



South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045
TDD (561) 697-2574

PRO ERG

January 20, 1999

Dr. Garth Redfield
Lead Environmental Scientist
Water Resources Evaluation Department
South Florida Water Management District
P.O. Box 24680
West Palm Beach, FL 33416-4680

Dear Dr. Redfield:

SUBJECT: Third Quarter 1998 Report to Technical Oversight Committee

Enclosed please find the third quarter 1998 graphs displaying:

- 1) the geometric mean of the total phosphorus (TP) concentration levels measured from September 1995 through September 1998, at the marsh stations within the Arthur R. Marshall Loxahatchee National Wildlife Refuge compared to the interim and long-term TP concentration levels;
- 2) the Shark River Slough 12-month moving flow-weighted mean TP concentration data for water years 1988 through 1998, compared to the interim and long-term discharge limits, and for the last 24 months, the 12-month moving average with the composited TP sample concentration for each sampling event;
- 3) the Taylor Slough and Coastal basins 12-month moving flow-weighted mean TP concentration data for water years 1988 through 1998, compared to the long-term 11 ppb discharge limit, and for the last 24 months, the 12-month moving average with the composited TP sample concentration for each sampling event.

The geometric means calculated from the TP concentrations measured in water samples collected in the Arthur R. Marshall Loxahatchee National Wildlife Refuge in July, August and September 1998, were 9.3, 9.1 and 7.0 ppb, respectively (Figure 1). All three geometric mean concentrations met both the interim and long-term levels. Samples were collected from six stations in July, seven stations in August and eight stations in September due to low water levels. Average water stage was 15.9 feet in July, 16.08 feet in August and 16.25 feet in September.

The 12-month moving average for the flow-weighted mean concentration (fwmc) of TP entering Shark River Slough was 9.0 ppb in July, 9.2 ppb in August and 9.9 ppb in September (Figure 2). These values were below the interim discharge limits of 9.9, 10.3 and 10.7 ppb for July through September, respectively, but were above the long-term discharge limits of 8.3, 8.8 and 9.2 ppb, respectively, for this same period.

Governing Board:

Frank Williamson, Jr., Chairman
Eugene K. Pettis, Vice Chairman
Mitchell W. Berger

Vera M. Carter
William E. Graham
William Hammond

Richard A. Machek
Michael D. Minton
Miriam Singer

Samuel E. Poole III, Executive Director
Michael Slayton, Deputy Executive Director

Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680

Dr. Garth Redfield
January 20, 1999
Page 2

The 12-month moving average for the fwmc of TP entering Taylor Slough and the Coastal Basins was 7.4 ppb in July, 7.9 ppb in August and 10.5 ppb in September (Figure 3). These flow-weighted mean concentrations met the 11 ppb long-term limit.

The frequency of composited samples for each sampling event exceeding 10 ppb within a given 12-month period was included in the Settlement Agreement as an additional aid in tracking compliance. For Shark River Slough a frequency or percentage limit for samples greater than 10 ppb is based on observed flow. Taylor Slough and the Coastal Basins have a fixed limit of 53.1%. The following table presents the 12-month moving averages for the actual frequency exceedance and the calculated frequency limits for Shark River Slough and Taylor Slough for the previous year.

<u>Year Ending</u>	<u>Shark River Frequency Exceedance</u>		<u>Taylor Slough Frequency Exceedance</u>	
	<u>Actual</u>	<u>Limit</u>	<u>Actual</u>	<u>Limit</u>
Oct 1997	33.3	46.3	9.1	53.1
Nov 1997	33.3	47.2	9.1	53.1
Dec 1997	25.0	47.4	9.1	53.1
Jan 1998	30.0	45.9	13.6	53.1
Feb 1998	25.0	44.7	13.6	53.1
Mar 1998	22.7	43.4	16.7	53.1
Apr 1998	29.2	41.4	16.0	53.1
May 1998	36.0	40.3	15.4	53.1
Jun 1998	42.9*	41.2	11.5	53.1
Jul 1998	48.0*	43.4	14.8	53.1
Aug 1998	53.9*	45.8	21.4	53.1
Sep 1998	60.0*	48.1	32.1	53.1

*exceeded frequency limit

If you have questions regarding the reported results please call me at (561) 682-6392.

Sincerely,



Timothy J. Bechtel, Ph.D.
Senior Supervising Environmental Scientist
Resource Assessment Division
Water Resources Evaluation Department

Enclosure
TB/dwp

Monthly Total Phosphorus Concentration Levels for Loxahatchee National Wildlife Refuge

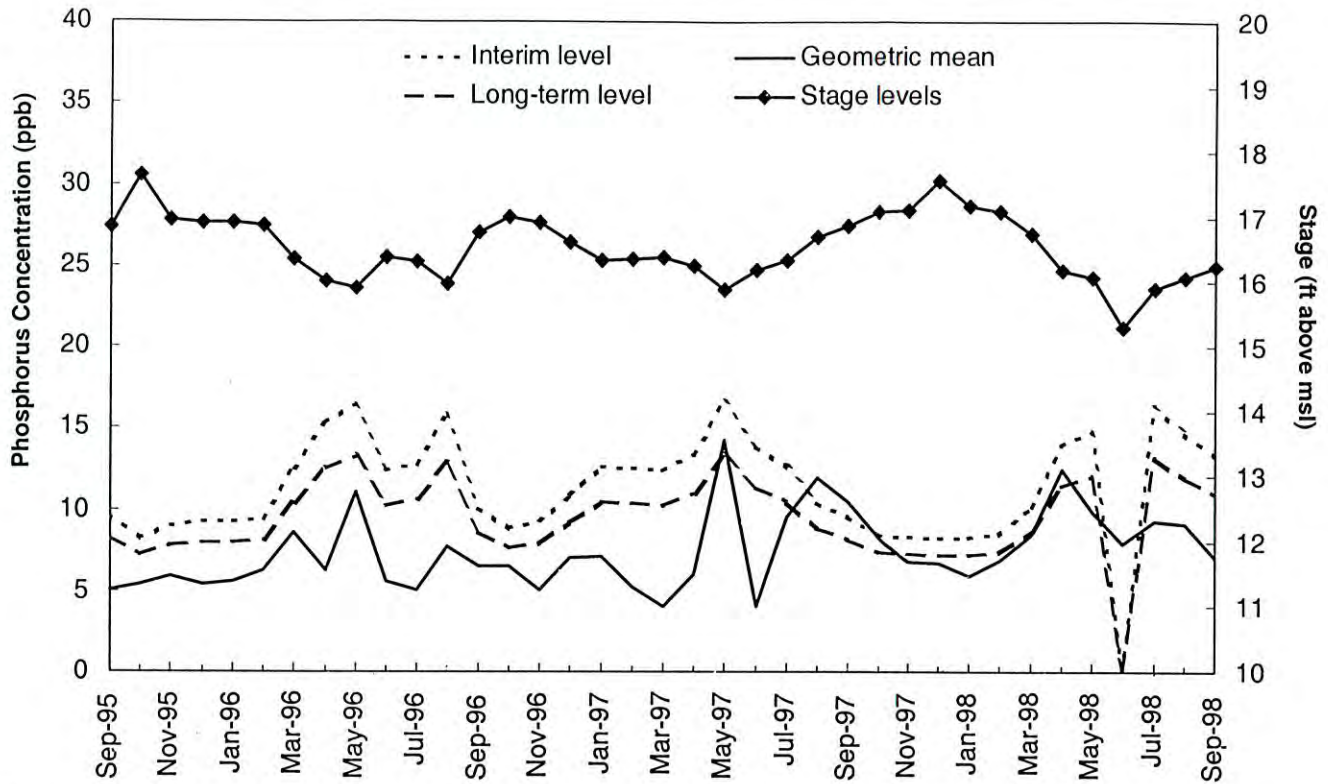


Figure 1. Observed monthly total phosphorus concentration levels for the Loxahatchee National Wildlife Refuge compared to the interim and long-term targets. The geometric means and targets are adjusted for fluctuations of water elevation.

Discharge Limits for Taylor Slough (S332 and S175) and the Coastal Basins (S18C)

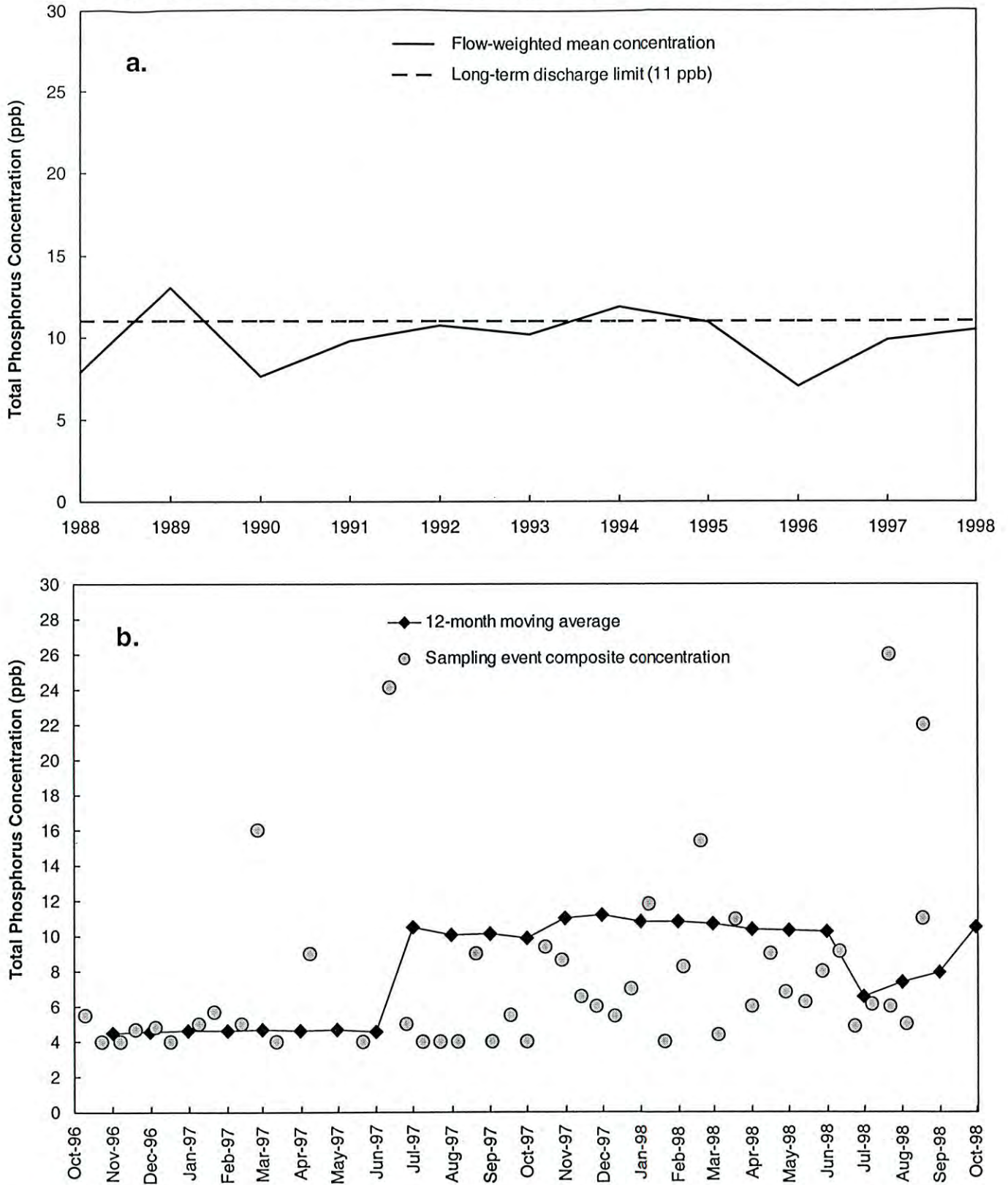


Figure 3. 12-month moving flow-weighted mean total phosphorus concentrations in the inflows to Everglades National Park (ENP) through Taylor Slough and the Coastal Basins compared to the long-term target. **a.** Concentrations at the end of each water year. **b.** 12-month moving average concentration at the end of each month and the composite concentration for each sampling event.