

**Indian River Lagoon (IRL)  
Basin Management Action Plans (BMAPs) 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 that have enough data to show they are not meeting state water quality standards. Water quality standards vary depending on the type of waterbody and include fishable and swimmable, recreational purposes, water supply needs, and shellfish harvesting. A TMDL consists of: (1) a restoration target based upon state water quality standards; and (2) a required reduction of the pollutants 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. Underway are separate TMDLs for the impaired tributaries (creeks, streams, and canals) that enter the lagoon. The tributaries TMDLs 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 re-growth 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 conditions. As polluted runoff reaches the lagoon, it prevents the 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 uses the WBID approach to focus on each section of a waterbody 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**

A necessity for seagrass growth is sunlight. However, high concentrations of nutrients currently enter the lagoon causing algae growth to increase because the nutrients act as fertilizer on the algae. The algae form mats or blooms on the surface of the water, which 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, which further prevents 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.

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**BMAP Approach**

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

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

FDEP will work with the stakeholders in the basin to develop the BMAP. The BMAP must include a plan to meet the TMDL. The IRL BMAP will be phased, meaning a portion of the total reductions will need to be met in the first 5 years of implementation; however, the BMAP will include a discussion of the remaining reductions and a timeline to achieve the TMDL.

Because the IRL Basin is large with many stakeholders, the basin will be divided into 3 subbasins (see Figures 1-3):

- 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 3 BMAPs must achieve the TMDLs. In order to develop these BMAPs, FDEP will hold technical meetings in each of the subbasins. Technical meetings will be held the second Friday morning of the month and will rotate subbasins so that each subbasin meets every 3 months. The purpose of the technical meetings is fact-finding and compilation of data to provide supporting information for the BMAP. Additionally, a Basin Working Group (BWG) will be formed and this group will meet as needed. The purpose of the BWG is to provide recommendations to FDEP on how local stakeholders can achieve the TMDL. The BWG members are management-level representatives and the group has a set membership. The BWG votes on issues to provide guidance to FDEP during the BMAP process. 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**

There are several types of stakeholders in the basin that can receive detailed allocations. These entities include:

- Wastewater treatment facilities (WWTFs);
- Municipal separate storm sewer systems (MS4s);
- Urban areas outside of an MS4;

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- Water control districts;
- Agriculture;
- Transportation;
- Other nonpoint sources; and
- Federal facilities.

The BMAP actions 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 Secretarial adopted BMAP. For the agricultural producers, they 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 having an impact on the water quality of the lagoon.

**Basin Website**

FDEP will post meeting agendas, summaries, handouts, and presentations to their 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**

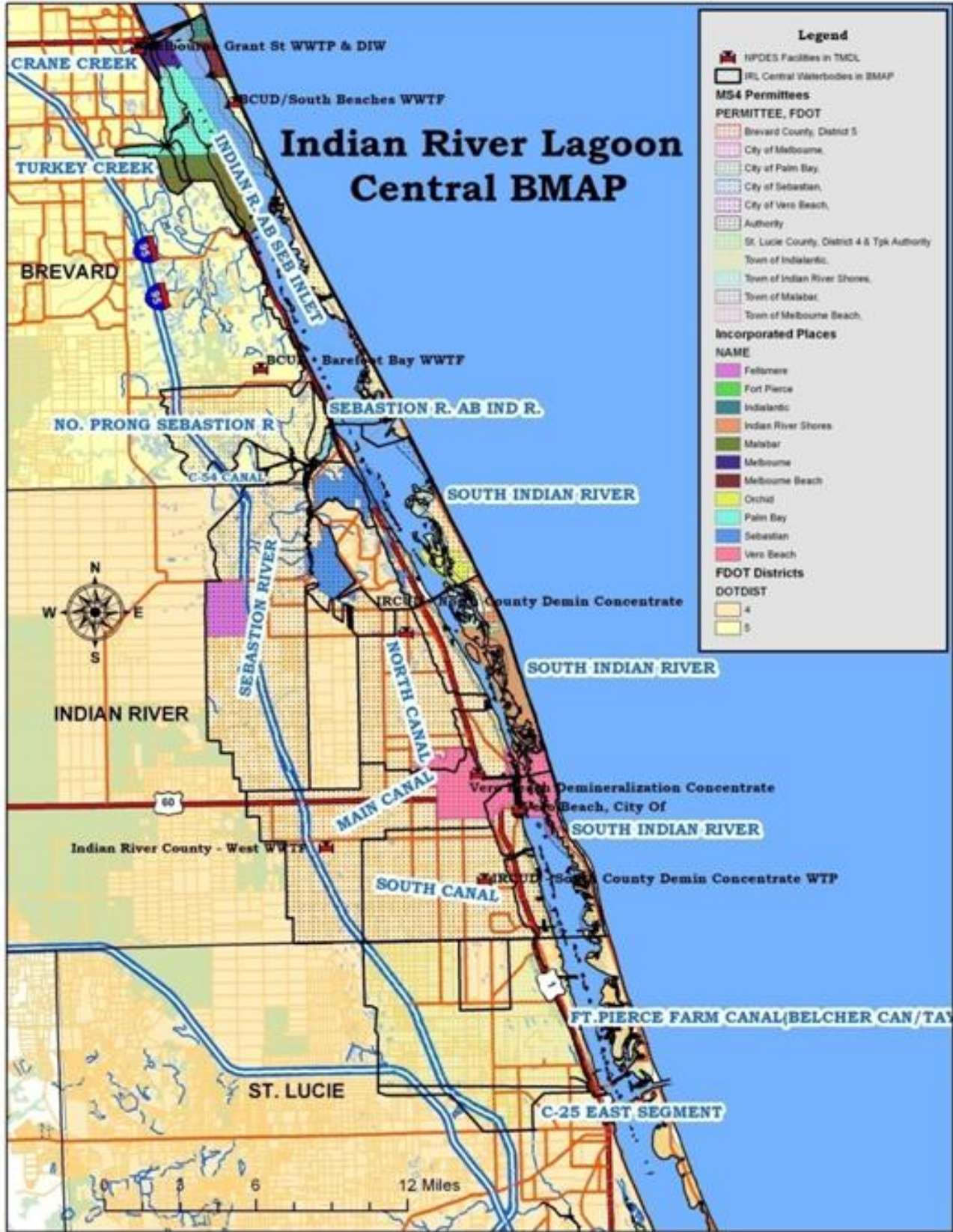


FIGURE 2: IRL CENTRAL BMAP AREA

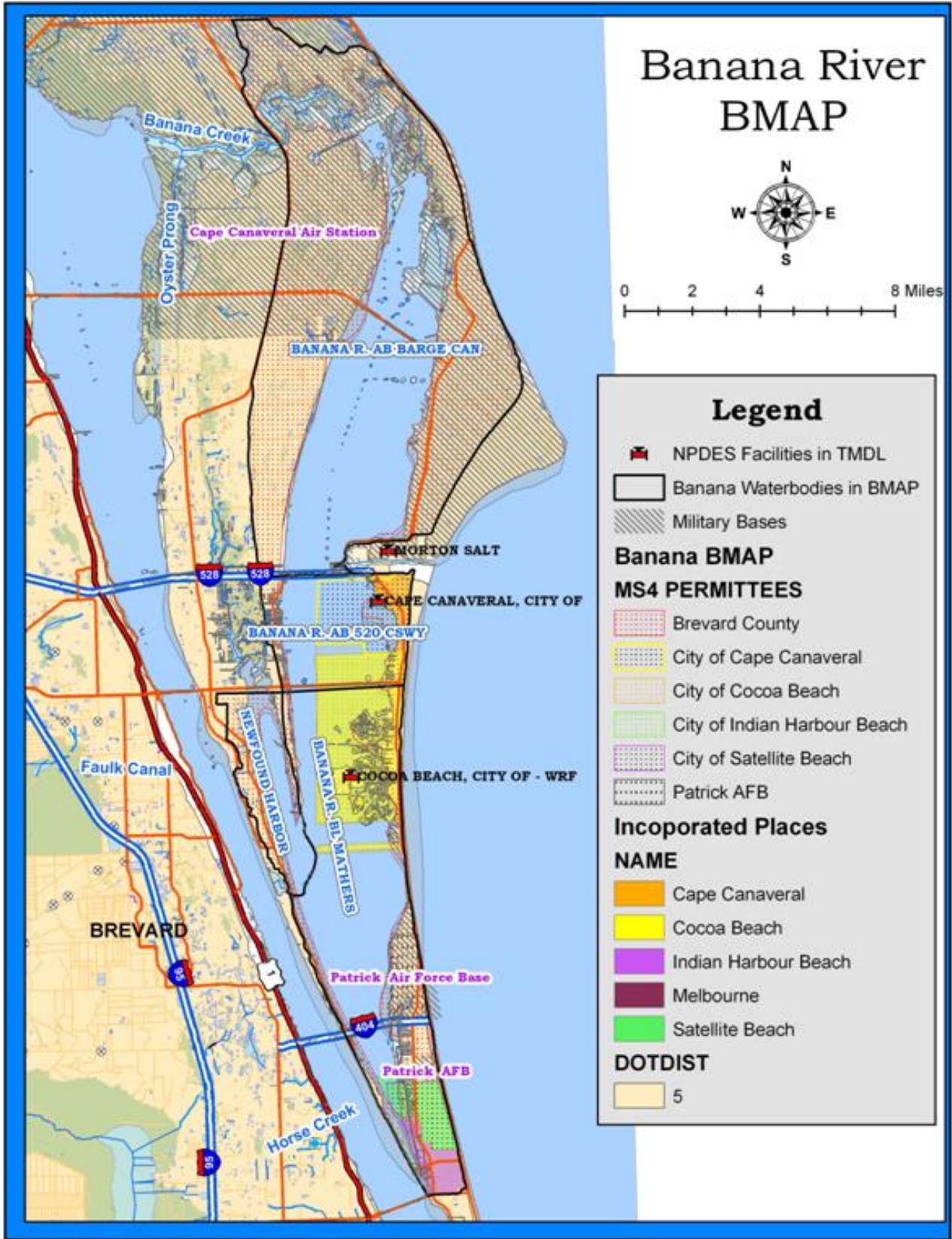


FIGURE 3: BANANA RIVER LAGOON BMAP AREA