



# Florida Department of Environmental Protection

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## MEMORANDUM

Date: April 28, 2010

Subject: Department Comments on the Environmental Protection Agency's (EPA) Proposed Numeric Nutrient Criteria for Florida Lakes and Flowing Waters, January 26, 2010

To: Docket ID No. EPA-HQ-OW-2009-0596

From: Jerry Brooks, Director *Jerry Brooks*  
Division of Environmental Assessment and Restoration

The Florida Department of Environmental Protection (Department) respectfully submits our comments on the January 26, 2010 Environmental Protection Agency (EPA) proposed numeric nutrient water quality criteria for the State of Florida's Lakes and Flowing Waters. Attached to this cover letter are numerous documents containing the Department's technical, legal, and policy evaluations of the proposed EPA action.

The Department evaluated the science behind the criteria and how that science was utilized in the expression of the criteria, including any implementation provisions. With that in mind, we evaluated the proposal to determine whether the criteria were established at levels necessary to protect the designated use of Florida's lakes and flowing waters. It is critically important that the criteria are correct. Criteria values that are more stringent than necessary result in forced investment of limited public (and private) dollars to develop site-specific alternative criteria, an activity that has no environmental benefit. In the absence of site specific criteria, overly stringent criteria forces significant investments for remediation with no associated environmental benefit. Criteria less stringent than necessary can result in failure to prevent environmental harm. Furthermore, the Department reviewed the science underlying the criteria to determine whether it was suitable to support adoption of the water quality standards, including whether appropriate regulatory provisions were included that recognize uncertainty in the analysis. The Department provided recommendations where improvements could be made based on our review.

### 1) Criteria for the Protection of Streams

The overarching issue related to the protection of streams is EPA's failure to account for natural features in the State that affect nutrient concentrations. The influence of the

geologic Hawthorne formation on total phosphorus concentrations and the contributions of high levels of organic nitrogen to streams from wetlands are not accounted for in the EPA proposal. In evaluating unimpacted, largely natural streams in Florida against the proposed criteria thresholds, those that exceeded the criteria were either located proximal to the Hawthorne formation (a natural phosphorus bearing geologic feature) or dominated by the influence of wetlands as evidenced by the high water color and low dissolved oxygen content. It is illogical to establish criteria that are violated by natural features, and EPA should account for this in their final promulgated criteria to avoid implication of these features as pollutant sources.

The Department would also like to caution EPA against viewing occasional nonattainment of the currently adopted dissolved oxygen (DO) standard in Florida waterbodies as an indication of nutrient enrichment or biological harm. Most of our biologically healthy streams and lakes will exhibit low DO events during the course of the year. The Department has collected one year's worth of detailed biological and DO information and is continuing that collection effort with the intent of revising the currently adopted DO criteria to one that is more indicative of what is necessary to protect Florida's aquatic biology. Our attached comments contain some preliminary analysis of that data. Florida's DO criterion is based upon the EPA recommended 304(a) criteria and has not been adjusted to account for all the natural features that define Florida's unique diversity. Alternatively Florida has implemented the criterion, both in a regulatory context and assessment context, to recognize the influence of Florida's wetlands on dissolved oxygen. Our laws and regulations are structured to ensure that our programs do not force actions to correct natural conditions. With that in mind, we encourage EPA to focus more on the designated use attainment of streams as an indication of stream health rather than the DO condition of the stream.

It must also be acknowledged that the derivation of stream criteria was not based on a cause effect relationship. This is important as you move towards implementation of the criteria. EPA should acknowledge that attainment of the criteria would provide protection, but at the same time acknowledge that nonattainment of the criteria may not be an indication of designated use impairment. Given that uncertainty, EPA should include in its proposal an allowance for the evaluation of response variables, like chlorophyll *a* or biological monitoring.

## 2) Criteria for the Protection of Lakes

The Department appreciates the EPA's willingness to build your criteria proposal from the procedures proposed by FDEP, including the use of modified criteria. We think this is critically important when implementing criteria derived from a correlated relationship between nutrient concentrations and chlorophyll *a*. While the correlation was strong, there is still enough variability to demand the need for adjustments to the nitrogen and phosphorus variables in instances where they are not exhibiting an undesirable algal response.

The structure of EPA's proposed lake criteria results in a process that weakens Florida's surface water protection programs. Using EPA's structure, each time FDEP conducts assessments for lakes under paragraph 303(d) of the Clean Water Act, FDEP would become obligated to define the modified lakes criteria. This would happen every year for numerous lakes and would shift resources into assessment and reporting and away from monitoring, TMDL production, restoration activities, permitting, or other environmental programs. EPA should embrace the structure proposed by FDEP that acknowledges the variability of TN and TP from year to year and controls against an unacceptable number of annual excursions from the criteria. This structure is similar to many of our currently approved metals criteria that are based on hardness and does not impose a burdensome process for implementation.

The proposed rule for the protection of downstream lakes is inaccurate and unnecessary. The error associated with the total phosphorus loading results provided by the Vollenweider formula is too large to use as a water quality standard. The Vollenweider formula was derived using northern, deep lakes that do not exist in Florida, and a one size fits all formula does not work for the varying dynamics of the 7,000 lakes in Florida. The water quality models referred to in EPA's Technical Support Document would produce much fewer errors. Additionally, the assumption that zero phosphorus is attenuated in streams (i.e., that 100% of phosphorus in the headwaters reaches the lake) is not correct. This may occur over geologic timeframes considering geologic processes, but it is not the intent of the Clean Water Act to govern natural geologic processes. Fortunately, the in-stream protection values offered by the Department provide inherent protection of downstream lakes making additional downstream protection values for lakes unnecessary. The Department requests that EPA reconsider their proposal to adopt a single formula to represent all lake conditions in Florida, acknowledge that the combination of lake and stream criteria meets the intent of the law, and let the other programs authorized by the Clean Water Act serve to ensure protection of both streams and downstream waters. Adoption of the proposed formula will result in excessive process for the establishment of site specific criteria because the formula does not reflect true lake water quality processes.

### 3) Criteria for the Protection of Estuaries

The Department is pleased that EPA recognizes the benefit of delaying these provisions until the necessary water quality targets for estuaries are known. We will continue to work with local scientists to develop these protective estuary values. However, it must be noted that downstream protection values for total nitrogen for the protection of estuaries are unnecessary because the in-stream protection values proposed by FDEP are inherently protective of the downstream estuaries. Additionally, the use of the SPARROW model in Florida does not produce accurate downstream protection values even if correct estuary loads are used. The SPARROW model is built upon a delineated stream network that is coarse and does not reflect the true hydrology of Florida. This results in significant error when projecting necessary nitrogen values upstream. The

SPARROW model also does not account for the influence of wetlands on total nitrogen values, which underestimates true nitrogen conditions of Florida streams. These types of errors produce faulty criteria that should not be adopted into federal regulations. Again the promulgation of criteria that does not reflect the true water quality dynamics of streams, rivers, lakes, and wetlands as water flows from them towards estuaries will demand unnecessary process that overall weakens the protection of Florida's surface waters.

#### 4) Economic Cost Estimates

The cost estimates provided by EPA for the implementation of the criteria appear to significantly underestimate the costs to wastewater facilities, municipal separate storm sewer systems (MS4s), and agricultural sources. The Department has compiled the cost estimates from various parties and interests into one attached document for your use and consideration. It is possible that the EPA estimates are significantly less than those compiled by the Department because EPA has made assumptions about implementation. If EPA anticipates implementation actions that moderate the actions to achieve compliance with the proposed criteria, such actions should be clearly articulated.

#### 5) Implementation

Of immediate concern is the effective date of the criteria. Assuming the promulgated criteria address the concerns expressed in our comments, only then can Florida take action to implement those criteria and such actions will take time. The proposed effective date of 60 days from promulgation is untenable. In order to properly implement the criteria after proposal, the Department will need to, at a minimum, adopt regulations for permitting and assessment (Impaired Waters Rule). The Department will also need to adopt the criteria and associated procedures for adoption of site specific criteria into rules. State law prohibits the Department from implementing policies or procedures that are not contained in rule. Given the administrative process for adopting rule changes, this may require two years dependent upon any resulting rule appeal. Without appeal the administrative process would take a minimum of one year. Until that occurs, the Department cannot implement the promulgated criteria in other Clean Water Act programs like permitting, water quality assessment, and total maximum daily loads.

Beyond the effective date issue, it will be very important for EPA to clearly define the Clean Water Act expectations for implementation. The true implications of the proposed criteria can only be established if there is clear understanding of what actions will be demanded upon promulgation. Additionally it will be important to clearly define how the criteria will be applied with regards to duration and frequency, including minimum time frames for long term averages and minimum data requirements.

The Department has made significant investments in the derivation of numeric nutrient criteria and the evaluation of how it should be implemented. We hope that our analysis and expertise is considered as you make decisions about the final promulgation of the criteria for the State.

JB/db/h

Attachments: