2019 Tampa Bay Water Quality Assessments

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



Historic results:



Figure 1: Decision matrix results for 1975 to 2019.

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 2) 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).

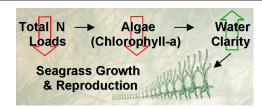


Figure 2: Seagrass restoration with N management.

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 annuallyassessed decision support results are shown to the right.

	"Stay the Course" Continue planned projects. Report
G	data via annual progress reports and Baywide
	Environmental Monitoring Report.
	"Caution" Review monitoring data and nitrogen loading
Υ	estimates. Begin/continue TAC and Management Board
	development of specific management recommendations.
	"On Alert" Finalize development and implement
R	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 large magnitude and duration (5 yrs) chlorophyll-a exceedance. However, effective light penetration was observed to be supportive of seagrass in all bay segments (Table 1).

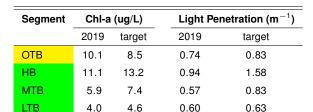


Table 1: Water quality outcomes for 2019.

- Annual Mean - Management Target -- +1 se ···· +2 se Old Tampa Bay Hillsborough Bay 1975 1980 1985 1990 1995 2000 2005 2010 2015 1975 1980 1985 1990 1995 Middle Tampa Bay Lower Tampa Bay

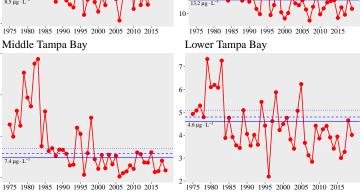


Figure 3: Historic chlorophyll-a annual averages for the four bay segments.

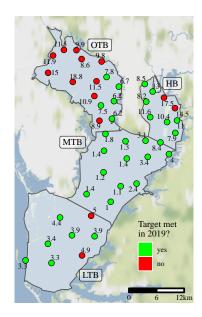


Figure 4: Chlorophyll attainment outcomes by site for 2019.

Note: Continuing water quality monitoring support provided by the Environmental Protection Commission of Hillsborough County. Consulting support provided by Janicki Environmental. Inc. Full methods in Janicki, A., Wade, D., Pribble, R.J. 2000. TBEP Technical Report #0400. Points in site map show attainment by targets for whole segments and are for reference only.