



Southeast District  
Assessment and Monitoring Program

## Ecosummary

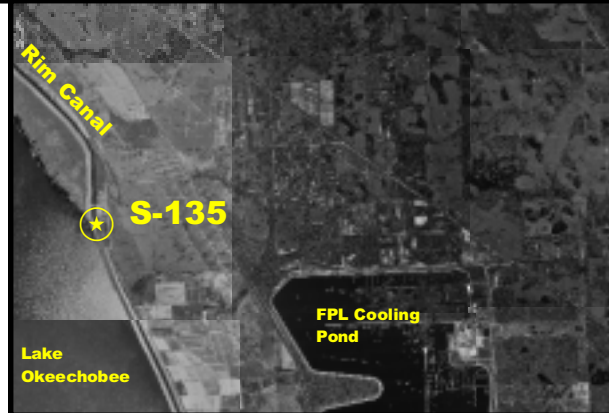
### SFWMD Pump Station S-135

Okeechobee County

September 1999



**Summary:** Water being pumped into Lake Okeechobee through S-135 pump station often contains elevated concentration of phosphorus. Current water quality status: *IMPAIRED*.



The S-135 pump station is located on the north-east side of Lake Okeechobee, fifteen miles southeast of the town of Okeechobee, at Chancey Bay. Chancey Bay is a wide spot in the Rim Canal which runs along the edge of the lake. The pump station itself is about fifteen feet wide and fifty feet in length. It sits on the edge of the lake and is connected to the Rim Canal by a canal. The pump, which has a discharge rate of 500 cubic feet per second, is primarily used for flood control by manipulating water level in the Rim Canal. S-135 pumps water into the lake when the water level in

the Rim Canal rises to 14 feet NGVD. Pumping continues until water level drops to 13.5 feet. The S-135 has a navigational lock structure that gives access to Lake Okeechobee for recreational boaters. When Lake Okeechobee's water level is below 13.5 feet the lock stays open at all times. Another feature of the S-135 structure is a spillway with two gated corrugated metal pipe culverts that are used when the water level in the lake is below 13 feet.

Land uses in the immediate vicinity of the S-135 pump station are mixed, with most of it being recreational fishing camps, citrus groves, and sugarcane fields. There are also small residential areas and some woodlands. A large variety of wildlife lives around the S-135 pump station, including alligators, birds, water fowl, fish and small mammals.

The water being discharged to Lake Okeechobee through S-135 comes mostly from water quality impaired freshwater streams which discharge to the Rim Canal, e.g., Myrtle Slough, Lettuce and Henry Creeks. There are no apparent trends in either dissolved oxygen, nitrogen or phosphorus

#### Recent FDEP sample results for May 18, 1999

Dissolved Oxygen - 6.1 mg/l

pH - 7.7

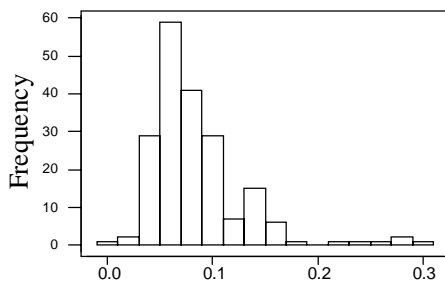
Conductivity - 509 umhos/cm

Total Phosphorus - 0.092 mg/l

Total Nitrogen - 1.13 mg/l

Inorganic Nitrogen - 0.002 mg/l

concentrations at S-135. Based upon data collected by the SFWMD between 1985 and 1998, the dissolved oxygen concentration was 6.7 mg/l; however, 27% of the 190 dissolved oxygen measurements failed to meet the State of Florida's standard of 5mg/l. Average inorganic nitrogen was a fairly low 0.11 mg/l, with about 12% of the measurements above 0.25 mg/l. Average total phosphorus concentration, which is of primary concern regarding the health of the lake, was 0.090 mg/l; however, 26% of the 196 measurements were above 0.100 mg/l with 94% being above 0.040 mg/l. The latter concentration has been proposed as a maximum concentration limit for discharges to the lake.



*This "histogram" depicts the frequency of various levels of total phosphorus concentration present in the 1985 through 1998 SFWMD data.*

The existing monitoring data indicates that the water at the structure varies considerably, with water quality being exceptionally poor about one-quarter of the time. Presumably these poor water quality events can be attributed to discharge from impaired streams discharging to the Rim Canal. Water quality problems at S-135 can only be solved by addressing its tributaries.



*S-135 (background) on the shore of Lake Okeechobee.*

**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