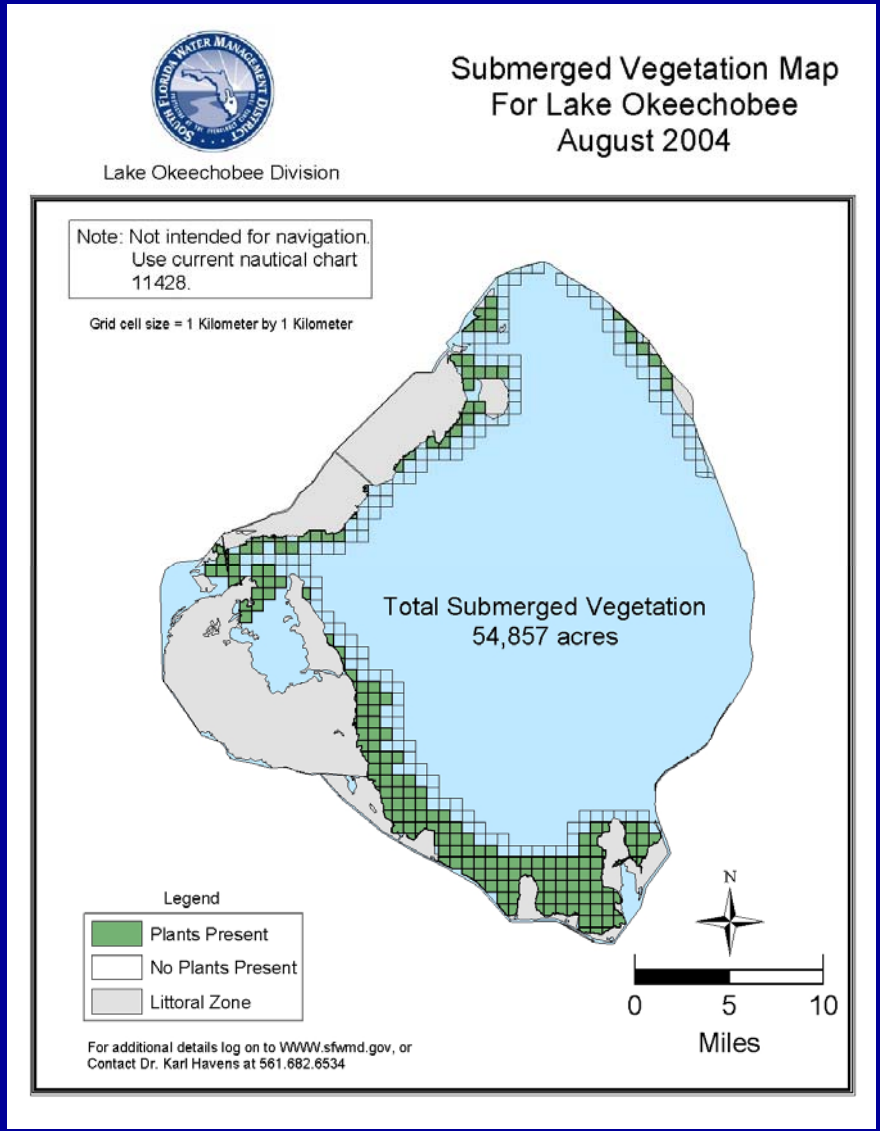
Lake Okeechobee Conditions

2004-2005

August 2004

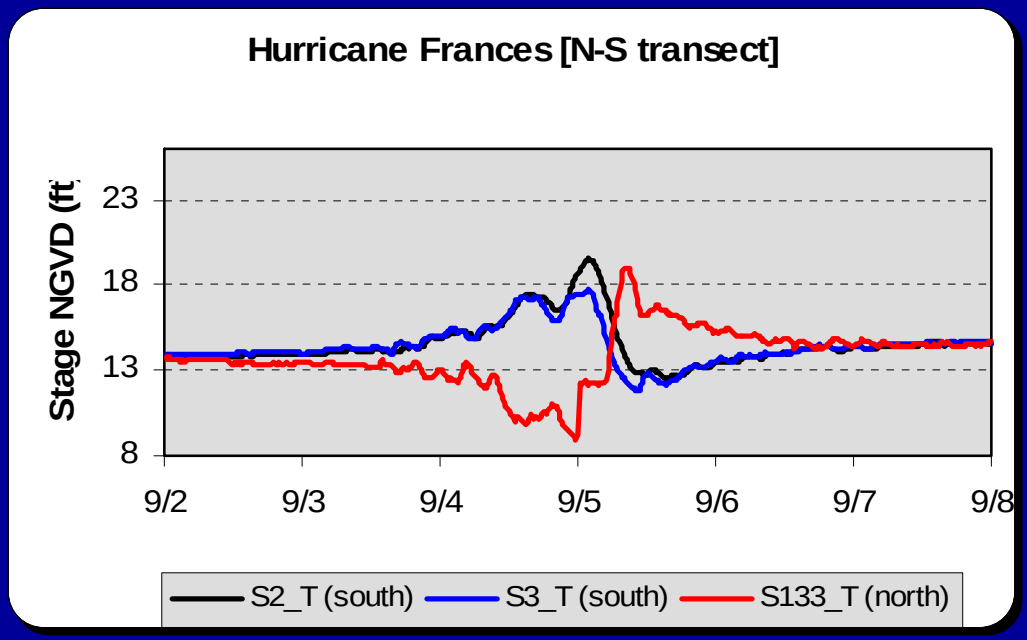
- 54,857 acres of submerged aquatic vegetation (SAV).
- Most extensive coverage of SAV since annual mapping began in 1999.

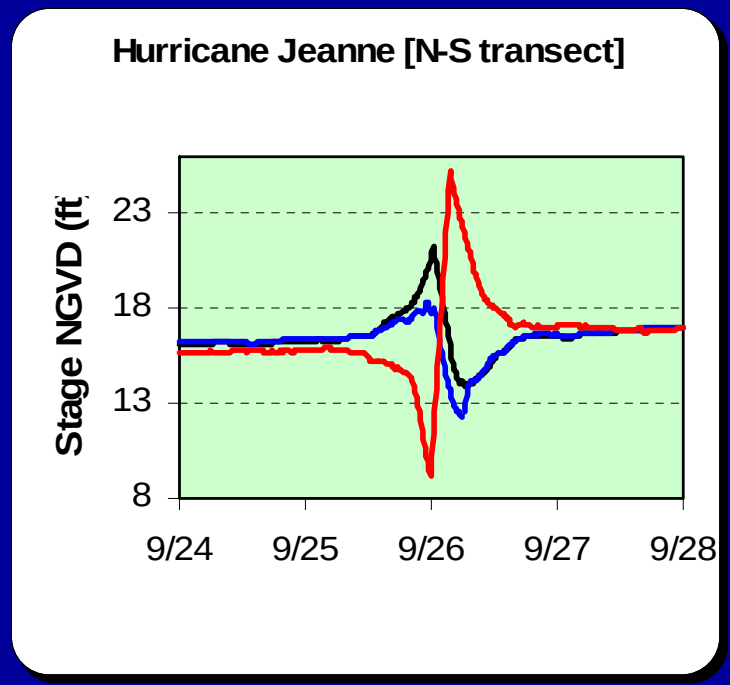


September 2004

- Hurricanes Frances and Jeanne cross Lake Okeechobee
- Wind speeds reaching 80 mph during hurricane Frances and 78 mph during hurricane Jeanne.
- Seiches (storm surges) of 5.5 ft during Frances and 9 ft during Jeanne
- Increase of 6 ft. in Lake stage.

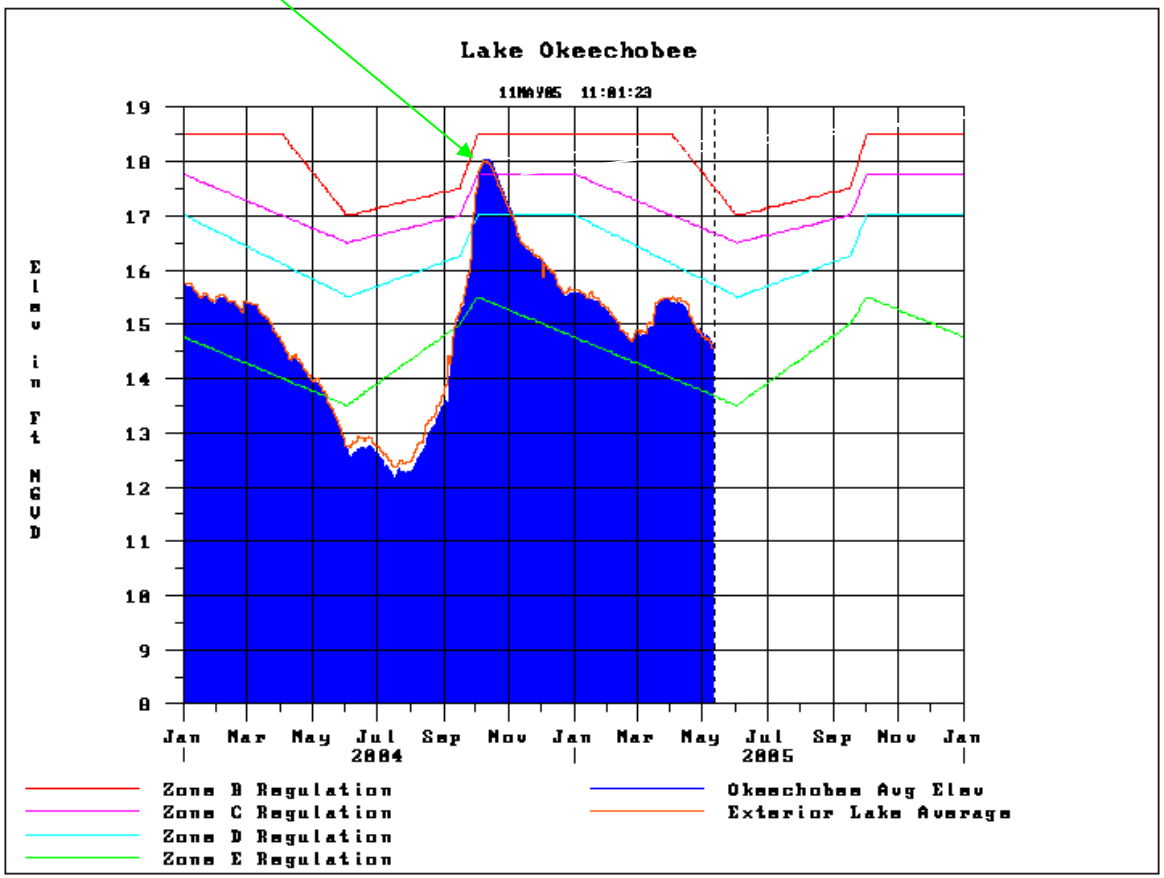
Seiches


Hurricane Frances [N-S transect]
Stage NGVD (ft)
23
18
13
8
9/2
9/3
9/4
9/5
9/6
9/7
9/8
S2_T (south)
S3_T (south)
S133_T (north)


Hurricane Jeanne [N-S transect]
Stage NGVD (ft)
23
18
13
8
9/24
9/25
9/26
9/27
9/28

Lake Stage

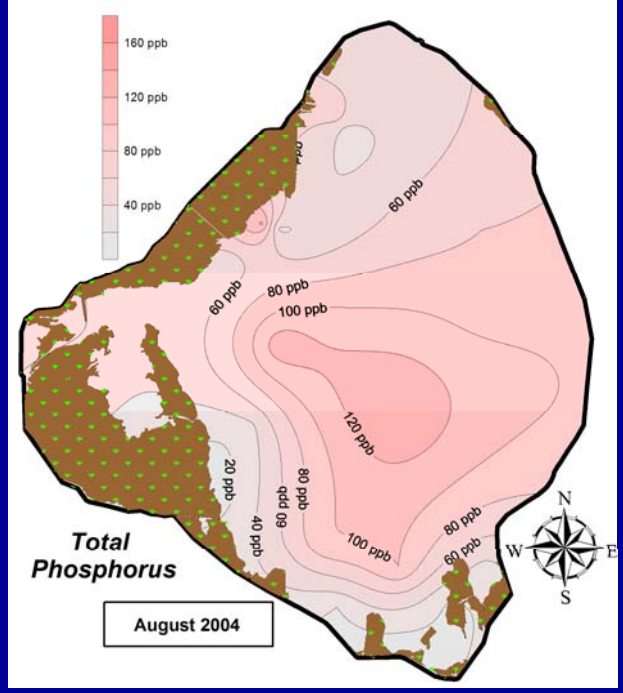
Hurricane impact

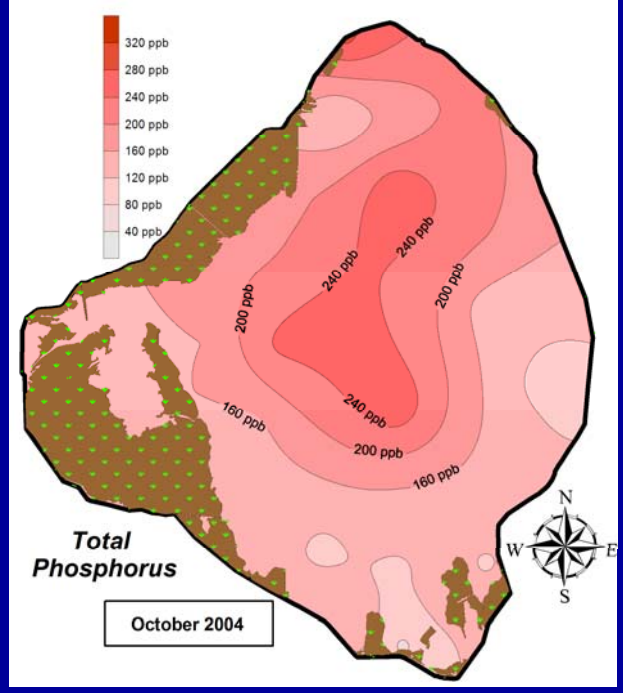


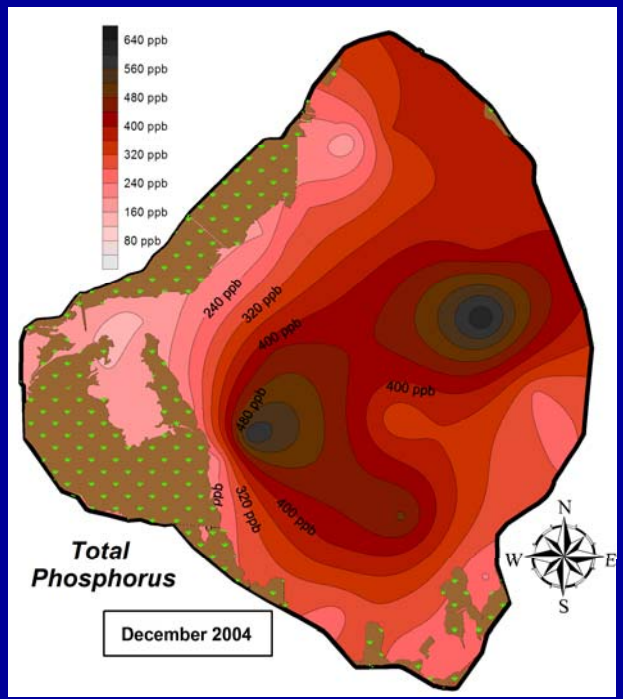

ZUCCALA'S

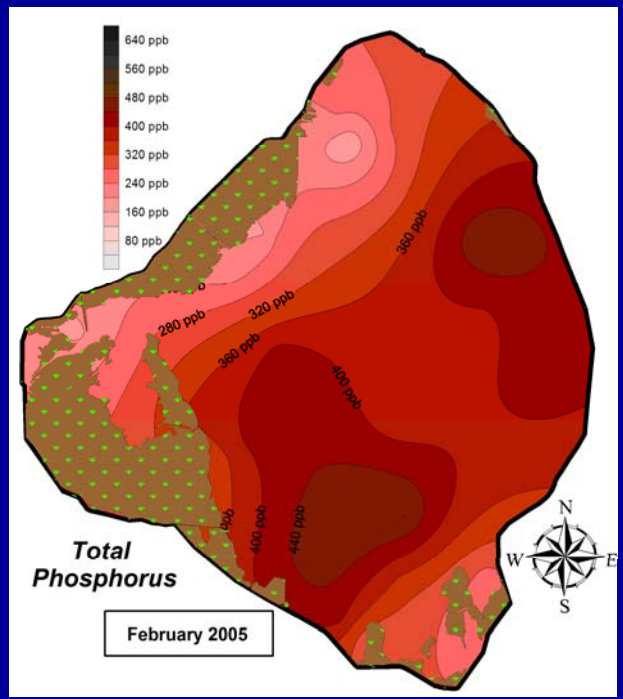
Immediate, Dramatic, Long Term Impacts on Water Quality

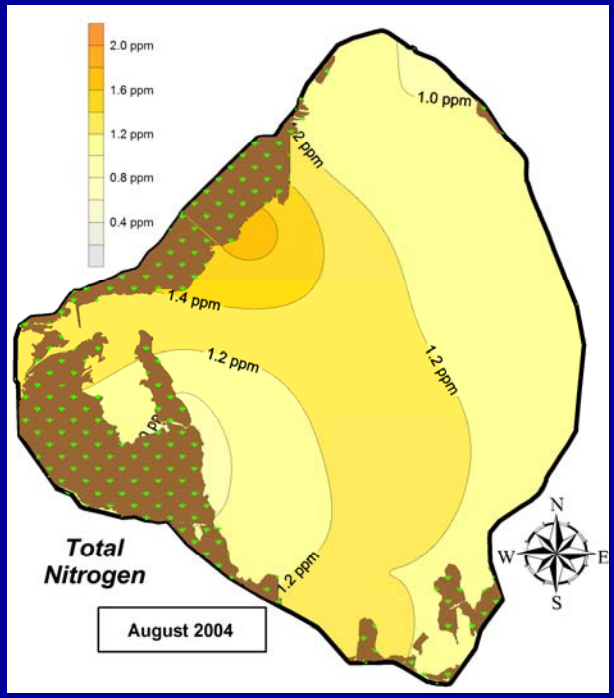
- Increased Turbidity
- Increased Total Phosphorus Concentrations
- Increased Total Nitrogen Concentrations

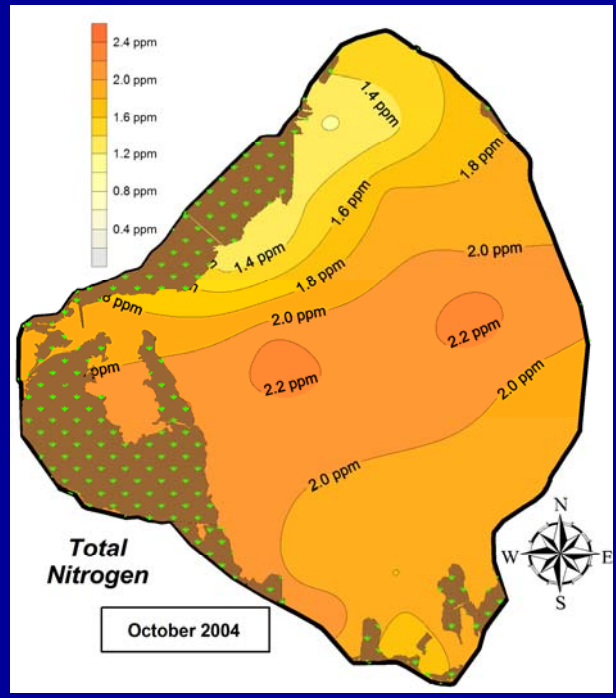

160 ppb
120 ppb
80 ppb
40 ppb
60 ppb
60 ppb
80 ppb
100 ppb
120 ppb
20 ppb
40 ppb
60 ppb
80 ppb
100 ppb
80 ppb
60 ppb
Total Phosphorus
August 2004
N
W
E
S

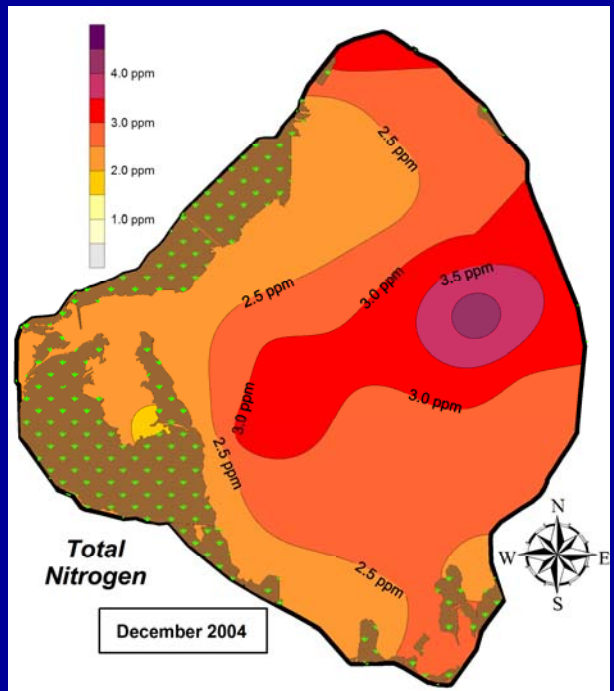

320 ppb
280 ppb
240 ppb
200 ppb
160 ppb
120 ppb
80 ppb
40 ppb
200 ppb
240 ppb
240 ppb
200 ppb
160 ppb
240 ppb
200 ppb
160 ppb
Total Phosphorus
October 2004
N
W
E
S

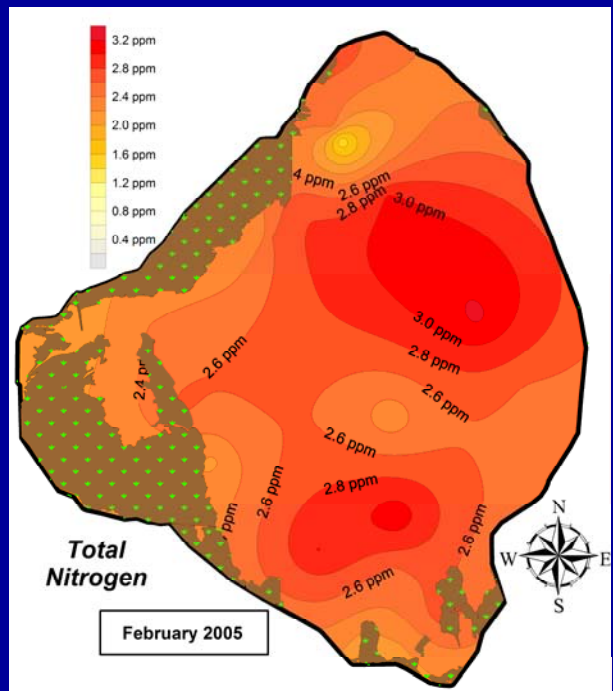

640 ppb
560 ppb
480 ppb
400 ppb
320 ppb
240 ppb
160 ppb
80 ppb
240 ppb
320 ppb
400 ppb
400 ppb
480 ppb
320 ppb
400 ppb
Total Phosphorus
December 2004
N
W
E
S


640 ppb
560 ppb
480 ppb
400 ppb
320 ppb
240 ppb
160 ppb
80 ppb
360 ppb
280 ppb
320 ppb
360 ppb
400 ppb
400 ppb
440 ppb
Total Phosphorus
February 2005
N
W
E
S


2.0 ppm
1.6 ppm
1.2 ppm
0.8 ppm
0.4 ppm
1.0 ppm
1.4 ppm
1.2 ppm
1.2 ppm
1.2 ppm
Total Nitrogen
August 2004
N
W
E
S


2.4 ppm
2.0 ppm
1.6 ppm
1.2 ppm
0.8 ppm
0.4 ppm
1.4 ppm
1.8 ppm
1.6 ppm
1.4 ppm
1.8 ppm
2.0 ppm
2.0 ppm
2.2 ppm
2.2 ppm
2.0 ppm
2.0 ppm
Total Nitrogen
October 2004
N
W
E
S


4.0 ppm
3.0 ppm
2.0 ppm
1.0 ppm
2.5 ppm
2.5 ppm
3.0 ppm
3.5 ppm
3.0 ppm
3.0 ppm
2.5 ppm
2.5 ppm
Total Nitrogen
December 2004
N
W
E
S


3.2 ppm
2.8 ppm
2.4 ppm
2.0 ppm
1.6 ppm
1.2 ppm
0.8 ppm
0.4 ppm
2.6 ppm
2.8 ppm
3.0 ppm
3.0 ppm
2.8 ppm
2.6 ppm
2.6 ppm
2.6 ppm
2.8 ppm
2.6 ppm
2.6 ppm
Total Nitrogen
February 2005
N
W
E
S

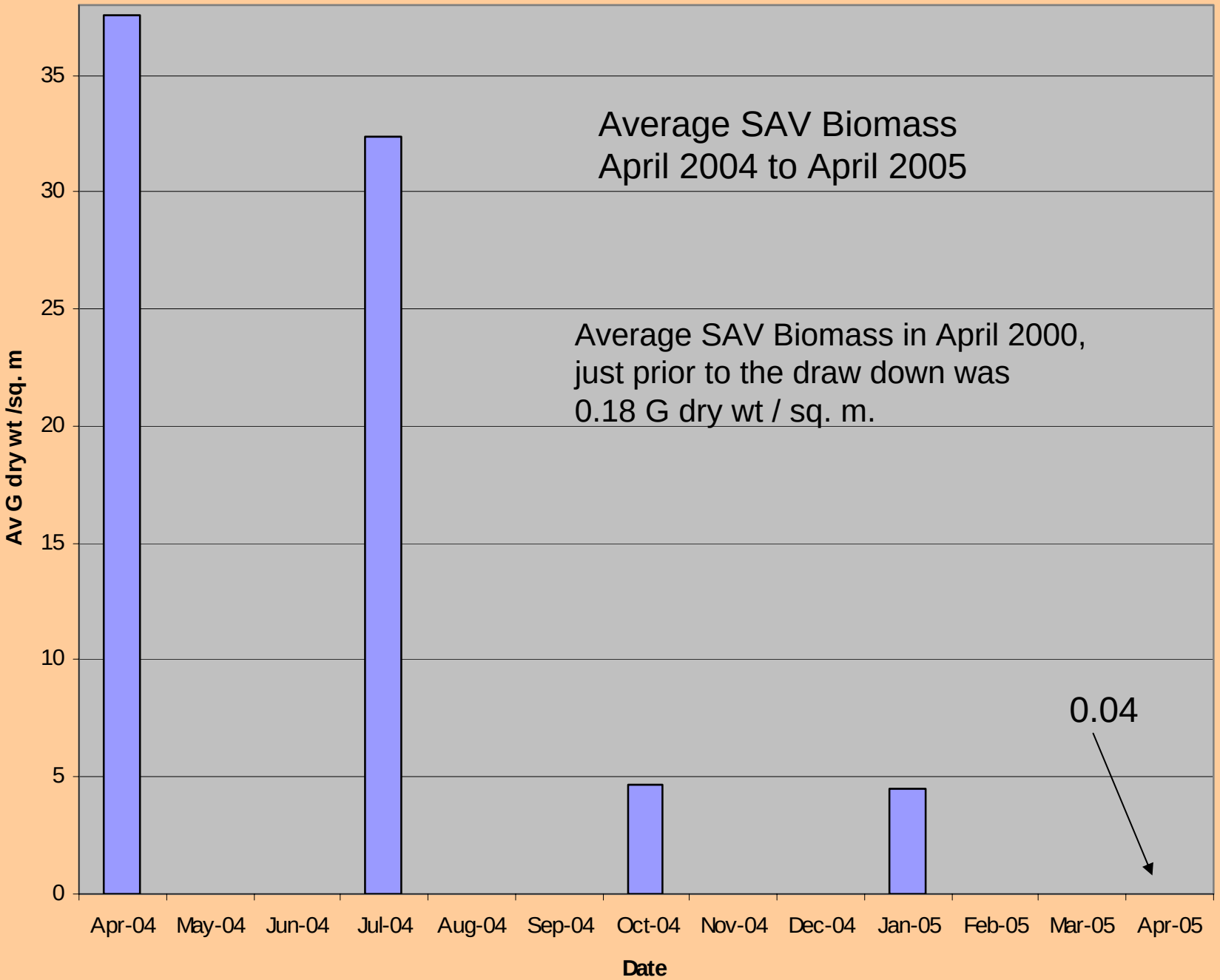
Water Quality Impacts

- Increased turbidity results in decreased light availability for SAV.
- Light penetration problems are intensified because suspended particles do not settle readily.
- Reduced light availability also impacted phytoplankton during the winter months.
- As turbidity issues resolve, high nutrient concentrations increase the likelihood of intense algal blooms this spring and summer.

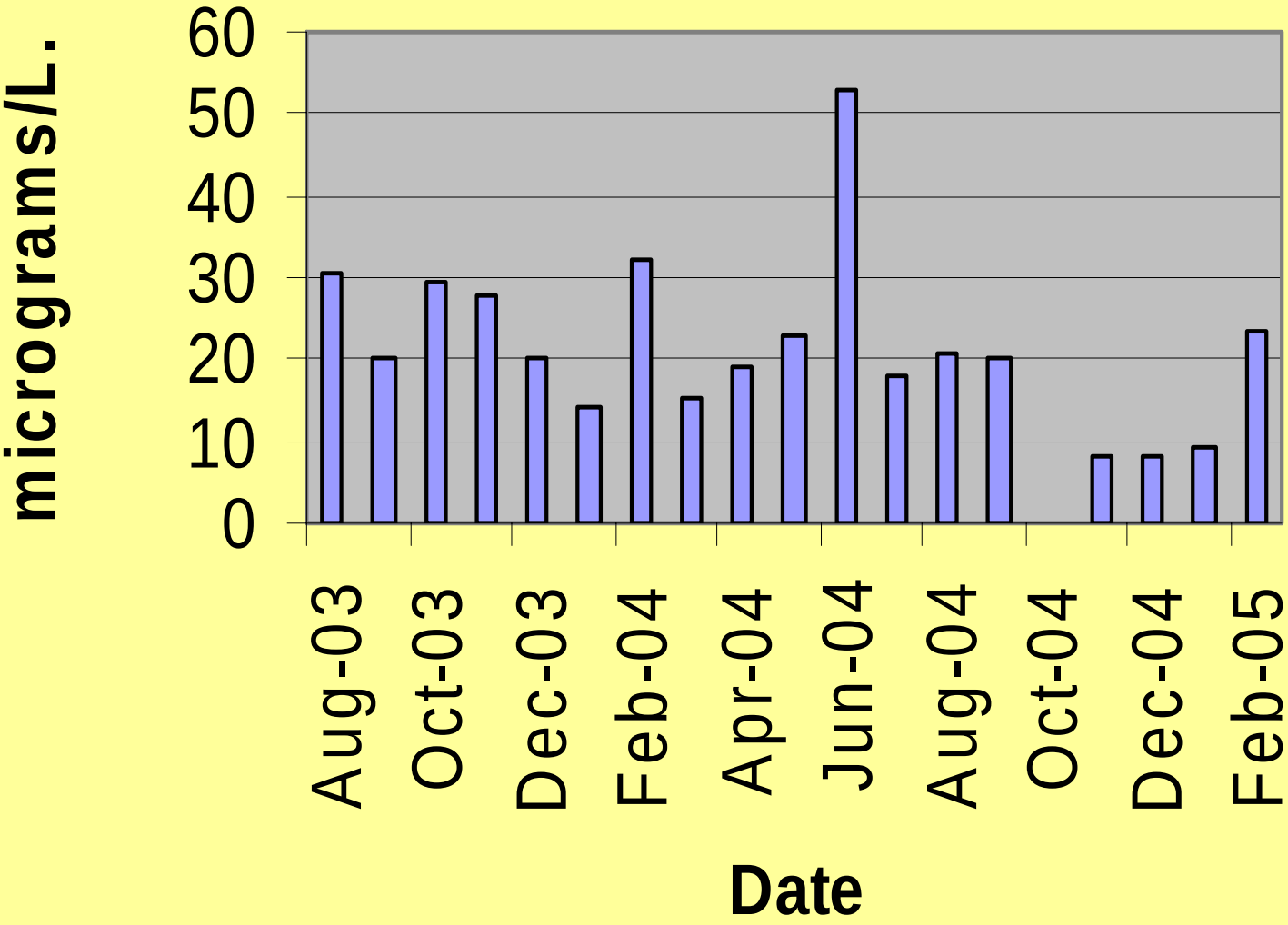
Settling Rate of Suspended Solids

Day 0

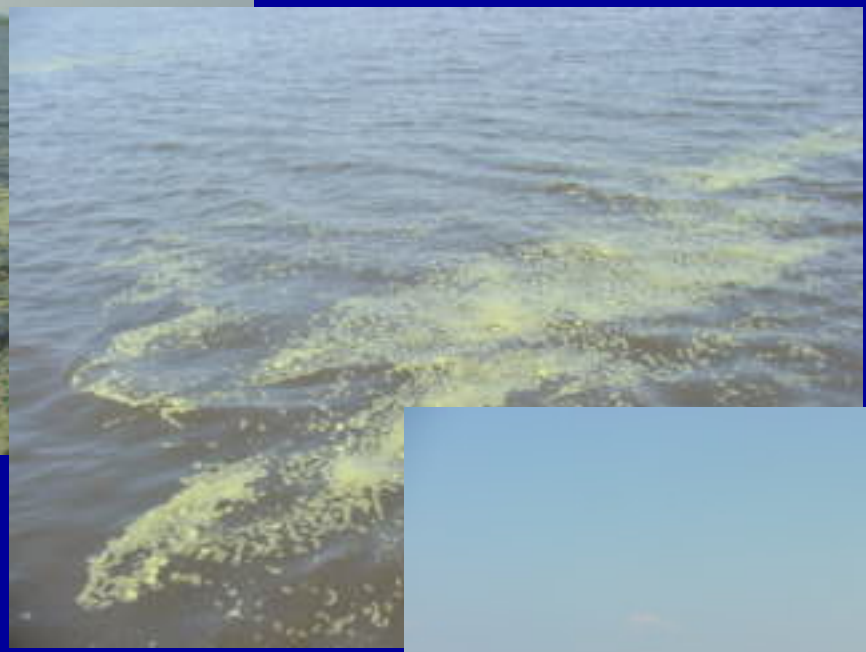
Day 14


Average SAV Biomass
April 2004 to April 2005
Average SAV Biomass in April 2000, just prior to the draw down was 0.18 G dry wt / sq. m.
0.04
Av G dry wt /sq. m
0
5
10
15
20
25
30
35
Apr-04
May-04
Jun-04
Jul-04
Aug-04
Sep-04
Oct-04
Nov-04
Dec-04
Jan-05
Feb-05
Mar-05
Apr-05
Date

Average Chlorophyll



Algal Bloom



May 17,2005

Prognosis, June to December 2005

- Higher than environmentally desirable lake levels.
- Continued elevated turbidity and Phosphorus levels.
- Persistence of algal blooms through the spring and summer months.
- Continued decline in SAV distribution and density.
- Potential for extended severe impacts on the Lake Okeechobee fishery and on other wildlife.