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# Sustainable Fisheries GLT Forage Workplan

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— Discussion —

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# Forage Outcome

- Defining forage species;
- Determining the status of the forage base;
- Establishing management objectives for forage species;
- Promoting actions to manage fisheries and protect habitats that support forage;
- Maximizing the efficiency of monitoring programs; and
- Building on existing efforts to map areas and habitats important for the production and maintenance of forage.

# Status Report: Forage

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Leads: Forage Action Team

## Recent activity:

- STAC workshop held and report recommendations presented to Management Board.
- Key forage species identified.
- UMCES project on forage indicator and consumption profile development complete.
- Drivers of forage variability study funded and underway
- Public outreach video being explored by Chesapeake Bay Program.

## Issues:

- Does the management strategy and workplan satisfy requirement to develop a strategy: “By 2016, develop a strategy for assessing the forage fish base available as food for predatory species in the Chesapeake Bay.”

## Next Steps:

- Determine how to utilize/apply forage indicator options
- Agree on process to identify priority species (prey or predator) and management objectives

# Near-term Actions

- What are near-term priority species (forage or predator) to focus tracking and indicator development efforts?
  - Ex: MD has been developing indicators for striped bass prey species.
- What should public outreach and web content focus on?
  - Potential Chesapeake Bay Program video
- What types of indicators would be most useful to managers and stakeholders?
  - Specific types of indicators/species to track

Key Forage Groups	Additional Important Forage Groups (alphabetical)
Bay Anchovy	American Shad & River Herrings
Polychaetes	Atlantic Rock Crab
Mysids	Atlantic Silverside
Amphipods and Isopods	Blackcheek Tonguefish
Mantis Shrimp	Blue Crab
Spot	Flounders
Weakfish	Gizzard Shad
Sand Shrimp	Kingfish
Atlantic Croaker	Lady Crab
Razor Clams	Macoma Clams
Atlantic Menhaden	Mud Crab
	Mummichog & Killifishes
	Small Bivalves*

\*other than  
Macoma spp. or  
Razor clams

[Forage Management Strategy](#) Table 1. The Most Important Forage Groups of The Chesapeake Bay as determined by data analysis and expert consultation provided at the STAC Forage Workshop, 12-13 November, 2014. The first column includes key forage taxa important to a wide variety of predators. The second column includes groups recognized as important forage in the Chesapeake system, but were not identified as top contributors to diets of predatory fishes, based on data analysis conducted for the workshop.

# Forage Indicator Development

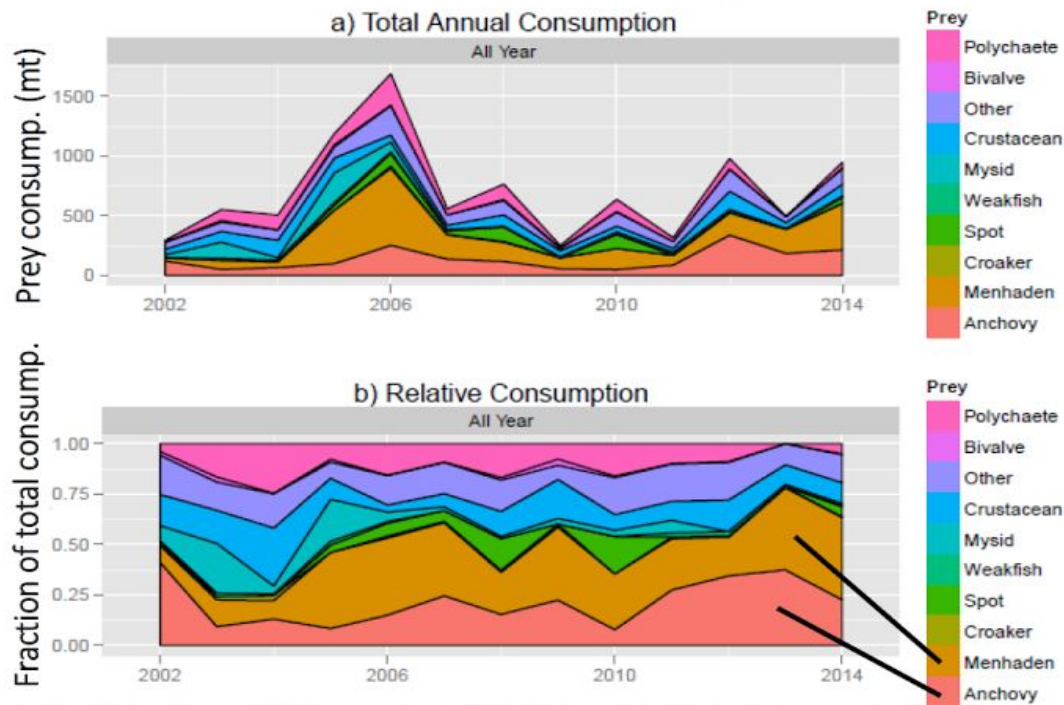
	Forage indicators	Description/justification
1.	Relative prey abundance or biomass	<ul style="list-style-type: none"><li>• Synthesis of survey-based indices</li><li>• Metric of prey standing stock</li></ul>
2.	Diet-based indices	<ul style="list-style-type: none"><li>• Predators as prey "samplers".</li><li>• Index of relative prey importance and availability from diets.</li><li>• Good for poorly sampled prey.</li></ul>
3.	Prey-predator ratios (PPR)	<ul style="list-style-type: none"><li>• Ratio of prey to predator indices.</li><li>• Index of relative prey availability.</li><li>• Accounting for density dependence.</li></ul>
4.	Consumption-prey ratios (CPR)	<ul style="list-style-type: none"><li>• Ratio of population-scaled consumption to prey index.</li><li>• Index of predation intensity.</li></ul>

## CBP/CBT Funding FY 14

Buchheister, A., E. Houde, and C. Lozano. Forage indicators and consumption profiles for Chesapeake Bay fishes. Presentation to Sustainable Fisheries GIT: Dec 2015.  
[http://www.chesapeakebay.net/channel\\_files/23179/3\\_buchheister\\_git\\_meeting\\_12-14-15\\_final.pdf](http://www.chesapeakebay.net/channel_files/23179/3_buchheister_git_meeting_12-14-15_final.pdf)

# Consumption Profile Development

## Total Annual consumption (Striped bass)



## CBP/CBT Funding FY 14

Buchheister, A., E. Houde, and C. Lozano. Forage indicators and consumption profiles for Chesapeake Bay fishes. Presentation to Sustainable Fisheries GIT: Dec 2015. [http://www.chesapeakebay.net/channel\\_files/23179/3\\_buchheister\\_git\\_meeting\\_12-14-15\\_final.pdf](http://www.chesapeakebay.net/channel_files/23179/3_buchheister_git_meeting_12-14-15_final.pdf)