May 11, 2017 Quarterly Progress Review Meeting Follow-up:
Summary and Elaboration on Recommended Adaptations and Actions
June 9, 2017

Background: At the May 11, 2017 Quarterly Progress Review Meeting, the Management Board heard presentations from six Watershed Agreement Outcome leads on the results of their adaptive management review, including recommended adaptations and actions for Management Board consideration. One of the common comments received after the meeting was that many of the recommended adaptations and actions were not specific enough, nor received early enough, for Management Board action during the May 11 meeting. In response, following are summaries of the challenges identified by the Outcome leads during their review, recommended adaptations and actions presented during the May 11 meeting and, in some cases, greater specificity and background. This information is being provided to the Management Board in the hope that it will allow for preparation by Management Board members in advance of the June 15 meeting and lead to more meaningful discussion and decisions.

Healthy Watersheds Outcome
Outcome: 100 percent of state-identified currently healthy waters and watershed remain healthy

Challenges:
- Lack of monitoring and tracking programs,
- Lack of threats and vulnerability data,
- Limited allocation of resources,
- Challenges in articulating the economic value of healthy watersheds,
- Lack of participation and engagement,
- Lack of prioritization,
- Challenges in rolling out tools
- Variability in defining and tracking healthy watersheds

May 11, 2017 Recommended Adaptations and Actions:
- Consistent partner participation
- Pathway to communicate tools and information to planners and watershed organizations (2-way)
- Monitoring and assessment of healthy watersheds
- Inclusion in the Watershed Implementation Plans (WIPs)

June 9, 2017 Additional Information and Specificity
- Goal Team Membership
- The Healthy Watersheds GIT currently has ~15 active members (who regularly participate in calls) including team staff.

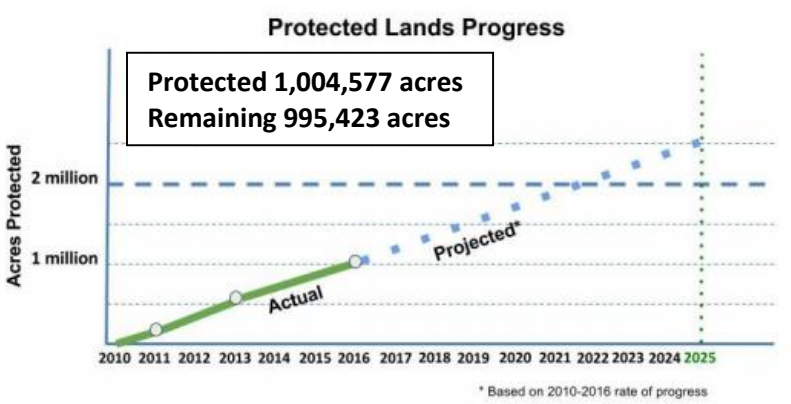
Maintain Healthy Watersheds GIT	
Members:	**Affiliation:**
John Schneider	State of Delaware
Matt Robinson	District of Columbia

Mike Naylor	State of Maryland
Jason Dubow	State of Maryland
Angel Valdez	State of Maryland
	Commonwealth of Pennsylvania*
Sarah Latessa	State of New York*
Todd Janeski	Commonwealth of Virginia*
Greg Garman	Virginia Commonwealth University*
Greg Evans	Commonwealth of Virginia
Tim Craddock	State of West Virginia
Mark Hoffman	Chesapeake Bay Commission
	National Park Service*
	US Army Corps of Engineers*
Steve Epting	US Environmental Protection Agency
Bill Jenkins	
Dan Murphy	US Fish and Wildlife Service*
Sally Claggett	US Forest Service
Renee Thompson	US Geological Survey
Mark Bryer	The Nature Conservancy
Jennifer Miller Herzog	Land Trust Alliance
Lee Epstein	Chesapeake Bay Foundation

- Consistent partner participation *(Please reach out to your jurisdictional representatives to let them know their continued participation and engagement in our Healthy Watersheds goal team is a priority). Those Affiliations marked with a * are especially missing.*
- Pathway to communicate tools and information to planners and watershed organizations (2-way) *Help Communications, LGAC, Local Engagement, Citizen Advisory and GITs work together to index communications products and develop a plan related to target audience, subject matter, best medium of outreach etc.*
- Monitoring and assessment of healthy watersheds *(Evaluate how existing monitoring efforts (within the Bay Program partnerships, cross-GIT, etc.) can be leveraged by the GIT to assess healthy watershed status. Use the evaluation results to help jurisdictions better prioritize healthy watersheds when allocating limited resources for monitoring.*
- Inclusion in the Watershed Implementation Plans (WIPs) *Make jurisdictions aware of healthy watersheds and their locations with maps, and identify possible co-benefits from WIP related initiatives and activities. WIPs not only address target load reductions, but also provide an opportunity for a holistic approach that includes planning and land-use decisions, conservation, and other natural resource management decisions.*

Protected Lands Outcome

Outcome: By 2025, protect an additional two million acres of lands throughout the watershed – currently identified as high-conservation priorities at the federal, state or local level – including 225,000 acres of wetlands and 695,000 acres of forestland and highest value for maintaining water quality



Challenges:

- Changing federal funding climate for land protection
- Impact on state and local revenues from changing federal funding
- Support for funding land protection varies based on economy and understanding of long-term goals

May 11, 2017 Recommended Adaptations and Actions:

- Support and effectively credit land conservation in the updates to the Bay models and Total Maximum Daily Load (TMDL) by creating strong incentives going forward for:
    - The placement of science appropriate BMPs on permanently protected lands, and
    - The permanent protection of large landscapes of resource lands from conversion in combination with other possible measures

Stream Health Outcome

Outcome: Continually improve stream health and function throughout the watershed. Improve health and function of 10 percent of stream miles above the 2008 baseline for the Chesapeake Bay watershed.

Challenges:

- Fill Stream Health Workgroup Chair vacancy
- Active/committed workgroup member participation and follow-through on workplan actions
- Expanding and sharing of increased knowledge
- Establish interim success criteria
- Incentivizing biological uplift
- Continuing to streamline permitting processes
- Funding to establish 2008 baseline ($18K)

May 11, 2017 Recommended Adaptations and Actions:

- Active leadership and involvement in accomplishing biennial workplan tasks
    - New co-chairs
    - Staff performance plans
- Funding to establish the 2008 baseline and document progress towards Outcome
    - $18K requested

June 9, 2017 Additional Information and Specificity

Workgroup Membership

The Stream Health Workgroup currently has 45 active members (regularly participate in calls) including team staff.

Stream Health Workgroup (SHWG)	
Members:	**Affiliation:**
Jennifer Greiner (Coordinator)	US Fish and Wildlife Service (Federal)
Kyle Runion (Staff)	Chesapeake Research Consortium (NGO)
Claire Buchanan	Interstate Commission on the Potomac River Basin (Federal/State)
Josh Burch	DC Department of Energy and Environment (State)
Denise Clearwater	MD Department of the Environment (State)
Stephen Faulkner	US Geological Survey (Federal)
Mike Galvin	Johnson, Mirmiran, and Thompson (Private)
Nat Gillespie	US Forest Service (Federal)
Adam Griggs	Interstate Commission on the Potomac River Basin (State/Federal)
James Haggertt	US Army Corps of Engineers (Federal)
Anne Hairston-Strang	MD Department of Natural Resources (State)
Alana Hartman	WV Department of Environmental Protection (State)
Than Hitt	US Geological Survey (Federal)
Gina Hunt	MD Department of Natural Resources (State)
Buck Kline	VA Department of Agriculture and Forestry (State)
Jeffrey Lapp	Environmental Protection Agency (Federal)
Neely Law	Center for Watershed Protection (NGO)

James Leitner	WV Conservation Agency (NGO)
Mike Lovegreen	Upper Susquehanna Coalition (NGO)
Scott Lowe	McCormick Taylor (Private)
Larry Lubbers	MD Department of Natural Resources (State)
Serena McClain	American Rivers (NGO)
Derrick McDonald	PA Department of Environmental Protection (State)
Matthew Meyers	Fairfax County (Local)
Jim Morris	Johnson, Mirmiran, and Thompson (Private)
Todd Petty	West Virginia University (Research)
Scott Phillips	US Geological Survey (Federal)
Jake Reilly	National Fish and Wildlife Foundation (NGO)
Kristen Saacke Blunk	Headwaters (Private)
John Schmidt	US Fish and Wildlife Service (Federal)
Mark Secrist	US Fish and Wildlife Service (Federal)
Bill Seiger	MD Department of the Environment (State)
Rob Shreeve	MD State Highway Administration (State)
Christopher Spaur	US Army Corps of Engineers (Federal)
Gary Speiran	US Geological Survey (Federal)
Bill Stack	Center for Watershed Protection (NGO)
Rich Starr	Ecosystem Planning and Restoration (Private)
Scott Stranko	MD Department of Natural Resources (State)
Steve Strano	US Department of Agriculture (Federal)
Renee Thompson	US Geological Survey (Federal)
Keith Van Ness	Montgomery County Environmental Protection (County)
Denice Wardrop	Pennsylvania State University (Research)
Julie Winters	Environmental Protection Agency (Federal)
Sarah Woordford	VA Department of Environmental Quality (State)
Adam Wright	Department of Defense (Federal)

More refined Recommended Adaptations and Actions

a) The Stream Health Workgroup asks that the Management Board recommend potential new co-chairs for active workgroup leadership and recommend including active workgroup participation as an element in staff performance plans.

b) The Stream Health Workgroup asks that the Management Board assist in helping to secure $18,000 in funding to establish the 2008 baseline and document progress towards our Outcome. The baseline data has already been collected, the funding would cover the costs of analyzing the data. Without a baseline, it is difficult to measure outcome progress.

Brook Trout Outcome

Outcome: Restore and sustain naturally reproducing brook trout in the Chesapeake Bay's headwater streams, with an eight percent increase in occupied habitat by 2025.

Challenges:

- Limited ability to control stressors
- Insufficient resources for partner engagement/monitoring
- Limited understanding/access to Decision Support Tools (DSTs)
- Majority of restoration opportunities are on private property
- Restoration opportunities are not equal among States

May 11, 2017 Recommended Adaptations and Actions:

- Incentives for Team Members to be more engaged and invested in the Outcome
- Pathways for communication/outreach with key decision-makers/planners to increase awareness/opportunities
- Support for cross-GIT collaboration, monitoring programs

June 9, 2017 Additional Information and Specificity

Action Team Membership

The Brook Trout Action Team currently has 17 active members (regularly participate in calls) including team staff. Each state in the Chesapeake Bay Watershed with brook trout populations have a representative on the team. Each state representative works closely with the Eastern Brook Trout Joint Venture to report conservation and monitoring activities – data which informs the Brook Trout outcome indicator.

Brook Trout Action Team (BTAT)		
Members:	**Contact:**	**Affiliation:**
Alan Heft	alan.heft@maryland.gov	MD Department of Natural Resources (State)
David Kazyak	dkazyak@usgs.gov	US Geological Survey (Federal)
David Thorne	david.w.thorne@wv.gov	WV Department of Natural Resources (State)
Fred Henson	fred.henson@dec.ny.gov	NY Department of Environmental Conservation (State)
Jason Detar	jdetar@state.pa.us	PA Fish and Boat Commission (State)
Jennifer Greiner (Coordinator)	greiner_jennifer@fws.gov	US Fish and Wildlife Service (Federal)
Jonathan Niles	niles@susqu.edu	Susquehanna University (Research)
Matt Sell	matt.sell@maryland.gov	MD Department of Natural Resources (State)
Paige Hobaugh (Staff)	hobaugh.paige@epa.gov	Chesapeake Research Consortium (NGO)
Peter Tango	ptango@chesapeakebay.net	US Geological Survey (Federal)
Scott Scarfone	sscarfone@oasisdesigngroup.com	Trout Unlimited/Upper Gunpowder, MD (NGO)
Seth Coffman	scoffman@tu.org	Trout Unlimited (NGO)
Stephen Faulkner (Team Lead)	faulkners@usgs.gov	US Geological Survey (Federal)
Steve Perry	ebtjv.coordinator@gmail.com	Eastern Brook Trout Joint Venture (Federal)
Steve Reeser	Steve.Reeser@dgif.virginia.gov	VA Department of Game and Inland Fisheries (State)
Than Hitt	nhitt@usgs.gov	US Geological Survey (Federal)
Tim Pokorny	tim.pokorny@dec.ny.gov	NY Department of Environmental Conservation (State)

More refined Recommended Adaptations and Actions

The Brook Trout Action Team requests that the Management Board recommend that dedicated CBP Staff/Team Members become more engaged and invested in the Outcome. Having direct support from relevant Team Members' 1st/2nd-level supervisor for the inclusion of Brook Trout Workplan development and Workplan key action participation as an element of their annual performance plan is one option. We ask that the Management Board designate CBP staff support to help develop a plan to increase communication/outreach of brook trout conservation opportunities with key decision-makers and to coordinate cross-GIT collaboration. Designating staff to concentrate on these efforts will allow for Brook Trout Action Team Members to focus on workplan key actions, resulting in better progress toward the Outcome.

Fish Habitat Outcome

Outcome: Continually improve effectiveness of fish habitat conservation and restoration efforts by identifying and characterizing critical spawning, nursery and forage areas within the Bay and tributaries for important fish and shellfish, and use existing and new tools to integrate information and conduct assessments to inform restoration and conservation efforts.

Challenges:

- Lack an effective mechanism to communicate fish habitat priorities to CBP partners and the local community
- Lack a defined measure of progress
- Lack a direct connection between fishery managers and habitat decision makers

May 11, 2017 Recommended Adaptations and Actions:

- Incorporate fish habitat into the Phase III Watershed Implementation Plans
    - Prioritize Best Management Practices (BMPs) that address water quality and habitat
    - Serve as a metric of progress

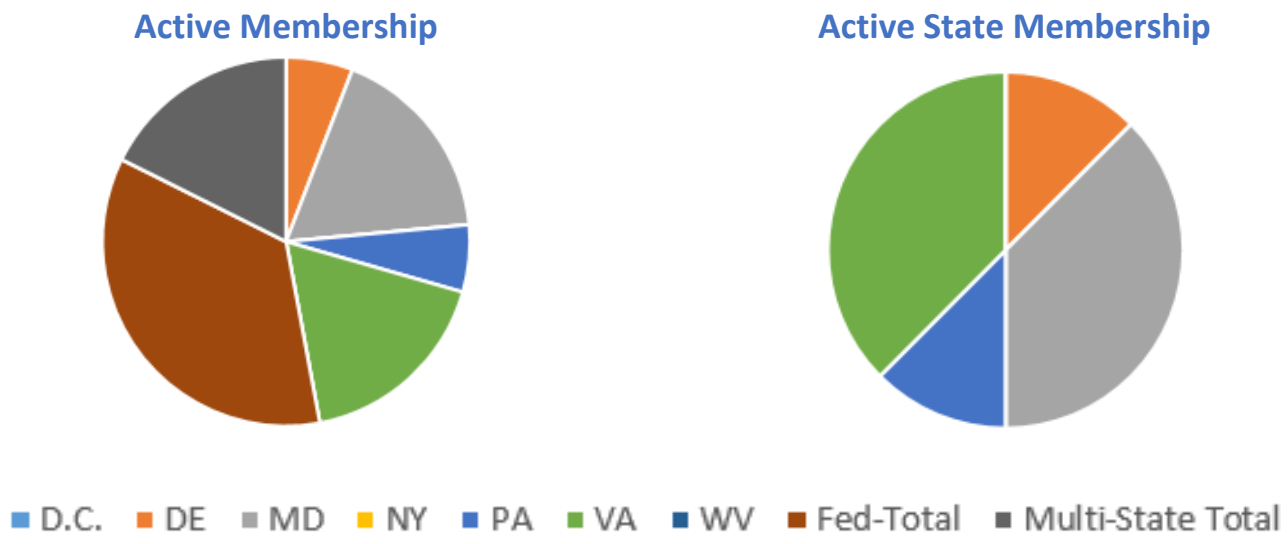
June 9, 2017 Additional Information and Specificity

Who is an active participant on the Fish Habitat Action Team?

Active members are defined as members who have participated in at least one call/meeting since June 2016. We have 17 active members and 17 interested parties. Interested parties receive team emails, but have not participated in a meeting in the past year. There are 17 members on the Fish Habitat Action Team (including team staff). Without team staff, there are only 12 active team members. The following members are on the Fish Habitat Action Team:

Fish Habitat Action Team Member	Organization
Bruce Vogt (Fed-based in MD) *GIT Coordinator*	NOAA Chesapeake Bay Office
Donna Bilkovic (VA)	Virginia Institute of Marine Science
Edna Stetzar (DE)	DE Department of Natural Resources and Environmental Control
Emilie Franke (Fed-based in MD)	ERT/NOAA Chesapeake Bay Office
Geoffrey Smith (PA)	PA Fish and Boat Commission
Gina Hunt (MD) *Chair*	MD Department of Natural Resources
Kara Skipper (MS-based in MD) *Staffer*	Chesapeake Research Consortium
Jennifer Greiner (Fed-based in MD) *Coordinator*	Fish and Wildlife Service
Julie Devers (Fed-based in MD)	Fish and Wildlife Service
Lisa Havel (Multi-state-based in VA)	Atlantic States Marine Fisheries Commission
Margaret McGinty (MD)	MD Department of Natural Resources
Mary Fabrizio (VA)	Virginia Institute of Marine Science
Matthew Ogburn (Fed-based in MD)	Smithsonian Environmental Research Center
Paige Hobaugh (MS-based in MD) *Staffer*	Chesapeake Research Consortium
Peter Tango (Fed-based in MD)	U.S. Geological Survey
Rachael Maulorico (VA)	VA Marine Resources Commission
Tom Ihde (MD)	Morgan State University Estuarine Research Center

Jurisdictions represented in the total membership include MD, DE, VA, WV, and PA.



What additional organizations would be beneficial to have on our team?

Based on our current focus on shoreline hardening and impervious surface impacts on fish habitat and the need for communication with local planners, it would be advantageous to have the following organizations included on our team:

- Watershed Implementation Plan Leads (i.e. MDE)
- Virginia Marine Resources Commission (Shoreline Permitting)
- Delaware Office of State Planning Coordination
- Pennsylvania Department of Community and Economic Development
- Maryland Department of Planning
- National Coastal Zone Management Staff
- County and Local Planning Staff
- Virginia Association of Soil and Water Conservation Districts
- Chesapeake Bay Program Communications Team Member(s)
- Local Government Advisory Committee Member(s)
- Citizen Advisory Committee Member(s)

Why are we requesting the management board to "Incorporate fish habitat into the Phase III Watershed Implementation Plans?

Watershed Implementation Plans (WIPs) were developed to improve water quality in the Chesapeake Bay by creating a road map and accountability framework that Bay jurisdictions can use to achieve nutrient and sediment reductions. These plans not only incorporate the latest data on estimated sediment and nutrient loads from different source sectors, but also establish a method of communicating and guiding counties/localities in environmental restoration and conservation efforts.

The Fish Habitat Outcome aims to inform fish habitat conservation and restoration efforts. However, there is currently no method to educate and inform fish habitat to partners and stakeholders. WIPs on the other hand, have established an effective and efficient means of reaching counties and localities in the Chesapeake Bay Watershed. While there are other methods to reach localities and counties outside of the WIP, it would not prove to be as efficient and broad. Without the WIP process, counties and localities would have to sift through information from multiple sources when making a BMP decision.

Integrating fish habitat considerations into WIPs demonstrates adherence to the EPA's Interim Expectations for the Phase III Watershed Implementation plans, which states that the "EPA also encourages state and local jurisdictions to consider the corollary benefits of BMPs that are targeted for implementation. Corollary benefits are those that not only result in water quality improvements but could address other 2014 Chesapeake Bay Watershed Agreement Outcomes." An added benefit of the suggested process to integrate fish habitat considerations into the WIP is to help local communities see tangible value in BMP implementation. Increased and healthier fish populations resulting from improved habitat may increase public support and understanding of WIPs.

<u>What actions can members of the Management Board (at the table) take to fulfill this request?</u>
We recommend that Management Board members:

1. Review the participation list provided and create an expectation that the agencies in their jurisdiction will join/continue active membership in the Fish Habitat Action Team.
2. Work with the WIP lead in your jurisdiction on a commitment to include fish habitat information in the WIP communication plan. Fish Habitat Action Team members can meet with the lead agency staff to discuss materials and approach.
3. Help identify local contacts in your jurisdiction for the watersheds identified in the communication pilot project described in question V.
4. Promote future Fish Habitat Action Team communications projects to their agencies and stakeholders.
    a. Communication materials described in question V.
    b. Fish Habitat webinars
    c. 2018 Fish Habitat Workshop Report

<u>What kind of information are we suggesting is provided through the Phase III Watershed Implementation Plans?</u>
Communication Materials.

a) *Estimation of BMP Impact on Chesapeake Bay Program Management Strategies Matrix*- This matrix can be used by local government to assess the impact BMPs will have on CBP's management strategies, including fish habitat. This matrix is intended to show the co-benefits and relative impact on additional goals that are important to the locality from nutrient and sediment load reduction BMPs.
b) *BMP Impact List Best Suited for Specific Habitat Conditions*- Fish habitat considerations vary geographically across the Bay Watershed and for each of our partner jurisdictions. In order to refine the suite of BMPs that benefit fish habitat, the Fish Habitat Action Team will develop a list of Best Management Practices (BMPs) best suited for four habitat conditions identified in the Fish Habitat Management Strategy:
    a) Tidal Saltwater nearshore
    b) Tidal Saltwater subtidal
    c) Non-tidal cold upstream waters
    d) Non-tidal warm water

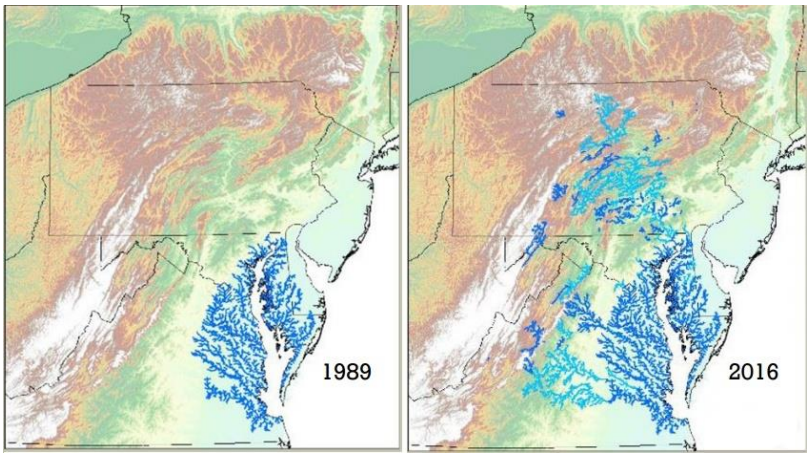
    These lists would be provided to localities/counties to guide their BMP selection process in a manner that incorporates corollary fish habitat benefits into local site-specific restoration and conservation projects. Individual jurisdictions could select fish habitat BMPs from the document list that best represents habitat conditions in their locality/county.
c) *Impervious Surface and Hardened Shoreline Stressors*- To guide our progress moving forward, the Fish Habitat Action Team has identified two priority stressors to fish habitat: 1) percent impervious surface in a watershed, and 2) percent hardened shoreline. Both stressors have

resulted in negative impacts on fish habitat, fish abundance and biodiversity. The Fish Habitat team will develop documents that educate and encourage action in counties and localities related to the impacts of these stressors. In addition to providing increased fish habitat value, impervious surface and hardened shoreline improvements can offer numerous co-benefits to other outcomes under the Chesapeake Bay Watershed Agreement such as blue crab, oyster, forage, wetlands, water quality, citizen stewardship, protected lands, climate, healthy watersheds, and SAV.

Pilot Project. The HUC12 watersheds identified at the May 11th Management Board Meeting are areas having the greatest potential of providing multiple outcome benefits. These watersheds will be the focus of a fish habitat communication pilot project. The project will be to directly contact localities in each identified watershed to work on a process to integrate fish habitat considerations into their planning and BMP selection process.

Fish Passage Outcome

Outcome: By 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.



Challenges:

- Private owners not willing to remove dams
- Overall shrinking pool of dam removal projects due to workgroup success! Low hanging fruit is gone, difficult, more costly dam removal projects remain
- Lack of resources

May 11, 2017 Recommended Adaptations and Actions:

- Dam removal incentive programs
    - Ex. Tax deductions for dam owners that opt to remove dams that produce significant ecological benefits
- State dam safety offices to consider ecological harm/impacts due to dam failure in addition to public safety concerns
    - Better coordination within state agencies to encourage removals when appropriate

June 9, 2017 Additional Information and Specificity

Workgroup Membership

The Fish Passage Workgroup currently has 27 active members (regularly participate in calls) including team staff.

Fish Passage Workgroup (FPWG)	
Members:	**Affiliation:**
Jennifer Greiner (Coordinator)	US Fish and Wildlife Service (Federal)
Mary Andrews (Chair)	National Oceanic and Atmospheric Administration (Federal)
Kyle Runion (Staff)	Chesapeake Research Consortium (NGO)
Jose Barrios	US Fish and Wildlife Service (Federal)
Mark Bryer	The Nature Conservancy (NGO)
Nancy Butowski	MD Department of Natural Resources (State)
Jim Cummins	Interstate Commission on the Potomac River Basin (Federal/State)
Sandra Davis	US Fish and Wildlife Service (Federal)
Julie Devers	US Fish and Wildlife Service (Federal)
Sheila Eyler	US Fish and Wildlife Service (Federal)
Ashleigh Huber Fountain	US Army Corps of Engineers (Federal)
Ben Hutzell	US Fish and Wildlife Service (Federal)
Ben Lorson	PA Fish and Boat Commission (State)
Serena McClain	American Rivers (NGO)
Steve Minkkinen	US Fish and Wildlife Service (Federal)

Marian Norris	National Park Service (Federal)
David O'Brien	National Oceanic and Atmospheric Administration (Federal)
David O'Neill	National Fish and Wildlife Foundation (NGO)
Matthew Ogburn	Smithsonian Environmental Research Center (Research)
Angie Sowers	US Army Corps of Engineers (Federal)
Albert Spells	US Fish and Wildlife Service (Federal)
Rich Starr	Ecosystem Planning and Restoration (Private)
Jim Thompson	MD Department of Natural Resources (State)
Anne Timm	US Forest Service (Federal)
Alan Weaver	VA Department of Game and Inland Fisheries (State)
Howard Weinberg	University of Maryland Center for Environmental Studies (Research)
Adam Wright	Department of Defense (Federal)

More refined Recommended Adaptations and Actions

a) The Fish Passage Workgroup asks that the Management Board assist in creating incentive programs for dam removal. For example, an incentive program could include tax deductions for dam owners that opt to remove dams that produce significant ecological benefits.

b) The Fish Passage Workgroup asks that the Management Board recommend that state dam safety offices consider ecological harm/impacts due to dam failure in addition to public safety concerns. The encouragement of dam removals could be made easier through state agency coordination (e.g. State Highway Administration, Department of Environment and Dam Safety).