Chesapeake Bay Program
Science. Restoration. Partnership.

Forage Action Team
Meeting MINUTES

September 9, 2021 10:00am - 12:00pm

Attendance:

- *Somers Smott (VMRC)*
- *Ryan Woodland (UMCES)*
- *Troy Tuckey (VIMS)*
- *Slava Lyubchich (UMCES)*
- *Jim Uphoff (MDNR)*
- *Bruce Vogt (NCBO)*
- *Justin Shapiro (CRC/NCBO)*
- *Rochelle Seitz (VIMS)*
- *Mandy Bromilow (NCBO)*
- *Ed Houde (UMCES)*
- *Peter Tango (USGS)*
- *Matt Ogburn (SERC)*
- *Chris Moore (CBF)*

Meeting Actions:

- *Mandy Bromilow (NCBO) will send around graphs/plots of abundance estimates for various taxonomic groups not shown during the presentation. The FAT will provide Mandy with any additional feedback/questions.*

Updates on Ongoing Work (*Bruce Vogt*, *Mandy Bromilow and Ryan Woodland: 25 min*)

Group Questions/Feedback on Benthic Abundance Time Series:

- *Updates from Mandy Bromilow (NCBO):*
    - *Mandy is building out a number of time series plots of various taxa of benthic invertebrates. The estimates use an R-based Delta GLM program. Mandy will continue exploring new taxa and ways to best present this abundance information.*
- *Jim Uphoff (MDNR): Can Mandy place standard error bars on the bay-wide estimate graph? Jim also mentions that having upper, mid, and lower bay estimates does essentially account for the salinity factor that was being discussed.*

    - *Mandy Bromilow (NCBO): Notes to explore inclusion of standard error bars. She also agrees with Jim's point on salinity regimes.*
    - *Rochelle Seitz (VIMS): Agrees with Jim's point that tracking different regions/depths essentially accounts for factors like DO and salinity, making an additional plot with those abiotic factors included a bit redundant.*
- *Rochelle Seitz (VIMS): Also notes that trends in James river look very different whether accounting for environmental factors or not.*
- *Matt Ogburn (SERC): Is there any possibility for clam species to be included in these time series? It could be valuable to look at some specific species like razor clams*
    - *Mandy Bromilow (NCBO): Does have clam information, but it is a bit more complicated as the species are not parsed out. She is working on a way to break up data into species-specific information. Notes that she would love feedback on how to best break out relevant species of interest.*
        - *Rochelle Seitz (VIMS): Comments that breaking out large and small clams makes a lot of sense for this exercise.*
- *Slava Lyubchich (UMCES): Asks what "r" package was used for these estimates?*
    - *Mandy used a publicly available Delta GLM.*
- *Troy Tuckey (VIMS): For other species that were estimated, did you see any noticeable contrasts by region?*
    - *Mandy Bromilow (NCBO): Mysids were a species that showed contrast between upper vs lower bay. Mandy will share more graphs via email.*
- *Bruce Vogt (NCBO): Is there anything surprising here from the data? Is there a way to contextualize these results as representing "good" or "bad" conditions?*
    - *Rochelle Seitz (VIMS): Adds that she's not surprised by lack of contrast when lumping many species together.*
    - *Jim Uphoff (MDNR): Connecting these estimates with diet data. The Major idea behind these indicators is connecting forage abundance to key predator species, so it's important to keep that in mind.*

<u>Group Questions/Feedback on Springtime Warming Indicator GIT-funded Project:</u>

- *Updates from Ryan Woodland (UMCES):*
    - *Funded to look at a variety of forage indices, climate indices, and AMO*
    - *His team is using bay anchovy data, trawl surveys from VIMS, and historical data from COL in the main stem.*
    - *All environmental temperature data is acquired from NOAA, VIMS and AMO data*
    - *The team is currently investigating potential modeling structures*
        - *Working specifically on polychaetes now and will soon work on bay anchovies*
    - *The final step is to relate forage indices to AMO and degree day data and have an updateable indicator for Bay Program.*
- *Peter Tango (USGS): Asking about the mentioned degree-day indicator (in relation to STAC rising temperatures workshop)*

- *Ryan Woodland (UMCES): Refers to the number of days to reach 500 accumulated degrees. A low value means its warming quicker in a given year. This indicator is correlated with forage abundance.*

Preparation and Discussion for Upcoming Adaptive Management (SRS) Review
(Bruce Vogt and Justin Shapiro: 1.5 hours)

Review of SRS Schedule for Fall, 2021

- *September 28th - Stoplight and narrative analysis rough drafts due for SRS cohort check in*
- *October 21 - Draft narrative analysis/presentation materials due to STAR*
- *October 28 - Dry run presentation to STAR*
- *November 4 - Final narrative analysis/presentation materials due*
- *November 18 - Presentation to Management Board*

Review of Current Work Plan and Accomplishments

- *A presentation will be displayed highlighting our accomplished action items from the previous two years.*
  - *LINK to SRS presentation*

Summary of Group Discussion about Priorities and Direction of the Team

- *Full membership responses are available HERE*
- *Quantifying Success:*
  - *What is our key message to the Management Board? Do we feel the last two years have been successful in the context of our outcome language?*
    - *Group Consensus - These two years have been successful. We should focus on accomplishments pertaining to tiered indicator development and supporting research to better understand factors influencing forage.*
  - *How can this team better serve its members and drive utility for fisheries management? Are we moving in the right direction?*
    - *Group Consensus - This team is moving in the right direction. The group recommends continuing with indicator development, better connecting forage to predator abundance, and continuing communication/dialogue with fisheries managers/stakeholders about opportunities to utilize indicators.*
- *New Priorities:*
  - *Are there any external developments (scientific, fiscal, policy) that should impact this group's focus/priorities in the next two-year cycle?*
    - *Utilizing results of upcoming STAC rising temperatures workshop*
    - *VIMS implementing new trawl survey with smaller mesh size*
    - *Opportunities to link microplastic research needs with zooplankton monitoring. What synergies exist here?*
    - *Linking forage monitoring with predator movements. Utilizing new telemetry arrays*

        - *Consider connections to the State of the Ecosystem report.*
    - *What do you view as this Team's greatest challenge(s) moving forward?*
        - *Ensuring forage is linked to key bay predators*
        - *Ensuring that indicators are relevant to the fisheries management community*
        - *Solutions to data limitations (ex. Plankton survey)*
- *Crafting our Ask:*
    - *Are there any requests we should bring to the Management Board to help us better accomplish our goals?*
        - *Potentially funding to develop cross-GIT action team*
        - *Helping to make connections with the fisheries management community*