Outcome: Forage

Goal: Sustainable Fisheries-Protect, restore and enhance finfish, shellfish and other living resources, their habitats and ecological relationships to sustain all fisheries and provide for a balanced ecosystem in the watershed and Bay.

Outcome: Continually improve the Partnership's capacity to understand the role of forage fish populations in the Chesapeake Bay. By 2016, develop a strategy for assessing the forage fish base available as food for predatory species in the Chesapeake Bay.

Long term Target: Implement an assessment and monitoring of forage per the strategy to determine the status of forage availability.
2 year Target: Write a strategy outlining how Chesapeake Bay forage species will be assessed and monitored.

Key Action** *Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.*	**Performance Target(s)** *Identify incremental steps to achieve Key Action.*	**Participating Entity** *Identify responsible partner for each step.*	**Geographic Location**	**Timeline** *Identify completion date (month & year) for each step)*	**Estimated Project Cost** *Best estimate of total project cost (needed)*	**Available funding by Partner**	**Factors Influencing and/or Gap** *Identify related factor or gap in Management Strategy*
Management Approach 1: Define forage species and what comprises the forage base.							
Key Action**	**Performance Target(s)**	**Participating Entity**	**Geographic Location**	**Timeline**	**Estimated Project Cost**	**Available funding by Partner**	**Factors Influencing and/or Gap**
Using results from the forage workshop report, *Fisheries GIT resource managers will identify highest priority forage species* to focus near-term science and management efforts.	Develop and conduct a process to identify near term priority species across the resource management agencies. Maryland has decided to focus on striped bass as a key managed predator to develop forage indicators around its major prey species.	Forage Action Team, Fish GIT Ex Comm (MD, VA, PRFC)	MD, VA and Potomac River waters (focus on tidal and estuarine waters)	early 2016	Staff time		Management prioritization and commitment, funding and coordination, challenges in assessing migratory species, numerous management species, Bay and Regional objectives may not align, lack of indicators for invertebrates and benthic species
	Compile data and analyses for selected near-term forage species to quantify their contribution to the forage base.	Forage Action Team	MD, VA and Potomac River waters (focus on tidal)	late 2016	Staff Time		
	Determine how to utilize this information to manage the forage supply for key predators.	Forage Action Team, Fish GIT Excomm (MD, VA, PRFC)	MD, VA and Potomac River waters (focus on tidal)	late 2016 - early 2017	Staff time		
	Prioritize data gaps and identify potential funding mechanisms.	Forage Action Team	N/A	late 2016	Staff time		
Totals					**Total**		
Resource managers will identify and prioritize forage species from the forage workshop report to focus long term efforts.	Compile and evaluate information on long-term priority forage species and determine how to utilize this information to manage the forage supply for key predators.	Forage Action Team, Fish GIT Excomm (MD, VA, PRFC)	MD, VA and Potomac River waters (focus on tidal)	late 2016	Staff time		Management prioritization and commitment, funding and coordination, challenges in assessing migratory species, numerous management species, Bay and Regional objectives may not align, lack of indicators for invertebrates and benthic species
	Prioritize data gaps and identify potential funding mechanisms.	Forage Action Team	N/A	late 2016	Staff time		
Totals					**Total**		
Conduct outreach to emphasize importance of forage species and the application of efforts to quantify their role in the Bay ecosystem.	Meet with ASMFC and MAFMC to identify shared efforts/priorities.	Fisheries GIT Staff and jurisdictional reps (MD, PRFC, VA), jurisdictional advisory bodies	N/A	Ongoing	Staff time		Management prioritization and commitment, funding and coordination, challenges in assessing migratory species, numerous management species, Bay and Regional objectives may not align, lack of indicators for invertebrates and benthic
	Present the STAC Forage Workshop Report and progress to CBP Management Board and STAR.	Fisheries GIT Staff and STAC Forage Workshop Leads	N/A	Ongoing; Initial briefings in early 2016	Staff time		
	Develop content and web pages on CBP website and partner sites.	Fisheries GIT staff and Forage Action Team	N/A	mid 2016	NCBO and EPA Comm's staff time		

	Explore the feasibility of developing a documentary about the importance of forage for outreach efforts.	Forage Action Team, CBP Communications Team, Forage experts	N/A	early 2016	Staff time		indicators for invertebrates and benthic species
Totals							

Management Approach 2: Determine the status of the forage base including a definition of "balanced" state.							
Key Action**	**Performance Target(s)**	**Participating Entity**	**Geographic Location**	**Timeline**	**Estimated Project Cost**	**Available funding by Partner**	**Factors Influencing and/or Gap**
Use existing data to develop indicators and metrics for near-term species.	Identify which indicators are most useful for specific forage groups using the results of the GIT funded forage project.	MD DNR, VMRC, PRFC, Forage Action Team, UMCES	N/A	early 2016	2015 - $50,000, 2016 - $60,000	GIT Funding	Management prioritization and commitment, funding and coordination, challenges in assessing migratory species, numerous management species, Bay and Regional objectives may not align, lack of indicators for invertebrates and benthic species
	Maryland DNR will continue to refine forage/nutritional indicators for striped bass. (Preliminary indicators are complete)	MD DNR (Jim Uphoff)	MD waters	Ongoing	$83,153 (proposed 2015 budget/not yet approved)	MD DNR, DJWB	
					Total		
Develop a definition of a "balanced" state for predators and prey.	Identify and evaluate population trends for priority forage species. Evaluate and quantify consumption indices for 5 identified predator species.	MD DNR, UMCES, Forage Action Team	MD, VA and Potomac River waters (focus on tidal)	late 2016 (early 2016 - Report provided by UMCES)	2015 - $50,000 GIT funding, staff time	GIT Funding	Management prioritization and commitment, funding and coordination, challenges in assessing migratory species, numerous management species, Bay and Regional objectives may not align, lack of indicators for invertebrates and benthic species
	Apply population trends analysis as a tool to develop management objectives.	Forage Action Team, Fish GIT Ex Comm (jurisdictional managers)	MD, VA and Potomac River waters (focus on tidal)	2017	staff time	GIT Funding	
					Total		

Management Approach 3: Inform management decisions to better address sustainability of the forage base.							
Key Action**	**Performance Target(s)**	**Participating Entity**	**Geographic Location**	**Timeline**	**Estimated Project Cost**	**Available funding by Partner**	**Factors Influencing and/or Gap**
The management jurisdictions will establish management objectives for priority forage species (near-term and long-term).	Convene a meeting to establish specific short-term management objectives including targets and thresholds for priority species.	Forage Action Team, Fish GIT Ex Comm (MD, VA, PRFC)	MD, VA and Potomac River waters (focus on tidal)	mid-late 2016	staff time		Objectives stated somewhere like a plan…FMP? FEP? Forage strategy? Managing factors influencing fish; what we produce could be a section of an FEP-ACTIONS
	Convene a workshop to discuss strategic long-term objectives and regional priorities.	Forage Action Team, Fish GIT Ex Comm (MD, VA, PRFC)	MD, VA and Potomac River waters (focus on tidal)	mid-late 2016	staff time, venue cost		
	Coordinate Fisheries GIT forage species science and management objectives with ASMFC/MAFMC. Provide information on Chesapeake Bay forage as needed to ASMFC/MAFMC.	Fisheries GIT Staff, MD, VA, PRFC, management agency advising groups	MD, VA and Potomac River waters (focus on tidal)	Ongoing	staff time		
					Total		

Management Approach 4: Maximize the efficiency of monitoring programs and build on existing efforts							
Key Action**	**Performance Target(s)**	**Participating Entity**	**Geographic Location**	**Timeline**	**Estimated Project Cost**	**Available funding by Partner**	**Factors Influencing and/or Gap**
	Explore options to modify existing monitoring programs that will reduce costs and cover a range of species.	Forage Action Team, STAR	MD, VA and Potomac River waters (focus on tidal?)	early-mid 2016	staff time		Management prioritization and commitment, funding and coordination

Identify and prioritize monitoring gaps for forage species.	Work with partners to evaluate the feasibility of restarting phytoplankton and zooplankton monitoring.	Forage Action Team, MD DNR, VIMS, STAR	MD, VA and Potomac River waters (focus on tidal?)	Mid 2016	staff time		commitment, funding and coordination, challenges in assessing migratory species, numerous management species, Bay and Regional objectives may not align, lack of indicators for invertebrates and benthic species
	Develop a proposal for shallow-water monitoring survey(s) that address identified gaps.	Forage Action Team, MD DNR, VIMS, STAR	MD, VA and Potomac River waters (other jurisdictions?)	Mid 2016	staff time		
					Total		
Draft a strategy for assessing the forage base available as food for predatory species in the Chesapeake Bay	Incorporate outputs from Management Approaches 1, 2 and 3.	Forage Action Team, Fish GIT Ex Comm		2017	staff time		Management prioritization and commitment, funding and coordination, challenges in assessing migratory species, numerous management species, Bay and Regional objectives may not align, lack of indicators for invertebrates and benthic species
					Total		