

Florida's Total Maximum Daily Load Program After Seven Years of Implementation¹

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What is a TMDL?

Subsection 305(b) of the 1972 Clean Water Act (CWA) requires that states, territories, and authorized tribes develop lists of pollutant-impaired waters. As described in subsection 303(d) of the CWA, impaired waters are those that do not meet water quality standards that states, territories, and authorized tribes have set based on designated use. The U.S. Environmental Protection Agency (EPA), following the CWA, requires that states, territories, and authorized tribes establish priority rankings for impaired waters and develop Total Maximum Daily Loads (TMDLs) of pollutants for these waters.

A TMDL represents the capacity of a surface water body or water body segment to assimilate a specific pollutant while still meeting water quality standards. Specifically, it is the maximum quantity of a pollutant for example, iron, nitrogen, bacteria, etc.-- that can be discharged to the water body without impairing its designated uses, which may include fishing, swimming, shellfish harvesting, or drinking water supply. TMDLs developed for each impaired water segment in Florida must be adopted through

the state's public rulemaking process, and subsequently implemented according to management and allocation plans developed with input from local stakeholders.

How is the Program Implemented?

The TMDL program is implemented in Florida by the Department of Environmental Protection (FDEP), as mandated by the state's Watershed Restoration Act of 1999 (s. 403.067, F. S.). The Florida Department of Agriculture and Consumer Services (FDACS) and the state's five water management districts work extensively with FDEP to develop and implement TMDLs. FDEP is required to report to the governor and legislature after 5 years of TMDL program implementation, to evaluate the success of the program and make recommendations for improving it. Accordingly, FDEP submitted in February 2005 a report entitled "Florida's Total Maximum Daily Load Program: The First Five Years" (DEP Division of Water Resource Management).

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Contaminants Causing Impairment and Triggering the TMDL Process

By the end of 2004, FDEP had developed and adopted, by rule, 52 TMDLs, with another 61 proposed or in draft form, but as yet not adopted by rule. In 2006, FDEP submitted its Integrated Water Quality Assessment for Florida and with 80% of the state's waters surveyed, FDEP indicates 1066 TMDLs on 223 water bodies will be required due to verified impaired water bodies. Water quality monitoring in support of the TMDL program has revealed that the major types of pollutants causing impairment of Florida's surface waters are:

- Nutrients / dissolved oxygen, primarily nitrogen and phosphorus, which promote the growth of algae and other aquatic plants that cause wide swings in oxygen levels and lead to fish kills and damaged habitat.
- Bacteria, which may threaten public health and close waters to swimming or shellfish harvesting.
- Metals, such as iron, silver, copper, cadmium, and zinc that adversely affect the health and reproduction of aquatic organisms.
- Mercury, based largely on the existence of Department of Health fish consumption advisories. (The relative contributions of local, regional, and global sources, including atmospheric sources, have been widely debated and still remains uncertain.)

divided the state into 29 basins, or major watersheds. These basins are arranged into five groups and are evaluated for water body impairment and development and implementation of TMDLs on a 5-year rotation

(
<http://www.dep.state.fl.us/Water/basin411/default.htm>).

The Watershed Restoration Act authorizes FDEP to make recommendations for statutory changes that would improve implementation of TMDLs. One of the most noteworthy recommendations made in the February 2005 FDEP report was formal recognition of basin planning, and making adopted Basin Management Action Plans (BMAPs) enforceable rather than voluntary. BMAPs are developed by FDEP in conjunction with local stakeholders, to allocate, among the local sources of pollution, reductions necessary to meet the TMDL. A BMAP sets forth the various projects, programs, and other activities to be undertaken by basin stakeholders to reduce pollutant loading and restore beneficial uses of an impaired water body. Plans must be developed with the active participation of basin stakeholders, including affected point and nonpoint source dischargers, representatives from local governments, FDACS, agricultural commodity groups, the local water management district, area businesses and industries, homeowner groups, and environmental groups.

Table 1. Pollutants most often identified as responsible for causing water body impairment in FDEP basin groups 1 through 4.

Pollutants	Number of Water Body Segments Impaired
Nutrients / dissolved oxygen	374 segments
Bacteria	236 segments
Metals	118 segments
Mercury (fish tissue)	208 segments

As part of the February 2006 FDEP report, Table 1 lists the pollutants most often identified as responsible for causing water body impairment during the development of the Verified Lists of Impaired Waters for basins in Groups 1-4. FDEP has

Possible Reclassification of State Water Body “Designated Uses”

Although not specifically listed in the February 2005 report as a recommendation, classification of

water body designated use has received intense scrutiny from FDEP and a wide range of stakeholders and third-party observers. A key concept in determining water body impairment and establishing a TMDL is determination of water body's "designated use." Currently, surface waters in Florida are grouped into four classes according to designated use:

- Class I – potable water supply
- Class II – shellfish propagation or harvesting
- Class III – recreation, propagation and maintenance of a healthy, well-balanced population of fish and wildlife, often termed "fishable and swimmable"
- Class IV – agricultural water supply

A fifth class exists (Class V – navigation, utility, and industrial use), but there are no water bodies in Florida that fall into it. The majority of Florida's surface waters are classified within Class III, including Everglades, springs, pristine streams, wet weather ponds, permanently flooded drainage canals, and near shore marine waters not within Class II.

A major shortcoming of this classification system, according to FDEP and other parties, is the equal application of water quality criteria to both "natural" systems (lakes, rivers, springs, etc.) and manmade water bodies, such as canal systems and urban and agricultural drainage ditches. These manmade systems, although having some potential to support aquatic life, often do not have the diversity of habitat to provide ecological conditions similar to natural water bodies. As such, FDEP has suggested that the long-standing (30+ years) surface water classification system in Florida is in need of revision, so they recently initiated a review of surface water classes and associated water quality criteria by an appointed committee of stakeholders. Discussions within this committee are still on-going and a specific deadline for recommendations has not yet been set.

FDEP contends that a surface water classification system based on more narrowly-defined designated uses (i.e., subdividing the Class III category) would reduce needless expenditure of

limited funds on TMDL development for water bodies that are not intended and may not be able to support aquatic habitat, recreation, or water supply, such as urban and agricultural stormwater conveyances. Critics of the proposal to change the broad classification and designated uses suggest that such an action would effectively lower the water quality criteria for a large number of potentially "fishable and swimmable" water bodies, and would provide an effective mechanism for their removal from the impaired waters list.

As the TMDL program in Florida progresses into the next 5-year cycle of development, implementation, and revision for the state's impaired water bodies, the process will likely continue to be modified and refined through legislation, and potentially, litigation. Interested parties should visit Florida DEP's TMDL web site (<http://www.dep.state.fl.us/water/tmdl/index.htm>) for additional information and program updates.

Information used to prepare this document was compiled from electronically-published material from the U.S. Environmental Protection Agency and the Florida Department of Environmental Regulation. More information can be found at the following EPA and FDEP web sites:

<http://www.epa.gov/OWOW/TMDL/>

<http://www.dep.state.fl.us/water/tmdl/index.htm>