



## Top Ten Water Quality Issues in New York State

# Nutrient Loadings and Eutrophication

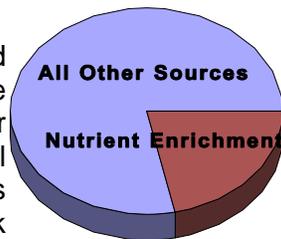
### The Problem...

While waterbodies require nutrients to support healthy ecosystems, excessive nutrients, or eutrophication, can harm water supplies, recreational uses and aquatic life. High levels of nitrogen and phosphorus in waters can produce nuisance algal blooms and increase aquatic weed growth (see also *Aquatic Weed Growth and Invasive Species*). Excessive algal and weed growth reduces water clarity and the recreational value of a waterbody. In addition, nutrients and resulting plant growth can draw oxygen from the water and produce "dead zones" where dissolved oxygen levels are so low that aquatic life cannot survive. This condition is referred to as hypoxia.

One of the reasons nutrients are such a problem is because the sources of phosphorus and nitrogen are so prevalent. Sources and practices that result in excessive nutrients in waterbodies include: municipal wastewater treatment plant discharges, urban runoff from impervious surfaces such as parking lots, lawns, rooftops and roads, agricultural activities that result in animal waste and sediments washing into waterbodies, flow from inadequate onsite septic systems, and atmospheric deposition.

### The Significance...

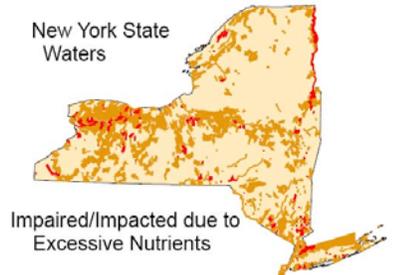
Excessive nutrients and eutrophication are identified as a major source in 23% of all waterbodies assessed as impaired in New York State. In another 29% of impaired water, nutrients and eutrophication are contributing sources (though not the most significant sources).



In addition, for 54% of the waters with less severe minor impacts or threats nutrients and eutrophication are noted as major contributing sources of impact. Additionally, 9% of impaired waters show nutrients as a lesser contributing source in waters with minor impacts/threats.

### Specific Waters...

Impaired waters (shown in red) or impacted/threatened waters (shown in orange) due to nutrients are fairly widespread across New York State. This broad distribution is a result of the multiple sources of nutrients to the waters of the state.



Municipal wastewater discharges and urban/storm runoff are the primary sources in more developed urban areas. Agricultural runoff, inadequate onsite septic systems, and other nonpoint sources contribute nutrients to waters in less populated rural areas. Nitrogen is the nutrient of greatest concern in and around Long Island and New York City marine waters, while phosphorus is typically the cause of enrichment in fresh waters of the state.

### What is Being Done...

Recognizing the multiple and varied sources of nutrients to the waters of the state, NYSDEC has a number of programs in place aimed at reducing nutrient loadings. A comprehensive stormwater program focuses on runoff from urban areas and construction activities. Nutrient management from agricultural sources is the focus of the Concentrated Animal Feeding Operations (CAFO) program. And waterbody-specific nutrient reduction and allocation strategies, known as Total Maximum Daily Load (TMDL) plans, have been developed for Long Island Sound, Lake Champlain, waters of the Croton River watershed and a number of lake watersheds.

NYSDEC is also developing more specific statewide water quality criteria for nutrients in lakes and rivers to protect drinking water supplies, recreational use and aquatic life. This is part of a national effort initiated by USEPA to address nutrient pollution, which causes significant and increasing impacts in waters all across the country.

### More Information

NYSDEC - Nutrients Standards Plan

[http://www.dec.ny.gov/docs/water\\_pdf/nutrientstandards.pdf](http://www.dec.ny.gov/docs/water_pdf/nutrientstandards.pdf)

USEPA - Nitrogen and Phosphorus Pollution

<http://www.epa.gov/waterscience/criteria/nutrient/>