



Southeast District
Assessment and Monitoring Program
Ecosummary

M-Canal

Palm Beach County

August, 1999



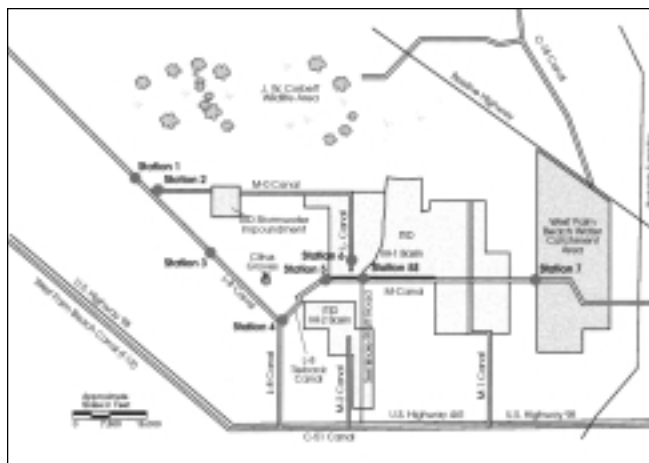
Summary: *The M-Canal is a man-made water conveyance designed to supplement drinking water supply to West Palm Beach as well as irrigation water to agriculture. Current water quality status: GOOD.*

The M-Canal was created in the 1950's by the city of West Palm Beach to augment its drinking water supply. The M-Canal receives water from Lake Okeechobee via a short interconnecting canal (the L-8 Tieback Canal) connecting the M-Canal to the L-8 Canal. The L-8 Canal flows southeastward from Lake Okeechobee to the West Palm Beach Canal. Water is pumped upward from the Tieback Canal



The M-Canal (far background) is connected to the L-8 Canal (running right to left) via the L-8 Tie Back Canal (center).

into the M-Canal to create an artificially elevated condition. Being elevated above surrounding surface and groundwaters helps protect the quality of water by limiting inflow from external sources. The M-Canal flows eastward from the Tieback Canal through citrus



groves which may withdraw water for irrigation. The canal then passes through several miles of residential areas to the Loxahatchee Slough, also known as the West Palm Beach Water Catchment Area. Water can either flow into or out of the M-Canal from the Catchment Area depending on relative water levels. Continuing east, the M-Canal then runs through a moderately populated area until it reaches Lake Mangonia. The City of West Palm Beach draws its drinking water directly from Lake Mangonia.

The M-Canal's major function is to provide drinking water to communities along the coast. Accordingly, it is classified as a Class I "Potable Water Supply" waterbody. Class I waterbodies possess the most stringent water quality standards since human health and welfare are of concern. Since the Class I M-Canal receives flow from the Class III L-8 Canal, maintaining water quality in the M-Canal depends, to no small extent, on maintaining water quality in the L-8 Canal. Currently, water quality in the L-8 Canal is rated "Good" (see L-8 Canal Ecosummary for further information). However, to meet the requirements of

the Everglades Forever Act, the SFWMD will install structures to divide the L-8 into north and south sections. The purpose for the L-8 Canal diversion is to increase water supply for Everglades National Park and other natural areas. Upon completion in 2004, drainage to the south section of the L-8 will be primarily from residential and agricultural areas, and it is from this south section that water will be withdrawn into the M-Canal. In addition, the South Florida Water Management District along with the city of West Palm Beach have entered into a two year agreement to widen and deepen the M-Canal, nearly tripling it's capacity to carry water.

The M-Canal has been monitored since 1975 by a variety of governmental agencies, including FDEP (1975-89) and Palm Beach Environmental Resource Management (1986-91). Because of concerns about M-Canal water quality resulting from partitioning the L-8, the City of West Palm Beach began monitoring basin water quality in 1991. Recent data (September 1996 thru March 1999) has been collected by the South Florida Water Management District at two sites on the M-Canal (stations 5S and 7). Average concentrations for this period are 5.5 mg/l dissolved oxygen, 34 per 100 ml fecal coliforms, and 0.028 mg/l total phosphorus. These values indicate good water quality.

Although it violates state statutes and water quality rules to discharge water that doesn't meet state standards into a Class 1 water body such as the M-canal, it is not illegal to discharge water that doesn't meet Class

1 standards into canals that connect directly to these water bodies. This practice, however, may inevitably contaminate the water body that is supposedly protected. Continued monitoring of the canal will be performed to insure that the quality of water in the M-Canal is not degraded. Regional planners should remain cognizant of potential adverse changes in water quality that may require incorporation of new or more advanced stormwater treatment facilities into existing and/or future developments.



*Agricultural (citrus) water supply intake
along the M-Canal.*

For more information: Contact the Southeast District Surface Water Quality section in Port St. Lucie at 561/871-7662, or by email: GREG.GRAVES@.DEP.STATE.FL.US