Assessing the Chesapeake Bay Forage Base: Existing Data and Research Priorities

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Co-chairs:

Tom Ihde (ERT/NOAA, STAC)
Ed Houde (UMCES CBL)

Background

- Need identified at the last December F-GIT meeting
- Submitted a workshop proposal to STAC (Scientific and Technical Advisory Committee of the CBP)
- STAC quickly approved our full request for the workshop
- Developed robust SC:
  - Included 13 individuals with a wide variety of forage expertise in the Chesapeake system, including a strong components of both scientific and management expertise
  - SC designed the workshop; working hard to identify a relatively small (~37) but essential group of experts who could weigh in on:
    - Forage
    - Predator-prey interactions
    - Trophic linkages, system dynamics & ecology
    - Existing data sources available
    - Habitat & Water Quality
    - Quantitative metric development, indicators, & stock assessment
    - Management needs

Background

- Focus:
  - “Forage” interpreted broadly
  - Scope system-wide, and on the critical forage for the system to function; consequently, most expertise invited to the workshop had previous experience looking at system-level questions; goals were not aimed at forage for any one particular species
  - Throughout - trying to put forward "actionable" recommendations, those that managers can use directly or science activities that have clear connection to management actions

The Workshop

- Hosted by UMCES at CBL
- High interest and enthusiastic engagement of the invited participants
  - Only a few folks we're not able to make it; most all of them had conflicts and still want to stay involved in the ongoing discussions
- Workshop was organized in distinct themes:
  1. Chesapeake Bay Forage Base and Managed Predators
  2. Limiting Factors for Forage Species
  3. Forage Metric/Indicator Development
  4. Research Needs and Management Recommendations

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- Workshop was organized in distinct themes:
  - Purpose of each themed session was to produce specific products:
    - ❖ Some were drafted in advance of the workshop:

      Chesapeake Bay Forage Base and Managed Predators
      - o Initial data analysis - identification of essential forage groups
      - o Literature review
      - o Database review
    - ❖ While other products were developed during workshop:

The Workshop

- Products produced at the workshop, in small workgroups of 5-8:

  Identification of limiting factors

  - Those we can control
  - Those we cannot control, but still must understand to manage, mitigate or adapt

  Development of forage metrics or indicators, and proxies that can inform management where direct information is lacking

  - Presentations included strategies used in forage management & metrics used as ecosystem indicators at ASMFC, and in other regions of the country (Mid-Atlantic, N. Atlantic, N. Pacific & Bering Sea)

  Identification of priority research needs & management recommendations

  - Summary of needs & recommendations identified throughout the workshop
  - Jurisdictional Managers' input – summary and discussion
  - Stakeholder concerns

Products

❖ ***Still actively compiling all the notes***

Key Forage Species / Groups:

- Bay Anchovy
- Polycheates
- Mysids
- Razor clams
- Amphipods and isopods
- Weakfish
- Spot
- Mantis shrimp
- Sand shrimp
- Atlantic croaker
- Macoma spp.

- ½ species are invertebrates
- Many not usually "forage"

- What is *not* there - additions:

3 Groups:

(1) Historically key species:
- Shad & river herring

(2) Species of management importance:
- Atlantic menhaden
- Blue crab

(3) Shallow water forage:
- Small bivalves
- Menidia spp.
- Fundulus spp.

Products

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Products

- **Several aspects that will undoubtedly be featured in the products of the workshop:**
  - *Diet studies that broadly cover predator ages and sizes*
  - *Habitat-focused management focus may be best lever to improve managment of many forage; improve understanding of habitats the predators and the major prey occupy(as identified in the workshop)*
  - *Shallow water monitoring in soft-bottom, marsh, and SAV habitats (to complement long-term seine and B-IBI monitoring surveys); including up-tributary habitats*
  - *Development of a standard set of metrics and indicators to track forage abundance. Setting targets and thresholds will be important that can be used to trigger management actions.*
  - *Estimates of predator demand and forage supply, by habitat. Predators should include key managed species (fishes) but also other predators (e.g., birds). Modeling comes in here as well as observations science.*

Products

- **Several aspects that will undoubtedly be featured in the products of the workshop (continued):**
  - *Broadly improve understanding of dynamics and trends in abundance of forage taxa, including those now little studied or understood, e.g., mysids, bay anchovy*
  - *Zooplankton monitoring (including nocturnal) is a critical need to index feeding conditions for many of key forage (e.g., bay anchovy, menhaden), and to develop abundance indices for some key forage taxa (e.g., mysids)*
  - *Need for educational video & web-based materials that show the importance of forage -> Change the view that "Forage is just bait and it doesn't matter"*
  - *Need for coordinated analysis of currently available data to improve understanding of how forage changes over time & relate to predator changes over time*