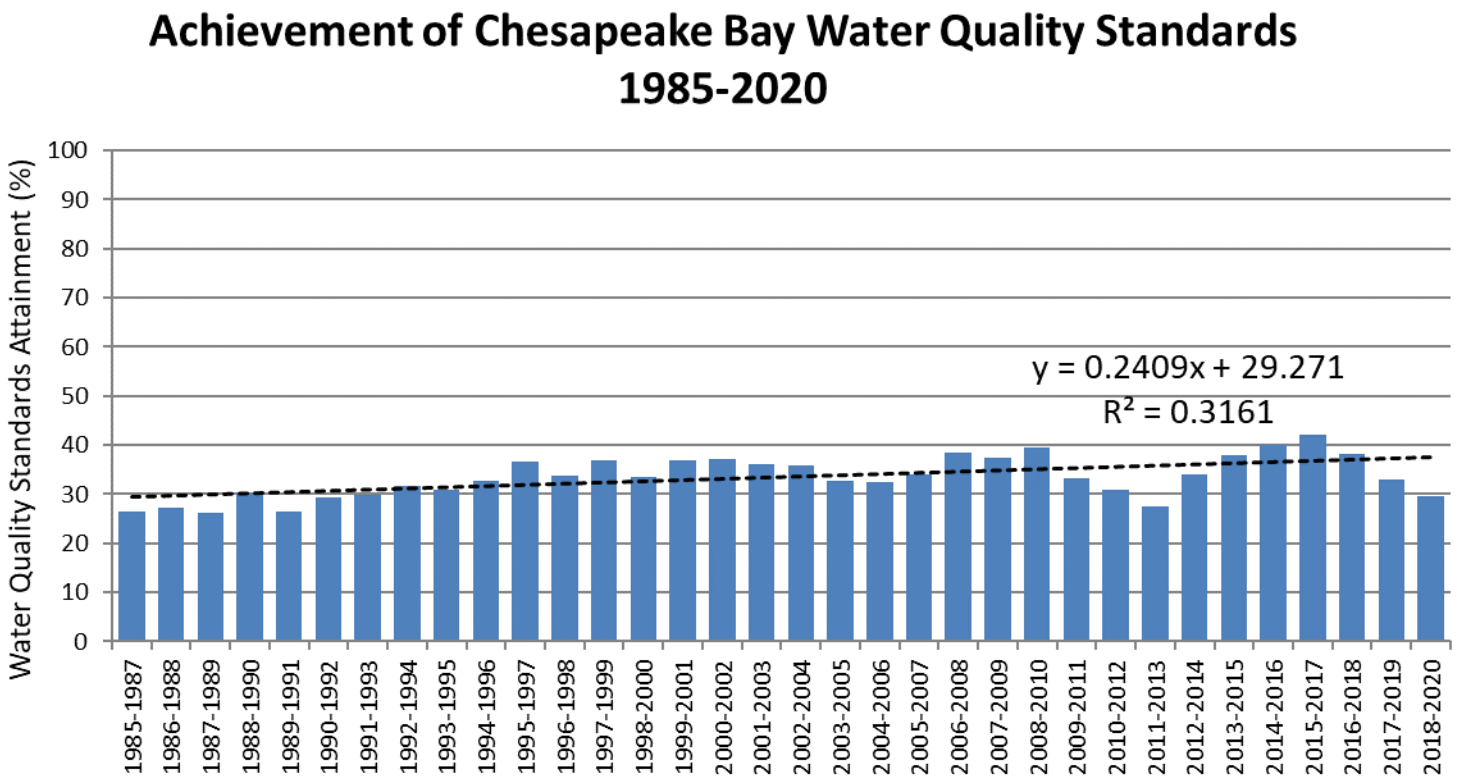
Chesapeake Bay Water Quality Standards Attainment Indicator (1985-2020)

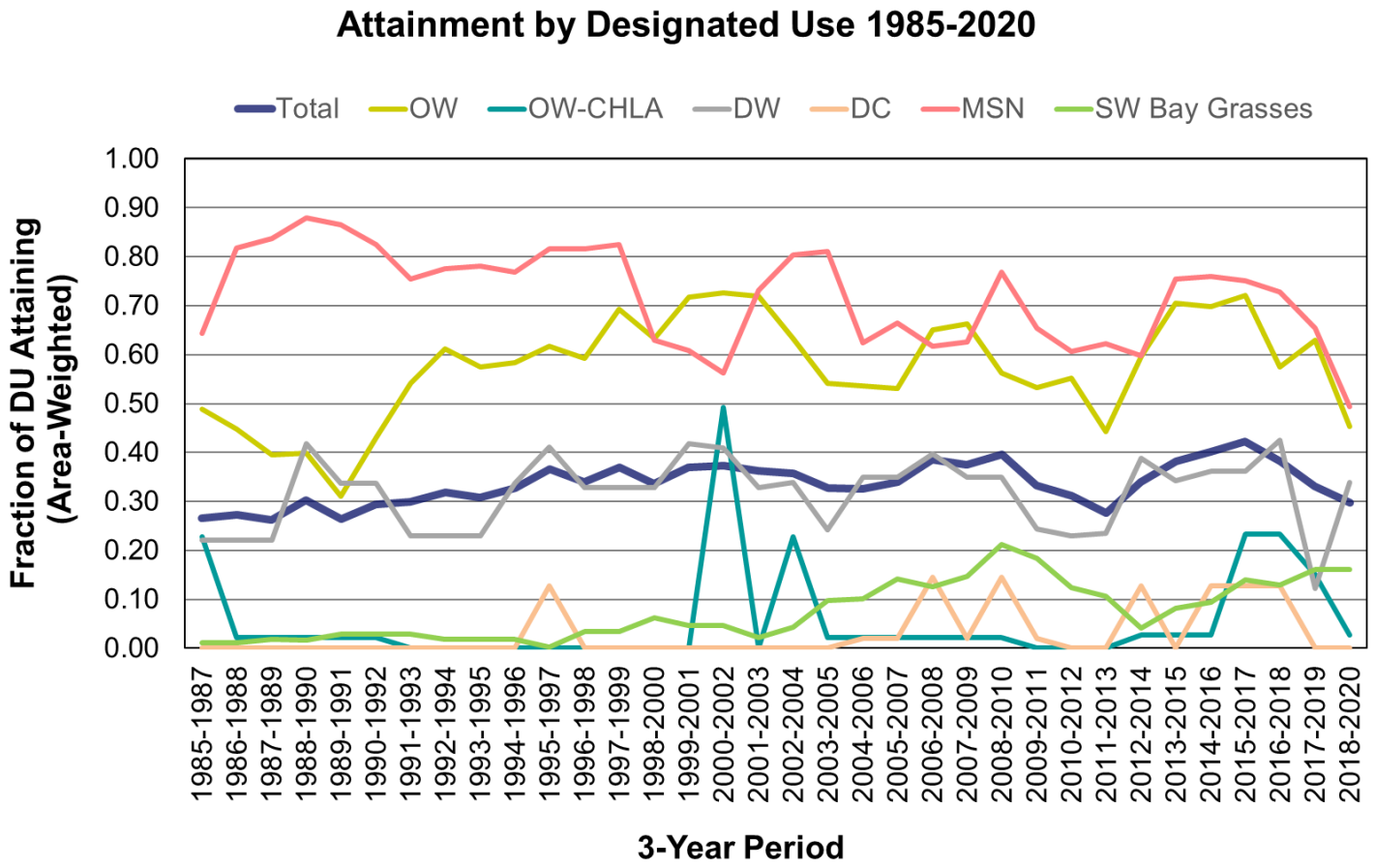
August 25, 2022



For the overall attainment indicator, a consecutive decline occurred during the 2016-2018, 2017-2019, and 2018-2020 assessment periods.

The latest score is 29.6%.

The record high of 42.3% occurred in the 2015-2017 period.



In terms of DU, the biggest contributors to the overall decline is OW-DO, MSN-DO, and CHLA.

By contrast, DW-DO improved in 2018-2020 compared with 2017-2019.

DC-DO and SWBG did not change.

INDICATOR FIGURE | DU FIGURE | INDICATOR TABLE | SEGMENT TABLE | COMPARISON TABLE | MSN MAP | OW MAP | DW MAP | DC MAP | CHLA MAP | SWBG MAP

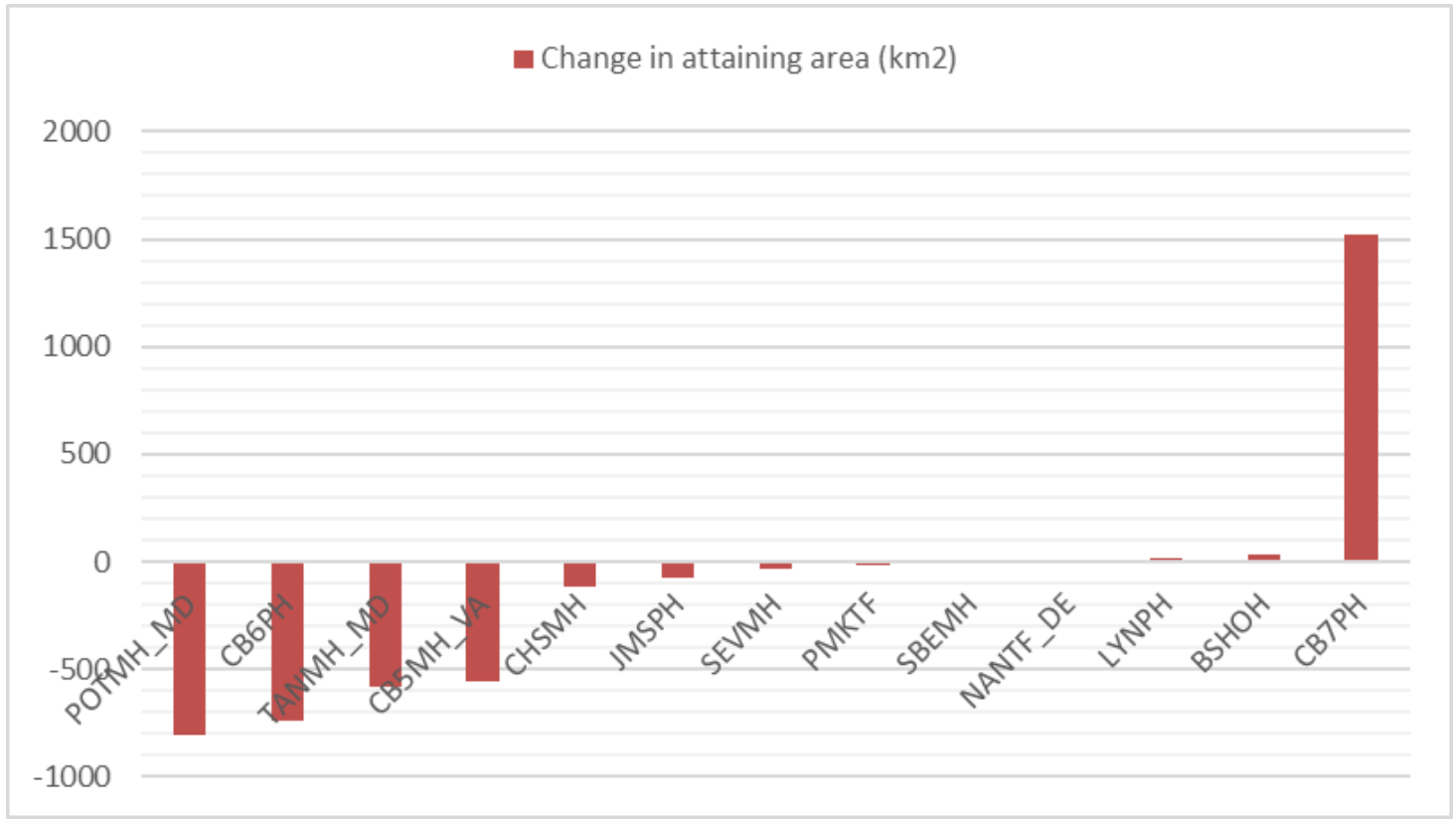
Show 50 entries Search:

	Segment	CHLA	DC	DW	MSN	OW	SWBG
1	BSHOH					Fail (2017) -> Pass (2018)	
2	CB5MH_VA					Pass (2017) -> Fail (2018)	
3	CB6PH					Pass (2017) -> Fail (2018)	
4	CB7PH			Fail (2017) -> Pass (2018)			
5	CHSMH					Pass (2017) -> Fail (2018)	
6	JMSPH	Pass (2017) -> Fail (2018)					
7	LYNPH					Fail (2017) -> Pass (2018)	
8	MAGMH				Pass (2017) -> Fail (2018)	Fail (2017) -> Pass (2018)	
9	NANTF_DE				Fail (2017) -> Pass (2018)		
10	PMKTF					Pass (2017) -> Fail (2018)	
11	POTMH_MD				Pass (2017) -> Fail (2018)		
12	POTMH_VA				Fail (2017) -> Pass (2018)	Pass (2017) -> Fail (2018)	
13	SBEMH			Pass (2017) -> Fail (2018)			
14	SEVMH					Pass (2017) -> Fail (2018)	
15	TANMH_MD					Pass (2017) -> Fail (2018)	

Showing 1 to 15 of 15 entries Previous 1 Next

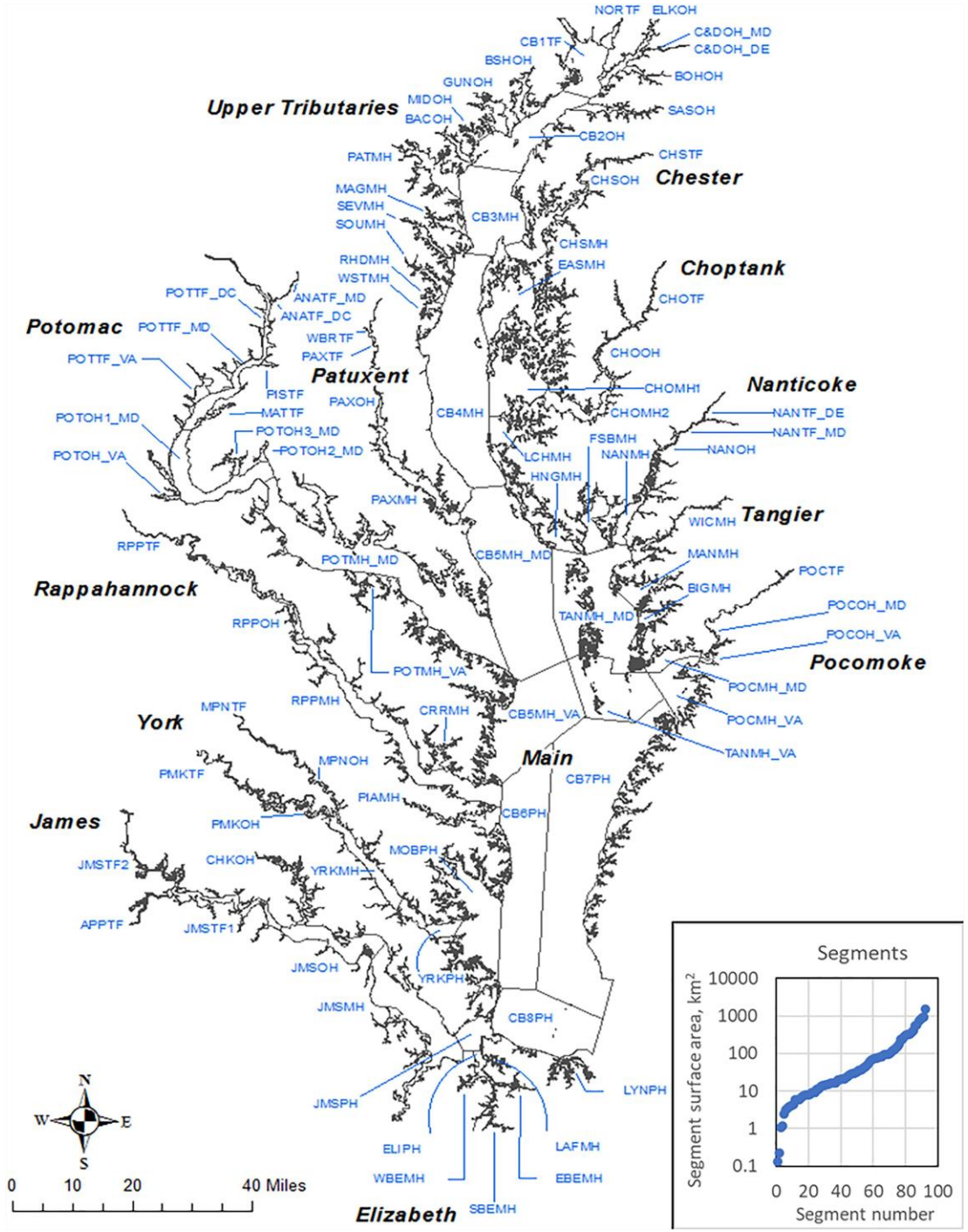
R Shiny APP developed to aid comparison of segment attainment status between two selected periods, e.g., 2017-2019 vs. 2018-2020.

It gives a quick overview of the DU-segment pairs that had a change in status (from 0 to 1 or the opposite).



In terms of segments, the largest contributors to the decline are POTMH_MD, CB6PH, TANMH_MD, and CB5MH_VA.

The largest contributor that goes against the decline is CB7PH; this segment greatly increased the total attaining area in 2018-2020.



To better understand the level of change by DU or segment, we can normalize the changes in attained area between 2017-2019 to 2018-2020 by the total surface area of the Bay.

	All DUs	MSN	OW	DW	DC	SWBG	CHLA
Total # of segments in attainment	-5	0	-4	0	0	0	-1
Total area in attainment, km2	-1,358	-744	-2,051	1,512	0	0	-77
Total area in attainment / Total Bay area	-11.6%	-6.4%	-17.6%	13.0%	0.0%	0.0%	-0.7%
DU contribution to the total "-1358 km2" number	100%	55%	151%	-111%	0%	0%	6%

Comparing 2018-2020 with 2017-19 by DU (i.e., integrating segments):

Attaining segments reduced by 5 (mostly OW).

Attaining area reduced by -1,358 km2 (largely OW-DO and MSN-DO).

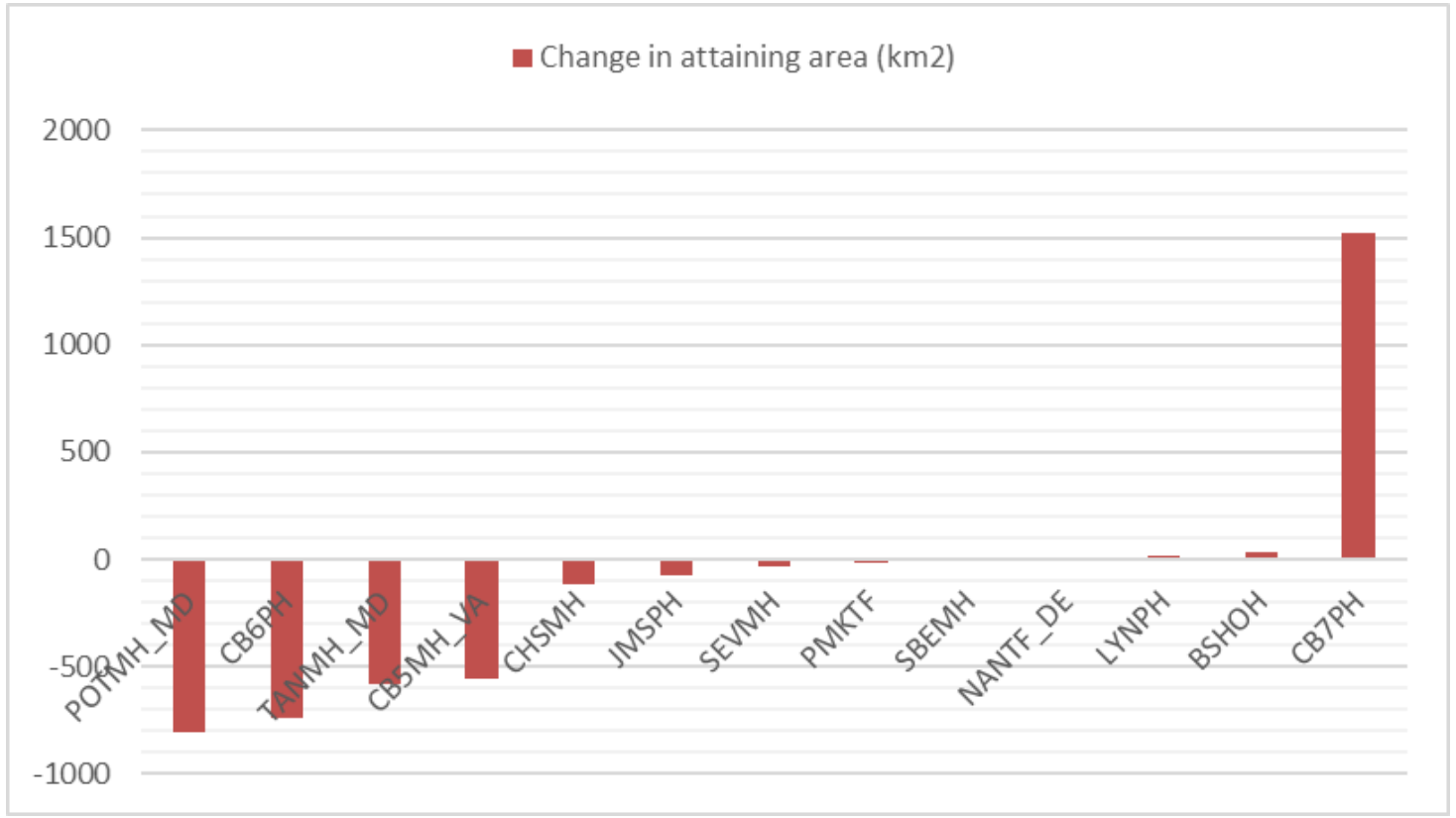
The decline is alleviated by DW-DO, which had an increase in attaining area (1,512 km2).

CBSEG_92	Count of change for all DUs	Segment area, km2	Change in attainment, % total Bay area
POTMH_MD	-1	804	-6.9%
CB6PH	-1	743	-6.4%
TANMH_MD	-1	581	-5.0%
CB5MH_VA	-1	554	-4.8%
CHSMH	-1	119	-1.0%
JMSPH	-1	77	-0.7%
SEVMH	-1	29	-0.3%
PMKTF	-1	16	-0.1%
SBEMH	-1	8	-0.1%
NANTF_DE	1	3	0.03%
LYNPH	1	20	0.2%
BSHOH	1	31	0.3%
CB7PH	1	1521	13.0%

Comparing 2018-2020 with 2017-19 by segment (i.e., integrating DUs):

Nine segments lost "attaining" area (1 DU each), with POTMH_MD, CB6PH, TANMH_MD, CB5MH_VA being most influential.

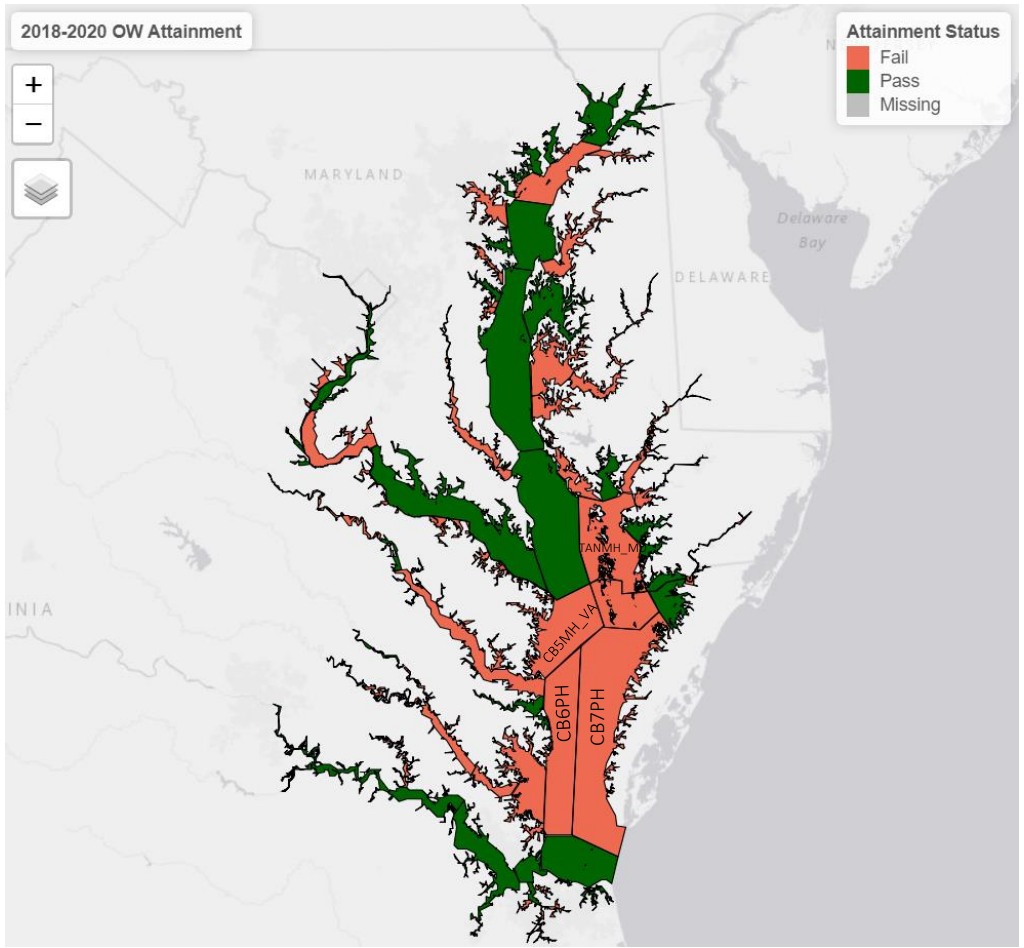
Four segments gained "attaining" area (1 DU each), with CB7PH being most influential.

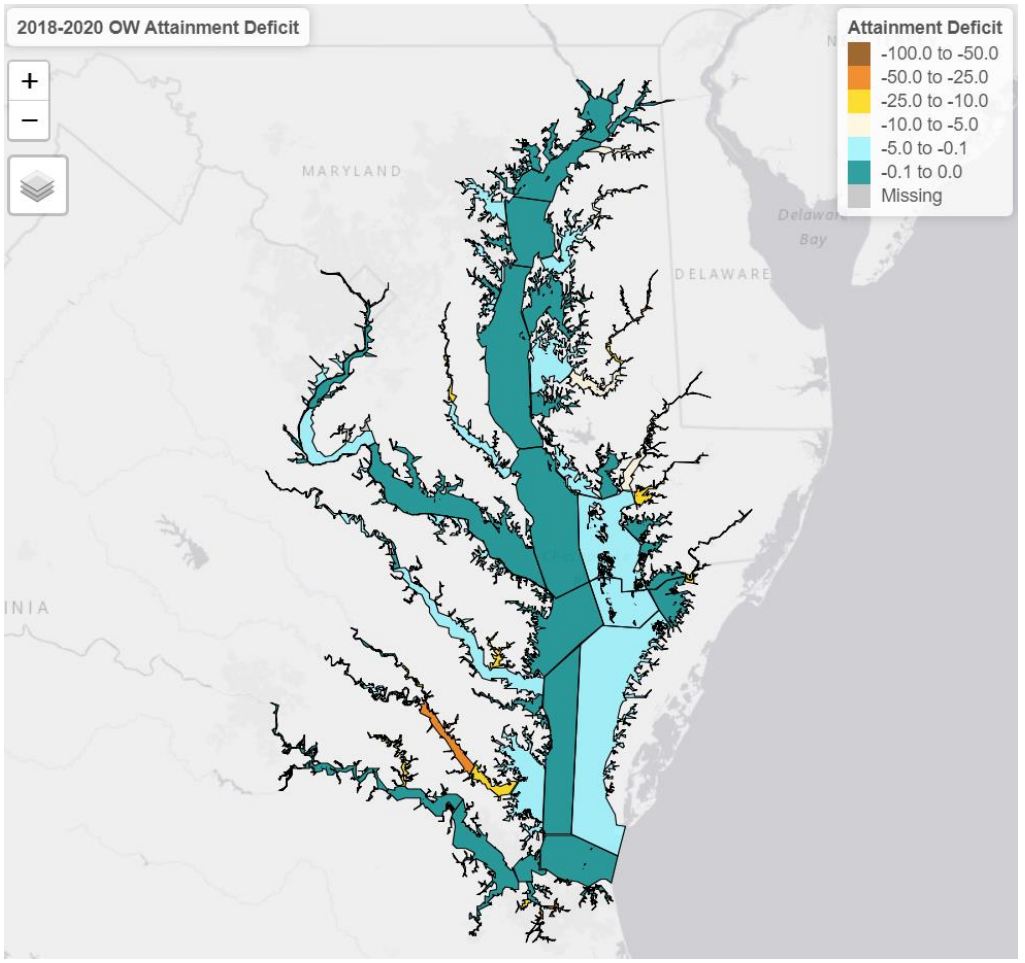


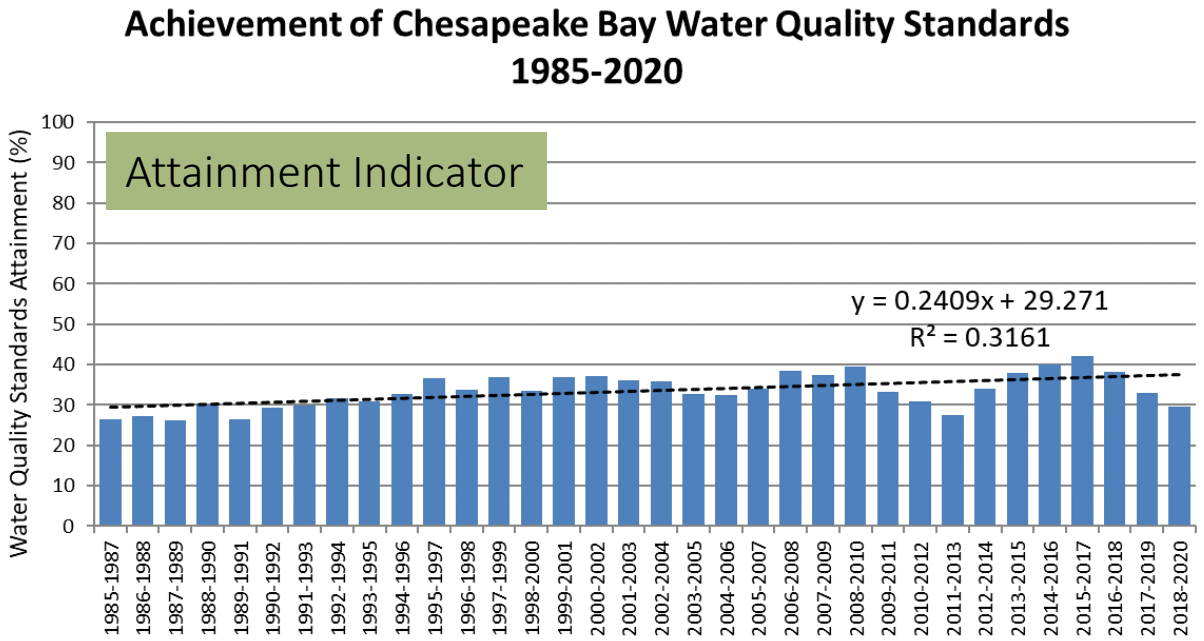
SEGMENT	PERCENT TO ATTAINMENT	ATTAINMENT DEFICIT
CB5MH_VA	99.98%	-0.02%
CB6PH	99.98%	-0.02%
POTMH_MD	99.75%	-0.25%
TANMH_MD	99.79%	-0.21%

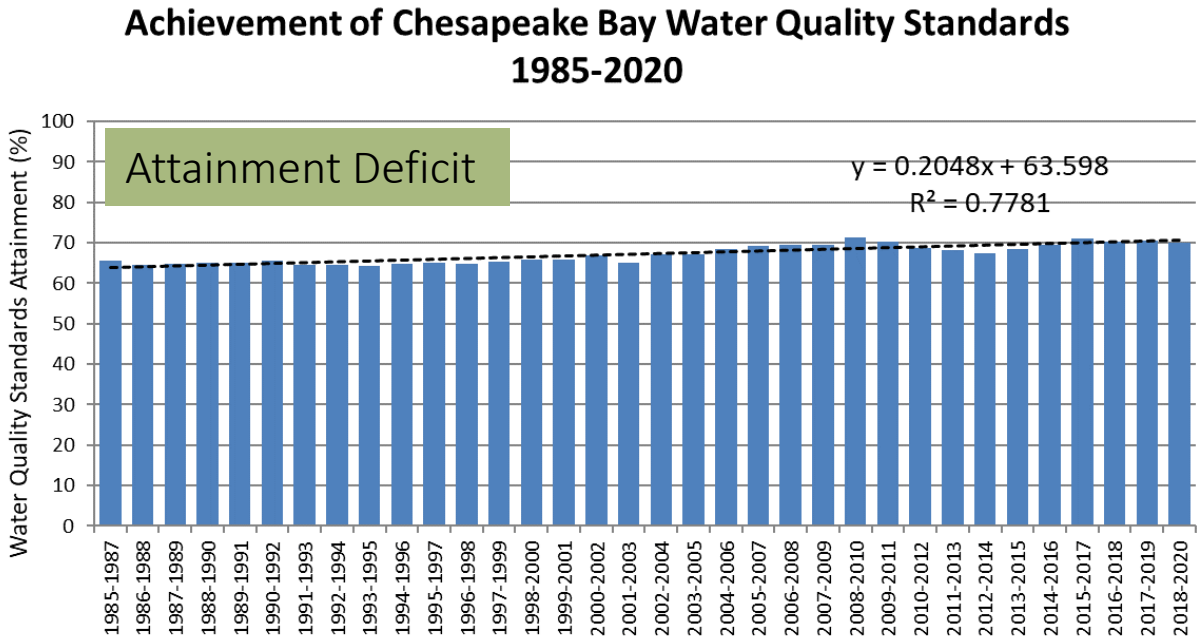
However, these "bad", large-area segments all have very minor deficit.

Unfortunately, these small deficits have resulted in the non-attainment status for these large segments in 2018-2020.


2018-2020 OW Attainment
Attainment Status
Fail
Pass
Missing
MARYLAND
Delaware Bay
DELAWARE
CB5MH_VA
CB6PH
CB7PH


2018-2020 OW Attainment Deficit
Attainment Deficit
-100.0 to -50.0
-50.0 to -25.0
-25.0 to -10.0
-10.0 to -5.0
-5.0 to -0.1
-0.1 to 0.0
Missing
MARYLAND
Delaware Bay
DELAWARE





If we integrated all the segment-DUs using attainment deficit (as opposed to the binary indicator), we would see minimal changes in the last few periods.

Overall, we still see an overall long-term improvement.