

Workshop Title:

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

Submitted by:

Tom Ihde (STAC) and Sustainable Fisheries Goal Implementation Team (SFGIT)

Workshop Steering Committee: (*denotes Co-Chair of workshop)

Chris Bonzek – Fisheries Data Analyst at the Virginia Institute of Marine Science with extensive knowledge of the various Virginia and coastal surveys and leader of VIMS diet lab.

Nancy Butowski – Program Manager of Fishery Management Plans and Fish Passage at MD DNR; extensive knowledge and support of SFGIT work.

Pat Campfield – Director of the Fisheries Science Program at the Atlantic States Marine Fisheries Commission (ASMFC) and SFGIT member; knowledge of Chesapeake Bay fisheries science needs and application of science to management.

Jack Frye – Virginia Director of the Chesapeake Bay Commission leading policy development and legislative outreach and SFGIT member; experience in conservation, recreation and nutrient reduction.

Bill Goldsborough – Fisheries Director for the Chesapeake Bay Foundation and SFGIT member; extensive background policy and regional fisheries management.

Joe Grist – Deputy Chief of the Fisheries Management Division of the Virginia Marine Resource Commission (VMRC); Chair of the Chesapeake Bay Stock Assessment Committee and applying science to management.

Ed Houde* – Fisheries Scientist at University of Maryland Chesapeake Biological Laboratory with extensive expertise in fisheries oceanography, recruitment, population dynamics and ecosystem management and a member of the Lenfest Forage Fish Task Force.

Tom Ihde* – Member of STAC, fisheries ecosystem modeler; background in fisheries stock assessment.

Lee Karrh – Chief of Living Resource Assessment Division at MD DNR, Chair of Chesapeake Bay Program's SAV Workgroup, and Habitat GIT member; background in biology.

Rochelle Seitz – Runs the Community Ecology Laboratory at the Virginia Institute of Marine Science focused on benthic ecology; current research includes benthic predator-prey relationships and food web dynamics.

Bruce Voigt - Manages NOAA Chesapeake Bay Office's Ecosystem Science and Synthesis, Coordinator for the SFGIT; background in benthic ecology and resource management.

Emilie Franke – Staff; Chesapeake Research Consortium, SFGIT Staffer

Andrew Turner – Staff; SFGIT Support at NOAA Chesapeake Bay Office

Endorsed by:

Peyton Robertson (Chair, SFGIT) and Mike Slattery (Chair, Habitat GIT)

Description of Workshop

The SFGIT proposes a two-day workshop to be held in late summer or early fall 2014. The workshop will identify: (1) forage groups of the Chesapeake Bay that are critical to assess for fisheries management; (2) existing data for these groups; (3) data gaps; and (4) strategies to improve the quantification of the forage base of this system. These strategies will both provide guidance in understanding and using current forage data, and allow for future integration of new research findings and enhanced approaches.

The outcomes of this workshop will be both timely and essential to fulfill a commitment by the SFGIT made in the current draft of the Chesapeake Bay Program's new Watershed Agreement: *“By 2016, develop a strategy for assessing the forage fish base available as food for predatory species in the Chesapeake Bay”*, enabling fishery management decisions to be made in an improved ecosystem context. Each of the products from this workshop will be an important resource as the SFGIT develops the Management Strategy to address this New Agreement forage outcome.

Workshop Products

- Literature review (pre-workshop) – will include summaries of previous review efforts in the region
- Data review (pre-workshop) – compiled list of identified data sets with a description and potential management application of each
- Clearly define “forage base”—a prioritized list of the species or species groups comprising it
- Recommendations of approaches to use existing data to develop a suite of Bay-specific indices or metrics to quantify the forage base, including specific strategies to adapt these metrics as new information becomes available.
- Identification of high priority research needs and monitoring gaps that would contribute to understanding the trophic transfer between forage species and their predators
- Recommendations on how to begin addressing the highest priority research needs

Justification for Workshop

Forage species play an integral role in the Chesapeake Bay food web by supporting higher trophic level production. Except for menhaden, many forage species are not directly managed by the ASMFC or Chesapeake Bay jurisdictions, but these species are critical to sustaining economically valuable commercial and recreational fish species in the Bay. Better understanding of the forage base, habitat areas critical for forage production, and predator-prey interactions involving these valuable species would be an important step toward ecosystem-based fisheries management in the Chesapeake Bay.

The Fisheries Ecosystem Planning for the Chesapeake Bay report (2006), stresses the importance of the “complex of species,” identifying predator-prey dynamics as a significant factor affecting the production of fisheries in the Chesapeake. The report stresses the need to not only identify key predator and prey relationships for target species, but to quantify those relationships as well. The products resulting from the proposed workshop will provide managers with the essential information to begin to accomplish both of these difficult tasks.

A forage workshop is especially relevant this year as the current draft of the Chesapeake Bay Program’s new Watershed Agreement contains a specific forage outcome. Although the importance of the outcome was recognized by the SFGIT Executive Committee and the Chesapeake Bay Program leadership, it was also made clear at the December 2013 meeting of the full SFGIT that much uncertainty surrounds this topic moving forward. Specifically, there is no clear definition of what the forage base consists of, what data already exists, where there are data gaps, how we can begin to quantify Chesapeake forage and how that information can be used in management decisions. This workshop is designed to gather the necessary scientific expertise to address these uncertainties and to recommend feasible approaches to improve our collective understanding of the forage base, thereby improving the management of the valuable fisheries that depend on this forage base. Workshop products will be invaluable to the SFGIT in the months following the proposed workshop, since the SFGIT will be responsible for developing an accompanying forage fish Management Strategy by summer 2015.

There is significant interest in this workshop from a broad range of perspectives across the Bay as seen in the Steering Committee membership (see above). The Steering Committee assembled for this workshop ranges across jurisdictions and across disciplines, and includes species experts, researchers, modelers, managers, and data experts. The Steering Committee is an informed group aware of the New Agreement outcomes as well as the SFGIT involvement and discussion on the forage topic.

Workshop Synthesis

Workshop discussions and outcomes will be documented in a final workshop report that will be distributed to the Chesapeake Bay Program and interested parties. The final report will be released within 90 days following the workshop.

Products (see list above) will focus on the use of existing forage data, and strategies to provide estimates of forage where data are lacking. Where data are lacking the report will recommend research priorities. The final report will provide guidance on the development of forage-specific abundance indices and forage indicators for the Chesapeake system.

Pre-workshop Preparation

The Steering Committee will identify and reach out to appropriate scientists and data experts when designing the workshop, ensuring that the full scope of necessary expertise is available, that up-to-date and accurate information is presented efficiently and logically, and to ensure that fruitful discussion will result. The Steering Committee will have regular planning meetings in advance of the workshop.

All relevant background information (scientific literature) and current monitoring/survey data sets will be identified, compiled, and sent to the workshop participants in advance of the workshop. These preparatory steps will be compiled as additional products of the proposed workshop, and will be made available to both the Fisheries and Habitat GIT's, as well as to others working on forage, both within the Chesapeake and elsewhere.

Workshop Speakers and Attendees

The Steering Committee will identify and convene experts in forage species, predator-prey interactions, stock assessments, monitoring, and fisheries management to address the workshop objectives and significantly contribute to the workshop products. In addition to Chesapeake Bay region experts, the Committee will invite experts from other regions to offer outside perspectives and knowledge to the workshop.

The Steering Committee’s broad range of expertise and experience will ensure the most relevant group of experts is assembled. The Committee themselves acknowledge the benefits of their diverse membership, and are looking to add one or two more Steering Committee members before the end of the workshop proposal process. These additions will further strengthen the current Committee’s expertise by adding a jurisdiction fisheries manager and an expert on benthic species.

Budget Justification and Logistics

The workshop will be held over two days between August-October 2014. Workshop participation will be by invitation only and target 25-30 participants. A significant portion of the budget will be dedicated to cover travel expenses for key experts within and outside the Chesapeake Bay region. Possible workshop locations include academic institutions that conduct research and/or surveys of forage species in the Chesapeake Bay region.

Estimated Budget

Venue - \$1,000	Catering - \$2,500	Travel for participants - \$6,500
Total requested from STAC - \$10,000		

Past STAC Workshop Proposals from the SFGIT

The SFGIT has previously submitted one workshop proposal to STAC titled “Initiating a Campaign for Land Conservation and Fisheries Health” in March 2013. This proposal was not accepted by STAC for FY13 funds.

STAC Reactive Workshop Proposal

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

Steering Committee Response to STAC Comments

March 3, 2014

STAC Comment 1: This is an excellent/critically important topic. But the proposed steering committee is very large.

Each Steering Committee member was selected for the unique and valuable perspective they bring to the workshop. Beyond their personal perspectives, however, members were also identified to enable this group to identify the broad range of expertise and particular individuals that we will need to present at the workshop. This expertise crosses disciplines (fisheries, habitat, benthic ecology, mapping, etc.), jurisdictions (Maryland, Virginia, ASMFC), and roles (managers, scientists, biologists, data managers), and most members were chosen that have the experience in the Chesapeake to wear multiple 'hats' in this regard. We believe this approach would ensure that workshop outcomes are meaningful, will have useful application, and that no critical aspect of assessing the forage base is missed by the group.

STAC Comment 2: Who will be the workshop lead? It could also be useful to identify a subset of the committee that will be responsible for writing the initial draft of the report.

The workshop will be co-chaired by Ed Houde (CBL) and Tom Ihde (NCBO/STAC). Ed and Tom have also agreed to be the primary authors of the report draft and coordinate the contributions of each Steering Committee member.

STAC Comment 3: Current catering estimate is expensive: \$100 per day for each of the 25 participants (cost of meals at previous STAC events run about \$50 per day, per participant on average).

The current catering budget estimate is \$2,500 for both days of the workshop. This budget is intended to cover the catering costs of 25 participants per day for two days and does equal \$50 per person per day.

STAC Comment 4: Will the steering committee request matching funds from another organization?

The Steering Committee is pursuing the possibility of additional funding sources at this time that could potentially decrease the cost to STAC. This includes a current MD Sea Grant funding opportunity. The Steering Committee will keep STAC informed of additional funding awards if they arise.

STAC Comment 5: A literature search is (presumably) already in the hands of many of the region's experts, so is there agreement to offer summaries?

Yes, summaries of current or previous literature review efforts will be available for use for this workshop. One of the workshop products is a relevant literature review to be prepared and distributed to workshop participants prior to the workshop itself to provide consistent background to all workshop participants on Bay-specific forage information. The Steering Committee will contact subject experts prior to the workshop to ensure the work of these experts is available for the workshop. The literature review prepared prior to the workshop will also be included in the final workshop report.

STAC Comment 6: Database: There are extensive databases in state agencies and academia, with low, open access to the latter databases. In order for this to move forward, guaranteed long-term open access for future analyses, threshold setting, etc. must be implemented. All analyses, and output/results, will need to be archived for future open examination.

One objective of this workshop is to compile a list of existing data sets and identify how these data can be applied toward specific use by the fisheries managers. Of critical importance is identifying the full range of data that is available, however, in many cases, we do not expect these data to be static, nor do we believe that the institutions that house the datasets would be agreeable to ongoing access to these datasets. Moreover, we anticipate that each dataset was created for its own purpose (likely having no direct applicability to questions of forage), and because each likely incorporates a unique sampling design with distinctive peculiarities and usage caveats, it will be critical to the appropriate application of these data that each database is considered on its own, and carefully applied to questions of forage in partnership with those that manage each dataset. Consequently, it would not be appropriate to treat the data in aggregate as a single database, and developing an open-access database for all forage data for the Chesapeake Bay is beyond the scope of this workshop. However, a compiled list of all available data sets related to this topic will be an outcome of the workshop, and ideally, our use of these various data sets, and our identification of the datasets and their managers to the SFGIT will foster ongoing relationships between these data managers and the SFGIT. The list of compiled data sets will be included in the final workshop report.

STAC Comment 7: Would the Chesapeake Bay Commission (CBC) Bi-State Blue Crab Advisory Committee (BBCAC) approach for blue crabs be a model for setting forage fish harvests/by-catch limits, etc.?

This workshop will take a similar approach to BBCAC in terms of multi-jurisdictional participation and a Baywide perspective on forage species. The workshop will also consider habitat and other ecosystem factors to ensure forage species are considered in an ecosystem context, similar to BBCAC's perspective on blue crabs. Setting forage fish harvests, bycatch limits, etc. are beyond the scope of this workshop, however, the products of this workshop will enable members of the SFGIT accomplish such tasks more readily.

STAC Comment 8: Other Sustainable Fisheries GIT-supported STAC activities are somewhat related, but are there other Sustainable Fisheries GIT activities not supported by STAC, but with other groups/organizations providing background?

The Steering Committee members are acting as the liaisons for each of their organizations to ensure all the relevant information and background from their organization is considered for this workshop. The diverse Steering Committee membership covers a wide range of Bay agencies and organizations. Many Steering Committee members are also SFGIT or Habitat GIT members, which ensures an open exchange of science and information.

STAC Comment 9: A report outlining necessary next steps for state decisions on forage fish harvests, and Atlantic States Marine Fisheries Commission (ASMFC) if required, would be a good outcome

Most forage species are not directly managed and will probably not be managed in the near future. The outcomes of this workshop would allow both state managers and ASMFC to better manage non-forage species and habitats that are directly linked to forage groups by improving their

knowledge of the status of the forage base that supports the managed species. The workshop outcomes will provide initial science tools to better understand the forage base and build the ecosystem context for managed species and habitats.



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February 14, 2014

Kirk Havens
Chair, Scientific and Technical Assessment Committee
645 Contees Wharf Road
Edgewater, MD 21037

Dear Mr. Havens,

As the Chairs of the Chesapeake Bay Program's Sustainable Fisheries and Habitat Goal Implementation Teams (GITs), we are writing to endorse the Fisheries GIT's proposal for a STAC-funded workshop titled "Assessing the Chesapeake Bay Forage Base: Existing Data and Research Priorities."

The Fisheries GIT's work is based on applying science to inform management decisions. This proposed workshop supports the Fisheries GIT directly by identifying: (1) which forage groups are critical to assess; (2) existing data for these groups; (3) data gaps; and (4) strategies to improve the quantification of the forage base. The outcomes of this workshop will be both timely and essential to fulfill a commitment by the Fisheries GIT made in the current draft of the Chesapeake Bay Program's new Watershed Agreement "By 2016, develop a strategy for assessing the forage fish base available as food for predatory species in the Chesapeake Bay", enabling fishery management decisions to be made in an improved ecosystem context.

The Habitat GIT recognizes the importance of available habitat to support forage species in the Bay. This workshop strengthens our collaboration with the Fisheries GIT to connect forage species to specific locations and habitat types in the Chesapeake system.

We recognize the importance of efficiently synthesizing the results of the workshop, and therefore support the Steering Committee's requirement that the final workshop report be delivered within 90 days of the workshop completion. Both the Fisheries and Habitat GITs look forward to working with the workshop Steering Committee and with STAC throughout the proposal process.

Thank you in advance for your consideration,

Peyton Robertson
Chair, Sustainable Fisheries Goal
Implementation Team
Director, NOAA Chesapeake Bay Office

Mike Slattery
Chair, Habitat Goal Implementation Team
U.S. Fish and Wildlife Service