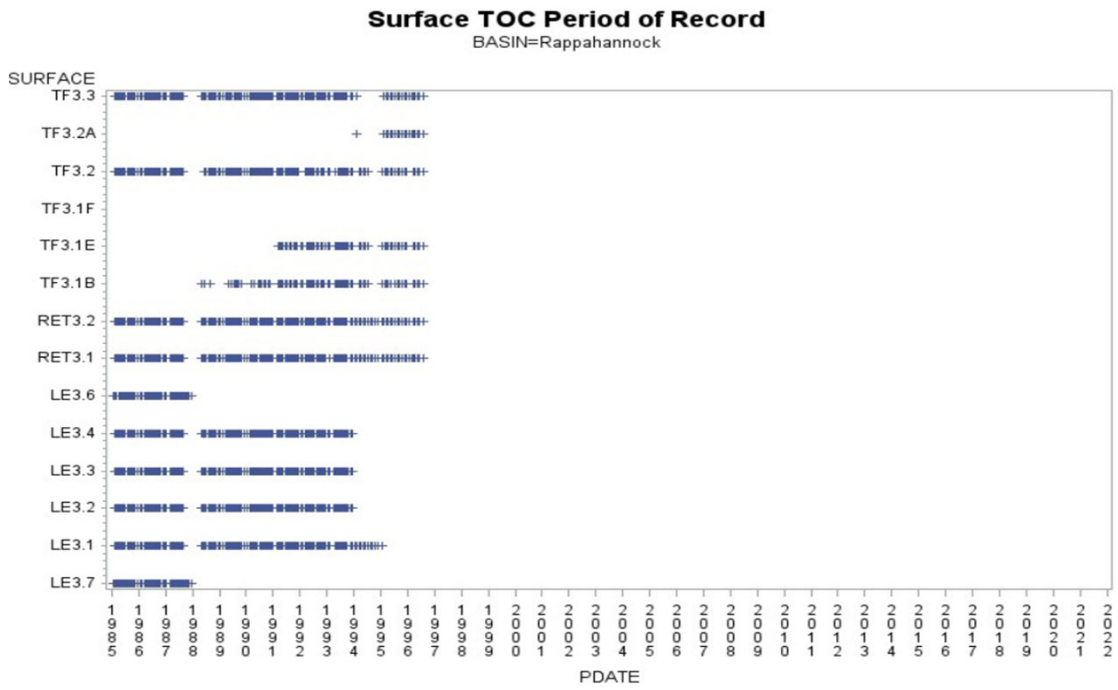
Total Organic Carbon

Sampled at nearly all Bay and Trib stations for varying periods of record except the uppermost TF stations.

Mainstem sampling discontinued in 1988.

Tributary sampling discontinued between 1994 to 1997 at different times for different stations.

Data are unsuitable for long term analysis.

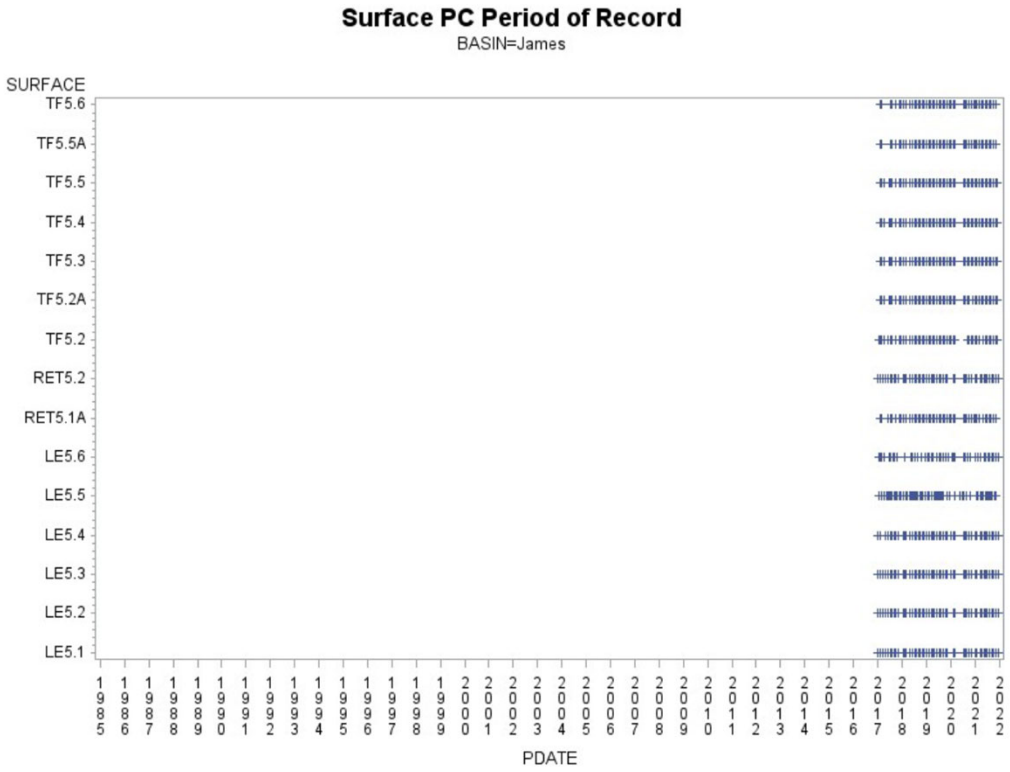


Particulate Carbon

Sampling at nearly all Bay and Trib stations begins in 2017.

Five years of data collection which will presumably continue.

Minimally SK trends on the last 5 years.



Dissolved Organic Carbon

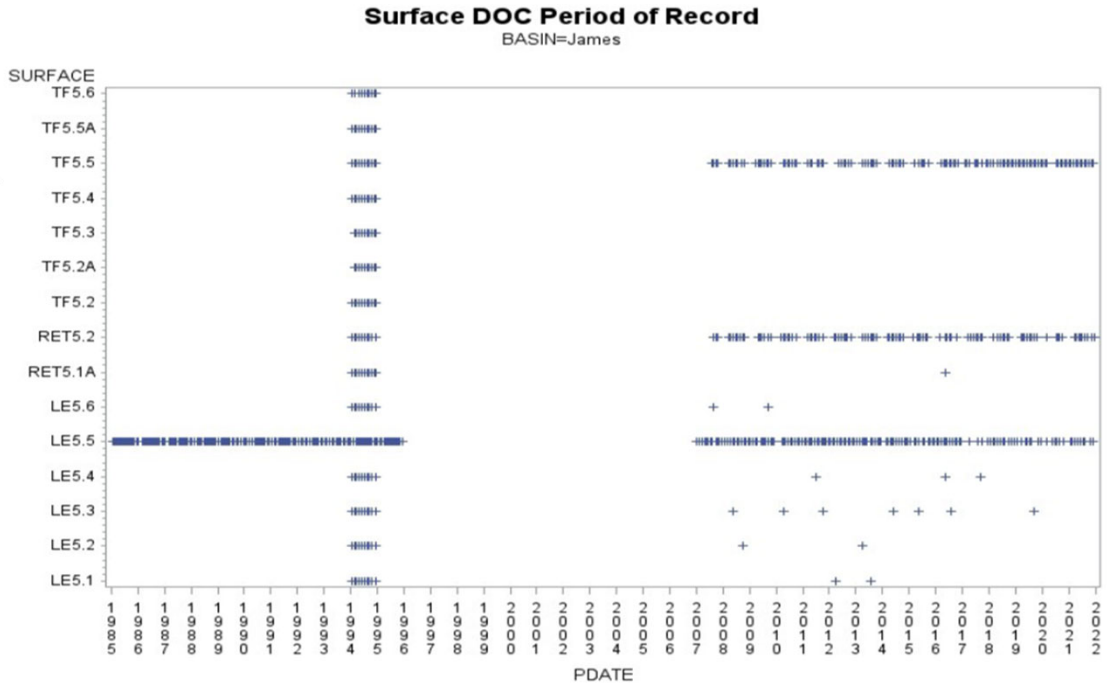
Sampling at Trib stations briefly for a year in 1994.

Mainstem stations sampled from 1985 through 1996 then discontinued (e.g. LE5.5).

Sampling re-instated at both Trib and Mainstem phytoplankton stations based on the P-IBI study.

Occasional samples found in the 2000s perhaps reflecting phytoplankton bloom locations.

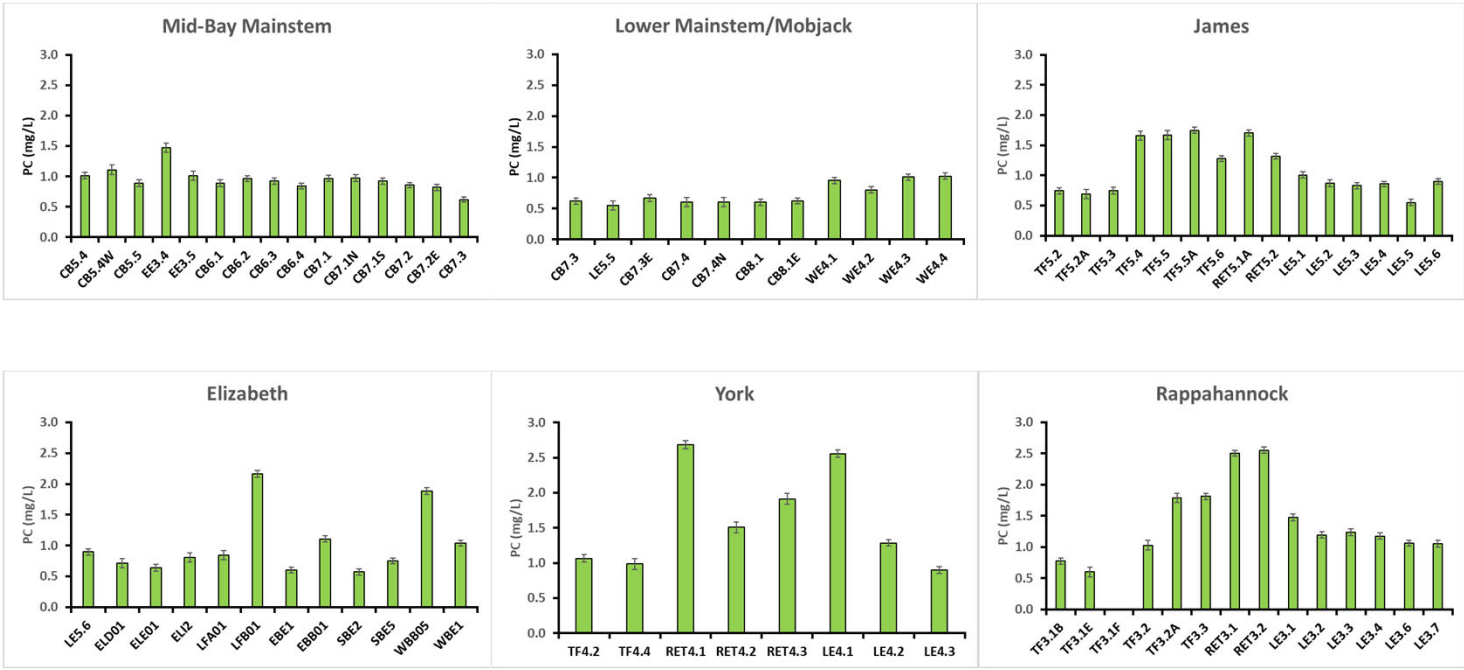
GAM analysis on DOC from 2007.



Particulate Carbon (2017-2022)

Lower in the Mainstem with a slight gradient towards Bay mouth

Most Tribs were low in the TF and LE, higher mid-estuary due perhaps to turbidity max.

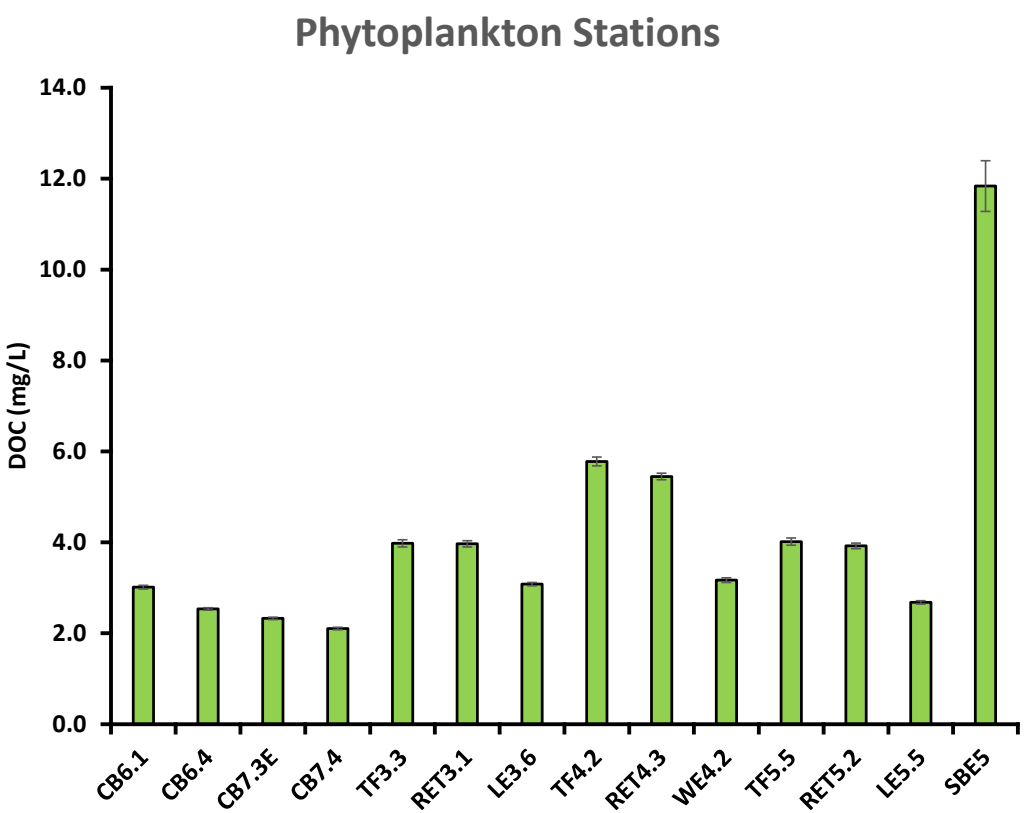


Dissolved Organic Carbon (2007-2022)

Generally decreasing down estuary in all basins.

Higher in the York River.

SBE5 was **2 to 6 times higher** than other stations.



Dissolved Organic Carbon (2007-2022)

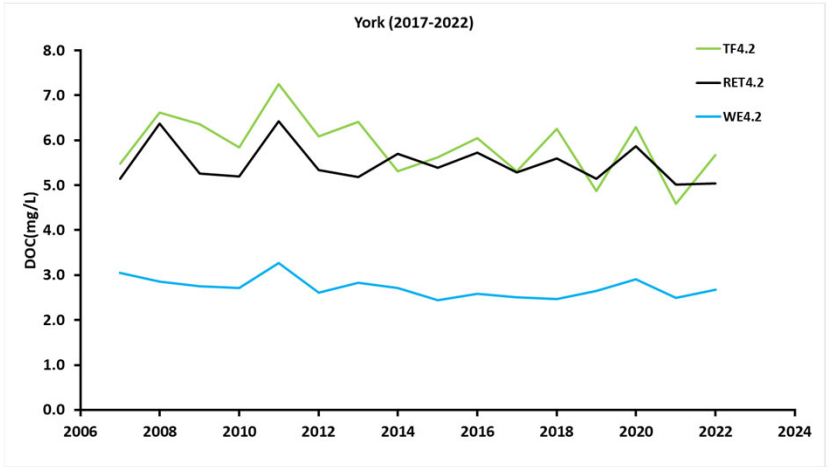
Patterns persistent across years for all stations

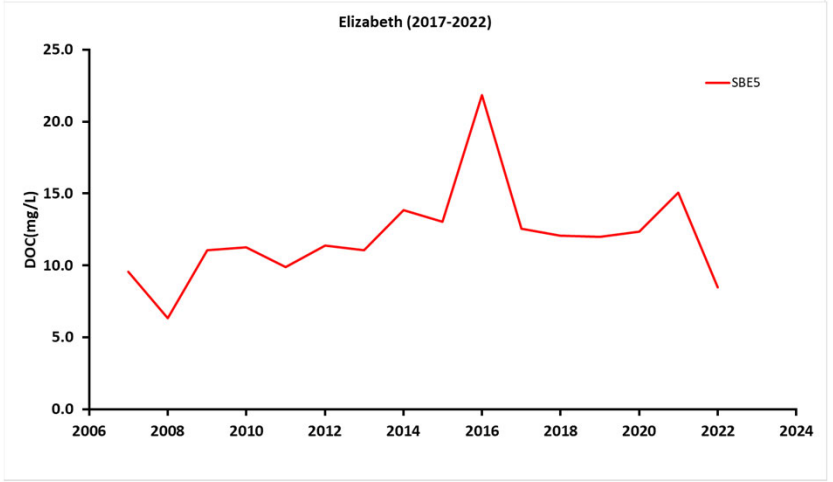
Slight gradient from up to down estuary.

York was the Trib with the highest values.

Except for SBE5 where it was generally much higher than the other stations.

Increasing trend at SBE5?





Dissolved Organic Carbon (2007-2022)

At two thirds of stations Chl a was positively correlated with DOC ($p < 0.05$).

At half DOC positively correlated to TSS. Three more, negatively.

Both suggest a potential connection to phytoplankton.

Many stations show a high negative correlation with salinity suggesting a positive relationship with flow or local freshwater runoff.

Connection to local runoff or flow inputs?

High values for DOC in the Elizabeth? Speculations…Discussion?

Station	Chl a	TSS	Salinity
CB6.1	0.37	0.43	-0.18
CB6.4	0.25	0.17	-0.42
CB7.3E	0.20	0.27	-0.46
CB7.4	0.33	-0.16	-0.68
TF3.3	0.25	-0.18	-
RET3.1	-	-0.23	-
LE3.6	0.38	0.39	-
TF4.2	-	-	-
RET4.3	-	-	-0.23
WE4.2	0.27	0.52	-0.37
TF5.5	0.33	0.23	-
RET5.1	-	-	-
LE5.5	0.21	0.50	-0.38
SBE5	-	-	-0.84