Forage Action Team: Indicator Development to Assess Forage Status

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As a Reminder

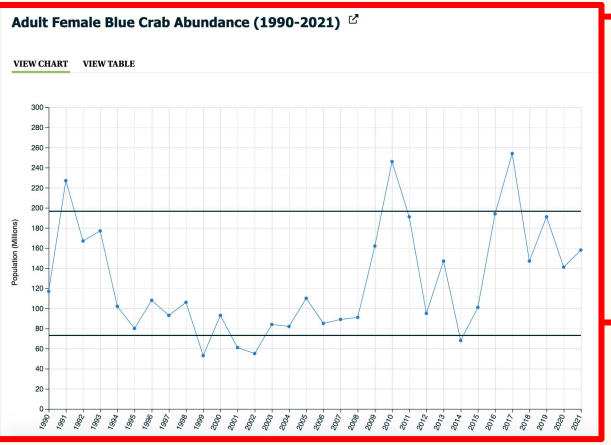
Tier 1: Abundance	Species of Interest
Benthic Invertebrates	Polychaetes
Demersal Finfishes	Atlantic croaker
Pelagic Finfishes	Bay anchovy Atlantic menhaden
Tier 2: Habitat and Environmental Factors	**Species of Interest**
Springtime Warming	Bay anchovy Polychaetes
Habitat Suitability Index	Bay anchovy
Hardened Shorelines	Juvenile blue crabs
Tier 3: Predator Consumption	**Species of Interest**
Diet Profiles	Striped bass

Are these the analyses the FAT should be publicly reporting out on as indicators (Do they address outcome language)?

- Habitat suitability for bay anchovy and juvenile spot
- Climate indicator for bay anchovy/polychaetes
- Polychaete abundance time series

Important Indicator Qualities*
Simple and easy to understand
Be scientifically well-founded
Have a reference or threshold value of significance
Be responsive to changes in the environment
Show trends over time
Feasible to measure and report (reasonable cost/benefit ratio)
Updated regularly with reliable procedures (timely with support of a monitoring program)
Adequately documented, known quality
Be useable by the community
Policy relevant

Where should this team commit to providing analysis/updates?



Chesapeake Progress (Official Indicator for the Chesapeake Bay Program)

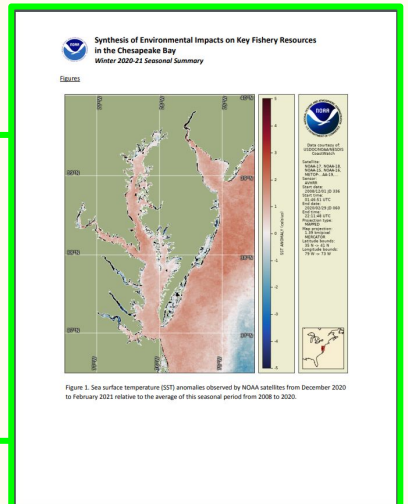
2020 Chesapeake Bay Blue Crab Advisory Report
CBSAC Meeting Date: May 19, 2020
Report Final: June 22, 2020

EXECUTIVE SUMMARY

The Chesapeake Bay Stock Assessment Committee (CBSAC) meets annually to review the results of the Chesapeake Bay blue crab surveys and harvest data, and to develop management advice. CBSAC adopted the Bay-wide Winter Dredge Survey (WDS) as the primary indicator of blue crab population health in 2006 because it is the most comprehensive and statistically robust of the blue crab surveys conducted in the Bay. Based on survey estimates, the total abundance of all crabs (males and females of all ages) was estimated at 405 million crabs in 2020. Recruitment, or the number of age 0 crabs (less than 60 mm or 2.4 inches carapace width), was estimated as 185 million crabs in 2020. Approximately 141 million age 1+ female crabs were estimated to be present in the Bay at the start of the 2020 crabbing season, which is above the abundance threshold of 70 million crabs, but below the target of 215 million crabs. The 2011 benchmark stock assessment recommended a control rule based on biological reference points for the female component of the population. The percentage of female crabs (ages 0+) removed by fishing (exploitation fraction) in 2019 was 17%. This exploitation fraction is below the target of 25.5% and the threshold of 34% for the 12th consecutive year since 2008. Therefore, overfishing is not occurring and the population is not depleted.

Based on analysis of the 2020 winter dredge survey results, CBSAC recommends that substantial changes in management are not necessary. CBSAC further recommends that the jurisdictions implement procedures that provide accurate accountability of all commercial and recreational harvest moving forward, as this is an important component for accurately accessing stock health.

NOAA regional State of Ecosystem of the Report and Bay-specific seasonal summaries



Synthesis of Environmental Impacts on Key Fishery Resources in the Chesapeake Bay
Winter 2020-21 Seasonal Summary

Figures

Figure 1. Sea surface temperature (SST) anomalies observed by NOAA satellites from December 2020 to February 2021 relative to the average of this seasonal period from 2008 to 2020.

Annual “Forage Report” added to the recent Logic and Action Plan

Logistical Questions for Each Potential Indicator

Polychaete Abundance Indicator

- **What**: What specific data do we want to report on/highlight?
  - Annual Analysis and Methods documents
  - Results synthesis for regional reports
- **Who**: Who is responsible for updating and interpreting results for reporting and synthesis?
- **Where**: Where should this indicator “live”? Multiples places?
- **How often**: When is the indicator updated?
- **Challenges**: Current barriers to completion/sustainability of reporting (ex. Capacity, funding, etc.)
- **Next steps?**

Climate Drivers Indicator

- **What**: What specific data do we want to report on/highlight?
  - Annual Analysis and Methods documents
  - Results synthesis for regional reports
- **Who**: Who is responsible for updating and interpreting results for reporting and synthesis?
- **Where**: Where should this indicator “live”? Multiples places?
- **How often**: When is the indicator updated?
- **Challenges**: Current barriers to completion/sustainability of reporting (ex. Capacity, funding, etc.)
- **Next steps?**

Habitat Suitability Indicator

- **What**: What specific data do we want to report on/highlight?
  - Annual Analysis and Methods documents
  - Results synthesis for regional reports
- **Who**: Who is responsible for updating and interpreting results for reporting and synthesis?
- **Where**: Where should this indicator “live”? Multiples places?
- **How often**: When is the indicator updated?
- **Challenges**: Current barriers to completion/sustainability of reporting (ex. Capacity, funding, etc.)
- **Next steps?**

What should be included in a Chesapeake Bay forage status report?

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Other Workgroup Priorities

Zooplankton Monitoring in Chesapeake Bay

- Status of current proposal submitted to Bay Program leadership
- Next steps and options to address this science need

For our next meeting?

- Dedicate meeting to discuss developments in recent mysid research
- Dedicate a future meeting to explore changes in in the bay's priority species
- Invite speakers to present on avian/mammal predation on forage species