2019 Tampa Bay Water Quality Assessments

TAMPA BAY
ESTUARY PROGRAM





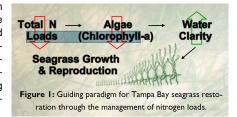
A Tampa Bay Estuary Program Initiative to Maintain and Restore the Bay's Seagrass Resources

Historic results:

Historic results:										
	OTB	HB	MTB	LTB						
1975	red	red	yellow	yellow						
1976	red	red	yellow	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	yellow	green						
1987	yellow	yellow	yellow	green						
1988	green	green	green	green						
1989	red	yellow	yellow	yellow						
1990	yellow	green	yellow	green						
1991	green	yellow	green	yellow						
1992	green	green	green	yellow						
1993	yellow	green	green	yellow						
1994	yellow	yellow	yellow	red						
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1997	green	green	yellow	green						
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Background

Light availability to seagrass is the guiding paradigm for TBEP's Nitrogen Management Strategy. Because excessive nitrogen loads to the bay generally lead to increased algae blooms (higher chlorophyll-a levels) (Figure 1) and reduce light penetration to seagrass, 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).



Decision Support Approach

Year to year algae abundance (measured as chlorophyll-a concentrations) and visible light penetration through the water column (depth of secchi disk visibility) have been identified as critical water quality indicators in Tampa Bay. Tracking the attainment of bay segment specific targets for these indicators provides the framework for developing and initiating bay management actions. TBEP management actions adopted in response to the annually-assessed decision support results are shown to the right.

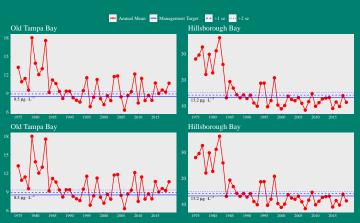
Green	"Stay the Course" Continue pianned projects. Report data via annual progress reports and Baywide Environmental Monitoring Report.
Yellow	"Caution" Review monitoring data and nitrogen loading estimates. Begin/continue TAC and Management Board development of specific management recommendations.
Red	"On Alert" Finalize development and implement appropriate management actions to get back on track.

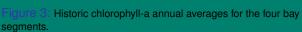
2019 Decision Matrix Results

Water quality (chlorophyll-a and light penetration) remained supportive of seagrass in Hillsborough Bay (HB), Middle Tampa Bay (MTB), and Lower Tampa Bay (LTB)(Table 1, Figure 3). The nuisance alga, *Pyrodinium bahamense*, was again reported in Old Tampa Bay (OTB) during the Summer and Fall 2019, contributing to a small magnitude chlorophyll-a exceedance. In all bay segments, separate algal bloom events contributed to individual stations exceeding the bay segment chlorophyll-a targets (Figure 4). However, effective light penetration was supportive of seagrass in all bay segments (Table 1).

Table 1: Observed water quality indicators & recommended management outcomes for 2019.

Bay seg-	Chl-a (ug/L)			Effec Light			
ment	om a (ag/L)			etration (m ⁻¹)		_	
	2019	target		2019	target		outcome
OTB	10.64	8.5		0.76	0.83		yellow
HB	11.31	13.2		0.97	1.58		green
MTB	5.83	7.4		0.59	0.83		green
LTB	4.05	4.6		0.61	0.63		green





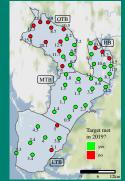


Figure 4: Chlorophyll attainment outcomes by site for 2019.

Decision matrix results for 1975 to 2019.

Acknowledgments: Continuing water quality monitoring support provided by the Environmental Protection Commission of Hillsborough County.