

KEY FINDINGS – SOUTHERN ESTUARIES

SUMMARY FINDING: Re-suspension of nutrients from the 2005 hurricane season resulted in algal blooms in many regions of the southern estuaries and may cause continued algal blooms in the bay for some time. However, this is expected to subside within a few additional years in lieu of further significant hurricane activity and should return to predominantly green for all regions with the possible exception of BMB.

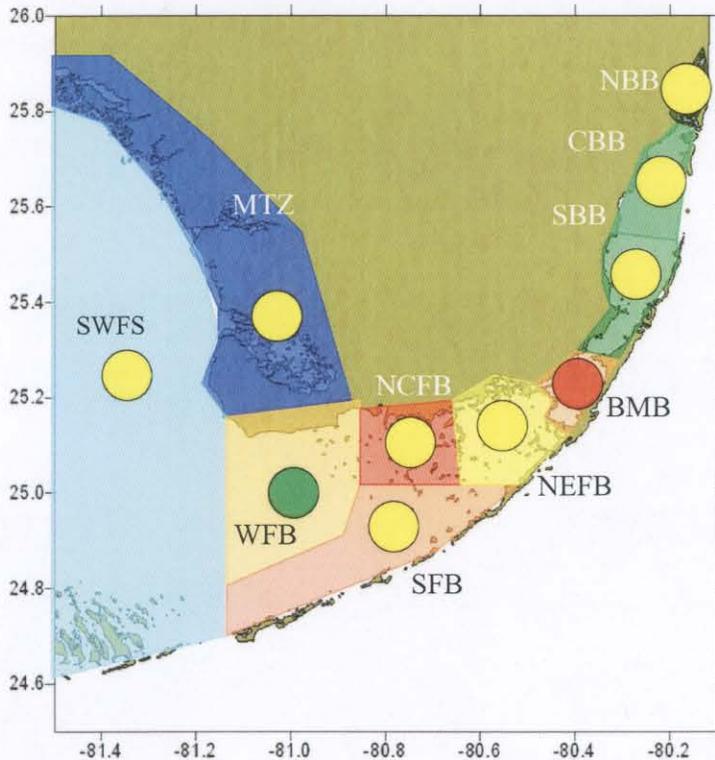


Figure 1. Map of Florida Bay regions with stoplight ratings by region

KEY FINDINGS:

1. The majority of regions assessed had significant algal bloom activity that appears to have been predominantly influenced by the heavy 2005 hurricane season aggravated for the eastern bay by road construction on US 1.
2. The majority of regions assessed had chlorophyll-*a* and algal blooms rated as moderate (yellow).
3. The majority of regions assessed where the chlorophyll-*a* was higher than the median do not appear to be indicative of long-term negative trends.
4. The most commonly occurring condition was large spatial coverage of algal blooms and elevated chlorophyll-*a* concentrations.
5. Overall eutrophic symptom expressions were geographically variable and appear to be explainable from existing phenomenological conditions of hurricane activity overall exacerbated by

road construction along US 1 in the eastern areas of the bay.

6. Water quality monitoring throughout the bay and the SW coastal shelf is essential particularly in light of the post 2005 hurricane season.
7. Monitoring of Barnes, Manatee and Blackwater Sounds was critical to being able to detect the impacts of road construction along US 1.
8. Monitoring long term consequences of nutrient releases into the bay from both natural (e.g. hurricanes) and human causes (e.g. road construction) and the interactions of hydrological restoration (e.g. more fresh water flow into Florida Bay) is critical to continuing the evaluation and assessment Florida Bay restoration.

ALGAL BLOOMS – SOUTHERN ESTUARIES

PERFORMANCE MEASURE	CURRENT STATUS ^a	CURRENT STATUS ^a
Chlorophyll a BARNES, MANATEE & BLACKWATER SOUNDS (BMB)		This region of the bay experienced an unusual cyanobacterial bloom in 2006. The bloom was initiated by a large spike in phosphorus from a combination of canal releases and highway construction in response to the active hurricane season. The bloom has abated somewhat but chlorophyll concentrations have not returned to previous levels.
Chlorophyll a NORTHEAST FLORIDA BAY (NEFB)		The current status is due to influence of the cyanobacterial bloom from Barnes, Manatee and Blackwater Sounds periodic expansion into this region.
Chlorophyll a NORTH-CENTRAL FLORIDA BAY (NCFB)		The current status is due to the presence of a seasonal cyanobacterial bloom in both early and late 2006. These blooms do not appear every year, but have occurred intermittently over the past 15 years.
Chlorophyll a SOUTH FLORIDA BAY (SFB)		The current status is due to the extension of the cyanobacterial bloom from the north-central region of the bay during both years. This has occurred intermittently over the past 15 years and it is unlikely that this signifies a long-term negative trend.
Chlorophyll a WEST FLORIDA BAY (WFB)		The seasonal diatom blooms in this region for both 2006 and current were not as dense or widespread as in the past.
Chlorophyll a MANGROVE TRANSITION ZONE (MTZ)		The chlorophyll concentrations were slightly higher in this region for 2006. This may have been due to the active 2005 hurricane season and is unlikely to indicate a negative long-term trend.
Chlorophyll a SOUTHWEST FLORIDA SHELF (SWFS)		The chlorophyll concentrations were slightly higher in this region for both 2006 & 2007. This may have been due to the active 2005 hurricane season and is unlikely to indicate a negative long-term trend.
Chlorophyll a NORTH BISCAYNE BAY (NBB)		The chlorophyll concentrations were higher than the baseline for the past four years.
Chlorophyll a CENTRAL BISCAYNE BAY (CBB)		The chlorophyll concentrations were higher than the baseline for the past four years.
Chlorophyll a SOUTH BISCAYNE BAY (SBB)		The chlorophyll concentrations were higher in this region for 2006. This area was also influenced by periodic expansion of the cyanobacterial bloom from Barnes, Manatee and Blackwater Sounds into this region.