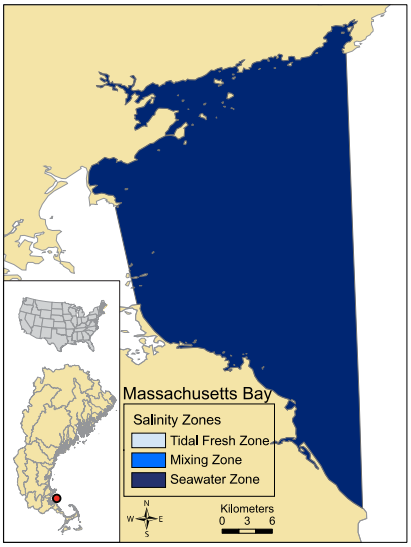
Massachusetts Bay

SUMMARY

Massachusetts Bay is a coastal embayment characterized by high chlorophyll-a and low nuisance/toxic bloom symptom expressions. Chlorophyll-a has increased and nuisance/toxic blooms have decreased since the 1999 assessment. Dissolved oxygen levels have remained healthy.



Influencing Factors

Any level nitrogen input and low to moderate susceptibility (good ability to dilute and flush nutrients).

Eutrophic Conditions *

Primary symptoms high but problems with more serious secondary symptoms still not being expressed.

Future Outlook

Nutrient related symptoms observed in the estuary are likely to improve substantially.

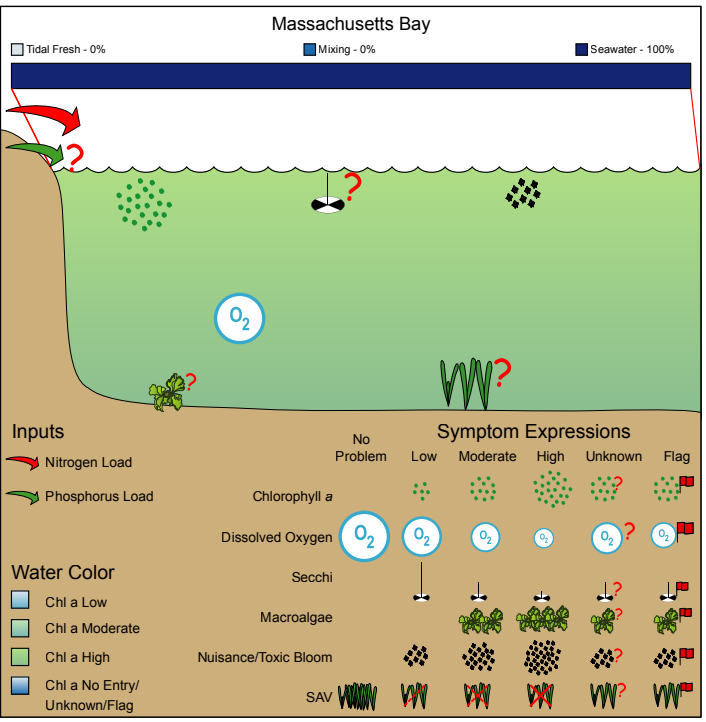
ASSETS Rating

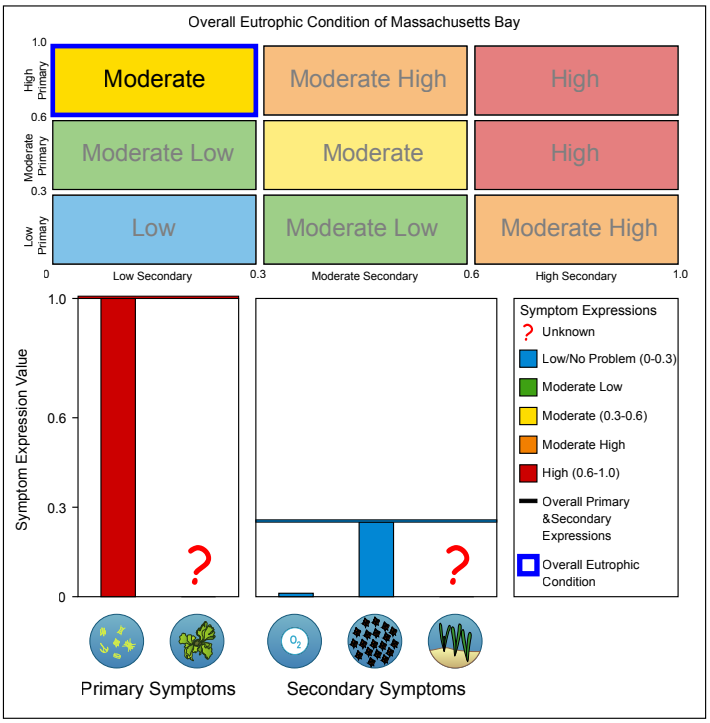
Assessment of Estuarine Trophic Status based on the three factors evaluated in NEEA.

Influence/eutro/future	Unknown	Low	Mod Low	Moderate	Mod High	High
ASSETS	Unknown	High	Good	Moderate	Poor	Bad

Reliability and Confidence: ? Unknown; * Low; ** Moderate; *** High

EUTROPHIC CONDITION





WATERSHED AND ESTUARY CHARACTERISTICS

Estuary		Landuse / Population		Watershed Details / Input Loads	
Area (km^2)	768	Urban (km^2)	1,616 (76.8%)	Area (km^2)	553
Tidal fresh zone area (km^2)	0	Agriculture (km^2)	26 (1.2%)	Mean elevation (m)	25
Mixing zone area (km^2)	0	Forest (km^2)	445 (21.2%)	Max. elevation (m)	76
Saltwater zone area (km^2)	768	Wetland (km^2)	16 (0.7%)	Watershed: estuary ratio	0.7
Volume (1,000 x m^3)	22,341,120	Range (km^2)	0 (0%)	TSS (tonne y^{-1})	21,300
Depth (m)	29.09	Barren (km^2)	0 (0%)	TN (kg y^{-1})	10,600,000
Tide Height (m)	2.69	Total (km^2)	2,103 (0%)	DIP (kg y^{-1})	Unknown
Residence Time (d)	60	Population	341,495	TSS/est. area (tonne km^{-2} y^{-1})	28
		Popn: est. area ratio	445	TN/est. area (kg km^{-2} y^{-1})	13,802
				DIP/est. area (kg km^{-2} y^{-1})	Unknown