



November 24, 2015

Dr. Lisa Wainger, Chair  
Scientific and Technical Advisory Committee  
Chesapeake Bay Program  
645 Contees Warf Road  
P.O. Box 28  
Edgewater, Maryland 21037

*Lisa*  
Dear Dr. Wainger:

Thank you for the opportunity to respond to the Scientific and Technical Advisory Committee's (STAC) report entitled "Assessing the Chesapeake Bay Forage Base: Existing Data and Research Priorities". The Management Board and the Chesapeake Bay Program recognizes the importance of this effort to bring together partners from across the region to begin to assess forage species that support highly valued fisheries. Such discussion on a Baywide scale is an important step toward achieving the Forage Fish Outcome in the 2014 Watershed Agreement.

The Chesapeake Bay Program is addressing the four major recommendations as follows. Most of our efforts are led by the Sustainable Fisheries Goal Implementation Team (Fisheries GIT) and their Forage Action Team.

***Conduct a strategic review and data-mining of all currently available data to quantify forage.***

This process has begun as part of the forage indicator development project described in the next section. The project is relying on currently available data to develop forage indicators and predator nutritional profiles. As similar efforts continue in the future, data-mining and analyses will be strategically-focused on priority forage species and management needs discussed by the Forage Action Team.

***Develop a standard set of metrics and indicators to track forage abundance, and better understand forage dynamics and trends; use these to begin to set targets and thresholds for triggering management actions.***

The Chesapeake Bay Program GIT Funding via the Chesapeake Trust is currently supporting a forage indicator development project in 2015. The project is being conducted by researchers at the University of Maryland Center for Environmental Science's Chesapeake Biological Lab who participated in the Forage Workshop. Expected deliverables include a variety of indicators for priority forage species identified at the STAC workshop as well as nutritional profiles for key predator species. The Fisheries

GIT is hoping to continue this project with 2016 GIT Funding to look more closely at factors driving forage dynamics and trends in the indicators.

The Forage Action Team, which includes fishery managers, identified the establishment of management objectives as an important management approach in the Forage Fish Management Strategy and is included in the Forage Workplan that is currently being developed. Once objectives are established, targets and thresholds can be developed to track progress toward those objectives.

***Re-establish zooplankton monitoring to develop an index of feeding conditions for key forage (e.g., Bay Anchovy) and to develop abundance indices for key forage taxa (e.g., mysids).***

Zooplankton monitoring would provide information on the food available to support forage species themselves, and this food availability is cited as a “Factor Influencing” forage populations in the Forage Fish Management Strategy. The Fisheries GIT has communicated this monitoring need with STAR and will continue the discussion as STAR and CBP evaluate their monitoring programs through the Building and Sustaining Integrated Networks (BASIN) process.

***Relate forage trends to predator trends.***

Again, the forage indicator development project funded by the 2015 GIT Funding via the Chesapeake Bay Trust has begun to explore predator and prey trends and relationships. This connection between predators and prey will continue to be the driver of the Forage Action Team and the related management strategy and workplan.

In addition to the major recommendations just described, we are addressing many of the minor recommendations from the workshop (listed below) by coordinating discussions with STAR and academic partners to address future monitoring and survey capacity.

As the Forage Management Strategy states, we seek to maximize the efficiency of monitoring efforts and build on existing programs to gather more information on forage species. Collaboration among fisheries monitoring partners and traditional CBP programs is necessary to identify opportunities to expand our living resource monitoring capacity.

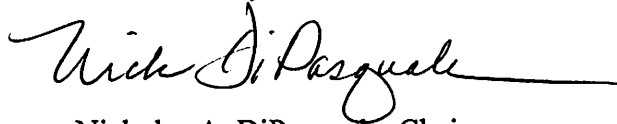
- ***Establish shallow water monitoring in soft-bottom, marsh, and SAV habitats to complement existing monitoring surveys, including up-tributary habitats.***
- ***Improve understanding key forage with limited or no current data (e.g., mysids), both at a system-scale and a specific habitat-scale.***
- ***Surveys used for forage groups should be conducted seasonally, sampling all life history stages of predators and forage in all important habitats. Careful development of sentinel sites can minimize the cost of new monitoring.***
- ***Estimate predator demand and forage supply by habitat.***
- ***Continue the development of quantitative ecosystem models that integrate information from various data sets to better frame management questions in an ecosystem context. Such models are needed to identify and evaluate ecological thresholds or critical habitat levels and to understand ecosystem effects of large-scale system changes on the forage base (and on their predators), especially for conditions and stressors for which data are lacking (i.e., climate change).***
- ***Consider current forage status relative to available records of historical forage abundances and distributions when developing thresholds for management. This is especially important***

***for species (e.g., shads and river herrings) that were once important but no longer abundant; such information can support development of benchmarks for restoration plans and targets, important for long-term management of the forage base.***

This STAC workshop and associated report have offered a great opportunity for increased Fisheries GIT involvement with STAC and the broader Chesapeake Bay academic community. It has also introduced important fisheries experts and partners to STAC and the Chesapeake Bay Program's work. We should continue this stronger partnership and collaboration with fisheries and other living resource experts as we focus our efforts on the Watershed Agreement outcomes, one-third of which are fisheries and habitat outcomes. We encourage STAC to support similar living resource workshops and scientific needs in the future.

On behalf of the Management Board, I want to thank you for your specific recommendations that will directly inform the Forage Management Strategy. Please extend our gratitude to STAC and the workshop steering committee for the time and effort involved in the production of this report. We greatly appreciate the ongoing role of STAC in serving as an independent review body directly towards continually improving our overall management of the Chesapeake Bay and watershed restoration efforts.

Most sincerely,

A handwritten signature in black ink, reading "Nick DiPasquale", with a long horizontal line extending to the right.

Nicholas A. DiPasquale, Chair  
Management Board

cc: Management Board Members