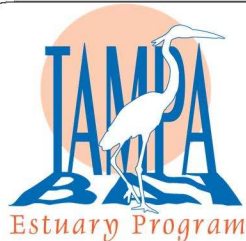


2007 Tampa Bay Water Quality Assessment

A Tampa Bay Estuary Program Initiative to Maintain and Restore the Bay's Seagrass Resources



For additional Info Visit:

www.tbeptech.org

Original Reference:

Janicki, A., D. Wade, & R.J. Pribble.
2000. Developing & Establishing a Process to Track the Status of Chlorophyll-a Concentrations and Light Attenuation to Support Seagrass Restoration Goals in Tampa Bay. Tampa Bay Estuary Program Technical Report # 04-00.

Historic Results:

Year	OTB	HB	MTB	LTB
1975	Red	Red	Red	Green
1976	Red	Red	Red	Yellow
1977	Red	Red	Red	Red
1978	Red	Red	Red	Yellow
1979	Red	Red	Red	Red
1980	Red	Red	Red	Red
1981	Red	Red	Red	Red
1982	Red	Red	Red	Red
1983	Red	Yellow	Red	Red
1984	Red	Green	Red	Yellow
1985	Red	Red	Red	Yellow
1986	Red	Yellow	Red	Green
1987	Red	Yellow	Red	Green
1988	Yellow	Green	Yellow	Green
1989	Red	Yellow	Red	Yellow
1990	Red	Green	Red	Yellow
1991	Green	Yellow	Yellow	Yellow
1992	Yellow	Green	Yellow	Yellow
1993	Yellow	Green	Yellow	Yellow
1994	Yellow	Yellow	Red	Red
1995	Red	Yellow	Red	Yellow
1996	Yellow	Green	Yellow	Green
1997	Yellow	Green	Red	Yellow
1998	Red	Red	Red	Red
1999	Yellow	Green	Yellow	Yellow
2000	Green	Green	Yellow	Yellow
2001	Yellow	Green	Yellow	Yellow
2002	Yellow	Green	Green	Green
2003	Red	Yellow	Green	Yellow
2004	Red	Green	Green	Yellow
2005	Green	Green	Yellow	Yellow
2006	Green	Green	Green	Green
2007	Green	Green	Green	Green



Continuing water quality monitoring support provided by the EPCHC.

Consulting support provided by Janicki Environmental, Inc.

Janicki Environmental, Inc.

Background

Light availability to seagrasses is the guiding paradigm for the Nitrogen Management Strategy developed by the TBEP. Because excessive nitrogen loads to the bay generally leads to increased algae blooms (chlorophyll) (Figure 1) thereby reducing light attenuation to seagrasses, an evaluation method was developed to assess whether load reduction strategies are achieving desired water quality results (i.e. reduced chlorophyll-a concentrations and increased water clarity).

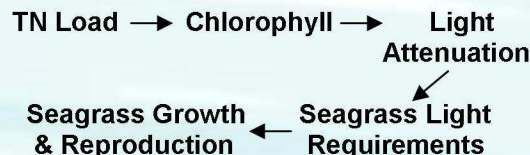


Figure 1: Guiding paradigm for Tampa Bay seagrass restoration through the management of nitrogen loads.

Decision Support Approach

Year to year algae abundance (via chlorophyll-a concentrations) and visible light penetration through the water column (secchi depth visibility) have been identified as critical water quality indicators. Tracking the attainment of bay segment specific targets for these water quality indicators provides the framework for which bay management actions are undertaken. Management actions adopted in response to decision support results are:

Green	"Stay the course"; partners continue with planned projects to implement the CCMP. Data summary and reporting via the Baywide Environmental Monitoring Report and annual assessment and progress reports.
Yellow	TAC and Management Board on caution alert; review monitoring data and loading estimates; attempt to identify causes of target exceedences; TAC report to Management Board on findings and recommended responses needed.
Red	TAC, Management and Policy Boards on alert; review and report by TAC to Management Board on recommended types of responses. Management and Policy Boards take appropriate actions to get the program back on track.

2007 Results

In comparison to 2006 results, a slight decline in water quality was observed in 2007 for Old Tampa Bay; however, all four bay segments maintained the green management response of "Staying the Course." Old Tampa Bay showed an exceedence of its chlorophyll-a target; however, the magnitude was small enough to not affect this bay segment's management response category (Table 1). Preliminary analyses of 2007 data indicate that for Old Tampa Bay, site-specific exceedences of the target influenced this bay segment's observed 2007 chlorophyll-a value in being slightly above its target (Figures 2 & 3).

Table 1. Observed water quality indicators and management outcomes for 2007.

Bay Segment	Chlorophyll-a (ug/L)		Effective Light Penetration (m ⁻¹)		Management Response
	2007	Target	2007	Target	
OTB	8.6	8.5	0.68	0.83	Green
HB	8.3	13.2	1	1.58	Green
MTB	5.5	7.4	0.68	0.83	Green
LTB	3.1	4.6	0.53	0.63	Green

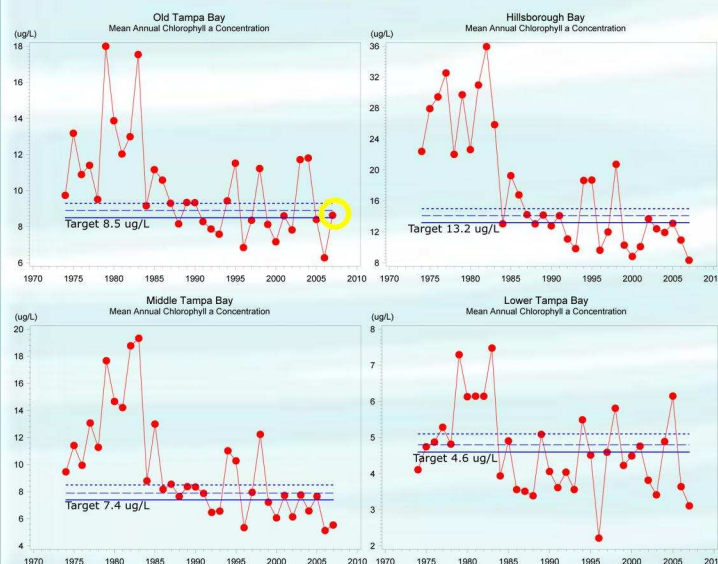


Figure 2: Historic chlorophyll-a annual averages for the four bay segments. Old Tampa Bay's 2007 slight exceedence value is highlighted by a yellow circle.

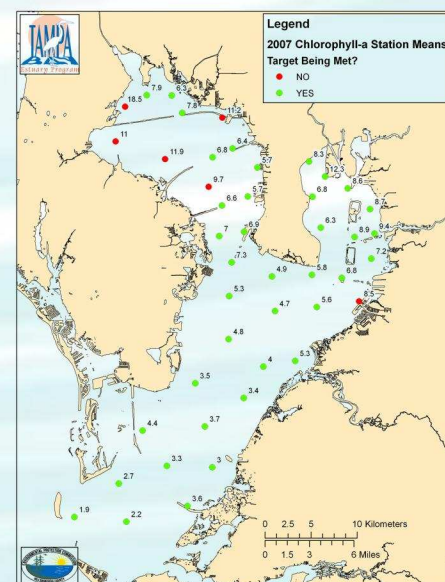


Figure 3: Map depicting individual station chlorophyll-a exceedences in Tampa Bay.