Lake Erie and nuisance algal blooms have returned and continue to worsen. Ohio's largest inland lake, Grand Lake St. Marys, experienced harmful algal blooms resulting in toxin (microcystin) levels last summer several times higher than the World Health Organization recommendation for recreation – forcing the state to issue a no contact advisory, essentially closing the lake for the recreation season. The sharp decline in tourism around the lake has been economically devastating to marinas, restaurants, camp grounds and other local businesses dependent upon lake visitors.

Regulating nutrients is very challenging. Unlike chemical pollutants, in the case of nutrients we cannot accurately predict a "dose-response" relationship. In other words, when it comes to nutrients, we don't know how much is too much in a particular water body. As a result, nutrient water quality standards must be based on a stressor-response relationship, or as it is more commonly known, weight of evidence. Thus, nutrients are not responsive to a "one-size-fits-all" approach to regulation.

For more than twelve years, Ohio has been using the results of a statistical analysis of existing water body biological scores and total phosphorus concentrations to translate Ohio's narrative standard, which has been in place since 1978, that waters shall be free from nutrients entering waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae, into targets for Total Maximum Daily Load (TMDL) reports. Many Ohio's publicly owned wastewater treatment plants receive total phosphorus effluent limits as a result of the TMDL reports, and total phosphorus load reductions identified by the TMDLs for agricultural non-point sources of pollution are on the order of 50 to 90 percent. We have had limited success in achieving these load reductions.

Ohio's experience illustrates that narrative water quality standards can result in partial progress. However, the resurgence of algal blooms means that more needs to be done. Nutrient enrichment, in short, is an unchecked threat to recreation in Ohio's waters.

New approaches are needed – stronger water quality standards for phosphorus and nitrogen are a good first step.

For nearly ten years, Ohio has been developing tools to effectively measure the relationship between nutrient concentrations and biological health. This research has been instrumental to allow us to derive nutrient criteria that is protective of stream quality. We are proud that Ohio is a national leader in this area of applied science.

The response variables that we have identified include primary productivity of the stream (meaning measured chlorophyll a and dissolved oxygen swings), biological health (meaning measures of fish and aquatic invertebrate species and abundance) and the concentration level of nutrients in the stream. We have distilled information into an unique multi-metric scoring system that accurately and effectively characterizes the degree of nutrient enrichment in a stream today and, through modeling projections, under future land use and wastewater treatment scenarios.

Let me provide a bit more background regarding Ohio's system. The Ohio Trophic Index Criteria (or TIC) identifies scores to measure four different categories, including: algal growth – using chlorophyll a levels; dissolved oxygen levels; biological criteria; and total phosphorus and dissolved inorganic nitrogen.

Table 1. Ohio's Trophic Index Criteria (TIC)

$$TIC = P_{chl\ a} + P_{DO} + B + N$$

Metric	Description	Metric Score
$P_{chl\ a}$	Primary productivity as measured by chlorophyll *a* concentrations	0 to 4
P_{DO}	Impact of primary productivity as measured by dissolved oxygen concentrations and ranges	0 to 5
B	Response of stream biology as measured by biological survey results	0 to 6
N	Degree of enrichment as measured by total phosphorus and dissolved inorganic nitrogen concentrations	0 to 4

The tally of these scores provides a numeric measure of a stream's nutrient status. We have developed three levels of trophic index scores—acceptable, threatened and impaired.

Table 2. Ohio's DRAFT Trophic Index Criteria Score Levels

Status of Stream	TIC
Acceptable – nutrient enrichment is not likely.	9 to 19
Threatened – nutrient enrichment is likely now or in the future.	5 to 8
Impaired – nutrient enrichment is documented.	0 to 4

The implementation of the TIC can be conceptually explained through Figures 1 and 2 below. These figures detail how Ohio EPA would determine if numeric nutrient criteria should be included in permits based on current and future scenarios.

Figure 1. TIC Implementation – Current Scenario

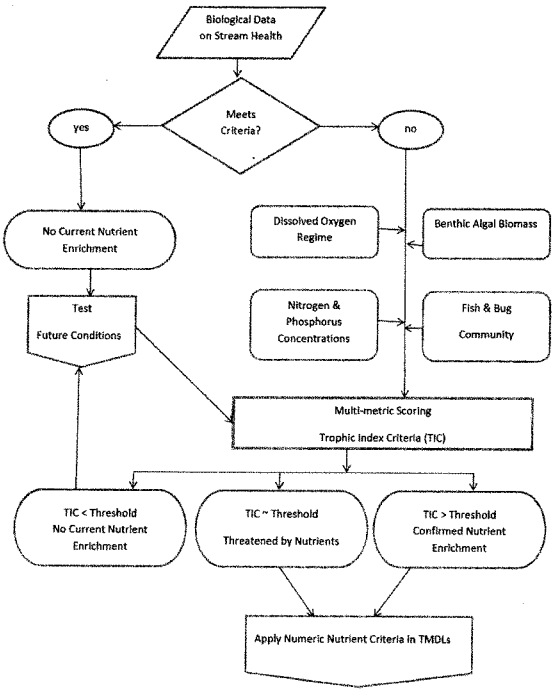
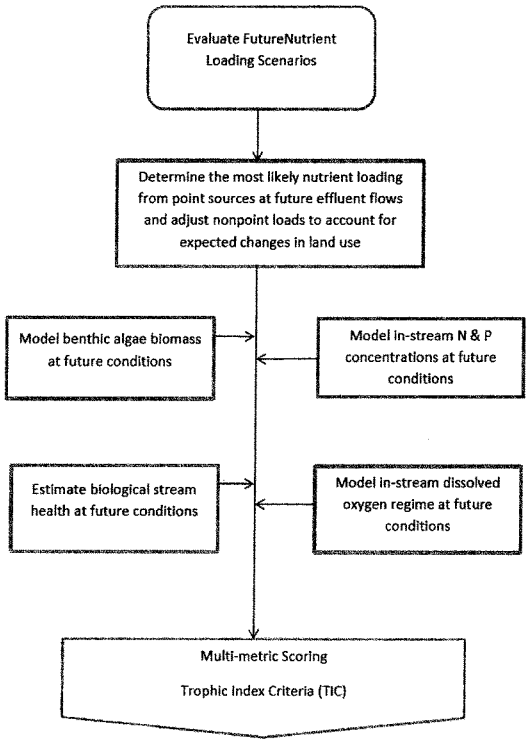


Figure 2. TIC Implementation – Future Scenario



To help support the use of the Tropic Index Criteria, Ohio has also developed a water quality trading option that is available as a tool for all dischargers to help address nutrient threatened and impaired conditions. Less stringent effluent limits may be "traded for nonpoint source best management practices" to provide a discharger up to three NPDES permit cycles to meet the final water quality based nutrient limits.

Basically, an existing source would be given the opportunity over ten years to meet the difference between technology based nutrient effluent limitations and more stringent water quality based effluent limitations through the implementation of a water quality trading program in accordance with Ohio's regulations in Ohio Administrative Code Chapter 3745-3. If after ten years, the trading program has not been successful in reducing stream nutrient loads sufficiently to eliminate reasonable potential, the

permittee would then be given a schedule of compliance to meet the nutrient water quality based effluent limits through treatment.

Ohio EPA hopes to move forward and formalize the Ohio approach in a draft rulemaking for streams and small rivers by releasing new and revised regulations for initial public review and comment later this year. Ohio cannot begin the implementation of our new approach for nutrients until this rulemaking is adopted and approved by U.S. EPA.

In addition to the efforts Ohio is undertaking for nutrient criteria for streams and small rivers, we are also working on nutrient standards for inland lakes. We are currently reviewing public comments received on a draft rulemaking containing draft nutrient standards for Ohio's inland lakes.

Ohio has also proposed to apply technology-based nutrient controls for all new and expanded publicly owned wastewater treatment works. Under our draft antidegradation rulemaking currently available for initial public comment, total nitrogen limits of 10 mg/L and total phosphorus limits of 2 mg/L will apply to new dischargers over 0.5 million gallons per day. We recognize that nutrient effluent limitations on larger wastewater treatment plants are likely either through a TMDL, or based on the future nutrient water quality standards; therefore, we believe it is good policy to require new treatment plants to be designed and constructed to provide nutrient removal upfront rather than retrofitting later at a higher cost. We are also reviewing public comments submitted on this draft rulemaking.

Industries and municipalities are faced with a wide array of regulatory requirements. We should not require industries and municipalities to meet stringent new nutrient limits unless we are sure that imposing these limits will result in stream improvement especially with the difficulty we are having in reducing nonpoint source pollution loads. Ohio's approach would require water quality based nutrient effluent limitations in situations where nutrients are causing biological impairments today (the weight of evidence approach) and through modeling projections, under future land use and wastewater treatment scenarios. Our approach also provides flexibility through the water quality trading option detailed above in achieving these limits.

Ohio has been working closely with our federal partners in Region 5 in the development of our approach and addressing concerns so that the long standing disagreement over the weight of evidence approach verses independent applicability (which means the imposition of water quality based effluent standards if any criteria are exceeded) does not stand in our way. I cannot emphasize enough that States need flexibility to build creative nutrient reduction strategies and water quality standards that effectively reduces nutrient impairment.

Ohio feels our tools and approach provide a flexible solution for controlling nutrients, allowing the weight of the evidence to drive decision making. We believe that our approach is comprehensive, protective, creative, fully-integrated, and results-oriented. We feel this approach will gain stakeholder support and allow the required rulemaking to move forward. And finally, with legally adopted, scientifically defensible nutrient standards in place, we will have the necessary mechanisms to assess the quality of our water resources and the means to make informed public policy decisions on the steps needed to restore, protect and maintain these resources.

Forty-two years ago, Ohio's burning Cuyahoga River appeared on televisions throughout the country. In response, Congress enacted the Clean Water Act and today such stories of gross water pollution have all but disappeared. However, new issues emerge, and today—too many nutrients are washing from the landscape and threaten the hard-won progress that has been made.

In closing, controls that we have implemented in the past are not sufficient to address the issues being caused by nutrients to our rivers, lakes and streams. Moving forward, we must have the flexibility to make reasonable and effective changes that will provide the necessary tools to ensure our waters achieve and maintain the Clean Water Act's fishable and swimmable goals.

Mr. Chairman and Members of the Subcommittee, thank you for this opportunity to share Ohio's thoughts on the importance of state input and flexibility in nutrient standards. I am happy to answer any questions you have.

The Environmental Council of the States
Subcommittee on Water Resources and Environment
of the House Committee on Transportation and Infrastructure
Numeric Nutrient Standards

Summary: Although not required by the Clean Water Act, the U.S. Environmental Protection Agency (EPA) is insisting that states develop numeric, rather than narrative, standards for nitrogen and phosphorous (nutrients) in waters that discharge from point sources. Nutrients, though not generally toxic to humans, are a widespread problem pollutant affecting many, if not most of our rivers, lakes and coastal areas. Numeric standards do provide certainty for dischargers and are easier to interpret and implement than narrative standards, so most states do not oppose the use of reasonable and practical numeric standards where appropriate. However, it remains an open question as to whether EPA will let the states effectively use the tools of flexibility, innovation, and collaboration among stakeholders as a means of achieving long-term water quality goals. EPA's inflexibility, if it chooses that path, will impair the states' ability to make both immediate and long-term progress in the continuing battle to clean up waters of the U.S.

For more information please contact:

Richard H. Opper, President
Environmental Council of the States (ECOS)
c/o R. Steven Brown
50 F Street, NW
Suite 350
Washington, DC 20001
202-266-4929

Testimony: I am testifying on behalf of the leaders of the state and territorial environmental agencies that are the members of the Environmental Council of the States. I am the President of that Council, and the director of Montana's Department of Environmental Quality.

Many states, including Montana, are in the process of developing numeric nutrient standards. In water quality jargon, the term "Nutrients" refers to the nitrogen and phosphorus compounds found in surface and ground water. Indeed these two elements do support the growth of plants large and small, terrestrial and aquatic and are essential elements for the support of plant life in general. When either or both of these elements are present in excess amounts, they are considered pollutants because they harm beneficial uses (fishing, swimming, drinking) of water bodies. Nutrient pollution comes from many sources, including stormwater runoff, septic systems, municipal wastewater discharges, air deposition, and a variety of agricultural sources.

Few, if any, dispute the fact that nutrient pollution is one of the top causes of water quality impairment in the country. A May 3, 2010 article authored by the U.S. Environmental Protection Agency; the Association of State and Interstate Water Pollution Control Administrators; and the Association of State Drinking Water Administrators listed the following facts:

- Nutrient pollution is linked to over 14,000 water segments in the U.S. listed as impaired.
- Over two million acres of lakes and reservoirs across the country are impaired and not meeting the standards set for those waterbodies due to excess nutrients.
- Seventy-eight percent of the assessed continental U.S. coastal areas exhibit symptoms of eutrophication (i.e., too much nitrogen and phosphorus).

The federal Clean Water Act does not require states to develop numeric nutrient standards. States have the discretion to use narrative, rather than numeric standards. However, in response to the Gulf hypoxia issue, EPA announced in 1998 that the states would be required to adopt numeric nutrient standards. A couple of years after that, Montana agreed to do so for the following reasons:

- Narrative criteria are often difficult to interpret.
- Numeric standards prevent "regulation creep," meaning goals are clearly defined for point source dischargers who are required to comply with water quality standards.
- Numeric standards are likely to provide better protection of the states' beneficial uses.
- Numeric standards allow for more consistent implementation.

Many states have been developing, and some have already developed, numeric nutrient standards since EPA's 1998 initiative. My state of Montana has developed but not adopted numeric water quality criteria intended to control excessive nutrient pollution in Montana's streams, rivers, and lakes. The Montana DEQ based the numeric nutrient criteria on the best available science and data, taking into account the effects on eutrophication of stream temperatures, flow patterns, light levels, and grazing on algae and plants by fish and aquatic insects.

In Florida, EPA was required by litigation to adopt the state's draft numeric nutrient standards. Montana is in a similar position in that the state has drafted standards but not yet formally adopted them in rule. Our standards are scientifically defensible and protective of waters of the state and U.S. The only problem, and it is a significant one, is that the standards are not achievable. In almost all cases, industries and municipalities simply cannot afford to remove as much nitrogen and phosphorous as our standards would require. Also, the cleanup technology hasn't adequately caught up to the treatment needs. Adoption of these standards today would immediately make every discharger a violator, and it would do nothing to clean up Montana's waters.

In March 2011, Nancy Stoner, Acting Assistant Administrator for EPA's Office of Water, issued a Memo entitled "Working in Partnership with States to Address Phosphorous and Nitrogen through Use of a Framework for State Nutrient Reductions." Among the points made in the memo are the following items:

- "Our resources can best be employed by catalyzing and supporting actions by states.."
- "States need room to innovate and respond to local water quality needs…"
- "A one-size-fits-all solution … is neither desirable nor necessary."
- "States, EPA, and stakeholders, working in partnership, must make greater progress in accelerating the reduction of nitrogen and phosphorous to loadings to our nation's waters."

The memo is clear about EPA's push for states to make effective use of the tools of flexibility, collaboration, and innovation to achieve immediate improvements to water quality. Montana takes EPA at its word.

My department has worked on the nutrient standards issue for four years with a stakeholder group comprised of members from municipalities. Two years ago, that stakeholder group expanded to include environmental groups and industry. Montana is one of the leading states in terms of working with stakeholders to develop implementation plans for the new numeric standards. The result of our efforts was a bill passed in April 2011 by a near-unanimous vote of both our House and Senate. SB 367 acknowledges the impracticality of adopting tight standards that cannot be achieved with today's technology and in light of the economic status of our cities and businesses. It establishes a general variance process as a first significant step towards implementing strict numeric surface water standards for nitrogen and phosphorous across the state. Most importantly, the bill lays out a structured path forward for achieving the standards over a specific timeframe, which is considered reasonable according to EPA memos. Implementation of SB 367 will result in immediate improvement to water quality in Montana for the following reasons:

- 70% of Montana's large dischargers (representing ~80% of our state's permitted volume) will require immediate upgrades just to meet the variance treatment minimums in the bill.
- 30% of our smaller dischargers will require immediate upgrades.
- 2/3 of our facilities with discharge permits would require additional nutrient monitoring.

Each variance is granted for a specific period and must be re-justified every 3 years.

Montana was faced with a decision: it could adopt strict standards and impose them on all Montana's dischargers immediately, knowing it would be years, perhaps decades before the standards would be achieved by a significant number of our permittees. Or it could work with stakeholders to develop a plan that a) establishes a long-term water quality goal in the form of strict numeric nutrient standards, b) results in immediate water quality improvements; c) is tailored to our state's unique needs; and d) has the buy-in of a diverse group of stakeholders, including the environmental community.

Montana has shown exactly the flexibility, collaboration among our stakeholders, and innovation called for in EPA's March 2011 memo, as well as in previous EPA memos. EPA's reaction to our variance process has been decidedly lukewarm. Initially, its discomfort with the word "variance" obscured its vision of the progress which Montana's approach will produce. There are recent signs, however, that EPA is willing to work with us to develop a legal way to implement our variance. This should not be difficult to do since our approach is consistent with and certainly not in violation of the federal Clean Water Act. EPA is faced with a choice of embracing Montana's efforts and considering us as a model for other states to emulate if not outright imitate, or essentially banning our implementation of SB 367 by objecting to permits we issue that apply the variance. If EPA ultimately rejects our variance process, Montana will not proceed with the adoption of our numeric nutrient standards. We will only do so when required by EPA. Our stakeholders will be angry. Our dischargers will make no improvements to their systems for years until they can raise money from the dwindling SRF program. And the nutrient problem will grow worse over that time period. This is not the outcome any of us prefer.

Montana's position is somewhat unique, in that EPA supports the criteria we developed. But other states, like Nebraska, have faced objections by EPA to proposed numeric nutrient criteria – not

because those criteria lacked scientific justification, not because the criteria violated the Clean Water Act, but because EPA simply didn't think they were strict enough.

We support EPA's efforts to have states adopt numeric nutrient standards. However, EPA must be willing to accept the flexibility and innovation it encouraged the states to demonstrate – not just in Montana, but in all states that are willing to make progress on the battle to reduce nitrogen and phosphorous loading to our nation's waters.

TESTIMONY OF

NANCY K. STONER
ACTING ASSISTANT ADMINISTRATOR FOR WATER
U.S. ENVIRONMENTAL PROTECTION AGENCY

BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES

June 24, 2011

Good morning Chairman Gibbs, Ranking Member Bishop, and Members of the Subcommittee. I am pleased to appear before you today to discuss EPA's mission to protect public health and the environment in the context of the water quality challenges from what is known as "nutrient pollution." This pollution, which comes from excess nitrogen and phosphorus, threatens the environmental and economic viability of our nation's waters. The urgent problem before us is how we can most effectively collaborate at federal, state, and local government levels to address the growing public health risks and economic impacts of widespread nitrogen and phosphorous pollution on the prosperity and quality of life of communities across the country. EPA believes that states and local governments are best suited to address nutrient pollution and have a long history of working collaboratively.

We all recognize the value of clean water. Clean water is not simply a resource and asset to be passed on to our children, but is an essential part of life. Clean water contributes to our public health, our drinking water supplies, and to the welfare of our families and communities, whether in large cities, small towns, or rural America. The health and growth of our small and large businesses and the jobs they create rely upon a high-quality and sustainable source of water. The range of businesses that we depend on – and who, in turn, depend on a reliable and plentiful

supply of clean water – include tourism, farming, fishing, beverage production, manufacturing, transportation, and energy generation, just to mention a few.

Nitrogen and phosphorous pollution is a major threat to these uses. This has been extensively documented in the scientific literature and confirmed by monitoring data collected by federal and state agencies and by the public. EPA's most recent National Aquatic Resource Surveys of aquatic health found that 67% of our streams are in poor or fair biological condition, and that of the stressors assessed, nitrogen and phosphorus are the most pervasive in the nation's wadeable streams and lakes. Approximately 50% of streams and more than 40% of lake acres have high or medium levels of nutrients. States have identified more than 15,000 waters nationwide that have been degraded by excess levels of nutrients to the point that they do not meet state water quality standards. Cleaning up these already degraded waters will require significant effort.

A particularly persistent result of excessive nutrient pollution is the proliferation of harmful algal blooms – a situation in which once-clear waters are choked with algae and green with slime. Because of the increased incidence of these and other risks, many states actively monitor their waters for harmful algal blooms to protect swimmers, assure safe recreational uses, and protect consumers of shellfish. Some states, for example Kansas, Ohio, and New York, have public websites to post advisories warning citizens about the dangers of public waters that are impacted by harmful algal blooms.

Contamination of America's waters by nutrient pollution is a widespread and growing problem. For example, a recent analysis of 647 U.S. coastal and estuarine ecosystems indicates that the

percentage of systems with hypoxia (a common result of high nutrient levels) has increased dramatically since the 1960s and has become measurably worse even since the 1980s. The first national assessment of oxygen conditions in U.S. waters, conducted in the 1980s, found 38% of systems to have hypoxia. Updating the information from all these sources using today's data finds that 307 of 647 ecosystems, or 47%, experience hypoxic conditions.

Let me provide one example of how nutrient pollution can affect our communities. Grand Lake St. Marys, a large drinking water supply and a historically popular recreational area in Ohio, has suffered over the past several years from harmful algal blooms during the summer months caused by increasing nitrogen and phosphorus loading from farm runoff, failing septic systems, and fertilizer applied to lawns. The lake has experienced massive blooms of toxic algae, which have led to the death of fish, birds, and dogs, and illnesses of at least seven people. This lake, used by generations for drinking water supply, summer recreation, and local community business development and jobs, has degraded to the point that small businesses like marinas and restaurants are closing. According to the Columbus Dispatch, the algae at Grand Lake St. Marys have "torpedoed" the local tourism economy. Expensive efforts to clean up the source of nutrients affecting the lake have to date failed. As the summer recreation season begins, pollution again threatens the health of the Lake's visitors and economy: the Ohio Department of Health issued a warning advisory on May 19th to community residents and visitors to not use the lake because of harmful algal blooms known to produce dangerous toxins.

Nutrient pollution can also affect the water that we drink. Levels of nitrate (a compound of nitrogen) in drinking water above the federal drinking water standard of 10 milligrams per liter

have been linked to serious illness in infants, as well as other potential human health effects. Reported drinking water violations for nitrate have doubled in the last eight years, with more than 1,000 violations in 2010. Other public water systems may have had to install treatment in order to remain in compliance. For example, in Lancaster County, Pennsylvania, more than 140 surface and groundwater systems have had to invest in new technology such as ion exchange treatment in order to address nitrate contamination. Nitrate can also be a risk to the 15% of Americans that use private wells that are not regulated under the Safe Drinking Water Act. The United States Geological Survey (USGS) published a report just this past year that found nitrate levels in groundwater to exceed the federal drinking water standard of 10 mg/L in more than 20% of the shallow (less than 100 feet below the water table) private water wells in the agricultural areas that it tested. USGS warns that states should now be concerned about the public health of the rural Americans who rely on shallow wells for their water supply because of the potential for nitrate contamination. Although most public water systems that use groundwater sources get their water from deeper wells, USGS advises that nitrate may be a continued public health concern even for these systems, as surface pollution infiltrates and could contaminate deeper municipal drinking water supply aquifers.

In addition to the well-documented relationship between high nitrate levels and increased risk of serious illness in infants, nutrients can contribute to drinking water contamination in other ways. As noted earlier in the Grand Lake St. Mary's example, increased nutrients can spur harmful algal blooms that release toxins that pose a risk to drinking water as well as impacting the ecology. Detecting these toxins can be challenging and costly, and significant uncertainty exists about the effectiveness of existing treatment in removing these toxins. If not properly treated,

the ingestion of water contaminated with toxins produced by harmful algal blooms can have health impacts on the liver, kidney, or nervous system. Additionally, higher levels of algae in drinking water sources can increase the formation of disinfection byproducts during drinking water treatment. This requires water utilities to take further action to prevent exposure that could impact the health of their customers, when the best way to address these byproducts is to prevent their formation in the first place.

Actions to Address the Nutrient Problem

EPA recognizes the nation's significant nutrient pollution challenges and is committed to finding collaborative solutions that protect and restore our waters and the health of the communities that depend on them. The growing and costly impacts of nutrient pollution on human health, recreation, tourism, business growth and expansion, and aquatic ecosystems demand a coordinated framework of action to better address the sources of nutrient pollution.

EPA believes that states are the best suited to address nutrient pollution, and while the Agency has an obligation to Act under the Clean Water Act if state efforts are not sufficient, EPA works closely with our state and local partners on a technical basis to aid their efforts.

EPA has worked with 25 states across the country to develop and approve numeric nutrient criteria for at least some of their waters. For example, EPA worked closely with the state of Wisconsin over the past several years to develop and adopt final water quality standards for phosphorus to protect lakes, reservoirs, streams, rivers, and the Great Lakes. EPA participated in numerous Wisconsin Department of Natural Resources stakeholder meetings, provided advice on

implementation issues, and reviewed draft and proposed standards. After the adoption of nutrient standards by the state of Wisconsin, EPA quickly reviewed and approved these standards to enhance the nutrient protections provided to Wisconsin's waters.

Building upon this collaborative approach, on March 16, I sent a memo to EPA's Regional Administrators entitled, *Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions.*[1] This memo further strengthens our commitment to build partnerships with states and collaboration with stakeholders on this issue. The Agency will use this memorandum as the basis for discussions with interested and willing states about how to move forward on tackling this issue, recognizing that there is no one-size-fits-all solution. As I said, the Agency strongly believes that states should lead the effort to reduce phosphorus and nitrogen pollution through standards they develop and we support these critical state efforts. For example, the State-EPA Nutrient Innovations Task Group provided EPA with solid recommendations, endorsed by states and EPA, to start addressing some of the problems associated with nutrients. EPA recognizes that states need flexibility to develop creative and cost-effective solutions.

As an example of our commitment to collaboration, EPA is working hard to focus on water quality goals in the Mississippi and Atchafalaya River Basin. EPA is working with USDA, USGS, and states to provide monitoring support in a subset of USDA's Mississippi River Basin Initiative watersheds. To complement the efforts of USDA and other partners, we are focusing on broader efforts to use funding under Section 319 of the Clean Water Act for watershed

[1] This memo is available at http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/memo_nitrogen_framework.pdf.

planning and stakeholder involvement to enhance USDA programs by engaging creatively in work with communities and watersheds to achieve improvements in water quality.

Additionally, EPA has engaged states and stakeholders to partner in addressing nitrogen and phosphorus pollution on numerous fronts. In 2009, EPA helped to lead the nationally focused State-EPA Nutrient Innovations Task Group to évaluate the science, sources, and economic impacts behind the ongoing problem of nutrient pollution and to develop recommendations for controlling the impacts to our nation's drinking water supplies and waterways. The Task Group issued *An Urgent Call to Action*, which provides specific recommendations to the EPA Administrator and the public for joint state and federal actions to control nitrogen and phosphorus pollution. EPA, other federal agencies and the states are also collaborating on the Gulf Hypoxia Task Force, the Gulf Restoration Initiative, and several joint committees with the Association of State and Interstate Water Pollution Control Administrators, the Association of State Drinking Water Administrators, and the National Association of Clean Water Agencies.

Given the fact that water is a national resource that flows through and between states, and recognizing the need for a coordinated effort to address nutrient pollution, EPA is renewing its commitment to work with states and other stakeholders to achieve forward progress. EPA is targeting its resources to help reduce nutrient pollution where it poses the greatest threats, including working with states whose waters flow to the Chesapeake Bay, Long Island Sound, Lake Champlain and the Gulf of Mexico.

Conclusion

The threat posed by nutrients in our nation's waters is perhaps the most serious water pollution problem faced by EPA, the states, and local communities. EPA is committed to working with states, other federal agencies, the agriculture community, and other stakeholders to identify ways to tackle the nutrient problem in a way that protects our nation's waters, sustains our economy, and safeguards the well-being of all Americans who depend upon clean and safe water.

Thank you for the opportunity to testify before the subcommittee today. I look forward to answering any questions you may have.

Enclosure

Responses to Questions for the Record
Subcommittee on Water Resources & Environment
Hearing on "Running Roughshod Over States and Stakeholders: EPA's Nutrients Policies
June 24, 2011
Transmitted by letter on August 2, 2011

1. **The other witnesses at the hearing all had expressed concerns with the direction that EPA is taking to nutrient control policies and efforts under the Clean Water Act (CWA). Their remarks, and EPA's actions, are in stark contrast to the image you tried to portray in your testimony that EPA "strongly believes that States should lead the effort" to reduce nutrient pollution, and EPA is "committed to finding collaborative solutions" and building "partnerships with States and collaboration with stakeholders." There appears to be a disconnect between their statements and your remarks.** ***If EPA is so "collaborative" and willing to let the States "lead the effort, "then why are so many States and local government entities, not to mention private sector stakeholders, so upset about EPA's approach to setting nutrient standards and regulating nutrient pollution? What specific actions is EPA taking to become "collaborative" and let the States "lead the effort"?***

The EPA's long-standing policy, consistent with the Clean Water Act (CWA), has been that states are best suited to address nutrient pollution. While the EPA has an obligation to act under the CWA if state efforts are not sufficient, the EPA works closely with our state and local partners on a technical basis to aid their efforts. The EPA is committed to collaborating with states and stakeholders to develop an approach such as the nutrients Framework outlined in the EPA's March 16, 2011 memorandum entitled *Working in Partnership with States to Address Phosphorus and Nitrogen Pollution Through Use of a Framework for State Nutrient Reductions* (Framework Memo) that addresses this important pollution problem. Provided below are just a few specific examples of how the EPA is working collaboratively with states to address nutrient pollution:

- The EPA co-chairs the Mississippi River/ Gulf of Mexico Watershed Nutrient Task Force (Gulf Hypoxia Task Force), which is comprised of 17 state and federal agencies. The Gulf Hypoxia Task Force provides a forum for state water quality and agricultural agencies to partner on local, state, and regional efforts to mitigate nutrient loading, encouraging a holistic approach that takes into account upstream sources and downstream impacts. The federal agency partners on the Task Force are providing coordinated support as states move forward to develop nutrient reduction strategies and state frameworks for managing nitrogen and phosphorus pollution in the Mississippi River Basin.
- The EPA Administrator chairs the Gulf Coast Ecosystem Restoration Task Force (Restoration Task Force), which is comprised of five states and 11 federal organizations. The Restoration Task Force is charged with developing a restoration strategy that proposes a Gulf Coast ecosystem restoration agenda that could potentially address a range of priority water quality issues, including Gulf Hypoxia, which is caused by excessive nitrogen and phosphorus concentrations.
- The EPA and the U.S. Department of Agriculture are coordinating with local groups to reduce nitrogen and phosphorus loading to specific watersheds, including the Root River Watershed in Minnesota, and the Wabash River Watershed in Ohio and Indiana.

- The EPA issued the final Chesapeake Bay total maximum daily load (TMDL) on December 29, 2010. The TMDL reflects a joint commitment by the EPA, the six watershed states and the District of Columbia to have all practices in place by 2025 to fully restore the Bay.
- The EPA has worked with 25 states across the country to develop and approve numeric nutrient criteria for at least some of their waters. For example, the EPA worked closely with the state of Wisconsin over the past several years to develop and adopt final water quality standards for phosphorus to protect waters of the state. The EPA participated in numerous Wisconsin Department of Natural Resources stakeholder meetings, provided advice on implementation issues, and reviewed draft and proposed standards. After the adoption of nutrient standards by the state of Wisconsin, the EPA quickly reviewed and approved these standards to enhance the nutrient protections provided to Wisconsin waters. The EPA continues to support states in developing numeric nutrient criteria which provide a clear, scientifically sound, and objective basis for efforts to reduce nitrogen and phosphorus pollution affecting local and downstream waters.
- In 2009, the EPA helped to lead the nationally focused State-EPA Nutrient Innovations Task Group to evaluate the science, sources, and economic impacts behind the ongoing problem of nutrient pollution and to develop recommendations for controlling the impacts to our nation's drinking water supplies and waterways. The Task Group issued *An Urgent Call to Action,* which provides specific recommendations to the EPA Administrator, state Commissions, and the public for joint state and federal actions to control nitrogen and phosphorus pollution.
- The EPA is financially supporting and partnering with the U.S. Department of Agriculture and Iowa in the first phases of a pilot study focusing on constructed wetlands that will provide many benefits, including reductions in nutrient pollution affecting the Gulf of Mexico.
- The EPA issued the March 16, 2011 Framework Memo further articulating that addressing nitrogen and phosphorus pollution is best addressed by the states, though numerous tools, including proven conservation practices. Using the memo as a guide, Regional Administrators have begun dialogues with states, tribes, and stakeholders about how we can best work together to make near-term progress on reducing nitrogen and phosphorus pollution while states continue their efforts, which the EPA has long encouraged, to develop numeric criteria for these pollutants. This memo builds on principles that the EPA has previously articulated and reaffirms the EPA's commitment to partnership with states and collaboration with stakeholders.
- The EPA continues to award to states throughout the country, nonpoint source control grants for reducing nitrogen and phosphorus pollution.

The EPA believes that the most effective and sustainable way to address widespread and pervasive nitrogen and phosphorus pollution is to build on these efforts and work cooperatively with states and tribes to strengthen nutrient management programs.

2. **EPA's Science Advisory Board ("SAB") has recognized shortcomings in EPA's approaches for deriving numerical nutrients criteria for use in water quality standards, including EPA's advocated approach of deriving criteria from empirical data from other waterbodies. The SAB expressed concerns that, among other things, large uncertainties in EPA's data and the fact that the approach of using empirical data do not prove cause and effect can be problematic if this approach is used in isolation as a stand-alone method to develop water quality criteria. (*See SAB Review of Empirical Approaches for Nutrient Criteria Derivation*, EPA Science Advisory Board, Ecological Processes and Effects Committee (FY 2009), Augmented for**

Review of Nutrient Criteria Guidance (April 27, 2010)). The SAB also observed that statistical associations may not be biologically relevant and do not prove cause and effect, and that without a mechanistic understanding and a clear causative link between nutrient levels and impairment, there is no assurance that managing for particular nutrient levels will lead to the desired water quality outcome. The SAB found that improvements in the guidance were needed to enable development of technically defensible criteria and to make the document more useful to States. The SAB recommended that EPA address, among other things, how to establish cause and effect relationships; the utility and limitations of using statistical methods; the supporting analyses and data needed to correctly identify predictive relationships; the need for more guidance and examples to describe when and how to use various methods and approaches; and the linkages between attaining waterbodies' designated uses and nutrient levels. The SAB also recommended that EPA use a tiered approach that recognizes the uncertainties in data, and provides a means for establishing causal relationships between nutrients and their effects to help confirm whether and at what level a waterbody is impaired. ***What is EPA doing to address the concerns of its Science Advisory Board? What is EPA doing to enable the States to develop scientifically defensible nutrient standards?***

The Science Advisory Board (SAB) reviewed the EPA draft guidance document for states to use when deriving numeric nutrient criteria using stressor-response relationships, *Empirical Approaches for Numeric Nutrient Criteria Development.* Stressor-response relationships are one of three general approaches that the EPA recommends for states to use when deriving numeric nutrient criteria. The EPA published peer-reviewed general guidance documents that outline these three approaches. The SAB reviewed a supplemental guidance document that provided more detail on one of the three approaches, and the SAB determined that the "stressor-response approach is a legitimate, scientifically based method for developing numeric nutrient criteria if the approach is appropriately applied." The criticisms that the SAB had were not on the approach itself, but rather on the detail provided in the guidance document to assist states in the use of this approach. The EPA revised this guidance document to address the SAB's concerns and released it in final form in November 2010, *Using Stressor-response Relationships to Derive Numeric Nutrient Criteria* (EPA-820-S-10-001). The guidance document may be used by states as an additional tool to develop scientifically defensible numeric nutrient criteria. In addition to the technical support that the EPA provides in the form of guidance documents on the methods and approaches available for deriving numeric nutrient criteria, the EPA provides expert technical assistance via a web-based clearinghouse for numeric nutrient criteria development (N-STEPS), and outreach in the form of workshops and technical meetings. The EPA will continue to partner with the states, the scientific community and all stakeholders on the development and implementation of numeric nutrient criteria.

3. **EPA's Science Advisory Board has concluded that EPA's "stressor-response" methods used to develop nutrient criteria in many TMDLs and for the State of Florida does not demonstrate "cause and effect."** ***What authority in the Clean Water Act authorized EPA to develop aquatic life or human health criteria without demonstrating a "cause and effect" relationship?***

The effects that manifest from nitrogen and phosphorus pollution are well understood and documented in the scientific literature. Nitrogen and phosphorus pollution causes the over-stimulation of vegetative growth and changes the assemblage of plant and algal species present in the ecosystem. Specifically, algal blooms can decrease water clarity and aesthetics, which in turn can affect the suitability of a waterbody for primary and secondary contact recreation. Algal blooms can adversely impact drinking water supplies by releasing toxins, interfering with disinfection processes,

or requiring additional treatment. Additionally, algal blooms can adversely affect biological processes by decreasing light availability to submerged aquatic plants (which serve as habitat for fish and other organisms), degrading food quality and quantity for other aquatic life, and increasing the rate of oxygen consumption. Furthermore, nitrogen and phosphorus pollution promotes the growth of less palatable nuisance algal species that result in less food available for filter feeders, and can alter the habitat structure and function by covering the stream beds with periphyton (algae attached to submerged surfaces).

EPA's general authority to promulgate new or revised water quality standards for a state (absent EPA disapproval of a state adoption and submission of new or revised standards) is CWA Section 303(c)(4)(B) and 40 CFR section 131.22. Moreover, CWA Section 304(a) authorizes the EPA's Administrator to develop and publish "criteria for water quality accurately reflecting the latest scientific knowledge

(A) on the kind and extent of all identifiable effects on health and welfare including, but not limited to, plankton, fish, shellfish, wildlife, plant life, shorelines, beaches, esthetics, and recreation which may be expected from the presence of pollutants in any body of water, including groundwater;

(B) on the concentration and dispersal of pollutants, or their by products, through biological, physical and chemical processes; and

(C) on the effects of pollutants on biological community diversity, productivity, stability, including information on the factors affecting rates of eutrophication and rates of organic and inorganic sedimentation for varying types of receiving waters."

4. **EPA's March 16, 2011 nutrient management "framework" memo states that EPA will be flexible and encourage State innovation in dealing with nutrient pollution. The memo indicates that a one-size-fits-all solution is neither desirable nor necessary. Yet States feel EPA has been intractable in pushing only for the adoption of numerical nutrient criteria and has been resistant to the measured approaches proposed by several State and interstate agencies (including Colorado, Montana, New England, etc.). Moreover, in some instances, EPA has begun pressing States in other ways to adopt nutrient standards and implement other CWA limitations in NPDES discharge permits (including reminding States of EPA's position that States with authorized CWA permitting authority cannot issue permits in the face of an agency objection).** ***Where does EPA believe the flexibility exists in its current approach?***

The March 16th Framework memo is guidance, not a regulation, and as such it is not binding on States. Rather, it provides EPA's recommendations for an effective framework to address nutrient pollution. The memo does not establish requirements and States are not obligated to follow its recommendations. We believe, however, that the recommendations provide a helpful framework that may be tailored to particular state circumstances, taking into account existing tools and innovative approaches, available resources, and the need to engage all sectors and parties in developing strategies to address nutrient pollution. Through the March 16th Framework memo, the EPA is encouraging states to work with stakeholders to develop a State Nutrient Reduction Strategy, recognizing the importance of ongoing activities and the innovative ideas that are working to reduce nutrients. The Framework recommends state adoption of numeric nutrient criteria on a reasonable timeframe, which EPA believes will better enable states to effectively protect local and downstream waters from nitrogen and phosphorus pollution. The EPA recognizes that states need flexibility to

develop creative and cost-effective solutions to addressing nitrogen and phosphorus pollution, and that a one-size-fits-all solution is neither desirable nor necessary. If states develop numeric nutrient criteria, there are a large range of implementation tools, including variances and designated uses, available to states when developing numeric criteria, which provide adequate flexibility to implement numeric nutrient criteria. Furthermore, the CWA provides states substantial flexibility in how to derive numeric nutrient criteria and in adjusting the frequency and duration components of those criteria.

5. **We heard from the other witnesses' hearing testimony that the States want to be able to effectively use the tools of flexibility, innovation, and collaboration among stakeholders as a means of achieving long-term water quality goals, but are concerned that EPA is not letting them do so.** ***Why is EPA not letting the States be innovative and flexible in addressing their water quality issues?***

   The EPA strongly believes that states are best suited to address nutrient pollution. While the EPA has the obligation to promulgate Federal water quality standards for a State if it determines that such standards are necessary to meet the requirements of the CWA, the EPA much prefers that States adopt appropriate water quality standards themselves and works closely with states and local partners on a technical basis to aid their efforts. The EPA recognizes that states need flexibility to develop creative and cost-effective solutions to addressing nitrogen and phosphorus pollution, and that a one-size-fits-all solution is neither desirable nor necessary. While the EPA continues to prefer that States develop numeric nutrient criteria for their waters, the EPA also stands ready to work with States to tailor a nutrient reduction approach to particular state circumstances. EPA is interested in continuing to engage with states through workshops and webinars to share practices and experiences, and to develop innovative approaches that are scientifically defensible and meet the requirements of the CWA, to address nutrient pollution.

6. **When asked whether EPA was intending on imposing Federal nutrient standards on any other State beyond Florida, Administrator Jackson referred to EPA's nutrient management "framework" memo that was released by you on March 16, 2011. EPA has acknowledged that "Florida has developed and implemented some of the most progressive nutrient management strategies in the Nation," and that Florida has placed substantial emphasis on the monitoring and assessment of its waters and, as a result of this commitment, has collected significantly more water quality data than any other State. It sounds like EPA agreed that Florida was doing the right things to address nutrient issues in the State, and Florida meets all the expectations of the nutrient framework. Nevertheless, EPA decided that the March 16th nutrient framework does not constitute a set of decision-making criteria for evaluating whether to determine that new or revised water quality standards, such as numeric nutrient criteria, are necessary in a particular State in order to meet the requirements of the CWA, and that the agency's decision to impose Federal nutrient standards was unrelated to whether Florida meets all the expectations of the March 16th nutrient framework.** ***Why is EPA sending such inconsistent, mixed messages? What is the real purpose of the March 16th nutrient framework? What is the real reason that EPA decided to undermine Florida's nutrient criteria development efforts and promulgate Federal nutrient standards in the State? Isn't the real heart of the March 16th nutrient framework the provision at the end which directs States to embark on nutrient criteria development, for both nitrogen and phosphorus, for a waterbody type within 3-5 years? How do you reconcile the framework's supposed flexibility" with this ultimate hard mandate?***

Again, the Framework is guidance only, and as such is not binding on States. As articulated in the memo, this framework can be tailored to particular state circumstances, taking into account existing tools and innovative approaches, available resources, and the need to engage all sectors and parties in developing strategies to address nutrient pollution. The Framework Memo further strengthens the EPA's commitment to build partnerships with states and encourages states to collaborate with stakeholders to reduce nutrient pollution. The EPA will use the Framework as the basis for discussions with states about how to move forward on addressing nutrient pollution and recognizing that there is no one-size-fits-all solution. The Framework describes the recommended elements of a state-wide nutrient reduction strategy, and presents a series of actions that states may voluntarily take to reduce nitrogen and phosphorus loading in the near-term while taking longer-term steps toward nutrient reduction. The EPA believes that the 3-5 year timeframe reflects a reasonable time period for the adoption of numeric criteria where the development of such criteria is determined by states to be a necessary component of their long-term nutrient reduction strategy..

In the case of Florida, in January 2009, the EPA made a CWA Section 303(c)(4)(B) determination that new or revised water quality standards in the form of numeric nutrient criteria are necessary to meet the requirements of the CWA in the state of Florida. The basis for the EPA's January 2009 determination is fully explained in the determination but is briefly summarized, in the following paragraphs.

The EPA determined that Florida's narrative criterion [that "in no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna." (See Subsection 62-302.530(47)(b), F.A.C.)] alone was insufficient to ensure protection of applicable designated uses. This determination was based on information on the significant and growing impacts of nutrient pollution on Florida's waters, including downstream waters, and whether existing state regulatory tools were adequately addressing the problem of nutrient pollution.

The determination recognized that Florida has a comprehensive regulatory and non-regulatory administrative water quality program to address nitrogen and phosphorus pollution through:

- A water quality strategy of assessments;
- Nonattainment listing and determinations, total maximum daily load (TMDL) development and National Pollutant Discharge Elimination System (NPDES) permit regulations;
- Individual watershed management plans through the state's Basin Management Action Plans;
- Advanced wastewater treatment technology-based requirements under the 1990 Grizzle-Figg Act; and
- Rules to limit nitrogen and phosphorus pollution in geographically specific areas like the Indian River Lagoon System, the Everglades Protection Area, and Wekiva Springs.

However, the determination noted that despite Florida's existing regulatory and non-regulatory water quality framework and the state's intensive efforts to diagnose nitrogen and phosphorus pollution, implementation of that framework was being conducted on a time-consuming and resource intensive case-by-case basis. This allowed substantial water quality degradation from nitrogen and phosphorus over-enrichment to remain a significant challenge and unaddressed for prolonged periods of time. Moreover, EPA was concerned that these conditions are likely to worsen with continued population growth and land use changes.

Overall, the combined impacts of urban and agricultural activities, along with Florida's physical features and important and unique aquatic ecosystems, made it clear that the nutrient problem in Florida was not being adequately addressed. Florida's reliance upon the narrative criterion alone and a resource-intensive, site-specific implementation approach, did not ensure protection of applicable designated uses for the many state waters that either have been listed as impaired and require loadings reductions, or those that are high quality and require protection from future degradation. The EPA concluded that numeric nutrient criteria will enable the state to take necessary action to protect the designated uses in a timely manner. The EPA determined that numeric nutrient water quality criteria would strengthen the foundation for identifying impaired waters, establishing TMDLs, and deriving water quality-based effluent limits in NPDES permits, thus providing the necessary protection for the state's designated uses in its waters. In addition, numeric nutrient criteria will support the state's ability to effectively partner with point and nonpoint sources to control nitrogen and phosphorus pollution, thus further providing the necessary protection for the designated uses of the state's waterbodies.

On November 2, 2011, the Florida Department of Environmental Protection (FDEP) announced its intention to move forward and complete its rulemaking for numeric nutrient criteria in the State. The EPA has been working in close coordination with FDEP throughout the rule development process. On this same date, EPA sent a letter to FDEP indicating that while EPA's final decision to approve or disapprove the criteria will follow our formal review of the rule, our current review of the draft rule, guidance, and supporting information leads us to the preliminary conclusion that EPA would be able to approve the draft rule under the CWA.

7. **Mr. Richard Opper (Montana DEQ) and others advocate using a "consensus" approach, where there is buy-in from the regulated community, in developing standards and an overall water quality strategy for addressing nutrients.** ***Does EPA agree or disagree with such an approach? Is it appropriate for States to use a system of "variances"(for example, as Mr. Opper advocated) to deal with situations where many of a State 's regulated entities cannot meet the State 's nutrient standards right away, because the technologies do not exist yet to do so without great economic impacts? When is it appropriate for variances from standards to be granted? How many variances from water quality standards been approved around the nation?***

The EPA understands the value of a consensus approach in developing water quality standards and a strategy to address nutrient pollution. Where states are able to develop support from a wide range of stakeholders in advance of formal rulemaking proposals (e.g., via a public outreach and engagement process to develop proposals and work through issues with stakeholders), such proposals have a better likelihood of being adopted by state boards and commissions. This is especially true where the costs of complying with proposed water quality standards changes will be high for the regulated community.

Variances are one tool available to states in situations where water quality standards cannot be met. Other tools that offer states flexibility include permit compliance schedules, revisions to designated uses based on a use attainability analysis, or adoption of site-specific criteria based on similar attainability analyses (e.g., natural conditions). A variance is a revised water quality standard that must be supported on the basis of one of the factors specified in 40 CFR section 131.10(g), such as economic impacts, and requires the EPA's review and approval before it can be effective for CWA purposes (40 CFR section 131.21(c)). A variance temporarily establishes a relaxed water quality standard and requires that the discharger make feasible progress toward protecting the designated

use. Generally, variances are an appropriate tool to consider where it can be demonstrated that it is not feasible to achieve the designated use during the term of the proposed variance. It is not uncommon for states to develop and the EPA to approve variances with adequate justification per the factors found at 40 CFR section 131.10(g), although the EPA does not have an exact count of the number that have been approved under the CWA Section 303(c) program. The EPA is currently working with Montana on the supporting economic analyses it is preparing to support the State's request for a variance. .

8. **It sounds like, from Mr. Opper's hearing testimony, that Montana has shown exactly the flexibility, collaboration with and among its stakeholders, and innovation called for in your March 16, 2011 nutrient "framework" memo, as well as in previous EPA memos.** ***Is Montana's approach reasonable and consistent with the March 16th nutrient framework? Why or why not? Does EPA allow States to issue variances from water quality standards (like in Montana) in appropriate circumstances? Please explain why or why not.***

   The EPA notes that Montana's approach does indeed reflect the incremental progress toward establishing numeric nutrient standards encouraged in that memo. With regard to the policy in Montana's law establishing nutrient standards variances (formerly Senate Bill 367) and the state's efforts to develop and adopt numeric nutrient criteria for wadeable streams, the EPA is in the process of reviewing the adopted statutory provisions and is working with the Montana Department of Environmental Quality to develop appropriate supporting analyses. In general the EPA supports adoption of numeric nutrient criteria in combination with general policies authorizing adoption of variances where justified.

9. **EPA has stated that it is not intending to adopt numeric nutrient criteria for other States; however, EPA has issued letters to States directing that narrative criteria provisions must be implemented to control nutrients in the absence of numeric standards, and EPA is preparing a narrative criteria implementation guidance document for use on permit reviews.** ***Please explain how this guidance document will be used in the regulatory process and whether EPA will use this document to define the level of nutrient control or numeric instream value necessary to meet EPA's interpretation of a State's narrative standard. Will this narrative criteria interpretation change from permit to permit or waterbody to waterbody in a State? If not, how does this differ in effect from EPA mandating a numeric criteria approach for different classes of waters in a State?***

   The EPA is in discussions about developing a guidance document to provide permitting authorities with tools to develop water quality-based effluent limitations and related NPDES permit conditions for nutrients based on narrative standards. The EPA recognizes that some states are already translating their narrative standards to develop NPDES permit limits.

10. **In any given watershed, nitrogen or phosphorus may be the limiting nutrient parameter. (In other words, the health of a watershed is tied to one or the other but not always both.) Inflexible application of numerical nutrient criteria for both parameters can lead to costly TMDLs and overly restrictive permits, with little to no environmental benefit.** ***Why is EPA against State-developed standards that recognize this issue and try to incorporate flexibility into their programs?***

    The EPA believes the adoption of numeric criteria for both nitrogen and phosphorus will help better protect both local and downstream waters since generalizations about the limiting nutrient are not

always appropriate. For example, lakes are not always phosphorus-limited and estuaries are not always nitrogen-limited, and the limiting nutrient in a waterbody or watershed often fluctuates seasonally and/or spatially. Importantly, since either or both nitrogen and phosphorus can be the direct cause of impairment in either near-field or downstream waters, EPA recommends that states adopt numeric criteria for both parameters (see references cited in responses to questions 14 and 15). Most recently, the SAB in their review of the methods and approaches that EPA has proposed for use in developing numeric nutrient criteria for Florida's waters stated that "Nitrogen and phosphorus may be limiting in different portions of the fresh to marine continuum, and in some cases may be co-limited. Thus, a dual nutrient (N and P) strategy is warranted, and we agree with the Agency's decision to take this approach."

However, EPA recognizes that the methods for deriving nutrient water quality criteria may differ across states as a result of state- or site-specific water quality information. EPA looks forward to working with states to ensure that they use effective, scientifically valid approaches for addressing the interrelationship between nitrogen and phosphorus in causing water body impairment.

11. **The ability of nitrogen and/or phosphorus to adversely impact biology is often dependent on other factors such as presence of light, water flow rate, and suitable substrate conditions.** ***Why does EPA cling to the requirement to identify and apply a numeric concentration of phosphorus or nitrogen in water as being harmful (or a violation), even in the absence of biological harm to aquatic life or other evidence of adverse impact on the ecosystem? Doesn't science dictate that multiple lines of evidence should be weighed to scientifically support and defend the need to minimize the concentration of nutrients?***

CWA Section 301(b)(1)(C) and EPA's implementing regulations at 40 CFR section 122.44(d)(1) and 40 CFR section 122.4(d) require that permits for point source discharges of pollutants (such as nitrogen and phosphorus) to waters of the United States include limits stringent enough to meet, achieve, and ensure compliance with applicable water quality standards. Adoption of numeric criteria for nitrogen and phosphorus is an important way to facilitate and expedite the protection of waters by assisting states in identifying and listing impaired waters, issuing TMDLS, and writing NPDES permits. Numeric criteria for nitrogen and phosphorus can also further improve water quality by assisting nonpoint sources in best management practice implementation.

The EPA recognizes that some waterbodies may not exhibit a local response to nitrogen and phosphorus loading due to site-specific characteristics (e.g., turbidity limits light availability and therefore primary production), the season (e.g., lower winter temperatures limit productivity), or the natural lag-time between nitrogen and phosphorus loading and a biological response. However, when a local response has not been clearly demonstrated, these waters may nevertheless be discharging nitrogen and phosphorus loads to downstream waters that do exhibit a response to nitrogen and phosphorus. Waiting for visible algal growth or an alteration in the biological community, in response to nitrogen and phosphorus loading, leads to a situation in which the designated use is already impaired before action is taken to reduce nitrogen and phosphorus loadings. It takes a significant amount of time and resources for a waterbody to recover once visible signs of nitrogen and phosphorus enrichment are demonstrated. Assessing for nutrient causal parameters, and implementing the necessary controls if the causal criteria values are, or have the potential to be, exceeded, will help prevent a nutrient response, and best serve the objective of the CWA to restore and maintain the chemical, physical, and biological integrity of the Nation's waters instead of waiting for biological harm to occur. The EPA will continue to work with states on the

use of a multiple lines of evidence approach in applying nutrient criteria that is preventive, protective of downstream water quality standards, and is scientifically defensible

The EPA recognizes that there is analytical, spatial, and temporal variability associated with environmental data that should be considered in deriving numeric criteria for nitrogen and phosphorus. The EPA can work with states to adjust the state-adopted causal parameter criteria to account for site-specific conditions that continue to assure attainment of applicable water quality goals. One option is for states to subcategorize waters (e.g., cool water aquatic life, warm water aquatic life) or use a tiered aquatic life use approach and apply the criteria accordingly.

12. **Testimony was received confirming that EPA is implementing an approach for nutrients known as "independent applicability" - that is, EPA is demanding that States adopt both nitrogen and phosphorus criteria for all classes of waters and that both standards must be met even if the waterbody is not exhibiting signs of nutrient impairment.** ***Is this correct? Hasn't EPA previously approved State numeric nutrient criteria that were tied to a demonstration that nutrients were actually causing excessive plant growth and that only regulated phosphorus in fresh waters? When did EPA peer review its "independent applicability" policy or otherwise publish this Section 304(a) criteria development requirement for public review and comment?***

The independent applicability policy does not require nitrogen and phosphorus criteria for all waters. As described in the EPA's June 19, 1991, Tudor T. Davies memorandum entitled "Transmittal of Final Policy on Biological Assessments and Criteria", the Agency's policy established that a demonstration of nonattainment using one assessment method (i.e., chemistry, toxicity testing results, or ecological assessment) does not require confirmation with a second method and that the failure of a second method to confirm nonattainment of water quality standards does not negate the results of the first method. Assessment guidance from the EPA states that if there is reason to doubt a nonattainment finding, the state should re-evaluate all of the datasets to resolve discrepancies. The EPA's independent applicability policy is based on the premise that any valid, representative dataset indicating an actual or projected water quality impairment should not be ignored when one is determining the appropriate action to be taken. The EPA recognizes that there are circumstances when conflicting results should be investigated further before the attainment or nonattainment decision is made. The intent of this policy is to protect against dismissing valuable information when evaluating aquatic life use attainment, particularly in detecting impairment. The policy does not preclude states from adopting a scientifically defensible approach for developing nutrient criteria that recognizes the interrelationship between nitrogen and phosphorous in causing water body impairment.

Some states have developed nutrient criteria based on stressor-response relationships so that the phosphorus and/or nitrogen criteria are tightly linked to response criteria such as algal and plant growth. The EPA has approved numeric nutrient-related water quality standards that included only phosphorus criteria. However, the EPA considers the adoption of numeric criteria for both nitrogen and phosphorus important because they are the causal parameters directly responsible for eutrophication in immediate and/or downstream waters.

The independent applicability policy was peer reviewed in 1990. The EPA circulated the draft policy to EPA Regions and states for comments on March 23, 1990. Additionally, the policy was discussed at the Water Quality Standards for the 21st Century Symposium in December 1990.

13. **Under EPA's concept of "independent applicability" regarding numerical nutrient standards, even when other types of evidence (including physical and biological indicators) point to a waterbody as being unimpaired, it nevertheless must be listed as impaired by nutrients if the numeric standard is tripped.** ***Why does EPA favor the imposition of independent applicability of numerical nutrient criteria over the implementation of response-based nutrient criteria for nutrient standards? Why is EPA generally against using a weight of evidence approach to develop and implement nutrient standards?***

    The EPA's independent applicability policy is based on the premise that any valid, representative dataset indicating an actual or projected water quality impairment should not be ignored when one is determining the appropriate action to be taken. The EPA recognizes that there are circumstances when conflicting results should be investigated further before the attainment or non-attainment decision is made. The intent of this policy is to protect against dismissing valuable information when evaluating aquatic life use attainment, particularly in detecting impairment. The EPA will continue to work with states on on the development of a multiple lines of evidence approach (i.e., dual analyses of causal and response nutrient parameters) in applying nutrient criteria that is preventive, protective of downstream water quality standards, and is scientifically defensible

14. **In New England, EPA is objecting to draft numeric nutrient criteria for freshwaters because the proposed standards only regulate phosphorus. EPA wants States to adopt numerical standards for both nitrogen and phosphorus, even though only one of the nutrients may be a problem.** ***Why would EPA want to require a numerical standard for a nutrient that is not causing water quality problems? Please identify the peer reviewed documents that confirm it is scientifically defensible and necessary to regulate both nitrogen and phosphorus for all fresh waters, regardless of which nutrient is actually limiting plant growth or whether those nutrients are actually causing impairment to a waterbody.***

    Excessive nitrogen and phosphorus loading to surface waters results in local and/or downstream water quality impairments. The EPA's regulations at 40 CFR section 122.44(d)(ii) prohibits increases of pollutants (such as nitrogen and phosphorus) that cause, have the reasonable potential to cause, or contribute to, an in-stream excursion of a narrative or numeric water quality standard. State adoption of numeric criteria for both nitrogen and phosphorus is a priority because generalizations about the limiting nutrient are not always appropriate. For example, lakes are not always phosphorus-limited and estuaries are not always nitrogen-limited, and the limiting nutrient in a waterbody or watershed often fluctuates seasonally and/or spatially. In July 2011, EPA's Science Advisory Board reviewed the methods and approaches that EPA has proposed for use in developing numeric nutrient criteria for Florida's waters and stated that "Nitrogen and phosphorus may be limiting in different portions of the fresh to marine continuum, and in some cases may be co-limited. Thus, a dual nutrient (N and P) strategy is therefore warranted, and we agree with the Agency's decision to take this approach." Provided below are just a few of the many peer reviewed published articles supporting the need for controlling both nitrogen and phosphorus, the causal parameters directly responsible for eutrophication in local and downstream waters:

    Conley, D. J, H. W. Paerl, R. W. Howarth, D. F. Boesch, S. P. Seitzinger, K. E. Havens, C. Lancelot, & G. E. Likens. 2009. *Controlling eutrophication: Nitrogen and phosphorus.* Science. 323:1014-1015.

Downing, J. A. and E. McCauley. 1992. *The nitrogen: phosphorus relationship in lakes.* Limnology and Oceanography. 37:936-945.

Elser, J.J., E.R. Marzolf, and C.R. Goldman. 1990. *Phosphorus and nitrogen limitation of phytoplankton growth in the freshwaters of North America: a review and critique of experimental enrichments.* Canadian Journal of Fisheries and Aquatic Science. 47:1468–1477.

Elser, J.J., M.E.S. Bracken, E.E. Cleland, D.S. Gruner, W.S. Harpole, H. Hillebrand, J.T. Ngai, E.W. Seabloom, J.B. Shurin, and J.E. Smith. 2007. *Global analysis of nitrogen and phosphorus limitation of primary production in freshwater, marine, and terrestrial ecosystems.* Ecology Letters. 10:1135-1142.

Howarth, R.W., and R. Marino. 2006. *Nitrogen as the limiting nutrient for eutrophication in coastal marine ecosystems: evolving views over three decades.* Limnology and Oceanography. 51:364-376.

Marino R, Chan F, Howarth RW, et al. 2006. *Ecological constraints on planktonic nitrogen fixation in saline estuaries: I. Nutrient and trophic controls.* Mar Ecol-Prog Ser 309: 25–39.

National Research Council. *Clean Coastal Waters.* National Academies Press, Washington, DC, 2000.

Paerl, H.W., L.M. Valdes, M.F. Piehler and M.E. Lebo. 2004. *Solving problems resulting from solutions: The evolution of a dual nutrient management strategy for the eutrophying Neuse River Estuary, North Carolina*, USA . Environ. Sci. Technol. 38: 3068-3073.

Pearl, H.W. 2009. *Controlling eutrophication along the freshwater-marine continuum: dual nutrient (N and P) reductions are essential.* Estuaries and Coasts 32:593-601.

Scavia, D., and K.A. Donnelly. 2007. *Reassessing hypoxia forecasts for the Gulf of Mexico. Environmental Science and Technology.* 41(23):8111-8117.

Skogen et al., 2004 M.D. Skogen, H. Søiland and E. Svendsen, *Effects of changing nutrient loads to the North Sea,* J. Mar. Syst. 46 (1–4) (2004), pp. 23–38.

Smith, V.H. 1979. *Nutrient dependence of primary productivity in lakes.* Limnology and Oceanography. 24:1051 -1064.

Smith, V.H. 1982. *The nitrogen and phosphorus dependence of algal biomass in lakes: An empirical and theoretical analysis.* Limnology and Oceanography. 27:1101- 1112.

Sylvan, J.B., Quigg, A., Tozzi, S., and J.W. Ammerman. 2007. *Eutrophication-induced phosphorus limitation in the Mississippi River plume: Evidence from fast repetition rate fluorometry.* Limnology and Oceanography. 56(6):2679-2685.

However, EPA reviews the scientific basis for proposed state water quality standards on a case-by-case basis and has not established a policy that numeric criteria for both nitrogen and phosphorous are necessary for every water body.

15. Several parties testified that a scientifically defensible relationship between nutrients and use impairment cannot be developed for flowing waters because too many site-specific factors control whether or not impairment will occur. ***Are these statements true? If not, please provide the Committee with the peer-reviewed scientific studies that confirm uniform relationships between nutrient level and stream impairment can be demonstrated to occur on a consistent basis such that single numeric nutrient criteria are appropriate for such waterbody types.***

Developing scientifically defensible and protective numeric water quality standards for nitrogen and phosphorus for flowing waters is possible, and has already been done by many states including WA, CA, NV, AZ, NM, MT, OK, WI, GA, NY, NJ, VT, FL, and HI. Many more states are in the process of deriving such criteria.

There is a well established and sizeable body of scientific knowledge including both experimental and observational studies that has unequivocally established a cause and effect relationship between nutrients and biological responses in streams, including an effect on the balance of flora and fauna (see references cited below and in responses to question 14).

Biggs, B. J. F. 2000. Eutrophication of streams and rivers: dissolved nutrient–chlorophyll relationships for benthic algae. Journal of the North American Benthological Society 19:17–31.

Bowling L.C., and P.D. Baker. 1996. Major cyanobacterial blooms in the Barwon–Darling River, Australia, in 1991 and underlying limnological conditions. Marine and Freshwater Research 47: 643–657.

Correll, D. L. 1998. Role of phosphorus in the eutrophication of receiving waters: A review. Journal of Environmental Quality 27:261 – 266.

Cross, W. F., J. B. Wallace, A. D. Rosemond, and S. L. Eggert. 2006. Whole-system nutrient enrichment increases secondary production in a detritus-based ecoystem. Ecology 87: 1556–1565.

Dillon, P. J. and F. H. Rigler. 1974. The phosphorus-chlorophyll relationship in lakes. Limnology and Oceanography 19: 767 – 773.

Francoeur, S.N. 2001. Meta-analysis of lotic nutrient amendment experiments: Detecting and quantifying subtle responses. Journal of the North American Benthological Society 20(3):358-368.

Mulholland, P.J., and J.R. Webster. 2010. Nutrient dynamics in streams and the role of J-NABS. Journal of the North American Benthological Society. 29(1):100-117.

Paerl, H.W. 1988. Nuisance phytoplankton blooms in coastal, estuarine, and inland waters. Limnology and Oceanography 33:823-847.

Schindler D.W., H. Kling, R.V. Schmidt, J. Prokopowich, V.E. Frost, R. A. Reid, and M. Capel. 1973. Eutrophication of Lake 227 by addition of phosphate and nitrate: The second, third, and

fourth years of enrichment 1970, 1971, and 1972. Journal of the Fishery Research Board of Canada 30:1415–1440.

Slavik, K., B. J. Peterson, L. A. Deegan, W. B. Bowden, A. E. Hershey, and J. E. Hobbie. 2004. Long-term responses of the Kuparuk River ecosystem to phosphorus fertilization. Ecology 85: 939 – 954.

Smith, V.H., G.D. Tilman, and J.C. Nekola. 1999. Eutrophication: impacts of excess nutrient inputs on freshwater, marine, and terrestrial ecosystems. Environmental Pollution 100, 179–196.

Stockner, J.G., and K.R.S. Shortreed. 1978. Enhancement of autotrophic production by nutrient addition in a coastal rainforest stream on Vancouver Island. Journal of the Fisheries Research Board of Canada 35:28–34.

Vollenweider, R.A. 1968. Scientific Fundamentals of the Eutrophication of Lakes and Flowing Waters, with Particular Reference to Nitrogen and Phosphorus as Factors in Eutrophication (Tech Rep DAS/CS/68.27, OECD, Paris).

16. **All water quality criteria must be based on the "effects" of a pollutant on aquatic life or human health. (Section 304(a).) Adequate scientific documentation is supposed to be provided on the effect of a pollutant and the threshold condition where adverse impacts are no longer demonstrated to occur. (40 CFR Part 131.)** ***Is it true that EPA was unable to demonstrate a clear "cause and effect" relationship for stream nutrient standards in Florida? Is it true that EPA, nonetheless, adopted stringent nutrient criteria for such waters? Since EPA could not demonstrate any "cause and effect" relationship, how does the Agency know its approach is not over- (or under-) protective of aquatic life?***

    In the Florida Inland Waters Rule, the EPA considered a wide variety of information in deriving numeric nutrient criteria for Florida's lakes and flowing waters. This included consideration of a large number of stressor-response and cause-and-effect relationship models using the best available data. These analyses produced significant models for both algal and macroinvertebrate responses. These relationships varied in their precision but were significant. There is a well-established and sizeable body of scientific knowledge, including both experimental and observational studies, that has unequivocally established a cause and effect relationship between nutrients and biological responses in streams, including an effect on the balance of flora and fauna (see references cited in responses to questions 14 and 15). The EPA deduces from this body of knowledge, corroborated by significant relationships observed in Florida that are consistent with predictions based on the body of scientific knowledge, that a cause and effect relationship between nutrient enrichment and biological responses exists in Florida and that nutrient reduction will result in environmental improvement.

    EPA used extensive work conducted by the State of Florida in developing the Federal standards. The standards promulgated by EPA are similar in most cases to the standards preliminarily developed by the State in draft in 1988, and in its current rulemaking that was announced on November 2, 2011, as they are based on the same scientific research.

17. **Section 303(d) of the Act requires States to identify impaired waters so that appropriate limitations may be placed on pollution sources in those watersheds.** ***What provision of the Clean Water Act authorizes EPA to impose water quality-based limitations even where a pollutant is not***

causing use impairment? What part of the Act allows EPA to conclude that a narrative criterion violation exists even where a waterbody is not exhibiting impairment? What part of the Act allows EPA to mandate nutrient reductions for waters that a State has concluded are not nutrient impaired and are not exceeding any adopted numeric nutrient criteria?

CWA Section 301(b)(1)(C) and EPA's implementing regulations at 40 CFR section 122.44(d)(1) and 40 CFR section 122.4(d) require that permits for point source discharges of pollutants (such as nitrogen and phosphorus) to waters of the United States include limits stringent enough to meet, achieve, and ensure compliance with applicable water quality standards. Such water quality standards include water quality criteria, both numeric and narrative. See 40 CFR section 122.44(d)(1). Therefore, even for waterbodies that are currently meeting standards, permit writers must set water quality-based limits if a reasonable potential to violate the standard exists, in order to ensure that the waterbody continues to meet standards.

CWA Section 303(d)(1) and its implementing regulations at 40 CFR section 130.7 require states to identify and list waters that are not attaining water quality standards, which include both numeric and narrative water quality criteria. If a waterbody is meeting the water quality standard, the waterbody would not need to be listed as impaired under CWA Section 303(d). Section 303(d)(2) of the Clean Water Act and its implementing regulations at 40 CFR 131.20 require states to submit their list of impaired waterbodies to EPA for approval, and EPA may approve or disapprove the identification of a particular waterbody as impaired or not impaired. In cases where EPA disapproves, EPA may revise the classification of the waterbody.

18. **EPA has begun requiring that communities discharging to nutrient impaired waters meet "limits of technology" treatment levels even where the point sources are a small component of the overall loading to the system.** ***When did EPA inform the public that "limits of technology"permit requirements must be met for point sources discharging to impaired waters? What section of the Clean Water Act authorizes EPA to mandate that "limits of technology" be achieved by point sources in these instances? Does the Clean Water Act allow States to impose less restrictive requirements on point sources in instances where point source controls will not assure attainment of use protection needs?***

National Pollutant Discharge Elimination System (NPDES) permits issued under Section 402 of the CWA typically contain numerical limits called "effluent limitations" that restrict the amounts of specified pollutants that may be discharged. Section 402 permits must contain both technology-based effluent limits, and more stringent water quality-based effluent limits when necessary to meet state water quality standards. Technology-based limitations establish performance-based levels of pollutant control and are designed to ensure a baseline level of water pollution control nationwide. Such limits are set based on national technology-based standards developed by EPA or, if such standards have not been developed, on a case-by-case basis. The CWA requires that permits include technology-based limits even where the receiving waterbody is meeting water quality standards.

In addition to the CWA requirement that permits include technology-based limits, CWA Section 301(b)(1)(C) and its implementing regulations at 40 CFR sections 122.44(d) and 122.4(d) require that NPDES permits include limits as stringent as necessary to meet water quality standards. The EPA has developed the Technical Support Document for Water Quality-based Toxics Control (1991) to assist states in deriving permit limits. As stated in the March 16th Framework memo, the EPA believes that certain minimum building blocks are necessary for effective programs to manage

nitrogen and phosphorus pollution, including reducing loadings through a combination of strengthened permits for point sources and reduction measures for nonpoint sources and other point sources of stormwater not designated for regulation.

The CWA and EPA's regulations do provide some flexibility with respect to water quality standards and designated uses. For example, states may perform use attainability analyses consistent with 40 CFR 131.10(g) to downgrade a designated use if one or more specific criteria are met, such as if imposing controls to attain that use "would result in substantial and widespread economic and social impact." 40 CFR 131.10(g)(6).

19. **EPA has stated that States may amend numeric nutrient criteria to less restrictive values where it is demonstrated that higher nutrient levels are not causing impairment.** ***Please identify the biological, physical, and chemical characteristics of a waterbody, other than nutrient concentration, that are used to demonstrate whether or not a waterbody is impaired for nutrients.***

Per 40 CFR section 131.11(b)(1), states should establish numeric water quality criteria based on (i) CWA Section 304(a) Guidance, (ii) 304(a) Guidance modified to reflect site-specific conditions, or (iii) other scientifically-defensible methods. The EPA's Water Quality Standards Handbook (Second Edition, August 1994) provides guidance on various types of water quality criteria (Chapter 3), including considerations for site-specific criteria modifications.

In a recent example, the EPA has stated that a state (in this case, Florida) may amend numeric nutrient criteria to less restrictive values where it is demonstrated that the site-specific alternative criteria is protective of the designated use, "Water Quality Standards for the State of Florida's Lakes and Flowing Waters", published in the *Federal Register* on December 6, 2010 (found in Vol. 75, No. 233, p. 75762). Specifically, the EPA made provisions for entities in the State of Florida to propose site-specific alternative criteria (SSAC) (see 40 CFR section 131.43(e)) that could adjust the federally promulgated criteria based on local information.

One approach to making such a demonstration that an adjustment to the applicable numeric criteria is appropriate and warranted is to use a combination of biological, chemical, and physical assessment measures to demonstrate that the waterbody is meeting its designated uses. See 40 CFR section 131.43(e). The entity can then propose concentrations of total nitrogen, total phosphorus, nitrate and nitrite, and/or chlorophyll *a*, as appropriate, that reflect conditions protective of the designated use as alternative criteria. Thus, for lakes, springs, and/or streams, entities can use methods and data similar to those used by EPA to show how the designated use will be met under alternative criteria.

20. ***In what ways is EPA taking into account the economic and job impacts of the requirements it imposes on States and localities?***

In accordance with the CWA, water quality criteria must be based on sound scientific rationale and assure attainment of the applicable designated use. This means that only scientific considerations can be taken into account when determining what water quality conditions are consistent with meeting a given designate use. Therefore, economic and social impacts are generally not considered when developing water quality criteria ("generally" because such impacts could be considered by a state or EPA in choosing between two criteria, both of which are protective of the applicable designated use and based on sound scientific rationale) . However, in implementing criteria the EPA and states

routinely rely upon flexibilities offered in the CWA and its implementing regulations that allow regulators to consider economic and social impacts. Specifically, under 40 CFR section 131.10(g), states may revise a designated use, or establish sub-categories of a use requiring less stringent criteria, if the state can demonstrate that attaining the designated use is not feasible due to substantial and widespread economic and social impacts (40 CFR section 131.10(g)(6)). Where appropriate, states may also adopt and submit variances to the EPA for review and approval, which would provide a temporary modification of the designated use and associated water quality criteria that would otherwise apply. Implementation of this tool recognizes that, in some situations, the designated use and associated water quality criteria may not be attainable in the short-term but may be attainable in the long-term. States can also use compliance schedules to give permittees additional time to meet water quality-based limits if such compliance schedules are consistent with the CWA and if the State's regulations allow for this.

The EPA published the Interim Economic Guidance Workbook in 1995 (http://water.epa.gov/scitech/swguidance/standards/economics/index.cfm) that may be used by states in considering economics at various points in the process of setting or revising water quality standards. The Guidance shows the variety of economic factors, including the local unemployment rate, that may be considered, and demonstrates a method for taking such economic and job impact factors into account.

Additional Questions from the Office of Congressman Frank Guinta (NH-1) regarding the EPA's actions in the Great Bay watershed:

1. **The State has determined that the municipal contributions are less than 20% of the load to the Bay system and the rest comes from nonpoint sources.** ***Why is EPA seeking to impose "limits of technology" permit requirements on the point sources, knowing that such limitations cannot possibly achieve the nutrient standards used in the draft permit? Does the CWA or implementing regulations mandate the imposition of such stringent limits in these circumstances? Where else has EPA mandated state of the art treatment when the municipal point sources are a minor component of the nutrient loading to a system? Has EPA mandated this approach in other nutrient impaired watersheds (such as Chesapeake Bay)? If EPA has not mandated this approach in some other nutrient impaired watersheds, why has it not?***

   CWA Section 301(b)(1)(C) (implemented through 40 CFR sections 122.44(d) and 122.4(d)) requires that permit limits be as stringent as necessary to meet the water quality standards. The EPA has developed the Technical Support Document for Water Quality-based Toxics Control (1991) to assist states in deriving permit limits.

   Currently nearly 20 million gallons of wastewater that has had little or no treatment for nitrogen removal flow from wastewater treatment facilities to Great Bay Estuary every day. New Hampshire has listed 11 of the18 Great Bay sub-estuaries, including the Squamscott/Exeter River and Portsmouth Harbor, as impaired due to nitrogen-enrichment. Nitrogen loading to the estuary exceeds biological assimilative capacity (i.e., the amount that is naturally utilized by plants, microbes, and other aquatic organisms), resulting in a number of adverse impacts. Specifically, excessive nitrogen inputs have fed algal blooms that have caused violations of the water quality standards for dissolved oxygen in the upper portions of the estuary, and macroalgae mats have replaced ecologically sensitive and important eelgrass beds. An essential step to restoring and

maintaining water quality and eelgrass habitat in the estuary is implementing reasonable and protective permit limits for wastewater treatment facilities in the watershed.

As the NPDES permitting authority in New Hampshire, the EPA is required to include limits for pollutants in NPDES permit for wastewater treatment facilities in New Hampshire to meet applicable water quality standards. CWA Section 301(b)(1)(C); 40 CFR section 122.44(d)(1). To determine whether a facility needs such a permit limit, EPA analyzes whether the pollutant of concern is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. 40 CFR section 122.44(d)(1)(ii). Nitrogen discharged from wastewater treatment facilities into the waters and tributaries entering Great Bay Estuary contributes to the impairment there. Therefore, the EPA is required under the CWA and corresponding regulations to impose limits on wastewater treatment facilities for total nitrogen that are sufficiently stringent to ensure compliance with New Hampshire's water quality standards. The EPA intends to establish permit limits that are scientifically sound and derived in accordance with applicable regulatory procedures and guidance. The EPA has flexibility in developing reasonable schedules, if necessary, for wastewater treatment facilities to attain the necessary total nitrogen reductions. Tools such as water quality trading may be available for ensuring compliance with water quality-based permit limits.

2. **EPA has published guidance saying State and Federal coordination and collaboration needs to occur on nutrient criteria development. The State has told EPA that permitting actions should not move forward until the technical issues are resolved.** ***Why is EPA seeking to impose stringent requirements knowing that the State and local governments are working collaboratively to resolve technical uncertainties? How is this consistent with EPA's recently published guidance entitled "Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions," dated March 16, 2011?***

   As stated above, the EPA is the NPDES permitting authority in New Hampshire, a role that EPA plays in only a handful of states. EPA therefore has a more direct role in implementing the NPDES permitting program in New Hampshire than in States that have authorization of their program. As the EPA develops NPDES permits in New Hampshire, the EPA is required to include limits for pollutants in NPDES permits for wastewater treatment facilities in New Hampshire to meet applicable water quality standards. CWA Section 301(b)(1)(C); 40 CFR section 122.44(d)(1). To determine whether a facility needs such a permit limit, EPA analyzes whether the pollutant of concern is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. 40 CFR section 122.44(d)(1)(ii). Moveover, in writing these permits, the EPA is required, per 40 CFR section 122.44(d)(1)(vi)(A), to consider all available and relevant information and analyses. The EPA will continue to provide technical support and work collaboratively with the State on a range of nutrient issues.

3. **The nutrient criteria that EPA is applying to issue the Exeter permit are draft numeric standards that have never been formally adopted by the State or approved by EPA. The Governor has indicated that EPA should not rely on the State's draft criteria pending completion of an independent technical review and further water quality analyses.** ***Why is EPA ignoring the State request and relying on the draft studies/standards that the State indicates need further work? What, if any, information does EPA have to show that the State's position is in***

error? Does the CWA allow EPA to impose requirements based on draft, un-adopted draft numeric criteria, contrary to a State's recommendations?

When there are no State numeric criteria, the permitting authority (in this case EPA) must base permit limits on the best available science. See, e.g., 40 C.F.R. 122.44(d)(1)(vi). The EPA used the best available science in drafting the permit for the Exeter wastewater treatment plant, including the nitrogen criteria document developed for Great Bay Estuary by the New Hampshire Department of Environmental Services (NHDES) in 2009. The EPA also carefully considered all the data, science and analyses that were part of the draft criteria development process. In addition to the NHDES nitrogen criteria, several other important sources of information were utilized in deriving the nitrogen permit limit. These sources include: published scientific literature and guidance documents; nitrogen, chlorophyll *a* and dissolved oxygen concentrations in the receiving and downstream waters; light attenuation (water clarity) measurements; macroalgae growth and coverage; current and historic eelgrass densities and coverage; and a steady state watershed nitrogen loading model for Great Bay Estuary and the tributary rivers that flow into the estuary. As a result, even in the absence of the draft State numeric nitrogen criteria, the EPA's obligation to use available science and best professional judgment to interpret New Hampshire's narrative water quality standards would have resulted in the same permit limit determination.

40 CFR section 122.44(d)(1)(vi)(A) provides that "where a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above the narrative criterion within an applicable state water quality standard, the permitting authority must establish effluent limits using one or more of the following options: ...Such a criterion may be derived using a proposed state criterion, or an explicit state policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents." Therefore, the EPA is legally compelled to use all available information in order to write permits, regardless of whether that information, e.g., the State's draft criterion, has been formally adopted through the state adoption process.

Although the EPA acknowledges the expressed concern regarding the use of draft numeric nitrogen criteria, it is important to note that the draft criteria were a part, but not the whole, of the body of information used by the EPA to derive water quality based effluent limits for Exeter.

4. ***Does the CWA and implementing regulations require that a State adopt numeric nutrient criteria before such values are imposed though an NPDES permit? What is the public process applicable to the adoption of numeric nutrient criteria by a State and approval by EPA? Has the State completed this process with respect to Great Bay? Why is EPA acting to truncate that process?***

The CWA and its implementing regulations do not require that states adopt numeric nutrient criteria before numeric effluent limits are imposed through a NPDES permit. Specifically, 40 CFR section 122.44(d)(1)(vi)(A) directs the EPA to make use of all available information, including draft criteria, when writing an NPDES permit. Additionally, the preamble to the EPA's permitting regulations states, "EPA's legal obligation to ensure that NPDES permits meet all applicable water quality standards, including narrative criteria, cannot be set aside while a state develops (numeric) water quality standards." 54 Fed.Reg. 23,868, 23,877 (1989).

The promulgation of new or revised water quality criteria by states constitutes a revision to the state's existing water quality standards regulations and therefore must be submitted to and approved by EPA. Federal regulations at 40 CFR Part 131 specify the minimum public participation requirements for water quality standard revisions and require at least a public hearing, which the public should be notified of 30-45 days in advance under EPA's public participation regulations at 40 CFR Part 25. States may have additional public participation processes required by state law to revise state regulations. Once adopted, state water quality standard revisions are submitted to the EPA for review and approval along with certification that the revisions were adopted in accordance with state law, including regulations pertaining to public participation. The New Hampshire Department of Environmental Services (NHDES) provided a public comment period from December 30, 2008 until March 20, 2009. NHDES' responses to public comments are included in pages 74-84 of the nitrogen criteria document found here: http://des.nh.gov/organization/divisions/water/wmb/wqs/documents/20090610_estuary_criteria.pdf. The EPA has not yet received a submission from NHDES regarding the adoption of numeric nitrogen criteria into New Hampshire's water quality standards.

5. **EPA claims that it conducted a "peer review" of the State's draft nutrient criteria.** ***How was the public allowed to participate in this peer review process? When did the peer review panel receive comment from the public and respond to those issues that were raised?***

As described in the EPA's Peer Review Handbook (2006), peer review is a "documented critical review of a specific scientific and/or technical work product." Peer review is conducted by qualified individuals (or organizations) that are independent of those who performed the work, and who are collectively equivalent in technical expertise (i.e., peers) to those who performed the original work. Therefore, peer review is not the same as public participation and the peer review process does not require a solicitation and response to public comment, though some peer review bodies may include such a step.

A scientific and technical peer review was transmitted to New Hampshire DES on June 29, 2010 covering their document entitled *Numeric Nutrient Criteria for Great Bay Estuary*. The review was conducted by two independent reviewers (faculty members from Cornell University and University of Maryland respectively) who are experts in the field of estuarine science. This peer review process was conducted by the EPA and administered through the Nutrient Scientific Technical Exchange Partnership Support (N-STEPS) program, which is a partnership between academic, state and federal agencies to provide technical information to states and tribes on developing nutrient criteria. Both reviewers noted the thoroughness and depth of analysis that NHDES performed on the eight years of collected data. It was also noted that multiple approaches for analyzing the data were employed and that the conclusions drawn were based on sound science and are well supported by scientific literature and reasoning.

Although the peer review process did not include public participation, New Hampshire Department of Environmental Services did solicit public comment from December 30, 2008 until March 20, 2009 as part of the state's water quality standards revision process. Furthermore, after the nitrogen criteria document was finalized, NHDES received additional comments and a critique of the criteria document from Hall and Associates on behalf of the communities of Portsmouth, Dover, Durham, Exeter, Newmarket and Rochester. As a result of these additional comments and critique, NHDES has included a review of the scientific literature documenting the relationship between excess

nitrogen and the detrimental effects that it has on estuaries, specifically with regard to dissolved oxygen and eelgrass.

Association of State and
Interstate Water Pollution
Control Administrators

1221 CONNECTICUT AVENUE, N.W, 2ND FLOOR • WASHINGTON, DC 20036 • TEL: 202-756-0600 • FAX: 202-756-0605 • WWW.ASIWPCA.ORG

June 24, 2011

Testimony of Coleen Sullins
ASIWPCA Board Member

United States House of Representatives

Committee on Transportation and Infrastructure
Subcommittee on Water Resources and Environment

Regarding

Nutrient Pollution Reduction and Control – The Essential State Role

Good morning, Chairman Gibbs and Members of the Subcommittee.

My name is Coleen Sullins, testifying today on behalf of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), where I serve on the Board of Directors. I am responsible for North Carolina's Division of Water Quality in the State's Department of Environment and Natural Resources. I have more than 25 years of experience in implementing Clean Water Act (CWA) programs in multiple states and in local government. Today I am testifying on behalf of ASIWPCA and not the state of North Carolina, although I will use several North Carolina examples to illustrate our points.

Celebrating its 50th Anniversary this year, ASIWPCA is the national voice of state, interstate, and territorial officials (hereinafter "states") responsible for implementation of programs that protect surface waters across the nation. ASIWPCA's membership consists of the state and interstate officials who administer the CWA programs. ASIWPCA's members work closely with the U.S. Environmental Protection Agency (EPA) as the co-regulators responsible for implementing this

critical statute. We offer technical and program support, increase state capacity, initiate dialogue, share information and resources, and, particularly relevant to our testimony today, ensure that states retain important flexibility to implement federal programs and initiatives in a way that makes good sense and yields the most beneficial environmental results possible.

The CWA has allowed us to successfully reduce many sources of pollution to our nation's waters. However, ASIWPCA's members are seeking ways to reduce the presence in our waters of two pollutants that present unique challenges – nitrogen and phosphorus (together, "nutrients"). Today, nutrient pollution is a leading cause of water quality impairments across the nation, and causes adverse impacts for drinking water sources, aesthetics, recreational uses and aquatic life (such as nuisance algae growth, dissolved oxygen reductions, and pH increases). EPA's database indicates that 21 percent of all listed impairments are nutrient related. EPA's database also shows that 18 percent of approved Total Maximum Daily Loads (TMDLs) have been developed to address nutrient impairments. So one thing I would like you to take away today is the realization that states are taking action to address this very complicated and important issue. I will provide additional examples later in my testimony.

Why is nutrient pollution control so difficult? Because our traditional approach to controlling a pollutant is to identify the level at which that pollutant is "too toxic" to the environment, and then set water quality-based numeric and/or narrative standards to keep that pollutant below the toxic level. Nutrients are different. There isn't a consistent, definitive level at which we can say across an entire state – or even across a waterbody or watershed – that this level is "too much." Nitrogen and phosphorus are widely variable, naturally occurring, ubiquitous, and frankly, are necessary components of healthy ecosystems. Ecosystems can be healthy under a wide variety of nutrient levels. Just as the amount of calories a person needs changes based on the individual's height, weight, metabolism, percent of body fat, exercise habits, etc.; an ecosystem's need for nitrogen/phosphorus depends on many factors. The extent to which nutrients' adverse effects (for example, algae growth, pH increases, drinking water taste and odor problems, and in extreme cases, fish kills) occur within a waterbody depends on a wide range of other critical factors such as sunlight, optimal stream substrate, stream flow, temperature and background water chemistry—factors that are very site-specific. Therefore, states have found that nutrient levels that may cause impairments in one stream under one set of conditions will not have the same negative impact in a different stream.

Since nutrient impacts are dependent on the presence of other factors, many states are finding that a "weight of evidence" approach is needed to identify waters that may be undesirably affected by high levels of nutrients or to determine that nutrients are the key to biological impairment. States are generally doing this on a watershed-specific basis. For example, if high levels of nutrients are present in a water body where high chlorophyll a, high light levels, low nighttime dissolved oxygen levels, and daytime oxygen saturation above 100 percent are observed - state biologists may conclude that the biological impairments noted are due to the influence of excessive, anthropogenic nutrients. In contrast, some streams may exhibit high nutrient levels that have no deleterious impacts on the stream's biology.

Simply stated, a single number for nitrogen or phosphorus is not often an accurate indicator of adverse ecological or water quality effects. That is why we need to work with EPA to develop a flexible approach to controlling nutrients in the environment.

I need to touch here on another complicating factor. Under the CWA, states only have direct authority over point sources, leaving most states in a position to only incentivize and encourage nonpoint source reductions (for example, from agriculture). In many watersheds, nonpoint sources may account for a large percentage of nutrient loads. Therefore expenditures aimed at achieving reductions from the end of the pipe may produce little overall gain, where nonpoint sources contribute the bulk of the nitrogen and phosphorus.

In North Carolina we have performed in-depth analyses of our estuarine areas and multiple significant reservoirs in the state that are impaired by nutrients. What we have found, in almost all situations, is that the nonpoint sources contribute greater than 70 percent of the nutrients to those impaired waters. The exceptions to the rule are typically more urbanized watersheds and smaller isolated areas such as a cove in a lake with a direct discharge of wastewater and a small watershed feeding the cove. Our General Assembly has recognized this issue and has directed, through specific statutory requirements, that all sources of pollutants (point source and nonpoint source), jointly share the responsibility of reducing the pollutants in a fair, reasonable, and proportionate manner.

In North Carolina we have an abundance of water, from our fabulous mountain waterfalls to our beautiful slow-moving swamp waters of the eastern coast. Our Albemarle Pamlico Sound is second

in size only to the Chesapeake Bay. If you have kayaked the Nantahala Falls, taken a spin on the Falls Reservoir, or canoed alongside the alligators and herons on the Black River, you know that these systems are quite distinct and their ability to assimilate nutrients is different. Therefore, any strategy to address nutrients in those systems must reflect these differences.

In addition to the variation in the natural systems, nutrient control and management calls for a rich mosaic of solutions. States are using a variety of CWA tools to achieve nutrient reductions. Beyond nitrogen and phosphorus standards and TMDLs, these tools include individual permit limits, wastewater treatment plant optimization, best management practices (BMPs), nutrient trading, control of other water quality parameters such as sediment, voluntary nutrient coalitions, and other innovative approaches. As a result of these approaches, a variety of nutrient accountability frameworks exist.

States understand the appeal of a single water quality standard for nitrogen or phosphorus in implementation. However, this approach does not acknowledge the need for a more flexible system, which allows nutrient standards to work effectively in the wide number of applications in which they are used by permitting authorities (for example, NPDES permit effluent limits, calculation of TMDLs). EPA's Office of Water recently acknowledged our reality in a March 16, 2011 memorandum to the Regional Administrators stating that "States need room to innovate and respond to local water quality needs, so a one-size fits all solution to nitrogen and phosphorus pollution is neither desirable nor necessary." The states are concerned, however, that this memorandum still establishes the expectation of numeric nitrogen and phosphorus standards.

I'd like to offer a few more examples from North Carolina. My fellow witnesses will offer other approaches from other parts of the country. North Carolina has proactively adopted and maintained a suite of both numeric (such as: chlorophyll a, dissolved oxygen, pH) and narrative nutrient criteria (such as: aesthetic and nuisance condition evaluations) for many years. For more than two decades the State has implemented a statewide chlorophyll a water quality standard (a measure of the amount of algae) for all surface waters in North Carolina. Examples of additional statewide initiatives include the phosphate detergent ban in the late 1980s and the required monitoring of nitrogen and phosphorus in effluent discharges from wastewater treatment plants. These actions resulted in a statewide reduction of phosphorus, plus an understanding of the level of

contribution from point sources. Other strategies we have deployed have been tailored to specific waterbodies.

- In the early 1980s we instituted a nutrient management strategy that implemented mandatory controls on wastewater facilities for the Chowan River and voluntary nonpoint source controls. The Agricultural Cost Share Program for Nonpoint Source Pollution Control was set up to assist meeting the nonpoint source nutrient reductions needed in the Chowan River and by 1989 it had been expanded to addressing agricultural nonpoint source pollution statewide. The primary purpose of the program is water quality protection and restoration. The program provides appropriated cost share funds as well as technical support to land owners and users for designing, constructing and implementing best management practices (BMPs) that achieve the greatest water quality benefit. When funds are available, the program provides farmers with 75% of the average cost of implementing approved BMPs. The program is carried out through the Soil and Water Conservation Districts. The Chowan River has subsequently recovered and is no longer impaired.
- In the 1990s management strategies were put into place for the Tar Pamlico and Neuse River estuaries. These strategies include nutrient trading as well as mandatory controls for all sources.
- Around this same timeframe North and South Carolina worked together to monitor a shared reservoir, Lake Wylie, to address the eutrophication issues in the lake. The collaborative process involved joint monitoring activities, determination of management needs, and implementation of control strategies to reduce the nutrients. The driving forces of the impairment in the Lake Wylie situation were the wastewater treatment plants. The control strategies that were implemented have resulted in significant improvements in water quality in the Lake, such that it is no longer impaired.
- In the latter part of the 1990s a pre-emptive strategy was developed for a new reservoir (the Randleman Reservoir) to prevent nutrient impairment upon construction of and damming of the river. The reservoir has only recently been impounded, but we were able to implement the control strategies in advance of the impoundment.
- We have also recently adopted strategies to address Jordan Reservoir and Falls Lake Reservoir (implementation has *just* begun). These strategies were years in the development with active stakeholder participation. Both strategies are estimated individually to cost in the range of $900 million to $1 billion to implement. On-going monitoring and reassessment are part of the regulations that were put into place in

recognition of the significant costs to all sources. The watersheds of these reservoirs account for less than 5% of the land area of the state.

- Permit-specific limits have been developed for a number of wastewater facilities that are not within any of the above mentioned waterbodies, but where limitations were necessary to prevent impairment or to address impairment in a site specific area. Potential or actual impairments were identified by looking to our water quality standards: levels of chlorophyll a, dissolved oxygen, pH, the presence of nuisance species or, in extreme cases, fish kills.

Each of these aforementioned strategies was developed based on the individual characteristics of the waterbody concerned. The Chesapeake Bay strategy developed by EPA, in conjuntion with states, shares similarities with some of the strategies that we have developed in North Carolina. We are also working with our Environmental Management Commission on the best methodology to assure protection of all waters of the state from all major nutrient sources through a prevention-based approach.

In conclusion: states share the Administration and Congress's concerns about nutrients *and* have adopted a variety of approaches, including narrative standards, response standards, weight of evidence approaches and, in some cases, nitrogen and phosphorus standards. In my own state, we have developed a variety of approaches because the nutrient issues are dependent on many site-specific issues. State economies, already under stress, are facing additional losses if we don't continue to reduce nutrient impairments in waterbodies. In addition, we agree with EPA that it is imperative to prevent additional nutrient impairments from developing, as it is much more economical to prevent impairments than it is to restore a system once it is impaired. In closing, we concur with EPA's memorandum – states need room to innovate and respond to local water quality needs and we believe that the states have shown the initiative to do so. We encourage EPA to continue to work with states to develop and implement the most appropriate tools for nutrient reduction and control, and to allow states the flexibility that is crucial to effectively address this important water quality challenge. The right tool is not always a number.

Mr. Chairman, members of the committee, thank you for this opportunity to share ASIWPCA's thoughts on the importance of the state's role in nutrient pollution reduction and control.

○