



Maryland
Department of
the Environment

Maryland's Chlorophyll a Criteria, Monitoring & Assessment Summary

**Slides for STAC Workshop: Advancing Monitoring Approaches to Enhance
Tidal Chesapeake Bay Habitat Assessment on Morning Water Clarity and
CHLA**

Friday, April 22, 2022

1:15 pm



Maryland's Chlorophyll a Criteria

- **Narrative Criteria for Class II – Estuarine and Marine Waters COMAR 26.08.02.03-3C.(10):**

“Chlorophyll a. Concentrations of chlorophyll a in free-floating microscopic aquatic plants (algae) may not exceed levels that result in ecologically undesirable consequences that would render tidal waters unsuitable for designated uses.”

- **Numeric Criteria for Public Water Supply Reservoirs assigned the “-P” designation (COMAR 26.08.02.03-3H.):**

“(1) The arithmetic mean of a representative number of samples of chlorophyll a concentrations, measured during the growing season (May 1 to September 30) as a 30-day moving average may not exceed 10 micrograms per liter; and

(2) The 90th-percentile of measurements taken during the growing season may not exceed 30 micrograms per liter.”



Maryland's Tidal Chlorophyll a Monitoring

- **Sonde Measurements**
 - MDNR monitors CHLA at its Continuous Monitoring sites (temporally intensive)
 - MDNR monitors CHLA in its DATAFLOW monitoring program (spatially intensive)
- **Lab-Analyzed Measurements**
 - MDNR samples at multiple depths at Main Bay and tidal trib sites
 - Samples taken at DATAFLOW calibration sites
 - Samples collected during ConMon site visits



Maryland's Freshwater Chlorophyll a Monitoring

- MDNR collects lab-analyzed samples at a subset of non-tidal tributary sites (Core/Trends)
- MDNR and MDE both collect lab-analyzed CHLA at impoundments at a set of representative monitoring stations



(MDE, 2016)



Maryland's Chlorophyll a Assessments

- Estuarine – What data is available has not been recently assessed.
- Freshwater – CHLA monitoring data in (-P) reservoirs was most recently assessed for MD's 2020-2022 Integrated Report and led to several impairment listings



Thoughts for CHLA and Other Assessment Needs

- For Estuarine waters – Hold regular CAP workgroup meetings to address assessments of existing nutrient-related criteria (i.e. high frequency DO)
- For Freshwater Lakes, evaluate EPA's 304a criteria (2021) for nutrient pollution in Lakes and Reservoirs



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