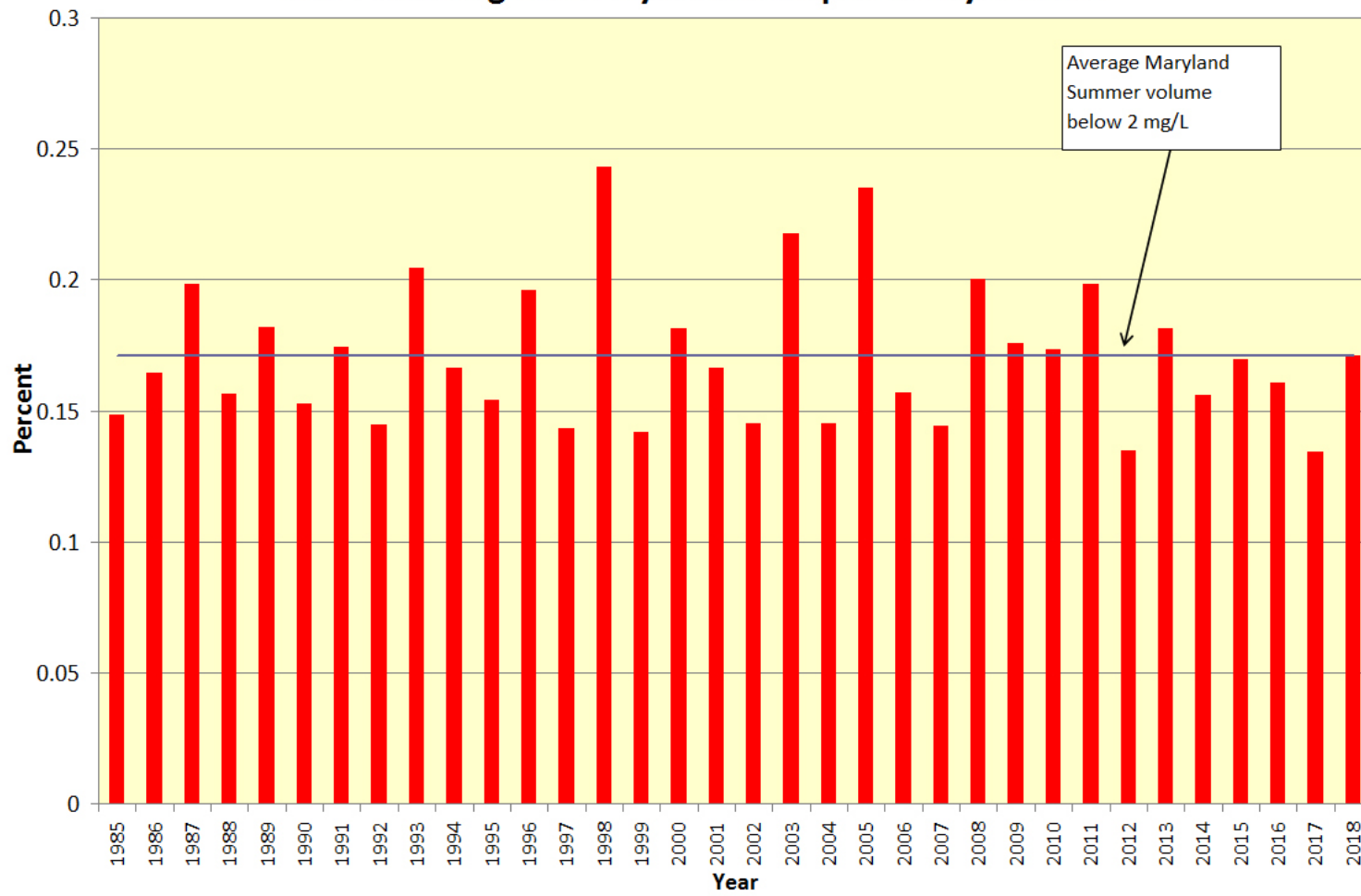


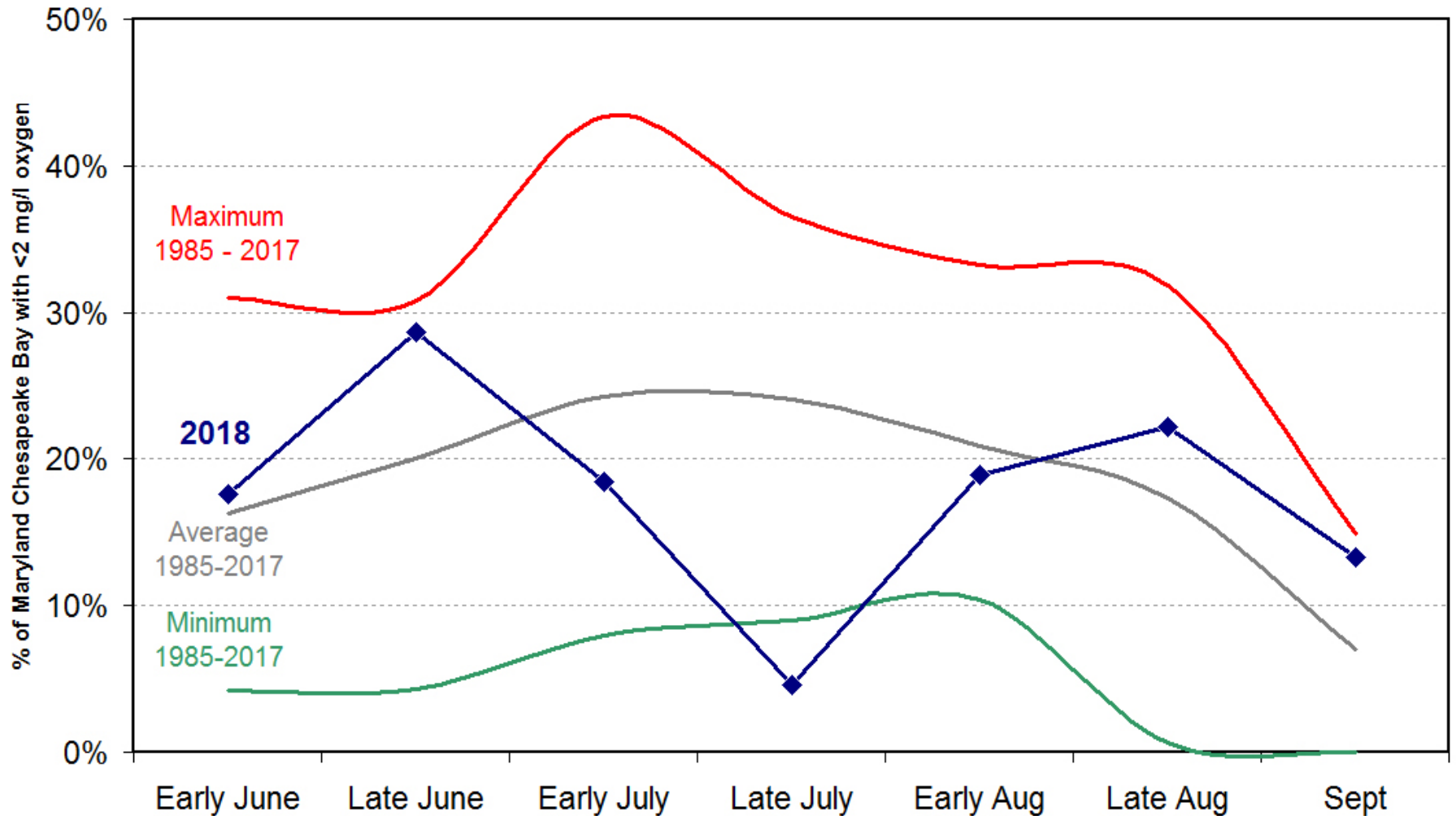
2018 Summer Hypoxia Forecast

- Forecast called for an above-average dead zone in the Chesapeake Bay
- Based on higher than average spring flows and associated N loads from Susquehanna and Potomac Rivers
- Forecast developed by UMCES and U of Michigan, (funding support thru NOAA)
- DNR's 2017 Summer Hypoxia results: one of the best on record

Summer 2018 - Average Volume of Dissolved Oxygen below 2 mg/L as a Percentage of Maryland Chesapeake Bay Volume



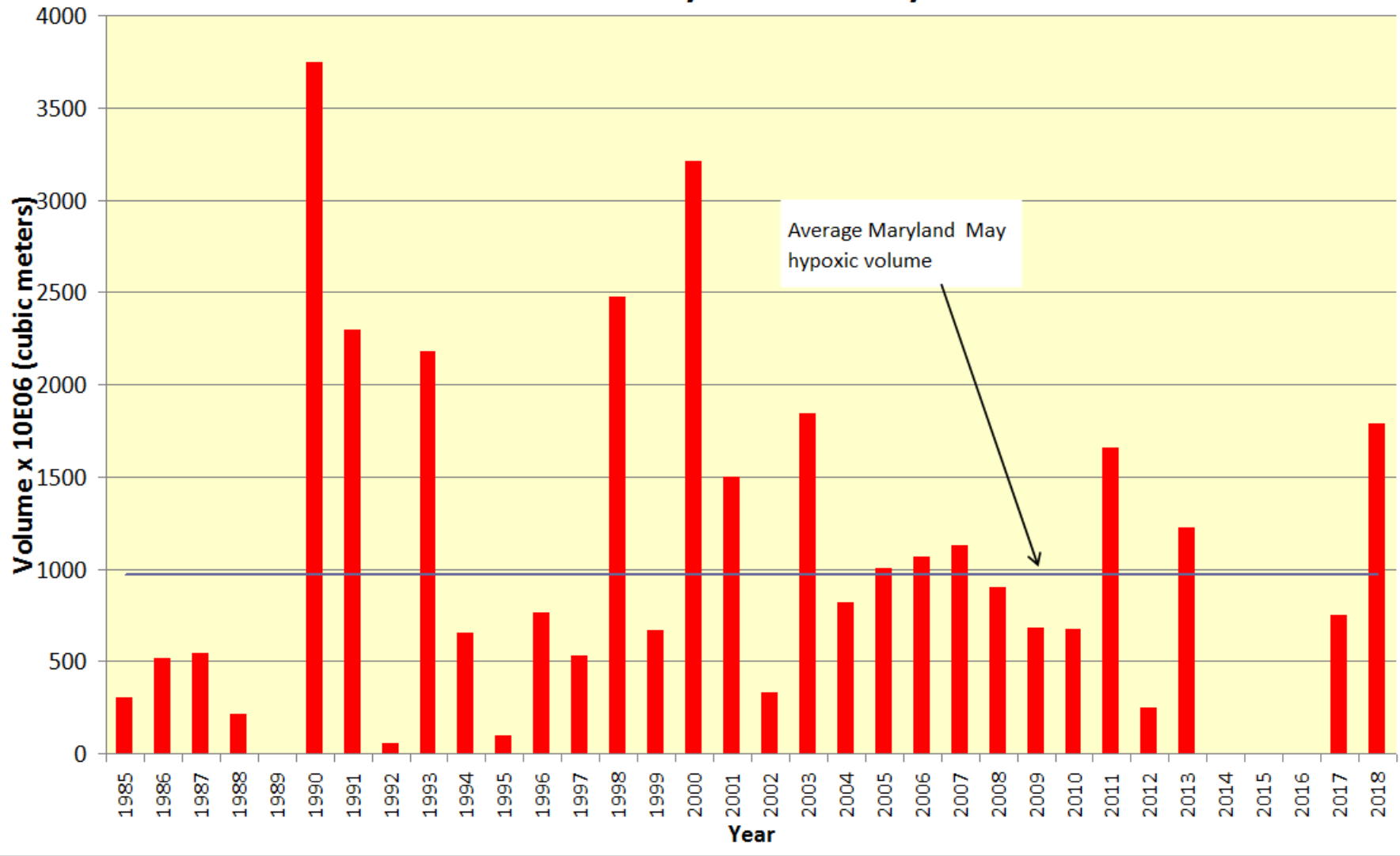
Percentage of Water in Maryland's Mainstem Chesapeake Bay Below 2 mg/l Oxygen



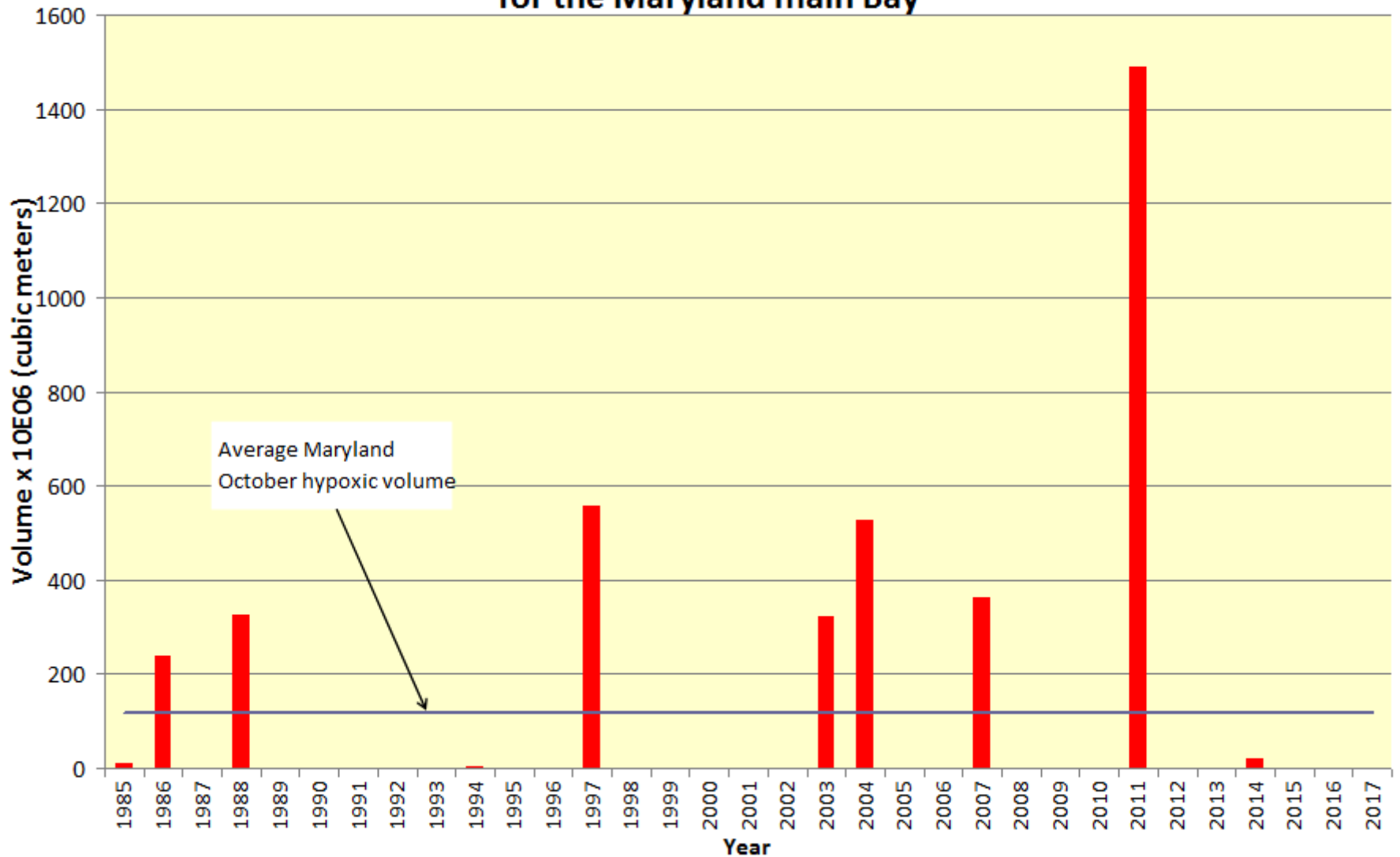
2018 Summer Characteristics

- June results as predicted
- July – impacts of record high flow events
- Second July cruise set record low hypoxia due to extreme mixing
- Hypoxia rebound in August and September
- September showed nearly record high hypoxia
- Evaluating May and October

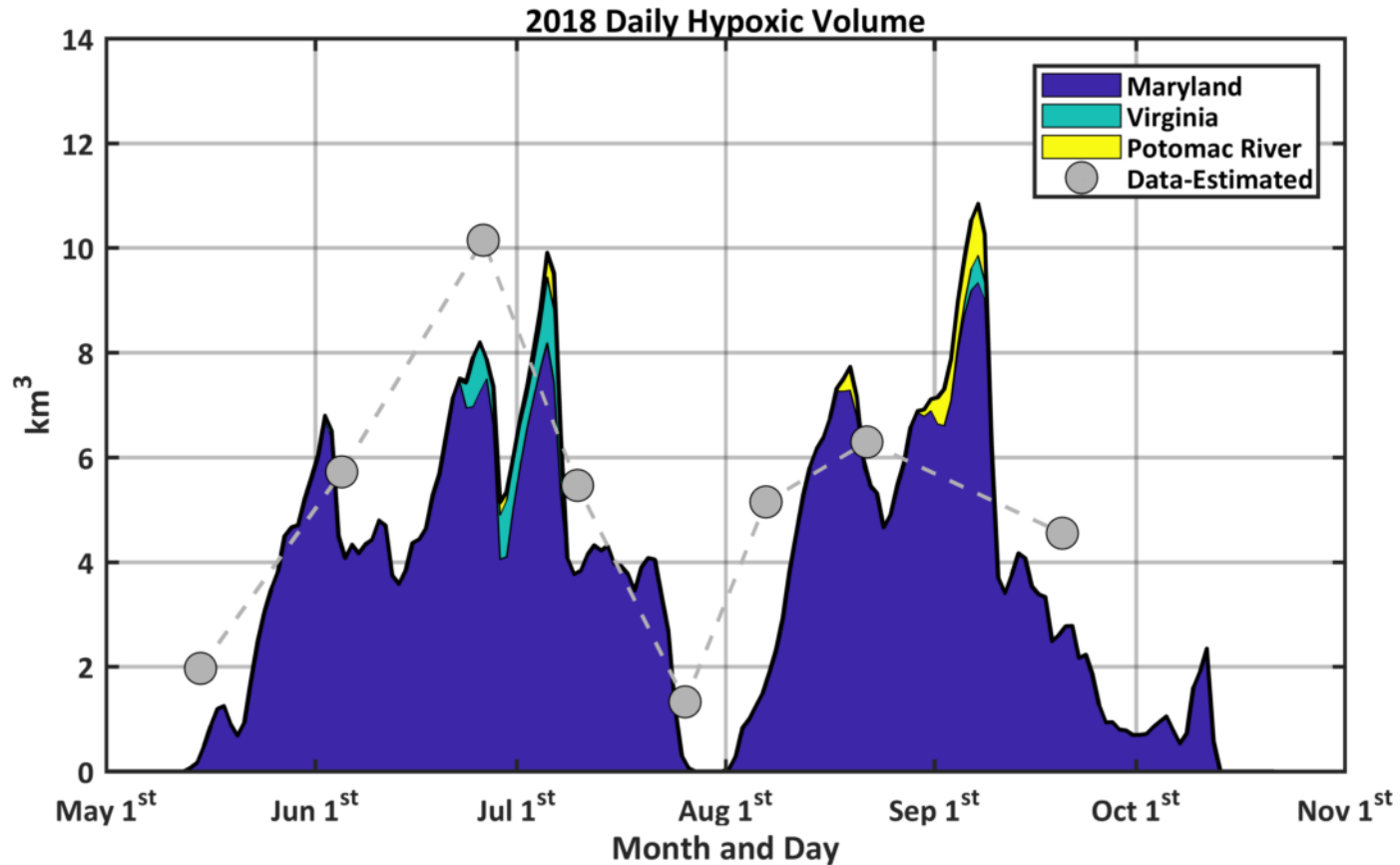
May cruise volume below 2mg/l for the Maryland main Bay



October cruise volume below 2mg/l for the Maryland main Bay



VIMS Forecast Compared to Discrete Sampling Events



Next Steps

- Due to extended periods of hypoxia in May – October, is there a need to evaluate timing of summer DO water quality criteria?
- These conditions might be exasperated by Climate Change
- Is there a need for multiple monitoring cruises in May and October?