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Numeric Nutrient Water Quality Criteria: Lessons from Florida

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The state of Florida is currently embroiled in a battle over state water quality standards for nutrients—one of our oldest and most basic tools for managing fresh water ecosystems. Florida, like most states, has implemented a narrative water quality standard for surface waters designed to protect designated uses assigned to those waters. Since 1996, the United States Environmental Protection Agency (EPA) has pushed all states to adopt numeric nutrient criteria for surface waters based on its belief that numeric standards will expedite identification of impaired waters as well as related restoration and protection efforts contemplated by the Clean Water Act (CWA). Florida and EPA mutually agreed on a plan for development of numeric nutrient criteria. EPA, however, abandoned the plan. Instead, it set numeric criteria for the state by federal rule in order to settle a lawsuit filed against it by several environmental groups. These groups contended that EPA and the state were not moving with appropriate dispatch in establishing numeric criteria for the state.

The response to EPA's action was a wave of lawsuits, including one filed by the state that challenged EPA's rule and its authority to impose numeric criteria on Florida. The regulated community, including many local governments, sees implementation of the rule as an unfunded mandate costing billions of dollars during difficult economic times. Entities opposing the new standard express concern whether a scientific basis exists for EPA's position that its mandate will be protective of the state's water resources.

In an effort to regain control over its own natural resources, the Florida Department of Environmental Protection (DEP) has recently promulgated numeric nutrient criteria as an interpretation of the existing narrative criteria. EPA has preliminarily approved DEP's proposed regulations pending final approval by the State Legislature, which should occur during early 2012. Several environmental groups are threatening to challenge the DEP rules once formally adopted and ratified by the State Legislature. At least one administrative action has been filed against DEP already. Regardless of the outcome of this heated battle, state and local governments and private regulated interests nationwide should learn valuable lessons from the Florida experience so they can avoid the upheaval Floridians are now experiencing.

To understand the lessons to be drawn from Florida's

experience, it is important to first explore the legal setting surrounding and events that led to this controversy. Section 303(c) of the Clean Water Act, 33 U.S.C. § 1313(c), mandates that states adopt water quality standards for all navigable waters within their jurisdiction. The standards must be approved by EPA. Water quality standards typically have two components: a designated use component and associated standards that are protective of the designated use. States, thus, are required to categorize their navigable waters by intended uses (e.g., potable water supplies, shellfish propagation, recreation). When designated uses are established, states must then set standards to ensure the designated uses are protected. The CWA allows states to establish narrative or numeric standards. Most states, including Florida, developed a narrative standard for nutrients that provides "[i]n no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of flora or fauna." See, e.g., Florida Administrative Code, Ch. 62-302.530.

Citing its concern that nutrient loading may be the leading cause of impairment of the nation's waters, EPA announced in 1998 that states would be required to adopt numeric nutrient water quality standards in lieu of narrative standards. This announcement was formalized as the *National Strategy for the Development of Regional Nutrient Criteria*. It was a component of President Clinton's broader Clean Water Action Plan, intended to provide a blueprint for agencies to work with states in restoring the nation's water resources. The Action Plan mandated that, by 2003, EPA achieve the development of numeric nutrient standards as a part of state water quality standards.

This was not the first time EPA expressed concern about impairment of waters from excess nutrients. In 1976, EPA published a report entitled *Quality Criteria for Water* that presented numeric criteria for nitrates, nitrites, and phosphorus that EPA contended would protect domestic water supplies. Twenty years later, EPA provided a report to Congress stating that nitrogen and phosphorus were the leading causes of impairment in the nation's waters. NATIONAL STRATEGY FOR THE DEVELOPMENT OF REGIONAL NUTRIENT CRITERIA FACT SHEET (June 1998). Thus, it became clear in 1998 that EPA's preferred approach for regulating nutrients (nitrogen and phosphorus) would be through numeric water quality standards and that EPA would push states to develop such criteria or EPA would step in and do so. EPA believed that narrative standards do not identify impaired waters or put in place protective measures for such waters in a timely manner. EPA assumed that the translation of narrative standards into measurable metrics

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on a case-by-case, water body-by-water body basis was too time consuming and inefficient. EPA justified its approach on the belief that numeric criteria would: (1) lead to easier and faster identification of impaired waters; (2) lead to easier and faster development of total maximum daily loads; (3) facilitate protective permitting; (4) facilitate evaluating success of load reduction programs; (5) provide measurable baselines and goals; and (6) avoid the ad hoc evaluations of water bodies that narrative standards require. U.S. ENVTL. PROT. AGENCY, NUTRIENT POLLUTION AND NUMERIC WATER QUALITY STANDARDS (May 25, 2007).

In connection with the National Strategy, on November 14, 2001, EPA requested that each state develop a nutrient criteria plan outlining how each state planned to develop and adopt numeric nutrient criteria including identifying milestones and schedules. U.S. ENVTL. PROT. AGENCY, DEVELOPMENT AND ADOPTION OF NUTRIENT CRITERIA INTO WATER QUALITY STANDARDS (Nov. 14, 2001). While such plans were not required, EPA strongly encouraged their development in order to reflect a mutually agreed upon approach and schedule. Developing such plans afforded states some flexibility with regard to timing of rule development so long as the state was making acceptable progress. *Id.* By 2008, 46 states had developed a nutrient criteria plan, 43 of which were approved by EPA. U.S. ENVTL. PROT. AGENCY, STATE ADOPTION OF NUMERIC NUTRIENT STANDARDS (1998-2008), (EPA-821-F-08-007, Dec. 2008).

The Florida Experience

Florida developed a nutrient criteria plan through its DEP in May 2002. EPA approved the plan on July 7, 2004. DEP subsequently revised its plan in September 2007 and received EPA's concurrence. The revised plan called for development of numeric nutrient criteria under the state administrative processes by January 2011. Importantly, by approving the revised plan, EPA agreed to the January 2011 submission date and a 2012 adoption date. Letter from James Giattina, EPA, to Jerry Brooks, DEP (Sept. 28, 2009).

Florida's development of a nutrient criteria plan followed a number of measures Florida began implementing in the 1970s to protect its water resources. Florida was the first state to implement statewide storm water treatment programs (generally an 80 percent load reduction treatment level) and to develop a comprehensive and systematic approach to identifying impaired waters and establishing total maximum daily loads. FL. STAT. § 403.067. Florida also developed a water reuse program, FL. STAT. § 403.064; implemented best management practices for nonpoint sources; adopted numeric nutrient response thresholds for determining waters that are nutrient impaired; developed the Surface Water Improvement and Management Program providing for the development of management and restoration plans for priority water bodies, FL. STAT. §§ 373.451-4595; developed numeric criteria for phosphorus within the Florida Everglades; and invested \$3 billion in the development of stormwater facilities across the state and \$20 million in the development of numeric nutrient

criteria, 75 Fed. Reg. 75,762, 75,763 (Dec. 6, 2010). Florida has rightly been regarded as being in the vanguard among states in protection of surface water quality.

In July 2008, several environmental groups sued EPA to force the accelerated development of numeric nutrient criteria for all of Florida's waters. *Florida Wildlife Federation v. Jackson*, N.D. Fla. Case No. 04:08-cv-324-RH-WCS. On January 14, 2009, EPA, in connection with the lawsuit, informed DEP that the state's narrative standard was not protective of the designated uses and immediate development of numeric nutrient criteria was necessary for the state to comply with the CWA. EPA abandoned the time frames mutually agreed upon in the state's nutrient criteria plan and ordered the state to develop acceptable nutrient criteria for flowing waters within 12 months and for coastal waters within 24 months. In August 2009 EPA entered into a consent decree with the plaintiffs in the lawsuit committing EPA to the schedule set forth in the January 14 determination letter. EPA's determination letter and subsequent consent decree supplanted the nutrient criteria plan that had been guiding EPA's and Florida's efforts since 2002. The consent decree was subsequently amended providing for the development of numeric nutrient criteria for all flowing waters excluding the south Florida region by November 14, 2010, and marine, coastal, and south Florida flowing waters by March 15, 2012. EPA's final rule published on November 14, 2010, provided that the proposed numeric nutrient criteria would be effective as of March 6, 2012.

The Fallout from EPA's Numeric Criteria Adoption

The consent decree ignited an explosion of litigation and political fury. The regulated community felt that, to settle the lawsuit, EPA had unjustifiably jettisoned the deliberative and cooperative process previously agreed to by EPA and the state. Many local governments, agricultural interests, and industry groups strongly opposed the consent decree, feeling it intruded on the state's right to develop its own criteria. The consent decree was upheld by the U.S. Eleventh Circuit Court of Appeals in August 2011.

In response to EPA's January 14 determination letter, DEP immediately initiated rule development to establish numeric surface water quality criteria. EPA's requirements effectively condensed two to three years of complex work into a 12-month period. After four public meetings on the issue, DEP abandoned its rule development effort, leaving EPA with the daunting task of establishing a standard. EPA then developed and adopted final numeric nutrient water quality standards for all flowing waters, excluding the south Florida region, and published notice concerning adoption of its standard on December 6, 2010.

The rule came under fire immediately. Critics argued that it was not based on sound science. Because of the compressed time frame in which the standard was developed, EPA used the seventy-fifth percentile for nutrient levels of selected pristine waters (meaning that one out of the four pristine waters would

not comply with the standards) to establish nutrient levels for all flowing waters. The financial burden of compliance with the standard, though highly disputed, has caused alarm for local governments, agriculture, and regulated interests, especially given current economic conditions. That cost is variously estimated to run from hundreds of millions to billions of dollars.

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The response to EPA's numeric nutrient criteria has spawned no fewer than 11 lawsuits. Plaintiffs challenging EPA's rule include the state of Florida, Florida's Department of Agriculture, phosphate mining interests, and professional associations representing a variety of industries (e.g., pulp and paper manufacturers, local governments, utilities, and fertilizer producers). Plaintiffs argue that the standards adopted by EPA are not scientifically sound and thus are arbitrary and capricious. Notably, the question raised in the lawsuits is not whether numeric nutrient criteria can be required but rather what the numbers should be.

Attempts to derail EPA's rule legislatively were initiated on both the state and federal levels, without success as of August 2011.

DEP has attempted to regain a meaningful role in the process by formally petitioning EPA to rescind its rule and allow the state to develop numeric nutrient criteria for adoption pursuant to its revised nutrient criteria plan (numeric nutrient criteria would be submitted in 2012). EPA did not rescind its rule but informed DEP that if its proposed numeric standards are as protective as EPA's standards and are developed using an acceptable methodology, EPA would consider adopting/approving the state's standards. After some internal debate, DEP formulated numeric nutrient criteria that are similar numerically to EPA's criteria. However, DEP's rule maintains the existing narrative water quality standard and utilizes the numeric criteria as an interpretation of the narrative standard. Ratification by the State Legislature is pending as of the time of this article. As noted earlier, several environmental groups have threatened to challenge DEP criteria and any EPA approval.

Lessons Learned

Why should other states care about the Florida experience? The simple answer is, "Because you are next." Nutrient pollution is a priority issue for EPA and establishment of numeric nutrient criteria nationwide is EPA's goal. Proponents of numeric criteria can effectively take control of the process through legal action against EPA even where a state nutrient criteria plan approved by EPA already exists and even if the parties to the plan are compliant with the plan. In fact, environmental groups have threatened lawsuits in Kentucky, Wisconsin, and Illinois, pressing EPA to pursue accelerated adoption of numeric nutrient criteria. States need to be actively involved in these legal discussions and, where possible, reach out to the plaintiffs to seek to resolve issues concerning process and science.

What we know from the Florida experience is that it takes time to develop scientifically sound criteria and to engage the regulated community and other stakeholders in both the process and science to establish such criteria. As a consequence of EPA's settlement of the Florida lawsuit, these things did not happen in Florida and now, three years following EPA's January 14 determination letter, the battle has not subsided. One lesson from the Florida experience is that when the state loses control over the adoption and implementation process, conflict ensues.

Exactly how the criteria adopted by EPA will be implemented remains a key issue. A major deficiency in EPA's Florida rule is that it defers implementation to the state. Implementation of the new standard by state and local governments requires significant planning and thus cannot occur in the compressed time frame in which adoption of the new criteria occurred. The state of Florida, its local governments, utilities, water and flood control districts, and private entities are endeavoring to understand and plan for implementation of the new standard while the numerous lawsuits play themselves out. Continued conflict regarding the validity of EPA or DEP's standards has also diverted attention and resources from implementation. Regulated interests, including local governments, have lost what little control these entities may have had regarding implementation.

An overriding lesson to be learned from this experience is that all stakeholders must be proactive in developing the necessary legal and policy tools for development and implementation of numeric nutrient criteria tailored to the individual needs of the affected interests, which should include the following components:

1. **Land Use Planning:** Focusing implementation on regulation of dischargers is typically the ready response to this type of standard. Land use planning provides an opportunity for more systematic and long-term controls to address the issue. Land use planning documents should include comprehensive plans and associated land development regulations through which local governments can affect nutrient loading on a going-forward basis for new development and on a retroactive basis for redevelopment projects.

Public Finance: Creative means for financing new infrastructure or improvements to existing infrastructure designed to improve nutrient levels in receiving waters is critical. Putting these financing mechanisms in place as part of a plan for compliance creates a financial platform from which governmental entities can foot the bill for costs of compliance.

2. **Legislative Actions:** Many states do not directly regulate nonpoint discharges. For those states that do not regulate nonpoint discharges, providing authority for state or local agencies to initiate such programs can address part of the problem. Legislative action could also include codification of best management practices related to stormwater and other discharges and adoption of fertilizer ordinances. Attention should be given to the designated uses for particular water bodies and any additional regulations should be tailored to protect those uses.
3. **Total Maximum Daily Loads (TMDLs):** Adoption of numeric nutrient limitations will likely result in more water bodies being identified as being impaired, necessitating creation of TMDLs under existing CWA requirements. States should have in place a process for developing TMDLs for impaired waters as well as a process for creating Basin Management Action Plans (BMAP) for implementing the TMDL. The equivalent of a BMAP provides another construct for implementing numeric nutrient criteria.
4. **Special Purpose Governments:** Special districts with localized regulatory/planning authority and more importantly, revenue raising authority, can provide a mechanism for compliance on a basin-by-basin, or watershed-by-watershed basis.
5. **Pollutant Trading Programs:** Structuring pollutant trading programs, similar to those utilized in connection with air pollution programs, can provide a mechanism for compliance and also can provide entrepreneurial opportunities for meeting nutrient loading limits. Such programs will likely require some governmental oversight and thus will likely require state legislation.
6. **Permitting:** Regulatory programs will necessarily play a part in implementation, including the federal NPDES, MS4, and Section 404 programs. State and local governments will need to develop permitting strategies with EPA for renewal of existing permits and for permitting new

activities. This could include restructuring state and local water pollution permitting programs where they exist.

For many areas, especially urbanized areas, simply retrofitting every water resource facility or constructing new end-of-pipe treatment facilities to achieve compliance with numeric criteria will not be prudent, affordable, or effective. It is impractical for a municipality to condemn chunks of city blocks to reduce nutrient loads. Achieving compliance

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requires innovative approaches that account for existing development while still enabling future development. How those innovative approaches are developed and implemented will vary depending on the unique local circumstances, and they will require thoughtful planning in advance of any mandates from EPA such as those Florida has experienced. The number of potential innovative solutions is only limited by one's imagination and, in the case of Florida, time. For states that have not yet embarked on this task or for states that have started but not yet completed the task, all efforts should be made to maintain control over the adoption and implementation of the standards, so the best solutions are chosen by the state and not imposed on it. 🌳