



Call for Change – An Effective Strategy for Dealing with Nutrients

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The Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) has developed a set of recommendations believed necessary to maintain and continue to improve the water quality in the United States. This "Call for Change: Water Quality Improvement in the 21st Century" is an invitation to the Federal government to reestablish an effective partnership and forge a new course of action to protect and improve the nation's water resources. ASIWPCA looks forward to an on-going constructive dialogue with the US Environmental Protection Agency (EPA), the incoming Administration, and interested stakeholders to meet this challenge.

General Overview and Background:

Nutrients, i.e., phosphorus and nitrogen, have been frequently identified in State water assessments as major contributors to water quality impairments in freshwater lakes, rivers and streams, as well as, to eutrophication and/or hypoxia in estuaries and near shore marine waters. Reduction of nutrient pollution is a typical focus of Total Maximum Daily Loads (TMDLs) and other plans to address water quality impairment. For the past several years, reduction of nutrient pollution in the Mississippi River Basin, which encompasses more than half of the United States, the Chesapeake Bay, the Puget Sound, Long Island Sound, and the Everglades, has been among the EPA's highest priorities. The hypoxic zone in the Gulf of Mexico, the NRDC petition to EPA related to municipal wastewater treatment, and litigation in Florida related to development of nutrient criteria are increasing the pressure to address these issues.

Nutrients present a unique set of challenges for water quality managers because they are naturally occurring and essential to maintaining healthy, sustainable ecosystems. However, when present in susceptible waterbodies in excessive amounts as a result of human activity, nutrients can disrupt natural systems and nutrient pollution results. Sources of nutrient pollution are ubiquitous: effluent from municipal wastewater treatment, on-site sewage treatment, and livestock operations; fertilizers used in row crop agriculture and on lawns; and air deposition of byproducts from fossil fuel combustion. When this additional nutrient load is combined with disruptive soil and development practices that both reduce nutrient removal capability of the watershed and hasten the delivery of nutrients to receiving waters, serious water quality impacts can occur.

A substantive, effective, holistic national strategy on nutrient pollution is needed consistent with human presence and the States' ability to manage, and afford to manage nutrients. Development of a comprehensive set of tools is needed in order to equip States to achieve reliable, across-the-watershed reductions from point and nonpoint sources in the shortest reasonable timeframe.

Reason for Change:

Water quality-based strategies, which currently rely upon development of numerical water quality standards, TMDLs, and related implementation plans, may not be the quickest or most reliable path to nutrient reduction. 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. The link between nutrient levels and adverse aquatic life impacts is complex and even within a bioregion



a range of nutrient loads and ambient concentrations may be acceptable, or even natural. A single number or threshold criterion approach, unless derived on a site-specific basis (very resource intensive), certainly leads to endless debates about the scientific credibility and can lead to erroneous decision making. In many watersheds the highest nutrient contribution comes from nonpoint or stormwater sources. Implementation of TMDL-driven reductions from nonpoint sources are typically very difficult to achieve reliably across the whole watershed because States are generally limited to voluntary, incentive-based programs to achieve results.

Although nonpoint and stormwater sources of nutrients are predominant contributors in many watersheds, this not uniformly true; for example, it has been determined that 80% of the nutrient loading to South Puget Sound is from point sources. The costs of across-the-board nutrient removal at municipal wastewater treatment plants are undoubtedly huge and would be added to other wastewater infrastructure needs. These costs can be especially high for small plants, particularly for reverse osmosis and filtration technologies that may be required to remove nutrients to the current limits of technology. The cost of nutrient removal at very small plants should be balanced against the need for cost-effective secondary treatment options in small communities (i.e., lagoons).

Current Federal programs which fund agricultural and urban nonpoint source pollution reduction projects are not optimized to focus on nutrient reduction. Costs of reducing nutrient pollution from livestock operations and row crop agriculture on a large scale, as well as those that are required to address urban nonpoint and stormwater loads probably exceed appropriations that fund the voluntary programs currently in place. And economics will drive whether land stays in conservation easements or is put back into production. This is especially true for agricultural croplands in the face of rising crop values that are putting more marginal lands into production. These tend to export more nutrients per acre and often require higher amounts of fertilizer. There is no strategy to focus Federal funding in a way that effectively targets nutrient reduction in watersheds with large nutrient loading.

The costs of both point and nonpoint source nutrient management must be balanced against the anticipated gains in environmental quality. A national strategy and appropriate funding is needed. However, for nutrient reduction requirements to be effective as well as cost-effective, States must also be permitted to customize performance-based and BMP-based requirements to reflect institutional, governmental and source characteristics in the State.

If EPA and the States jointly believe that reducing nutrient pollution within the coming decade is a critical water quality goal, an effective and comprehensive national strategy is needed that recognizes the relative contribution of nonpoint and point sources.

Recommendations:

- There should be a:
 - New accountability-based approach for nonpoint sources (regulatory, technology-based or some equally effective strategy)
 - Reasonable and sustainable technology or performance-based approach for point sources.
- Water-quality based State strategies already being implemented should not be pre-empted.
- Both point and nonpoint sources of nutrient pollution must be addressed for water quality improvements to be fully achieved.



- 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 are also critical concerns.
- An effective national nutrient strategy will require alignment of Federal Clean Water Act, Farm Bill, and water resource programs, and likely significant and sustained targeted funding to accomplish the desired water quality goals.

NOTE: *Throughout this document reference to States also refers to Interstate Water Pollution Control Agencies.*

For more information on ASIWPCA's Call for Change, go to www.asiwpca.org