Responding to the PSC Request to Improve the CBP Monitoring Networks: Hypoxia Collaborative - continued

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Hypoxia Collaborative

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Process

9 months start to finish

8 questions to answer

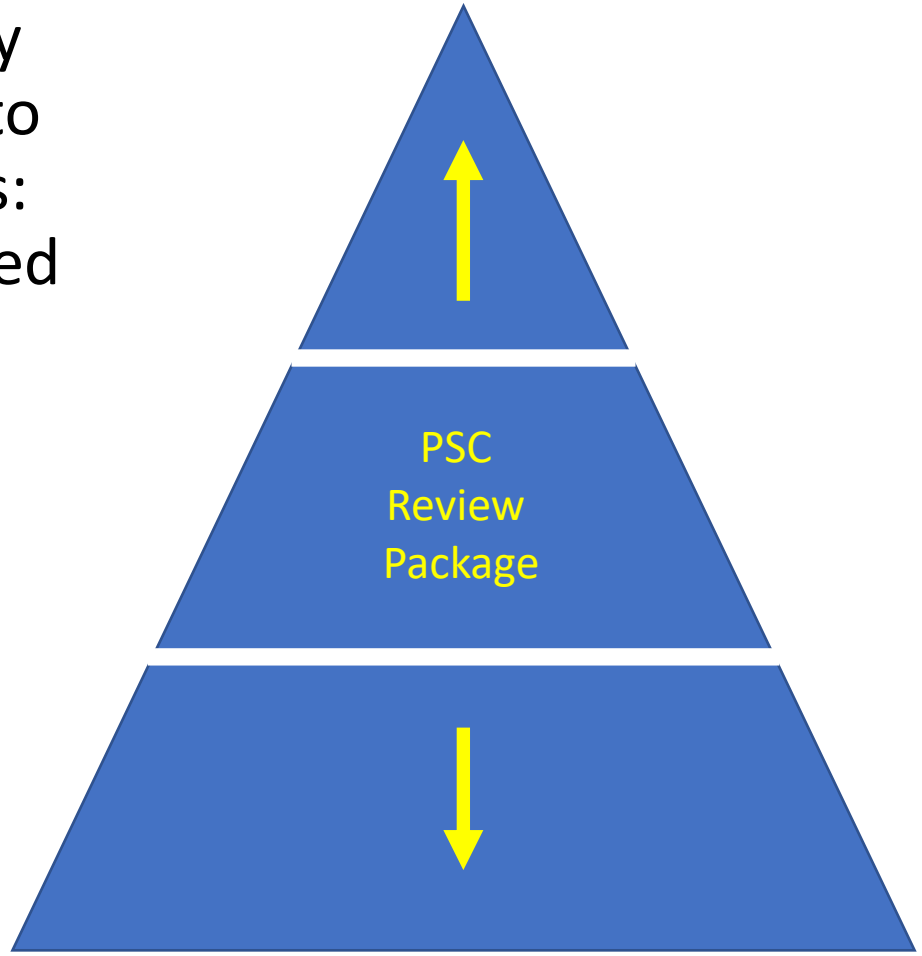
Provide a short synthesis to address the questions, vision going forward.

The finish line: Sharp, focused recommendations on sustaining and growing the network will be key

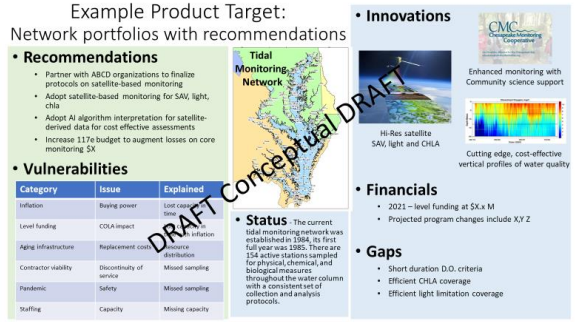
- Operationalize research to monitoring programming (e.g., new ConMon sensor applications)
- Acknowledge and grow partner commitments (e.g., NOAA, NASA)
- Enhanced use of existing resources (e.g., 4D Water Quality Estimator)
- Define investment needs with planned gap filling return on investment (ROI) – (e.g., vertical profiler network development)

Delivering a final product: Tiered communication

- 1 page: Executive summary on the recommendations to sustain and grow networks: strategies, resources needed
- 1 (max 2) page network portfolio summaries
- Short report on the 8 questions



Exec
Summary
1 pg

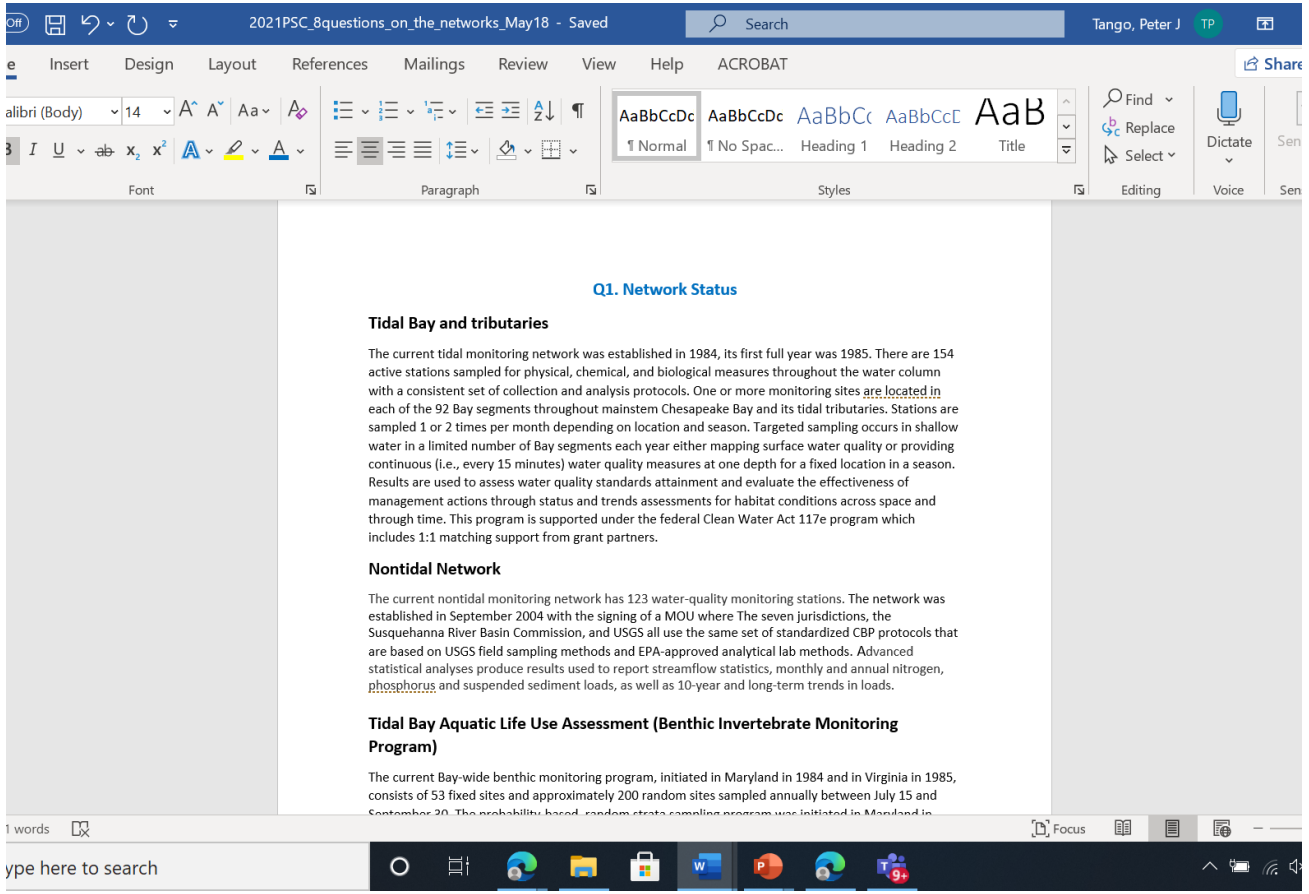


Report
Q1-Q8
Reference

Report product

- Topics addressed with single paragraph summaries supported by tables and graphics.

- NTN WG meetings take bites at this in workshop mode to review/edit together



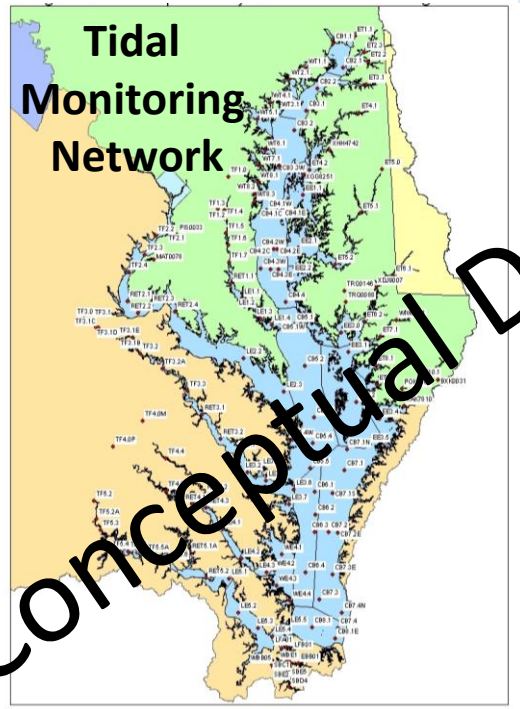
Example Product Target:
Network portfolios with recommendations

• Recommendations

- Partner with ABCD organizations to finalize protocols on satellite-based monitoring
- Adopt satellite-based monitoring for SAV, light, chla
- Adopt AI algorithm interpretation for satellite-derived data for cost effective assessments
- Increase 117e budget to augment losses on core monitoring $X

• Vulnerabilities

Category	Issue	Explained
Inflation	Buying power	Lost capacity in time
Level funding	COLA impact	Lost capacity in time with inflation
Aging infrastructure	Replacement costs	Resource distribution
Contractor viability	Discontinuity of service	Missed sampling
Pandemic	Safety	Missed sampling
Staffing	Capacity	Missing capacity

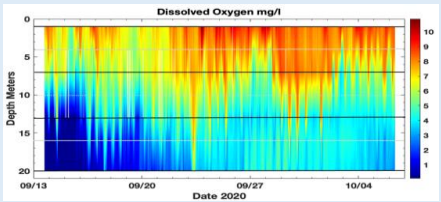


• Status - The current tidal monitoring network was established in 1984, its first full year was 1985. There are 154 active stations sampled for physical, chemical, and biological measures throughout the water column with a consistent set of collection and analysis protocols.

• Innovations

Hi-Res satellite
SAV, light and CHLA

Enhanced monitoring with Community science support



Cutting edge, cost-effective vertical profiles of water quality

• Financials

- 2021 – level funding at $X.x M
- Projected program changes include X,Y Z

• Gaps

- Short duration D.O. criteria
- Efficient CHLA coverage
- Efficient light limitation coverage


The
Path
Ahead

Spring season – basic background info

- Q1 and Q2 – network summary, vulnerabilities

Summer season – define level funding impacts

- review/update network objectives
- Capture level funding impacts to network and budget 5 yr timeline,
- what have we done in the past to address level funding challenges

Summer-autumn – Develop and codify recommendations

- Define any changes in how we do business among partners to cover any projected losses.
- Define programming and funding needed to sustain what we have in the network
- Define programming and funding needed to address new objectives.

The CBP fit

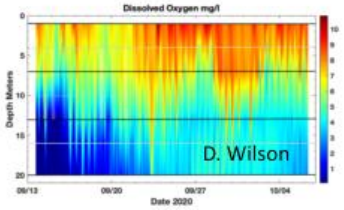
Dissolved oxygen – 4D WQ estimation to support water quality stds assessment

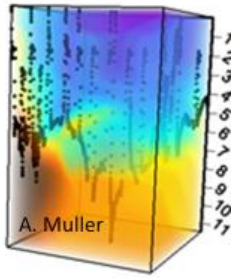
Fitting in the data utility

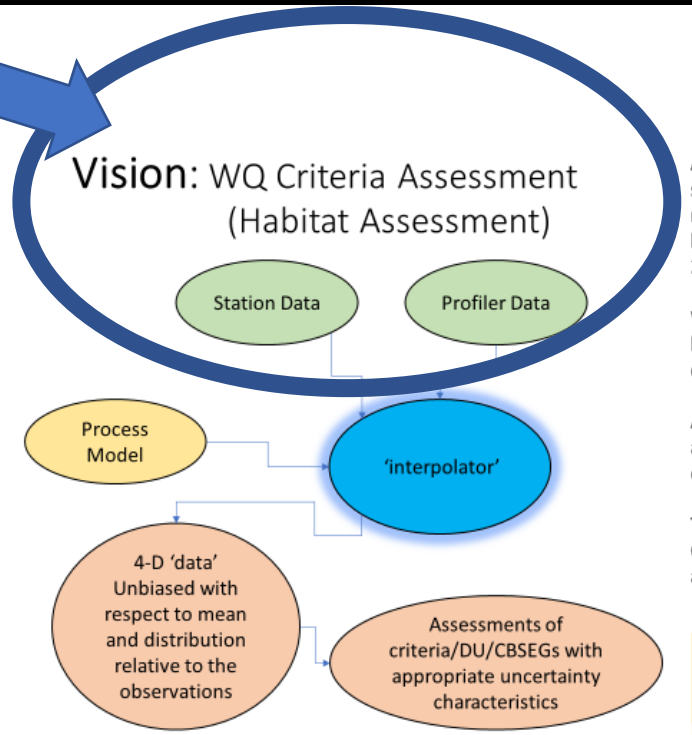
4D BORG
(Bay Oxygen Research Group)
(aka, "Interpolator Innovation Team")

Peter Tango/Rebecca Murphy
Team Leads

April 2021 Opening Meeting of the BORG







An 'interpolator' would take inputs from station data, profiler data, and process models to produce a complete historical hourly record of DO on perhaps a 200x200x1 meter cell framework.

We would want to specify that the resulting history was unbiased relative to several different distribution metrics

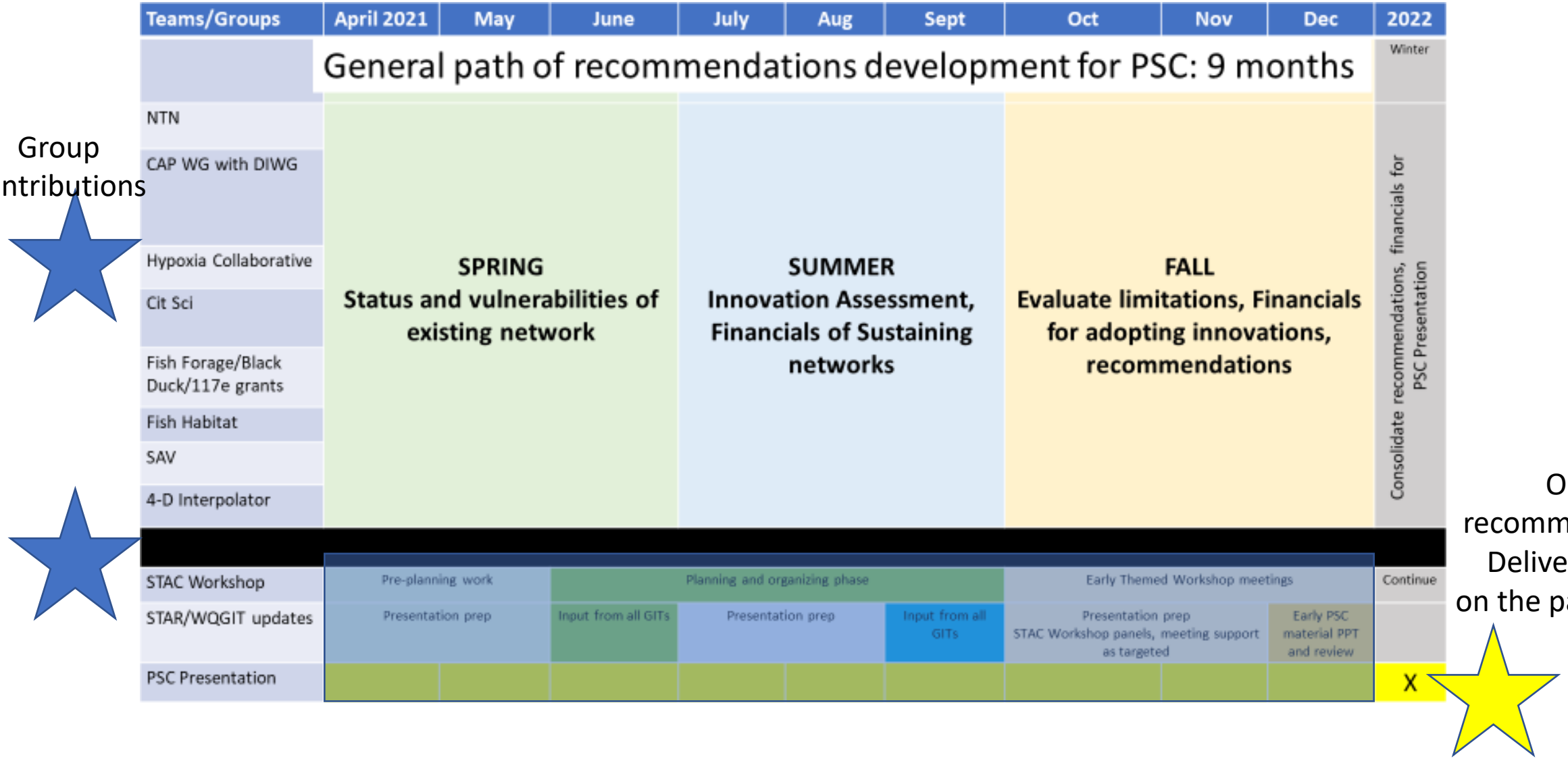
Assessments would be carried out in those areas and times-scales when uncertainty estimates are within acceptable ranges.

This could perhaps be tested using ChesROMs as the profiler data and WQSTM as the process model.

* Work underway by 4D BORG
= 4-D Water quality estimator team

Timeline: Engaging groups across CBP for input, delivery of recommendations for building network, support requests

Group contributions



One recommendation Delivery stop on the path ahead