

Alternative definitions of Water Quality Standards

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STAC/STAR Innovative Monitoring Design Workshop

What are Water Quality Standards?

- Set by each state, water quality standards regulate how clean a water body should be. The standards consist of:
 - the water body's designated uses,
 - water quality criteria to protect those uses
 - assessment methods to determine if the criteria are being attained, and
 - antidegradation policies to help protect high quality water bodies.

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Dissolved oxygen, water clarity and chlorophyll a criteria were derived for Chesapeake Bay(USEPA 2003)

Applicable Designated Uses

- Migratory fish spawning and nursery habitat;
- Open water fish and shellfish habitat;
- Deep-water seasonal fish and shellfish habitat;
- Deep-channel seasonal refuge habitat; and
- Shallow water Bay grass habitat.

2013-14

- Creating a new shallow water designated use for dissolved oxygen criteria was considered by the Criteria Assessment Protocol Workgroup.
- Results – no new designated use recommended. U.S. EPA is already flexible in supporting sub-segmenting assessment areas in cooperation with States where appropriate.

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Evolving assessments of water quality criteria

- The monitoring framework:
 - 161 long term water quality monitoring stations sampled 1-2x monthly
 - DATAFLOW mapping for water clarity and chlorophyll a assessments.
- Assessments
 - 3 yr Cumulative Frequency Distribution evaluation

Question

- Could we adopt an extensive use of sentinel stations and apply a Bay model for making assessments then serving as an accepted method for extrapolation and interpolation in space and time to cover the Bay and its tributaries?
 - Result: Reduce monitoring program costs supporting water quality standards assessment without impacting uncertainty of our results.
 - Need to run a Bay model in data assimilation mode.

Additional Suggestions?