



Indian River Lagoon Basin Management Action Plan Fact Sheet

Improving Water Quality and Seagrass Bed Coverage in the Lagoon

Overview of Total Maximum Daily Loads

A Total Maximum Daily Load (TMDL) is the maximum amount of a pollutant that a waterbody can absorb and still meet state water quality standards. TMDLs must be developed for waterbodies with enough data to show they are not meeting state water quality standards. Water quality standards vary depending on a waterbody's designated use, such as fishing and swimming, recreation, drinking water supplies, and shellfish harvesting. A TMDL consists of (1) a restoration target based on state water quality standards and (2) a required reduction of a pollutant to meet the target.

The Indian River Lagoon (IRL) Basin is impaired for the nutrients total nitrogen (TN) and total phosphorus (TP). The Florida Department of Environmental Protection (FDEP) adopted the nutrient TMDL for the main stem of the lagoon in March 2009. Separate TMDLs for the impaired tributaries (creeks, streams, and canals) that enter the lagoon are under way, and are scheduled to be drafted by the end of 2009.

The water quality target for the IRL main stem TMDL focuses on the water quality conditions necessary for seagrass regrowth in the areas where seagrasses grew historically in the basin. The amount of seagrass coverage in the IRL Basin has greatly decreased over the years due to changes in water quality. As polluted runoff reaches the lagoon, it prevents seagrasses from growing in deeper water. To determine the amount of nutrient reductions needed to improve lagoon water quality, the TMDL used a restoration target of 10% less than the historical seagrass coverage. This restoration target should result in nutrient reductions that allow seagrass coverage almost to the extent previously seen in the area.

The required TN and TP reductions calculated for each waterbody identification (WBID) number in the basin resulted in a percent reduction from current loadings. A WBID is a portion of a waterbody that has different characteristics than the surrounding waterbodies. FDEP assesses each WBID to determine the health of the waters and, if they are not meeting the necessary water quality standards, the potential causes of the impairment.

Relationship Between Nutrients and Seagrass

Sunlight is necessary for seagrass growth. However, high concentrations of nutrients currently enter the IRL, causing algae growth to increase because the nutrients act as fertilizer for the algae. The algae form mats, or blooms, on the surface of the water that prevent sunlight from reaching the seagrass on the lagoon bottom. In addition, algae can grow on the blades of the seagrass, smothering it and affecting its normal functions. Polluted runoff contributes to darker and less transparent water, further preventing sunlight from reaching the deeper seagrass beds. The goal of this TMDL is to reduce the amount of nutrients entering the lagoon, which in turn will reduce algal growth and allow more sunlight to reach the seagrass.

Approach to Implementing the TMDLs

To implement the IRL TMDLs for the main stem and tributaries, FDEP will develop a Basin Management Action Plan (BMAP) that outlines the characteristics of the basin, impairments, the sources of the pollutants, and a list of projects that will reduce the pollutants to meet the TMDLs. The major components of a BMAP include the following:

- TMDLs being implemented;
- Reductions assigned to responsible sources;
- Projects to meet the TMDLs and the funding sources;
- Monitoring plan to determine water quality improvements and progress towards the TMDLs;
- Responsible parties' commitment to the timeline for their efforts to implement the BMAP; and
- Adoption by FDEP's Secretary.

FDEP will work with the stakeholders in the basin to develop the BMAP. The BMAP must include a plan to meet the TMDLs. The IRL BMAP will be phased, meaning that a portion of the total reductions will need to be met in the first five years of implementation; however, the BMAP will include a discussion of the remaining reductions and a timeline to achieve the TMDLs.

Because the IRL Basin is large, with many stakeholders, the basin will be divided into three subbasins, as follows (see **Figures 1 through 3**):

- IRL North;
- IRL Central; and
- Banana River Lagoon.

A separate BMAP will be developed for each of these subbasins and their tributaries, and the total actions in all three BMAPs must achieve the TMDLs. To develop these BMAPs, FDEP will hold technical meetings in each of the subbasins the second Friday morning of the month; the meetings will rotate through the subbasins, so that a meeting is held in each subbasin every three months. The purpose of the technical meetings is fact finding and the compilation of data to provide supporting information for the BMAP. Additionally, a Basin Working Group (BWG) will be formed that will meet as needed. The BWG provides recommendations to FDEP on how local stakeholders can achieve the TMDL, and the group votes on issues to provide guidance to FDEP during the BMAP process. The BWG members are management-level representatives, and the group has a set membership. Both the technical and BWG meetings are open to the public. All meetings are publicly noticed and meeting summaries are prepared.

Types of Responsible Entities

Several types of stakeholders in the basin can receive detailed allocations, including the following:

- Wastewater treatment facilities (WWTFs);

- Municipal separate storm sewer systems (MS4s);
- Urban areas outside an MS4;
- Water control districts;
- Agriculture;
- Transportation;
- Other nonpoint sources; and
- Federal facilities.

The actions described in the BMAP are enforceable for point source entities (WWTFs and MS4s) through their National Pollutant Discharge Elimination System (NPDES) permits. The actions for nonpoint sources are enforceable through the BMAP adopted by FDEP's Secretary. Agricultural producers are required to implement appropriate best management practices (BMPs) for their crops or livestock activities, or implement FDEP-designed water quality monitoring, to show they are not affecting the water quality of the lagoon.

Basin Website

FDEP will post meeting agendas, summaries, handouts, and presentations on its website. The meeting materials for the IRL Basin can be found at:

<ftp://ftp.dep.state.fl.us/pub/water/BMAP/IndianRiverLagoon/>.

Contact

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FIGURE 1: IRL NORTH BMAP AREA



FIGURE 2: IRL CENTRAL BMAP AREA

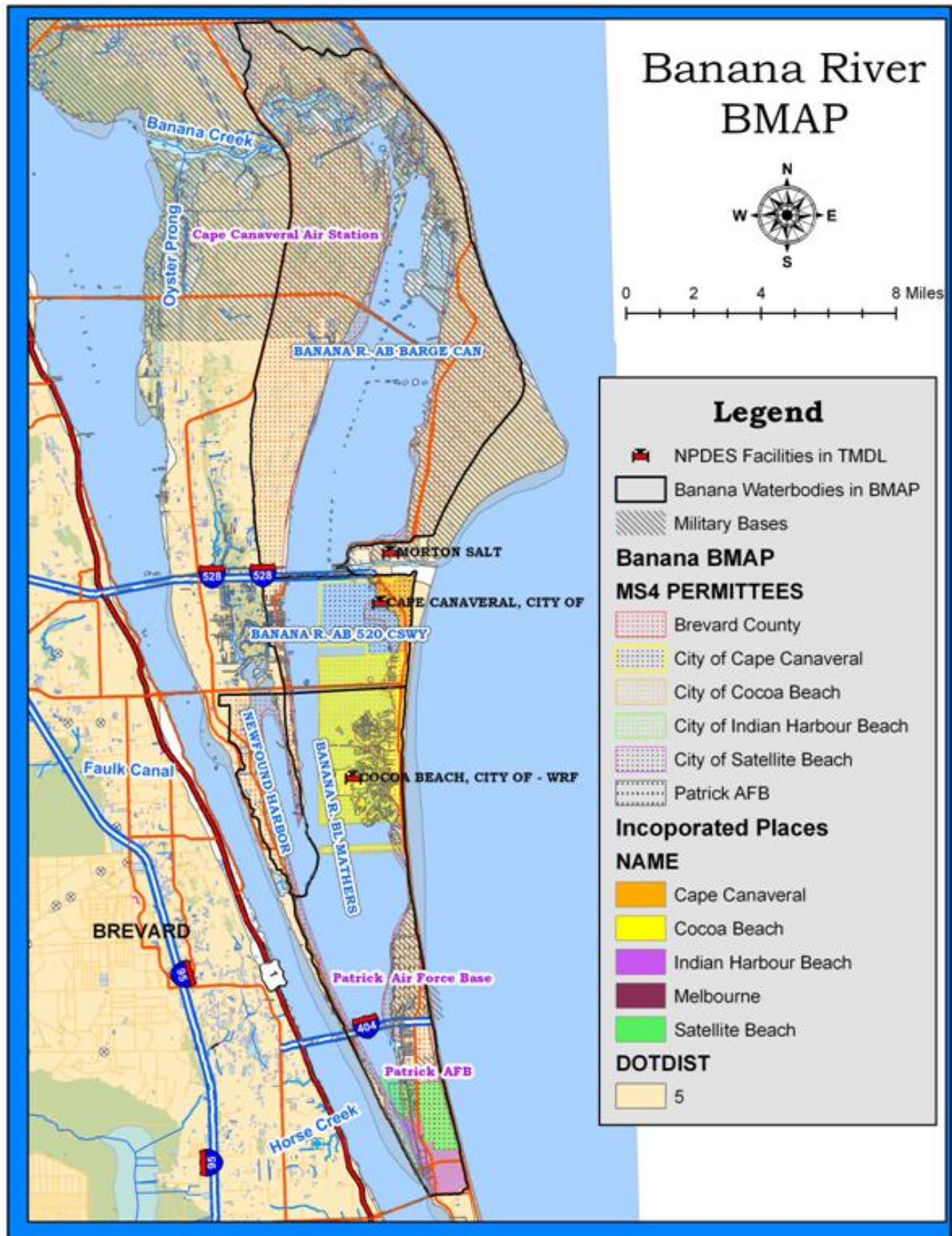


FIGURE 3: BANANA RIVER LAGOON BMAP AREA