

Revising the Lower Trophic Level Indicator

Presentation to the
Tidal Monitoring and Analysis Workgroup
June 12, 2012 Meeting

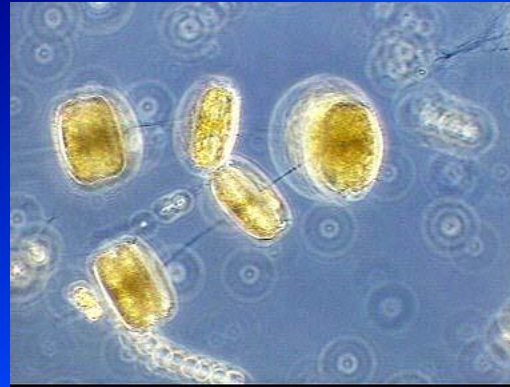
by

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Interstate Commission on the Potomac River
Basin

Components of the Habitats and Lower Food Web Indicator



SAV



Phytoplankton



Benthos



Wetlands

Phytoplankton Reference Conditions

SEASON	Salinity Regime	Community	Secchi Depth	PO4	DIN
SPRING	Tidal Fresh	REFERENCE	>0.9	NA	NA
		DEGRADED	<=0.9	>0.007	>0.070
	Oligohaline	REFERENCE	>0.7	NA	NA
		DEGRADED	<=0.7	>0.007	>0.070
	Mesohaline	REFERENCE	>1.8	NA	NA
		DEGRADED	<=1.8	>0.007	>0.070
	Polyhaline	REFERENCE	>2.15	NA	NA
		DEGRADED	<=2.15	>0.007	>0.070
SUMMER	Tidal Fresh	REFERENCE	>0.8	NA	NA
		DEGRADED	<=0.8	>0.007	>0.070
	Oligohaline	REFERENCE	>0.6	NA	NA
		DEGRADED	<=0.6	>0.007	>0.070
	Mesohaline	REFERENCE	>1.45	<=0.007	<=0.070
		DEGRADED	<=1.45	>0.007	>0.070
	Polyhaline	REFERENCE	>1.85	<=0.007	<=0.070
		DEGRADED	<=1.85	>0.007	>0.070

Components of the PIBI

Metric	Habitat Class							
	SPRING FRESH	SPRING OLIGOHALINE	SPRING MESOHALINE	SPRING POLYHALINE	SUMMER FRESH	SUMMER OLIGOHALINE	SUMMER MESOHALINE	SUMMER POLYHALINE
BIOMASS_CHL_RATIO	X	X	X	X			X	X
CHLA_SURF	X	X	X	X	X	X	X	X
CRYPTO_BIO_PCT				X				X
CYANO_BIOMASS	X				X	X		
DIATOM_BIOMASS			X		X	X		X
DINO_BIOMASS			X				X	X
DOC	X	X	X	X	X	X	X	X
MICROCYSTIS_AER_ABUND					X			
PHEO	X	X	X	X	X	X	X	X
PICO_ABUND							X	X
PROROCENTRUM_MIN_ABUND			X	X				
TOT_BIOMASS	X	X	X	X	X		X	X

1

2

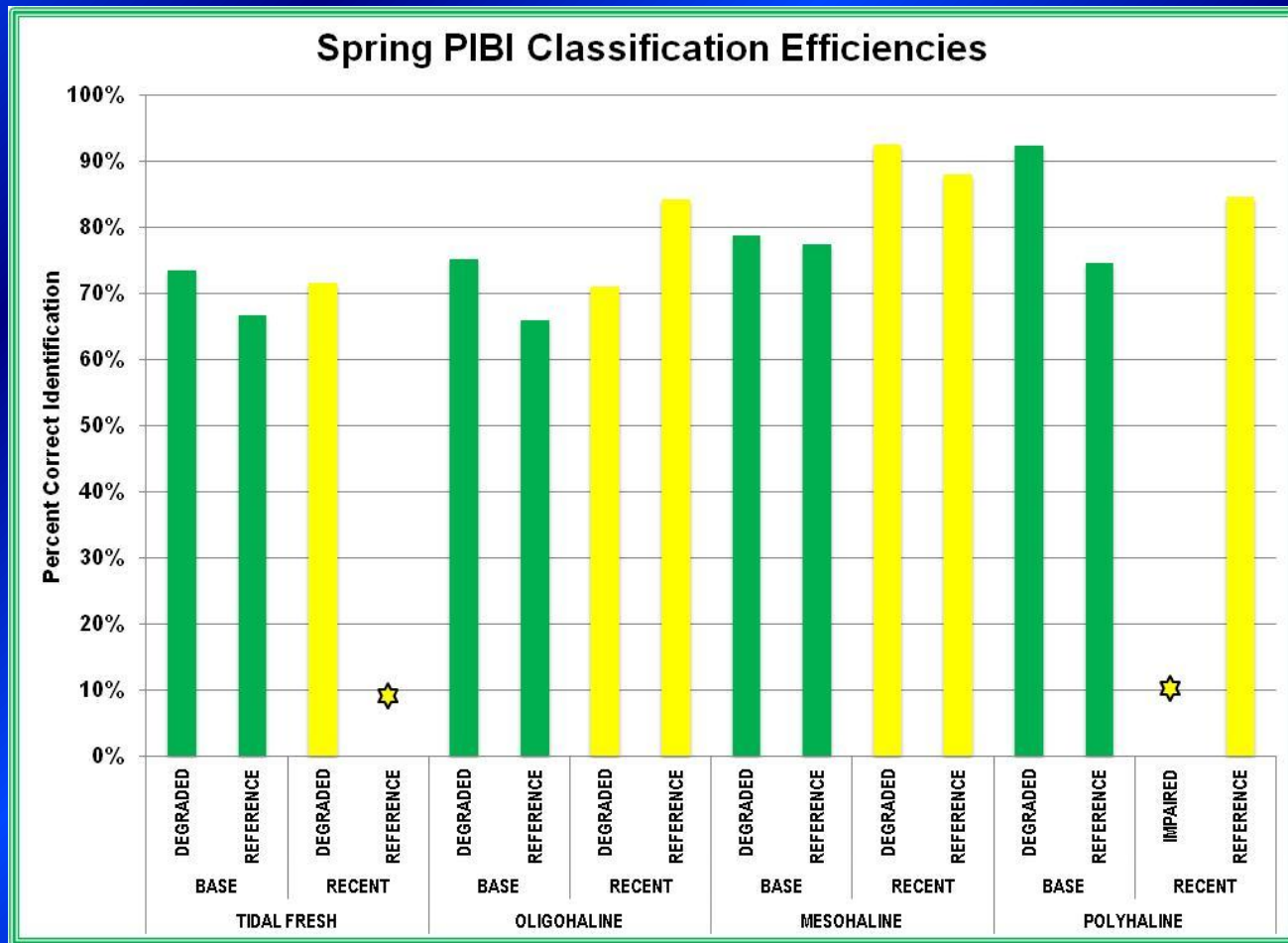
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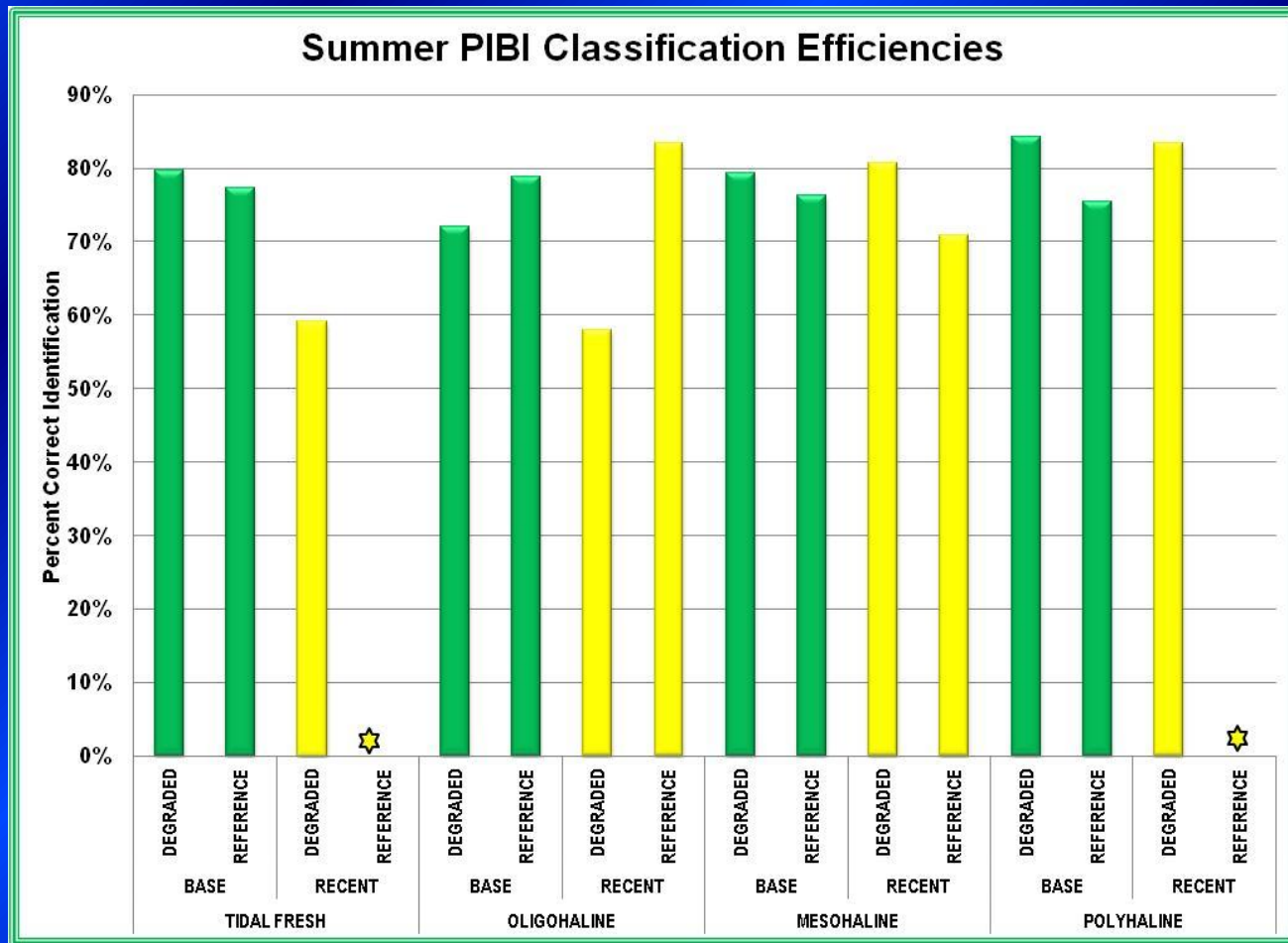
Spring Index Performance



Base Period: 1984-2002

Recent Period: 2003-2010

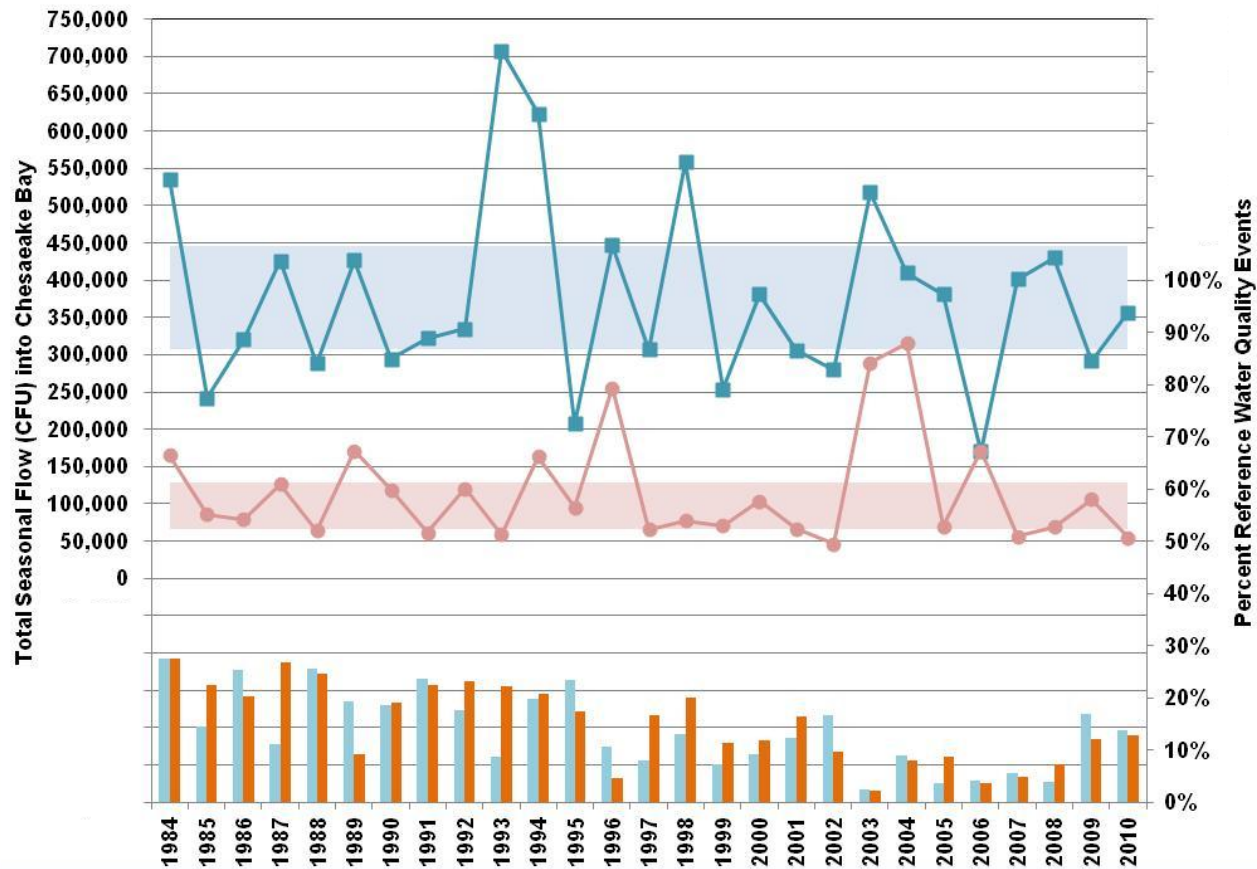
Summer Index Performance



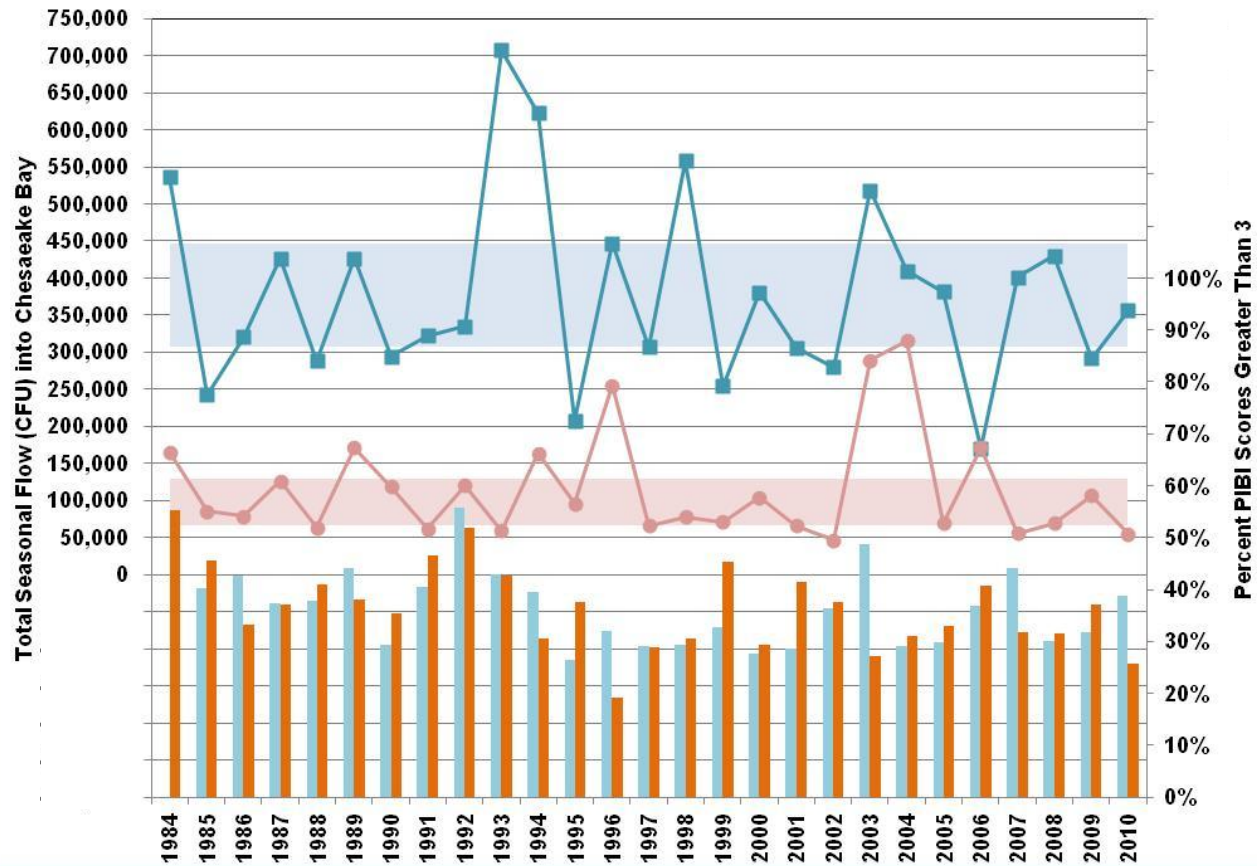
Base Period: 1984-2002

Recent Period: 2003-2010

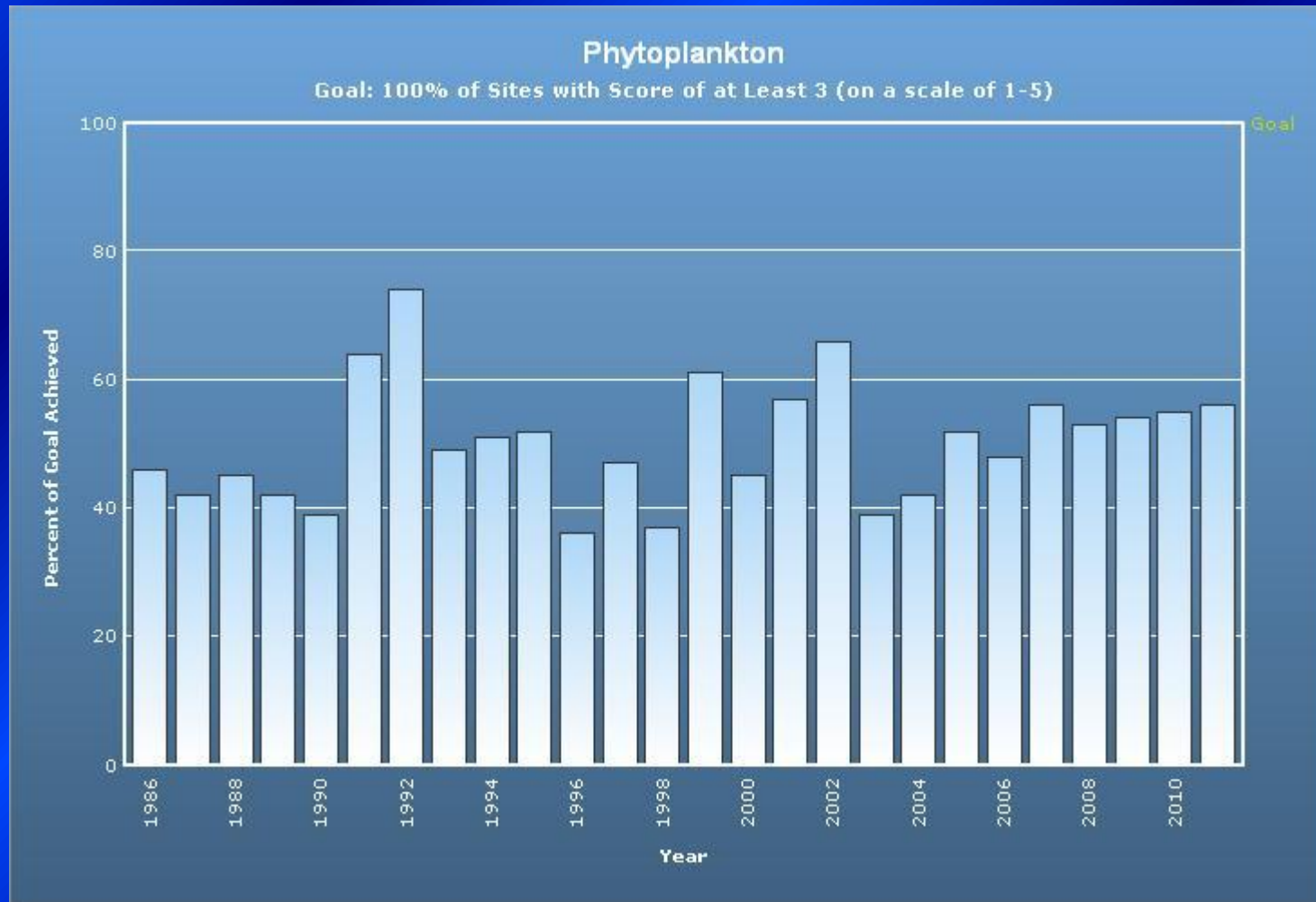
Spring and Summer Flow vs. Reference Water Quality Events



Spring and Summer Flow vs. PIBI Scores

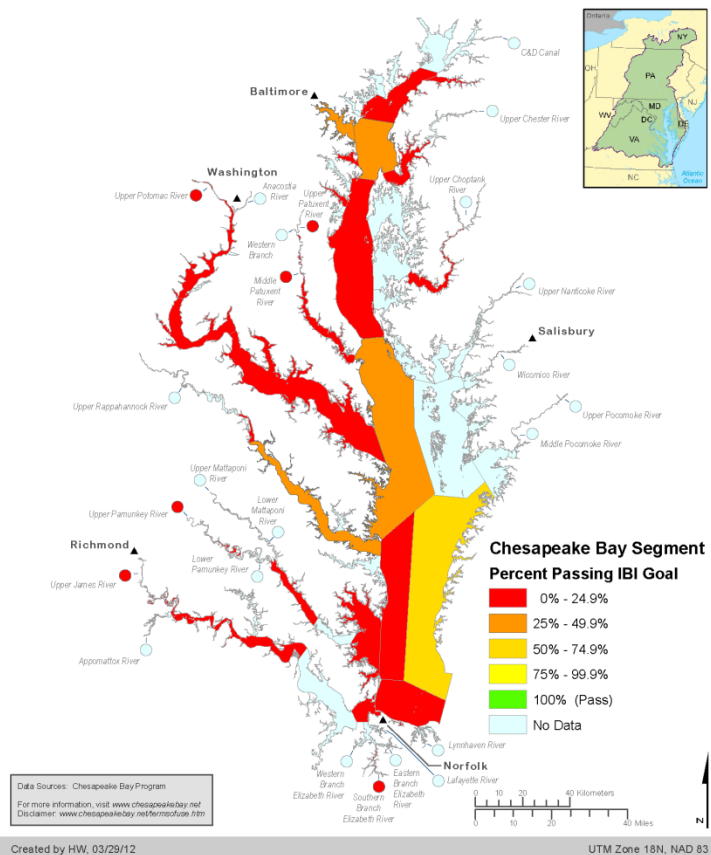


Current PIBI Indicator



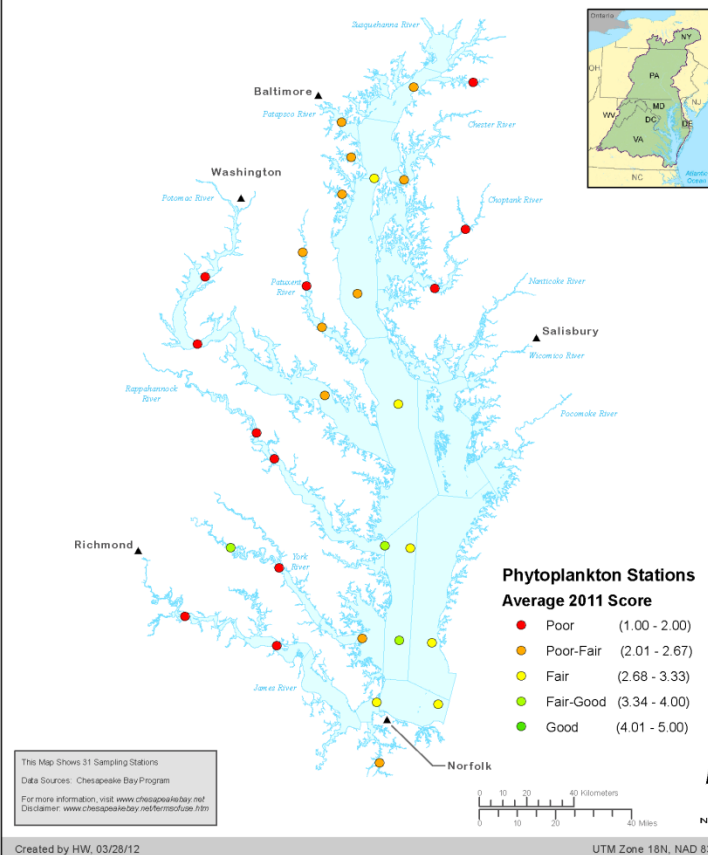
Phytoplankton (Index of Biological Integrity) (2011)

Percent of Goal Achieved

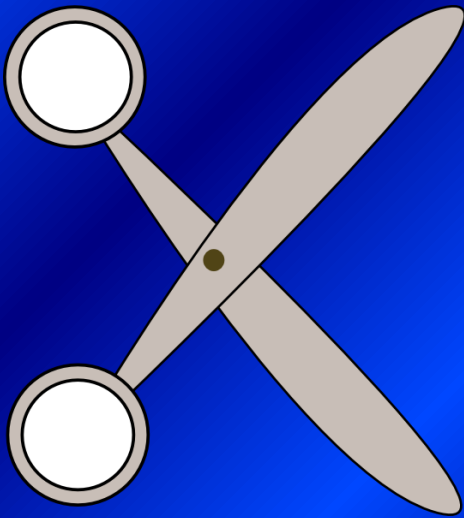


Phytoplankton (Index of Biological Integrity) (2011)

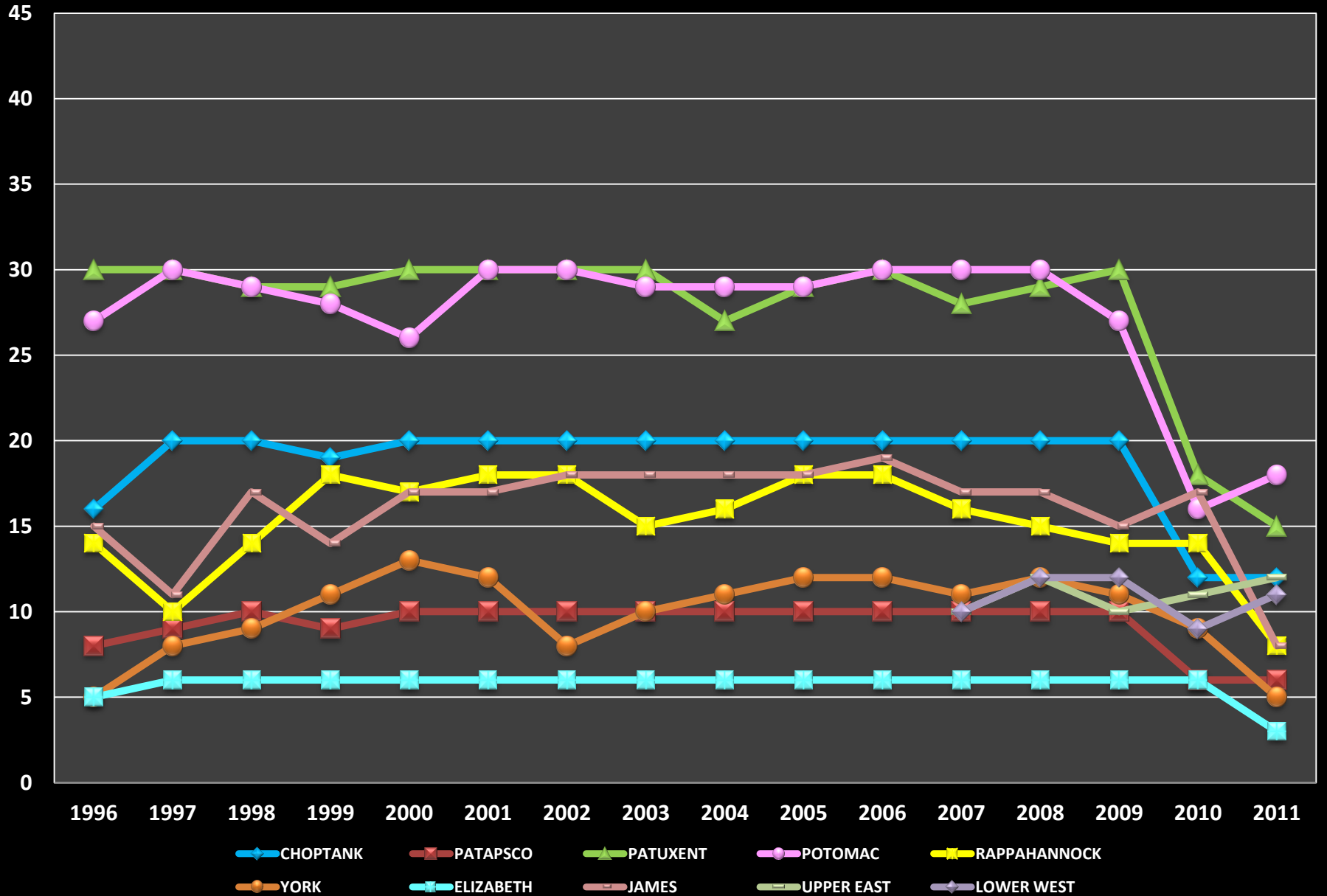
Annual Average Score by Sampling Station



MRAT



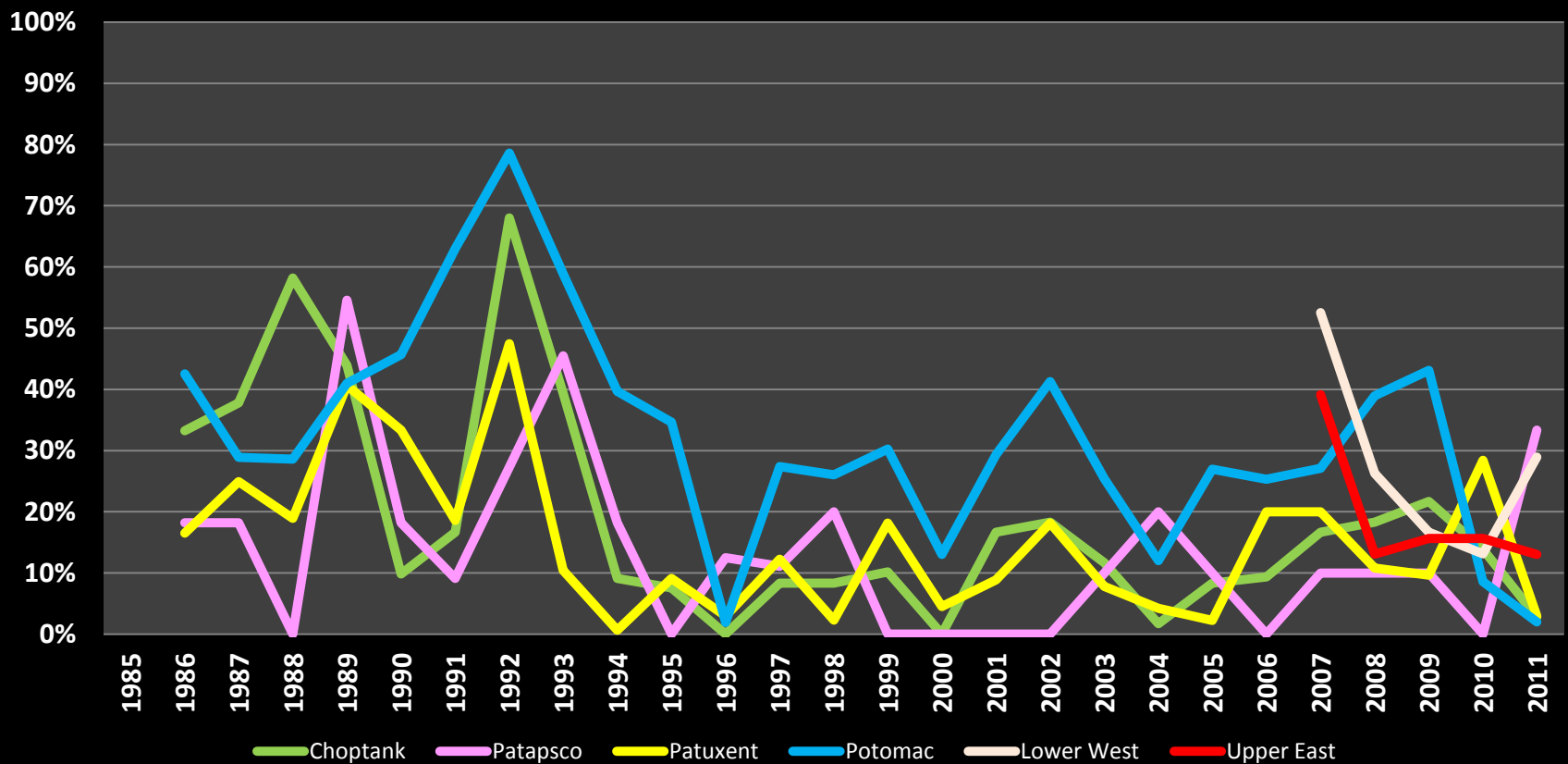
Tributary PIBI Sample Count



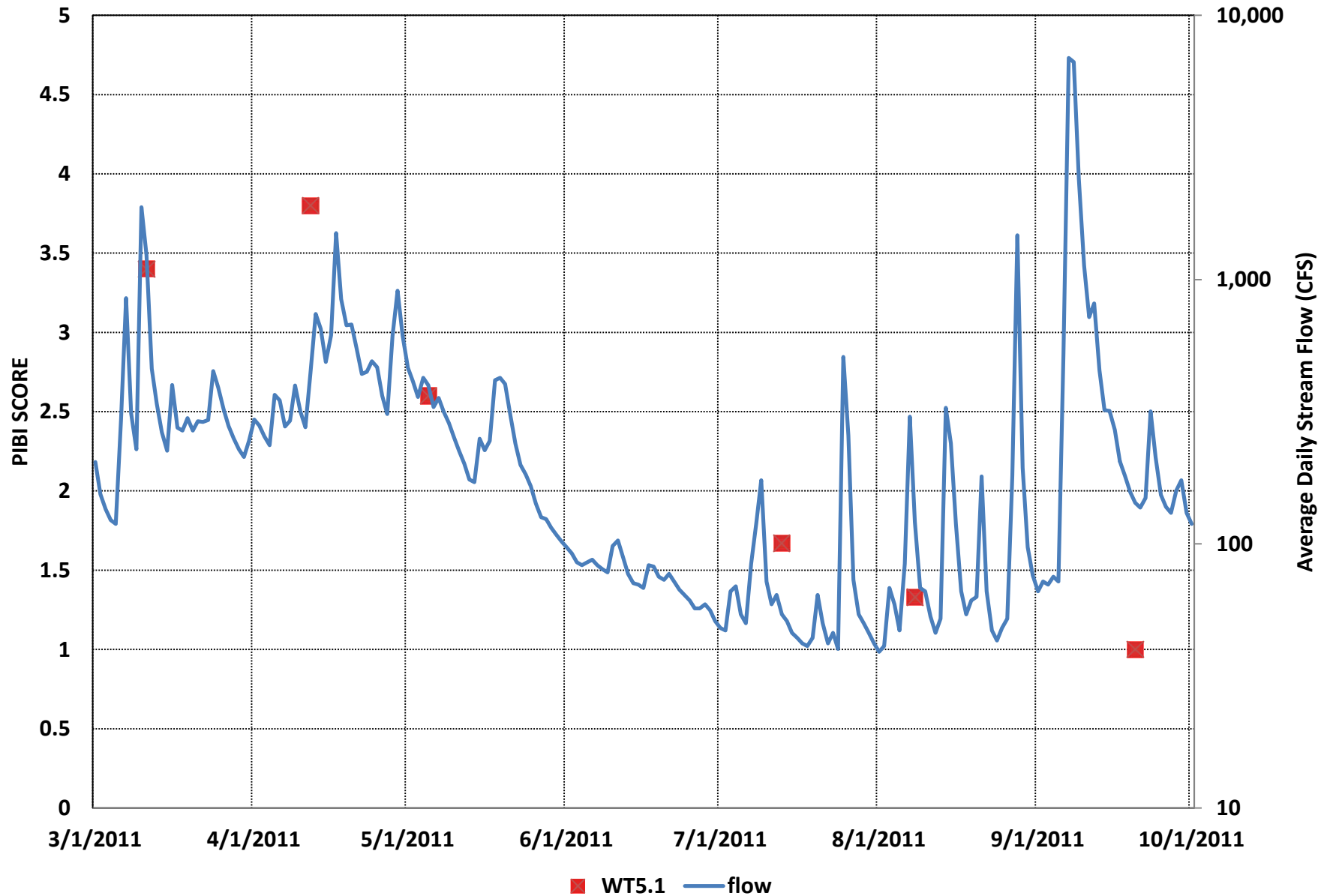
Mainstem PIBI Sample Counts



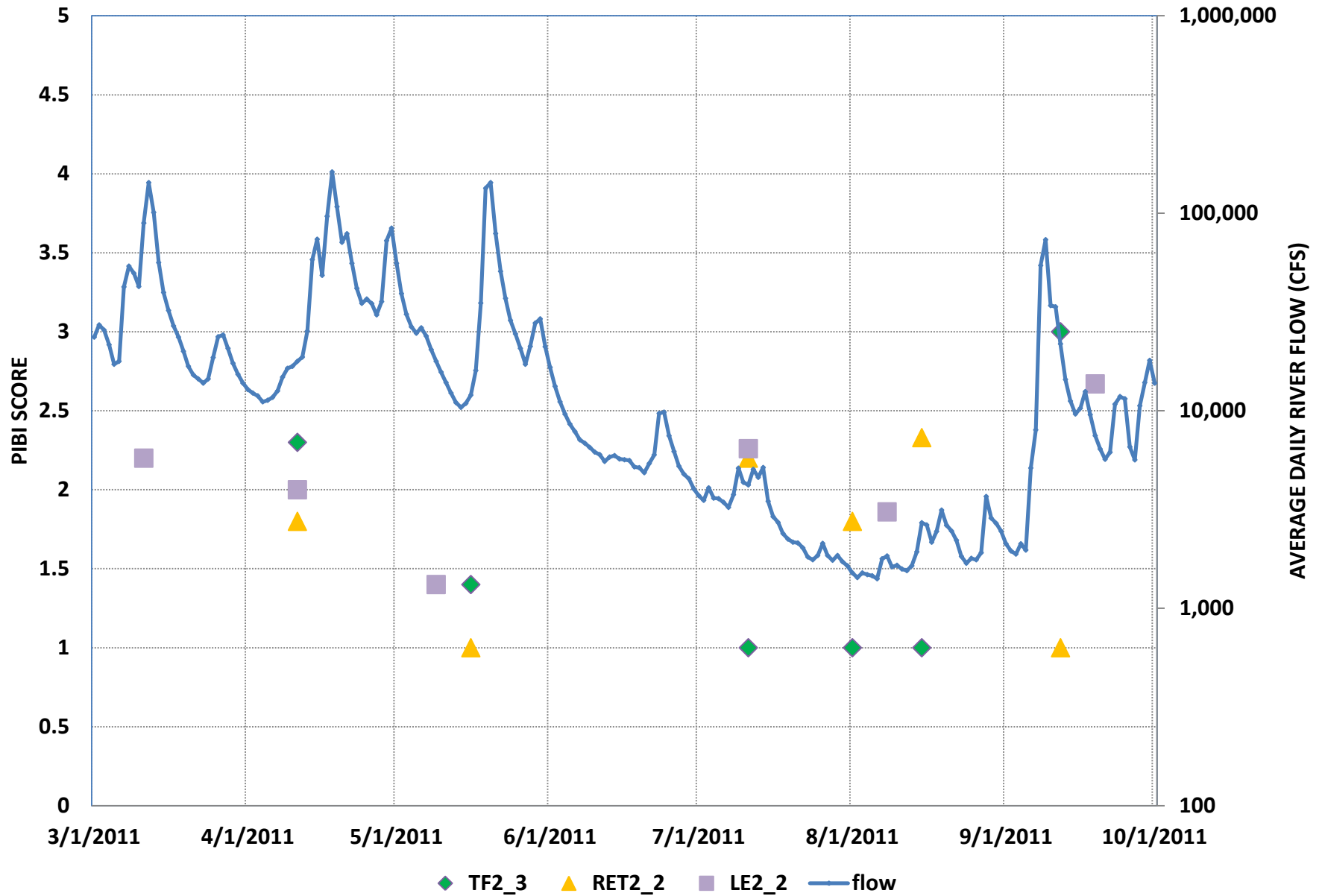
Maryland Tributaries



Patapsco River

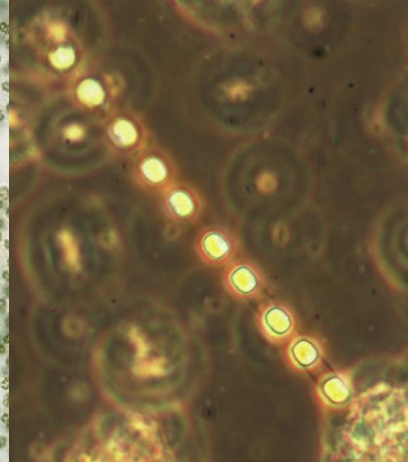
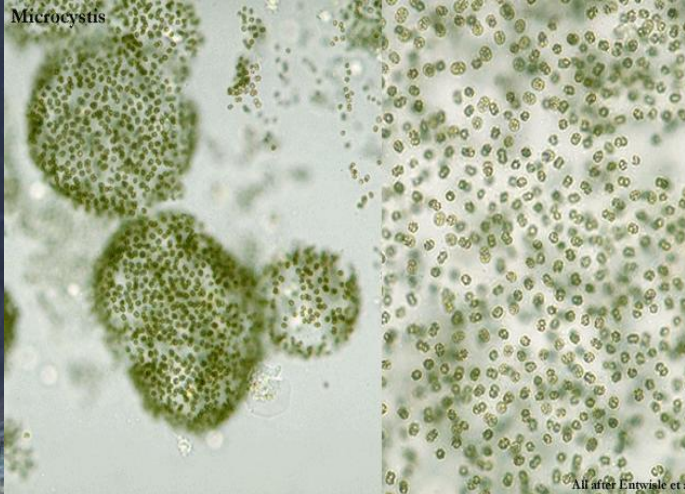
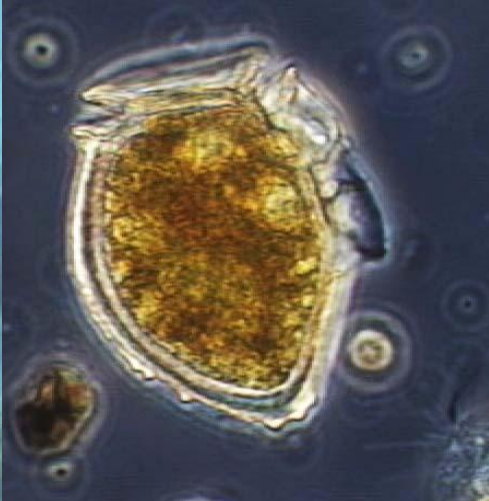
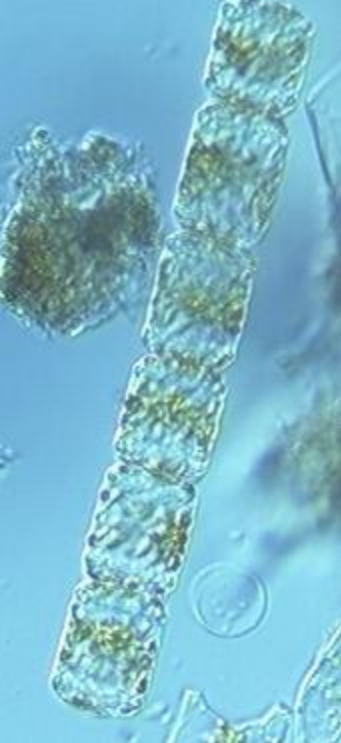


Potomac River



Issues and Options

- Due to reductions in sampling frequency the annual mean PIBI score is more likely to misrepresent a segment or a year with extreme flow events .
 - should we change the reporting window from 1 to 2 or more years?
 - Should reporting be limited to areas with more than one station
 - What should be the minimum number of sampling events for an area weighting analysis.



Discussion

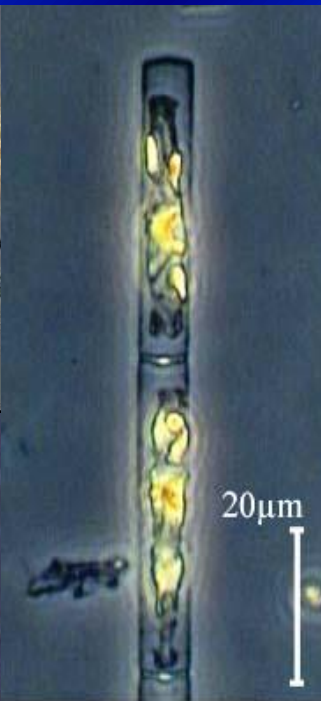
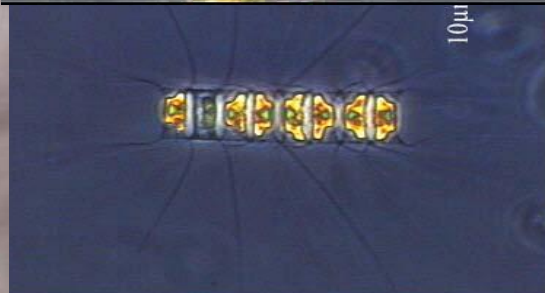


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