

Co-Benefits Projects Update

Modeling Workgroup—January 6, 2021



Bo Williams, EPA

RESES Project: Identifying and defining levels of meaningful change in ecosystem services of the Chesapeake Bay and its watershed

Collaboration between CBPO, Region 3 & CEMM (Gulf Breeze lab)
(Presentation from Ryann Rossi)

Scoped list of BMPs:

- Agricultural forest buffers (with and without fencing)
- Agricultural grass buffers (with and without fencing)
- Agricultural tree planting
- Agricultural cover crops (all cover crop BMPs)
- Urban forest buffers
- Urban forest planting
- Urban tree planting
- Forest conservation
- Wetland creation & restoration
- Impervious surface reduction (based on conversion to grass)



Key Ecosystem Services and Beneficiaries:

- What ecosystem services are most relevant for stakeholders you represent/work with?
Example:
 - Habitat quality (trout)
 - Pollinator fauna supply
 - Habitat quality (birds)
 - Water quality (nutrient in GW)
 - Supply of edible flora
 - Decreased risk of extreme events
- Who are the beneficiaries that we need to make sure we capture?
Example:
 - Farmers
 - Landowners
 - Watermen
 - Residential property owner
 - Recreational Anglers
 - Wildlife viewers

Project goal: Identify and quantify ecosystem services to help motivate increased implementation of conservation and restoration related BMPs, **especially upstream in the watershed** where folks may be more disconnected from the bay.

Chesapeake Bay Watershed Local Stream Ecosystem Services

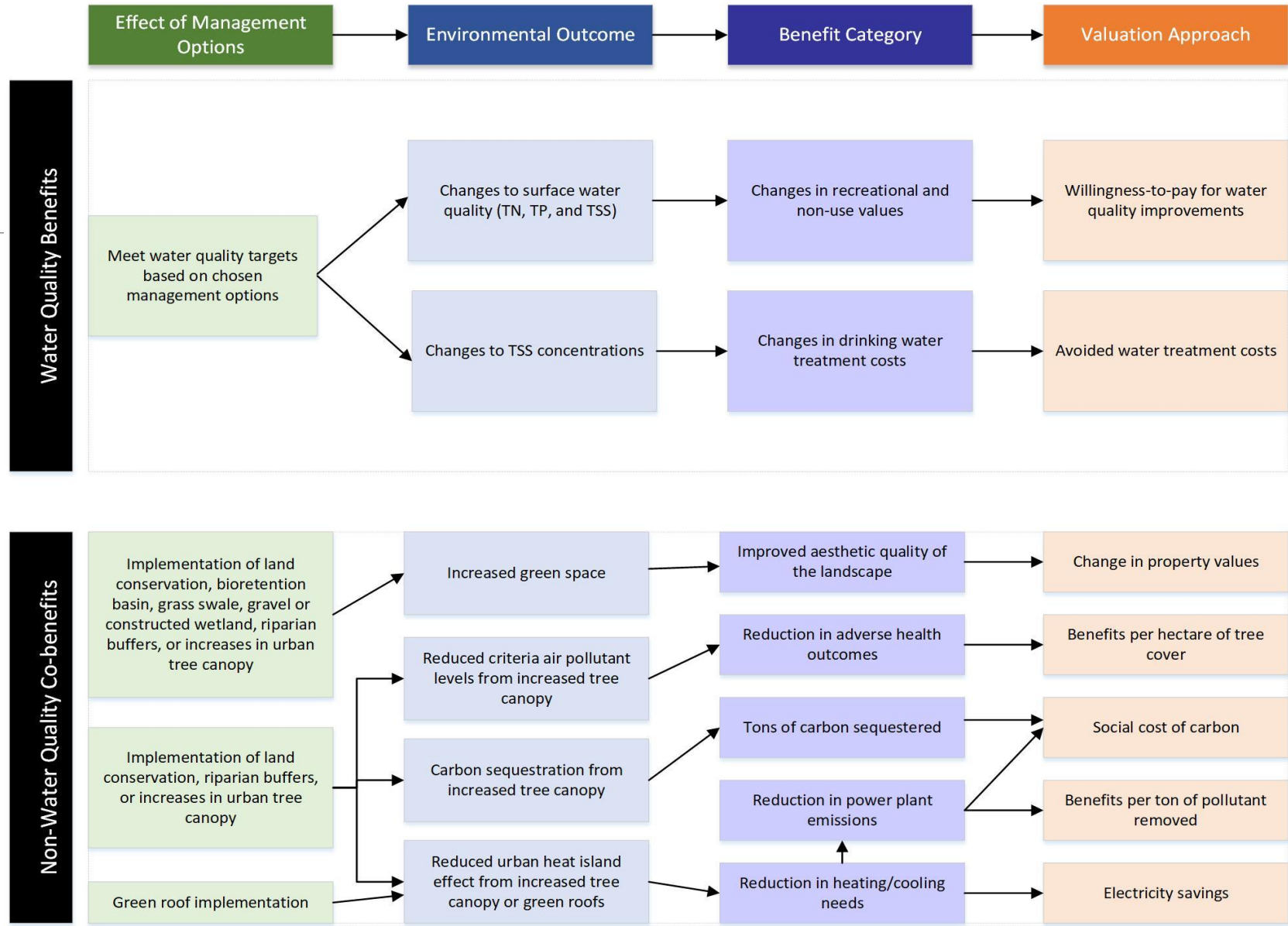
Emily Pindilli, USGS (epindilli@usgs.gov)

- Objective is to consider ecosystem services co-benefits (nutrient retention) to local populations of BMPs designed to support Bay water quality
- Builds on existing biophysical science and ES assessment/valuation of nutrient retention provided by floodplains (Hopkins et al.)
- Standardized analysis for entire Chesapeake and Delaware River watershed (shapefile with retention numbers)
- Also looking at co-benefits of BMPs for recreational fishing within watershed.

EPA ORD WMOST Cobenefits module

- WMOST is a local water quality optimization model developed by EPA ORD that has been used by some jurisdictions, like MD, to optimize BMPs for both local TMDLs and the Bay
- WMOST contains a new module that quantifies co-benefits associated with water quality best management practices
- Looking to work with ORD to identify if these quantified co-benefits could be used in CAST as well
- Collaborators: Naomi Detenbeck – EPA ORD Atlantic Coastal Environmental Sciences Lab

Benefits and Co-benefits quantified and valued in WMOST



ES Projects at CBP

- Toxics Workgroup: Methods to integrate co-benefits of toxic contaminant reduction into decision tools (GIT-Funded)
- Quantification of the Value of Green Infrastructure Hazard Mitigation Related to Inland and Coastal Flooding
- Tetra Tech: BMP Impact Scoring
- Developing High-Resolutions Metrics of ES for Mid-Atlantic
- Beyond Environmental Benefits

Questions
