Forage Outcome Draft Workplan
2016 – 2017

Fish GIT Ex Comm, Forage Action Team, Fish GIT Ex Comm, Jurisdictional Advisory Bodies, MD DNR, PRFC, VMRC, STAC Workshop Leads, UMCES, STAR, VIMS

Management Approach 1
Define forage species

- **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.**
    - *Identify priority near-term forage species.*
    - *Compile data for near-term priorities.*
    - *Prioritize data gaps and identify funding mechanisms.*

- **Resource managers will identify and prioritize forage species from the forage workshop report to focus long-term efforts.**
    - *Compile data for long-term priorities.*
    - *Prioritize data gaps and identify funding mechanisms.*

- **Conduct outreach to emphasize importance of forage species and the application of efforts to quantify their role in the Bay ecosystem.**
    - *Meet with state advisory committees, ASMFC, MAFMC.*
    - *Communicate results from STAC Workshop.*
    - *Develop web content (video?)*

Management Approach 2
Determine status

- **Use existing data to develop indicators and metrics for near-term species.**
    - *Review results of forage indicator project.*
    - *MD DNR refine forage/nutritional indicators for striped bass.*

- **Develop a definition of a "balanced" state for predators and prey.**
    - *Evaluate population trends and quantify consumption indices of predator species.*
    - *Apply population trends as a tool to develop management objectives.*

Management Approach 3
Inform decisions

- **The management jurisdictions will establish management objectives for priority forage species (near-term and long-term).**
    - *Establish short-term management objectives.*
    - *Convene a workshop to discuss long-term objectives.*
    - *Coordinate forage science and management objectives with ASMFC/MAFMC.*

Management Approach 4
Maximize monitoring

- **Identify and prioritize monitoring gaps for forage species.**
    - *Explore options to expand monitoring to cover a range of forage species and reduce costs.*
    - *Evaluate the feasibility of restarting phytoplankton and zooplankton monitoring.*
    - *Develop a proposal for shallow-water monitoring.*

- **Draft a strategy for assessing the forage base available as food for predatory species in the Chesapeake Bay.**

Management Approach

- **Key action**
    - *Performance target*
    - *Performance target*

Fish Habitat Outcome Draft Workplan
2016 – 2017

Fish Habitat Action Team, ACFHP, DC, DE, MD DNR, VMRC, NCBO, PA, STAC, STAR, TetraTech, TNC, USACE, CBP GITs

Management Approach 1
Identify and prioritize threats

- **Continue to improve our understanding of specific habitat stressors to promote sound management strategies that can conserve and restore habitat for productive fisheries.**
    - *Characterize primary threats and stressors.*
    - *Develop summaries of key stressors and fisheries response.*
    - *Evaluate living resource responses to dynamic ecosystem conditions.*
- **Work with Chesapeake Bay Program partners and other GITS to identify threats and understand how those threats are being addressed.**
    - *Coordinate development of metrics.*
    - *Prioritize specific water quality and toxics threats to fish and habitats.*
- **Develop thresholds and/or metrics for primary stressors and threats to characterize what aspects of habitat need to be maintained to support fish habitat functions.**
    - *Build on Maryland DNR's work on the impact of land use change on tidal fish communities.*

Management Approach 2
Compile data on habitats and fish utilization

- **Incorporate fish utilization information into a threat matrix.**
    - *Review and develop matrices that target species by life stage.*
    - *Delaware is working to identify habitat for largemouth bass, American shad and Atlantic sturgeon. Need research to identify critical areas.*

Management Approach 3
Develop spatial tools for fish habitat

- **Overlay spatial data on fish species habitat dependence (by life stage) with high-value habitat.**
    - *Convene a workshop on how to best use existing tools/data.*
    - *Maryland will continue to develop high priority fish habitat maps for life stages of anadromous species.*
    - *Complete development of telemetry network website (MATOS).*
- **Identify and, where possible, fill spatial data gaps for specific species and/or tributary areas that lack sufficient data coverage.**
    - *Identify species and geographic areas that need spatial data coverage.*
    - *Convert existing survey data to spatial data if needed.*

Management Approach 4
Communicate importance

- **Engage and communicate fish habitat needs with CBP partners and local communities.**
    - *Discuss species habitat requirements with CBP GITs.*
    - *Tailor communications to specific geographic areas and species.*
    - *Support Maryland's Fish Habitat Workgroup in connecting with rural communities to maintain rural character of their watersheds.*
    - *Delaware will consider regulatory approaches to protect habitat.*

Management Approach 5
Enhance fish habitat protection

- **Engage local planners and restoration practitioners to understand what elements of habitat need to be conserved to provide for ecosystem services.**
    - *Engage with regional partnerships.*
    - *Evaluate the success of outside efforts.*
    - *Work with partners who are implementing habitat conservation projects.*
    - *Work with Atlantic Coast Fish Habitat Partnership to include the Chesapeake.*
- **Review conservation efforts from other regions of the country.**
    - *Engage with TNC on their projects and potential applications.*
    - *Utilize the 2015 inland assessment.*
    - *Contact Midwest to learn about mussel restoration.*
- **Review policies and cultural views that may limit promotion of habitat conservation.**

Management Approach

- **Key action**
    - *Performance target*
    - *Performance target*

Brook Trout Outcome Draft Workplan
2016 - 2017

Management Approach 1
Priority Areas for Conservation

- **Target and conserve Wild Brook Trout populations in subwatersheds that have the best potential for sustaining resiliency (Priority Level 1 patches)**
    - *Identify 10 priority patches (2 in each of the 5 states) to conserve in 2015-2016*
        - USGS, WVU
- **Host dialogue on varied Brook Trout angling regulations across states and in National Parks**
    - *Inform overall restoration plans; Survey each state and NP regulatory agencies as to specific Brook Trout regulations and summarize*
        - BTAT, EBTJV
- **Communicate these priority patches in context with "big picture, long term" conservation planning**
        - LGAC

Management Approach 2
Emerging Stressors

- **Consider climate change in future projects and for inclusion in decision support tools**
    - *Apply RFB Mapper to Priority Level 2 Wild Brook Trout Only patches*
        - Climate Change WG, USFS
- **Review USGS Study (Snyder et. al. 2015) on stream temperature increase with climate change and groundwater influences**
    - *Select habitats vulnerable to fragmentation with increasing water temperatures*
        - USGS

Management Approach 3
Decision Support Tools

- **Develop a genetic "map" to enable managers to select appropriate brood stock source for re-introductions**
    - *Watershed genetic mapping of all Brook Trout populations*
- **Add predictive layer for AMD (acid mine drainage) impacted streams as potential restoration priority**
    - *Obtain needed data from states; identify/contract with someone to develop the tool; on the ground restoration can result in quick restoration/reintroduction of miles of Brook Trout population*
- **Add predictive layer for UOG (unconventional oil and gas) development on Brook Trout habitats**
    - *Update WVU's Brook Trout model*
    - *Review potential effects of UOG on Brook Trout populations using genetic techniques to assess population structures*
        - USGS, WVU

Management Approach 4
Expand monitoring

- **Continue assistance to states in determining the distribution of native Brook Trout**
    - *Lead contacts in each state report CB patch monitoring information to Technical Lead.*
        - EBTJV
- **Continue research on use of genetic information as potential census method for determining population status (viability) and restoration success**
    - *Genetic samples from 5 patches per state provided annually*
        - UMass
- **Review invasive species portion of USGS study (Snyder et. al. 2015) to better influence management of Brook Trout habitats**

Management Approach

- **Key action**
    - *Performance target*
    - *Performance target*

Fish Passage Outcome Draft Workplan
2016 - 2017

Management Approach 1
Open 1,000 stream miles

- **During the period 2011-2025, restore historical fish migratory routes by opening 1,000 additional stream miles, with restoration success indicated by the presence of Alewife, Blueback Herring, American Shad, Hickory Shad, American Eel, and/or Brook Trout**
    - *Remove Bloede Dam*
    - *Various dam removal planning, design, and implementation projects*
        - American Rivers, FPWG, MD DNR, NOAA, USFWS
- **Project Development via Incentive Programs**
    - *Dam removal incentive program for private land owners*
        - BTD DNR
- **Coordinate dam removal activities with the state Dam Safety Programs**
    - *Establish and continue relationships*
        - FPWG

Management Approach 2
Document return of target species

- **Document return of fish to opened stream reaches by establishing the presence or absence of target fish species (Tier I monitoring)**
    - *All NOAA funded dam removals will be monitored*
        - NOAA
- **Conduct Tier II monitoring on select dam removals (Currently, the Patapsco River monitoring is the only river designated as a Tier II site by NOAA)**
    - *Conduct Tier II monitoring on the Patapsco River*
        - American Rivers, MD DNR, NOAA, UMBC, USFWS, USGS
- **Conduct target species monitoring of select dam removals in VA (+/- and relative abundance)**
    - *Boat electrofishing upstream of Harvell Dam removal on the Appomattox River*
    - *Boat electrofishing upstream of Embrey Dam removal on the Rappahannock River*
        - VDGIF
- **Conduct target species counts in technical fishways in VA**
    - *Continue Annual American Shad count at Boshers Vertical Slot*
        - VDGIF
- **Conduct target species monitoring (+/- and relative abundance) at road culverts in VA**
    - *Continue annual backpack electrofishing at Claiborne Run and White Oak Run*
        - VDGIF
- **Conduct Juvenile Alosine surveys in VA**
    - *Determine origin of American Shad juveniles on the James River*
        - VDGIF
- **Continue to develop environmental DNA (eDNA) tools to detect River Herring presence**
    - *Develop and test tools on water samples (frozen & fresh)*
        - SERC, UMCES

Management Approach 3
CB Fish Passage Tool

- **Continue using the Chesapeake Bay Fish Passage Tool to implement high priority dam removal and fish passage projects**
    - *Identify high priority watersheds in MD, PA, and VA*
        - FPWG
    - *Conduct culvert and bridge assessments in high priority watersheds*
        - MD, PA, VA, American Rivers, NOAA, USFWS
    - *Work with the Bay Program to formally accept the new definition of stream miles as the upstream functional network*
        - FPWG

Management Approach

- **Key action**
    - *Performance target*
    - *Performance target*

Blue Crab Outcome Draft Workplan
2016 – 2017
MD DNR, VMRC, PRFC, CBSAC, NCBO, Jurisdiction Advisory Committees

Management Approach 1
Stock Assessment

- **Finalize plans for the next stock assessment.**
  - *Finalize the TORs and scope of the assessment.*
  - *Determine the timeline for each component .*
  - *Identify available funding.*
  - *Finalize scope of work for Principal Investigators .*

- **Conduct the next stock assessment (mid 2016-17).**
  - *Complete research, modeling and analyses and document in a stock assessment report. (UMCES, VIMS, DNR)*
  - *Regular check-ins with PI's. and GIT Executive Committee.*
  - *Coordinate a review of the assessment results by CBSAC, interested scientists and Fisheries GIT members.*
  - *Discuss results with stakeholders and industry.*

- **Continue the current process of CBSAC analysis of the annual Winter Dredge Survey results and associated management advice until the stock assessment is complete.**
  - *Analyze the results of the Winter Dredge Survey and produce the 2016 and 2017 blue Crab Advisory Reports. (CBSAC)*
  - *After the stock assessment is complete, discuss if the annual process of data analysis and CBSAC report process should change based on the assessment results.*

Management Approach 2
Evaluating an Allocation-based Management Framework

- **Work to improve harvest accountability within each management jurisdiction.**
  - *Maryland will continue to expand their pilot electronic reporting project.*
  - *PRFC will explore options to implement electronic reporting in 2016.*
  - *VMRC will continue promoting their commercial online reporting system.*
  - *Continue the discussion on recreational harvest and its impact on the fishery; utilize ongoing studies and existing reports.*
  - *Evaluate the need for developing standards for harvest accountability to improve accuracy of future management frameworks.*
- **Develop a framework to assess the feasibility of using and calculating a Baywide Total Allowable Catch (TAC) of blue crabs.**
  - *Compile available harvest data from the jurisdictions.*
  - *Work with CBSAC to determine how to calculate a TAC.*
- **Explore the feasibility of allocating a percentage of the Baywide TAC to the jurisdictions.**
  - *Compile a list of potential allocation methods.*
  - *Determine which methods have sufficient data to support them and discuss the pros and cons of each method.*
  - *Engage stakeholders, including jurisdictional advisory committees, to obtain public feedback on potential allocation methods.*
  - *Identify available economic information and consider future data collection to better understand the quantitative value of the fishery and impact of regulatory changes.*

Management Approach

- **Key action**
  - *Performance target*
  - *Performance target*

Oyster Restoration Outcome Draft Workplan
2016 – 2017
Maryland & Virginia Interagency Teams, Researchers, Management Agencies

Management Approach 1
Restoration Planning & Implementation

- **Maryland Interagency Team work in selected tributaries.**
  - *Harris Creek: Monitor restored reefs for Oyster Metrics parameters.*
  - *Tred Avon River: Seeding planned for 2016. Meetings/data collection trips with watermen and agency staff to help finalize draft tributary plan.*
  - *Little Choptank: Seeding planned for 2016.*
- **Virginia Interagency Team work in selected tributaries.**
  - *Complete planning process and develop tributary acreage goals.*
  - *Continue evaluating the status of past restoration projects.*
  - *Lynnhaven River: USACE will add hard reef habitat. Lafayette River: Possible construction of remaining acres to satisfy Oyster Metrics.*
  - *Piankatank River: USACE will construct 39-acres of habitat. VMRC will continue shell maintenance.*
- **Select additional tributaries for restoration.**
  - *Interagency teams recommend candidate tributaries.*
  - *Jurisdictions identify candidates for public scoping.*
  - *Conduct public scoping and have tributary selection in Maryland by late 2017.*
- **Track oyster restoration efforts in tributaries that are not currently selected as one the 10 tributaries.**
  - *Monitor past restoration projects in the Great Wicomico River. (USACE)*
  - *Communicate with PRFC on efforts in the Potomac.*
- **Continue collecting data to quantify ecosystem services on restored reefs.**
  - *Continued work on Oyster Reef Ecosystem Services (ORES) projects.*
  - *Share ORES project results and develop publications.*
  - *Track additional ongoing ecosystem services studies .*

Management Approach 2
Securing Support and Resources

- **Restoration partners will continue to meet with funding agencies and organizations to maximize resources.**
  - *Communicate the progress on current efforts.*
- **Restoration partners will work collaboratively to promote efficient, streamlined permitting processes.**
  - *Discuss how to preserve leases for future restoration efforts in those areas (Lynnhaven).*
- **Consider the concerns of shell budget and hatchery capacity and how to address future issues.**
  - *Apply for funds to convene a 2016 technical workshop on oyster hatchery and water quality issues.*
  - *Discuss limited shell/larval resources at Oyster Summit.*

Management Approach 3
Future Protection

- **Maryland and Virginia natural resources law enforcement agencies will continue to implement and assess the effectiveness of enforcement plans to address poaching.**
  - *Improve surveillance techniques and technology where possible. (MD DNR and VMRC)*
  - *Promote increased awareness of poaching consequences and promote alternative materials/ substrate as protection for reefs.*
  - *Identify additional considerations for sanctuary reefs in close proximity to harvest/seed areas.*

Management Approach 4
Local Participation

- **Conduct outreach to public and to stakeholders near selected tributaries or candidate tributaries.**
  - *Conduct stakeholder outreach meetings during planning*
  - *Utilize restoration partner websites to feature updates.*

Management Approach

- **Key action**
  - *Performance target*
  - *Performance target*