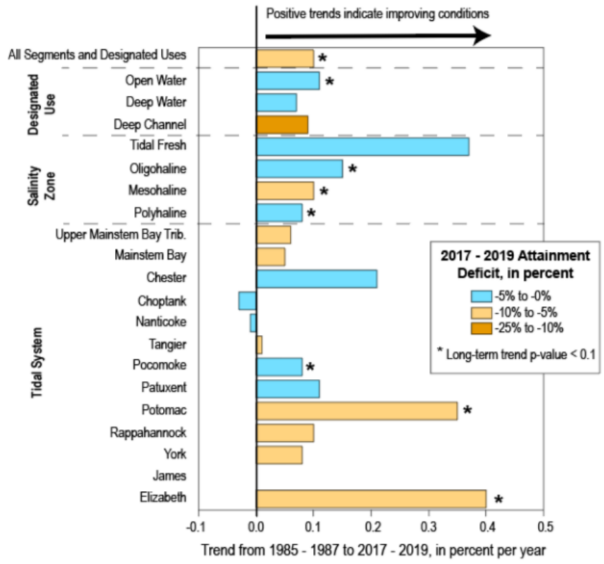
List of MTM Criteria and Descriptions

Number of criteria that fall into the following categories
WQ (water quality oriented): 5
LR (living resource oriented): 5
Misc (miscellaneous or social CBP outcomes oriented): 3
All (cross-GIT or cross-outcome): 4

* indicates that the criteria will be assessed using data we are compiling and will therefore score this “in-house.”

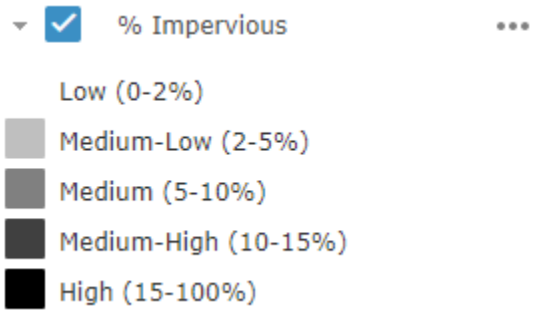
List of criteria for multiple tributary models decision matrix and pairwise comparison exercises

A. Well-studied (WQ)
    a. This tributary is well-studied and has a sizable body of research and data.
        i. Y/N
B. Oysters [sanctuaries and aquaculture] (LR)
    a. This tributary has oyster sanctuaries and/or a high concentration of filter feeder aquaculture.
        i. Y/N
C. Contribution (WQ)
    a. This tributary is a relatively large contributor to hypoxia in the deep channel.
        i. Y/N/maybe
D. Weak spots (WQ)
    a. This tributary did not have high resolution cell and process coverage in the Phase 6 estuarine model.
        i. Y/N
E. WQS attainment challenge or success (WQ)
    a. Score as 1 if more than one of the following statements are applicable to this tributary or one or more of its segments; score as 0.5 if only one is applicable; score as 0 if none apply to this tributary or any of its segments:
        i. This tributary is close to achieving WQ Standards (attainment gap 0-5%)
        ii. This tributary has long-term trends for DO or nutrients that are degrading
        iii. This tributary has short-term trends for DO or nutrients that are degrading



F. Focus area (All)
    a. This tributary is a NOAA Habitat Focus area or a state selected watershed from the USACE comprehensive plan. The NOAA HFAs are Middle Peninsula (York, Piankatank and Mobjack Bay) and Choptank River Complex. The estuarine complex USACE CBCP watersheds are York-Piankatank, Nanticoke, Choptank and Anacostia.
        i. Y/N
G. Restoration and conservation priorities (LR)
    a. This tributary contains areas where large scale restoration is occurring and/or being planned (Restoration link) OR this tributary contains areas that are conservation priorities (Conservation Link).
        i. Y/N
H. Monitoring data (All)
    a. This tributary has high-quality monitoring data sources (satellite, fish surveys, RIM stations, high frequency monitoring, etc) to facilitate a linkage between the model and living resources.
        i. Y/N/maybe
I. Fish habitat (LR)
    a. This tributary provides critical fish or living resource habitat. (Living resources include but are not limited to striped bass, blue crab, shad, herring, menhaden and other forage species such as bay anchovy). Key spawning areas for striped bass, shad and herring include Potomac, Lower Susquehanna, Choptank, and Nanticoke. Bruce recommended checking out this resource: https://databasin.org/maps/e8327d587c1a4eb583cf9a007361dc8c/
        i. A yes (1) means high levels of habitat, a maybe (0.5) means medium levels of habitat, and a no (0) means low levels of habitat.
J. Percent impervious* (Misc) - **Being Scored "In-house"**

a. This tributary has the following levels of impervious surfaces in its segment shed based on the new high resolution LU/LC data (2017-2018), as defined by the Chesapeake Healthy Watersheds Assessment.



i. High -1
ii. Medium-High - 0.75
iii. Medium - 0.5
iv. Medium-Low - 0.25
v. Low - 0

K. Underserved or EJ (Misc)
   a. The tidal segment-shed has a relatively high/medium/low % coverage of under-served or marginalized populations, for example areas in the MEBs storymap that shows overlap with communities or color or low income https://storymaps.arcgis.com/stories/49de0bfc3d7f4d70aae3f54dc3e9c890
      i. H/M/Low
         1. High = 1, Med = 0.5, Low = 0

L. PCBs (WQ)
   a. There are active PCB mitigation efforts, either with existing or forthcoming TMDLs, in this tidal system.
      i. Yes/No

M. Shallow water* (All) - **Being Scored "In-house"**
   a. The tidal system has one or more segments with a relatively high/med/low percent volume of shallow water (<2m) compared to the volume of that segment.
      i. High/Medium/Low (1/0.5/0) will be assessed based on data we are currently collecting and we will assess this criteria in-house
      ii. This would benefit from the higher resolution of a tributary model and allow potential insights to management impacts.

N. Tidal wetlands (LR)
   a. The tributary system has a relatively high/medium/low proportion of tidal wetlands and/or tidal wetland restoration activity
      i. High/Medium/Low (1/0.5/0)

O. Protected Lands* (Misc) - **Being Scored "In-house"**
   a. This tributary has a large percentage of area in its segment shed area that is regarded as protected.
      i. High/Medium/Low (1/0.75/0.5/0.25)

ii. This criteria will be assessed based on data we are currently collecting and we will assess this criteria in-house.
iii. Concept: we expect to list and score tributaries by the percentage of "segment-shed" area that is protected land.

P. SAV (LR)
   a. Does the tributary system include 1 or more study areas from Landry and Golden (2018)
      i. Yes/No

Q. Cross-GIT Restoration composite (All)
   a. Does the tributary system-shed include a relatively high/medium/low portion of area as "high value" cross-git restoration
      i. See https://chesbay.maps.arcgis.com/apps/instant/basic/index.html?appid=09165a0154e4486095fc2f244f10568b
      ii. 1 = you see a high portion of darker red/orange shades in the segments' contributing land area; 0 = you see mostly lighter shades in the segments' contributing land area; 0.5= in your opinion, the level of high-value areas is somewhere between high and low

Post-results, questions to consider (as opposed to framing these as additional or unique criteria):

- Balance of locations? Balance of nutrient sources/sectors/land uses?
- Balance of estuarine regimes?
- In case of close calls or ties: which tributaries have robust networks or would benefit most from local engagement building off higher res trib models?
- Would particular tributary systems be more valuable or essential for future climate change projections?
- Are there tributaries with segments that are potentially under consideration to be de-listed? If so, would those benefit from a tributary model?
- Any surprises?