

Outcome: Brook Trout

Goal: Restore, enhance, and protect a network of land and water habitats to support fish and wildlife, and to afford other public benefits, including water

Outcome: Restore and sustain naturally reproducing Brook Trout populations in Chesapeake Bay headwater streams, with an eight percent increase in

Long term Target: Pending analysis in Action Item 2

2 year Target: Pending analysis in Action Item 2

Management Approach 1: Identify and Communicate Priority Focal Areas for Brook Trout Conservation

Key Action** <i>Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.</i>	Performance Target(s) <i>Identify incremental steps to achieve Key Action.</i>	Participating Entity <i>Identify responsible partner for each step.</i>	Geographic Location	Timeline <i>Identify completion date (month & year) for each step</i>	Factors Influencing and/or Gap <i>Identify related factor or gap in Management Strategy</i>
1. Target and conserve wild brook trout populations in subwatersheds that have best potential for sustaining resiliency	Identify 10 "Priority Level One" patches (2 in each of 5 states) to conserve by 2017	Eastern Brook Trout Joint Venture with assistance from MD DNR, VA DGIF, WV DNR, NY DNR, and PA FB	MD, VA, PA, NY, WV and National Parks within the watershed	Spring 2016	Stream temperature (lack of riparian forest buffer)
	Utilize the Eastern Brook Trout Conservation Portfolio Project to deliver a fine scale assessment of priorities within historical focal areas.	Trout Unlimited	Headwater regions of the Chesapeake Bay	2017	
2. Communicate "best of the best" patches in context of local conservation planning	Map overlay with 'healthy watersheds map' and accompanying 'story map' that highlights successful local watershed efforts	CBP GIS team, Local Government Advisory Committee, Maintain Healthy Watersheds GIT, Upper Gunpowder Watershed Conservancy	MD, VA, PA, NY, WV	Summer 2016	Decision-maker awareness

Management Approach 2: Consider Climate Change and Emerging Stressors in Determining Restoration Priorities

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3. Add predictive layer for acid mine drainage-impacted streams and unconventional oil and gas development	Obtain needed data from states; CBP contract to create overlay to refine existing pilot model (Downstream Strategies)	Faulkner (USGS) and Petty (WVU); Habitat GIT seek funding to create overlay	MD, VA, PA, NY, WV and National Parks within the watershed	12/16 - Contractor selected; 12/17 - information provided to contractor	Declining coal production, losses in bond/severance tax revenues, State/Federal regulations
4. Consider impact of invasive species on brook trout habitat to better influence management of habitats and surrounding watersheds	Review invasive species portion of USGS study (Snyder et. al. 2015) and other relevant literature	USGS, Mid-Atlantic Panel on Aquatic Invasive Species, Habitat GIT	MD, VA, PA, NY, WV	2017	Invasive species, specifically Rainbow and Brown Trout
5. Implement Trout Unlimited's Home River Initiatives (Potomac Headwaters, Shenandoah, and Upper James River), which focus riparian and in-stream	Restore and re-connect fragmented brook trout patches, with an emphasis on re-connecting intact fisheries or high quality patches.	Trout Unlimited	South Branch and Cacapon River Watersheds in WV. Shenandoah and James	2017	Adaptation

restoration efforts on cold water streams.	Continue to work with partners to reconnect and restore large Brook Trout patches with limestone influence.		River Headwaters in Virginia.		
	Restore reduced brook trout populations and extirpated patches.				

Management Approach 3: Refine and Apply Decision Support Tools

Key Action** <i>Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.</i>	Performance Target(s) <i>Identify incremental steps to achieve Key Action.</i>	Participating Entity <i>Identify responsible partner for each step.</i>	Geographic Location	Timeline <i>Identify completion date (month & year) for each step)</i>	Factors Influencing and/or Gap <i>Identify related factor or gap in Management Strategy</i>
6. Apply pilot decision support tools to target stream restoration projects for brook trout, including habitats vulnerable to fragmentation and groundwater influences	Apply Riparian Forest Buffer Mapper tool to "Priority Level 2" Wild Brook Trout Only patches Run the Brook Trout Patch Vulnerability analysis on any extirpated spring creeks in the Bay watershed to identify those with the greatest likelihood of persisting as suitable habitat	USDA Forest Service, Climate Change Workgroup, USGS (Hitt and Snyder), Stream Health Workgroup	MD, VA, PA, NY, WV and Shenandoah National Park	Fall 2016	Stream temperature (lack of riparian forest buffer) and Development
7. Host dialogue on varied brook trout angling regulations across states and in National Parks	Survey each state and NP regulatory agencies as to specific BKT regulations, create a summary document by end of 2017	Brook Trout Action Team with facilitation assistance from Eastern Brook Trout Joint Venture (Invitees: NPS, MD DNR, VA DGIF, WV DNR, NY DNR, PA FBC)	MD, VA, PA, NY, WV and National Parks within the watershed	12/16 - Information provided from states and NPS; 12/17 - summary document completed	Brook Trout fishery quality, angler use/opportunity
8. The Chesapeake Bay Commission will work collaboratively with the Bay Program partners to identify legislative, budgetary and policy needs to advance the goals of the Chesapeake Watershed Agreement. We will, in turn, pursue action within our member state General Assemblies and the United States Congress. See CBC Resolution #14-1 for additional information on the CBC's participation in the management strategies.		CBC	Chesapeake Bay Watershed	ongoing	

Management Approach 4: Continue and Expand Brook Trout monitoring efforts

Key Action** <i>Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.</i>	Performance Target(s) <i>Identify incremental steps to achieve Key Action.</i>	Participating Entity <i>Identify responsible partner for each step.</i>	Geographic Location	Timeline <i>Identify completion date (month & year) for each step)</i>	Factors Influencing and/or Gap <i>Identify related factor or gap in Management Strategy</i>
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9. Continue assistance to states in monitoring brook trout occupancy and develop indicator using this data	Lead contacts in each state report Ches Bay patch occupancy information to Technical Lead; develop indicator by release of 2016 Bay Barometer	Ches Bay State reps on Eastern Brook Trout Joint Venture's Science and Data Committee, CBP STAR assist on indicator development	MD, VA, PA, NY, WV	annual monitoring	Trend data for presence/absence
	Work with TU's Potomac Headwaters Home River Initiative and Pennsylvania Coldwater Habitat Restoration Program with collecting and compiling Brook Trout patch and genetic sampling data.	Trout Unlimited	WV, PA	Ongoing	
10. Collect genetic information as potential census method for determining population viability and long-term restoration success	Genetic samples from 5 patches per state provided annually	U-Mass Amherst (Jason Coombs et al)	Five sites in each of five states	annual monitoring	Interbreeding with brown trout

****Note:** As a member of the Chesapeake Executive Council and a signatory to the Chesapeake Bay Watershed Agreement, the Chesapeake Bay Commission (CBC) functions as the legislative arm of the Chesapeake Bay Program working within Maryland, Pennsylvania and Virginia and at the federal level to identify specific Bay management concerns requiring intergovernmental coordination and

Acronym Guide (for all workplans)

- AACC – Anne Arundel Community College
- ACFHP - Atlantic Coast Fish Habitat Partnership
- ACJV – Atlantic Coast Joint Venture
- AgNPS – Agricultural Non-Point Source Pollution Model
- Appalachian LCC - Appalachian Landscape Conservation Cooperative
- ASTSWMO – Association of State and Territorial Solid Waste Management Officials
- BayFAST/CAST/MAST/VAST – Federal Assessment Scenario Tool/Chesapeake AST/Maryland AST/Virginia AST
- BDJV – Black Duck Joint Venture
- BKT – Brook trout
- BMP – Best Management Practice
- CAC – CBP Citizens’ Advisory Committee
- CAFO – Concentrated Animal Feeding Operation
- CB – Chesapeake Bay
- CBC – Chesapeake Bay Commission
- CBF – Chesapeake Bay Foundation
- CBIBS – Chesapeake Bay Interpretive Buoy System
- CBIG – Chesapeake Bay Implementation Grants
- CBP – Chesapeake Bay Program
- CBPO – Chesapeake Bay Program Office
- CBRAP – Chesapeake Bay Regulatory and Accountability Program grants
- CBSAC – Chesapeake Bay Stock Assessment Committee
- CBSSC – Chesapeake Bay Sentinel Site Cooperative
- CBT – Chesapeake Bay Trust
- CCWC – Choose Clean Water Coalition
- CEAP – Conservation Effects Assessment Project
- Chessie BIBI – Chesapeake Bay Basin-wide Index of Biotic Integrity

CNMP – Comprehensive Nutrient Management Plan
CNU – Christopher Newport University
CRC – Chesapeake Research Consortium
CREP – Conservation Reserve Enhancement Program
CSN – Chesapeake Stormwater Network
CWA – Clean Water Act
DAT – CBP Diversity Action Team
DC – District of Columbia
DCNR – Pennsylvania Department of Conservation and Natural Resources
DE – Delaware
DEP – Department of Environment
DE DNREC – Delaware Department of Natural Resources and Environmental Control
DNR – Department of Natural Resources
DoD – Department of Defense
DOEE – Dist. Of Columbia Department of Energy and Environment
DOF – Department of Forestry
DOT – Department of Transportation
DST – Decision support tool
DU – Ducks Unlimited
EC – Chesapeake Executive Council
EJ SCREEN – Environmental Justice Screening and Mapping Tool
EO Strategy – Executive Order 13508 Strategy for Protecting and Restoring the Chesapeake Bay Watershed
EJ – Environmental Justice
EL – Environmental Learning
ELCSS – Environmental Literacy Challenge for Systemic Sustainability
ERP – Elizabeth River Partnership
EPA – Environmental Protection Agency
Ex Comm - Executive Committee of the Sustainable Fisheries GIT
FERC – Federal Energy Regulatory Commission
FOD – Chesapeake Bay Program Federal Office Directors
FTE – full time employee
FWG – Forest Work Group
FWS – Fish and Wildlife Service
GIS – Geographic Information System
GIT – CBP Goal Implementation Teams
GMU – George Mason University
GSA – General Services Administration
HBCUs – historically black colleges and universities
HSCD – EPA Hazardous Site Cleanup Division
HWGIT – Healthy Watershed Work Group
ICPRB – Interstate Commission on the Potomac River Basin
IPC – Interfaith Partners for the Chesapeake
LCC – Landscape Conservation Cooperatives
LGAC – CBP Local Government Advisory Committee
LL – Local Leadership
LU – Land Use
LUWG – Land Use Work Group
MATOS - Mid-Atlantic Telemetry Observing System

MB – CBP’s Management Board
MD - Maryland
MDE – Maryland Department of Environment
MDSG – Maryland Sea Grant
MOU – Memorandum of Understanding
MSP – Math Science Partnership
MS4 – Municipal Separate Storm Sewer System
MWCOG – Metropolitan Washington Council on Governments
MWEES – Meaningful Watershed Educational Experiences
MWS – Master Watershed Stewards
NAAQS – National Ambient Air Quality Standards
NALCC - North Atlantic Landscape Conservation Cooperative
NATA – National Air Toxics Assessment
NCBO – NOAA Chesapeake Bay Office
NGO – Non-government organization
NEIEN – National Environmental Information Exchange Network
NERR – Chesapeake Bay National Estuarine Research Reserve
NFWF – National Fish and Wildlife Foundation
NOAA – National Oceanic and Atmospheric Administration
NP – National Parks
NPDES – National Pollutant Discharge Elimination System
NRCS – Natural Resources Conservation Service
NPS – National Park Service
NYS DEC – New York State Department of Environmental Control
ODU – Old Dominion University
ORES – Oyster Reef Ecosystem Services
ORP – Oyster Recovery Partnership
OSSE – Office of the State Superintendent of Education
PA – Pennsylvania
PA DEP – Pennsylvania Department of Environmental Protection
PCB – polychlorinated biphenyl
PMP -- Pollution Minimization Plan
PRFC – Potomac River Fisheries Commission
PSC – CBP’s Principles' Staff Committee
QA – quality assurance
RFB – Riparian Forest Buffer
RMNs - Regional Monitoring Networks
SAV – Submerged Aquatic Vegetation
SERC - Smithsonian Environmental Research Center
SHWG – Stream Health Work Group
SRBC -- Susquehanna River Basin Commission
STAC – CBP Scientific and Technical Advisory Committee
STAR – CBP Scientific and Technical Assessment Research team
TCW – Toxics Contaminants Workgroup
TEA - Tidewater Ecosystem Assessment Division of MD DNR
TMDL – Total Maximum Daily Load
TNC – The Nature Conservancy
TSCA – Toxic Substance Control Act

UMBC – University of Maryland Baltimore County
UMCES – University of Maryland Center for Environmental Science
UMCES-CBL – University of Maryland Center for Environmental Science-Chesapeake Biological Lab
UMD – University of Maryland
USACE – U.S. Army Corps of Engineers
USDA – U.S. Department of Agriculture
USFWS – U.S. Fish and Wildlife Service
USFS – U.S. Forest Service
USGS – U.S. Geological Survey
UVA – University of Virginia
VA – Virginia
VCU – Virginia Commonwealth University
VA CZM – Virginia Coastal Zone Management
VBOE – Virginia Board of Education
VDGIF – Virginia Department of Game and Inland Fisheries
VIMS – Virginia Institute of Marine Science

Virginia DEQ – Virginia Department of Environmental Quality
VMRC – Virginia Marine Resources Commission
WG – work group
WIP – Watershed Implementation Plan
WQN - Water Quality Network