NPS Stormwater BMP GIS Database FFWG Demonstration

Illustration by Greg Harlin, Wood Ronsaville Harlin, Inc.

May 10, 2022

Agenda

- ■ Introduction/Overview of NPS Coordination Process

- ■ GIS Database Data Development

- ■ GIS Database demonstration

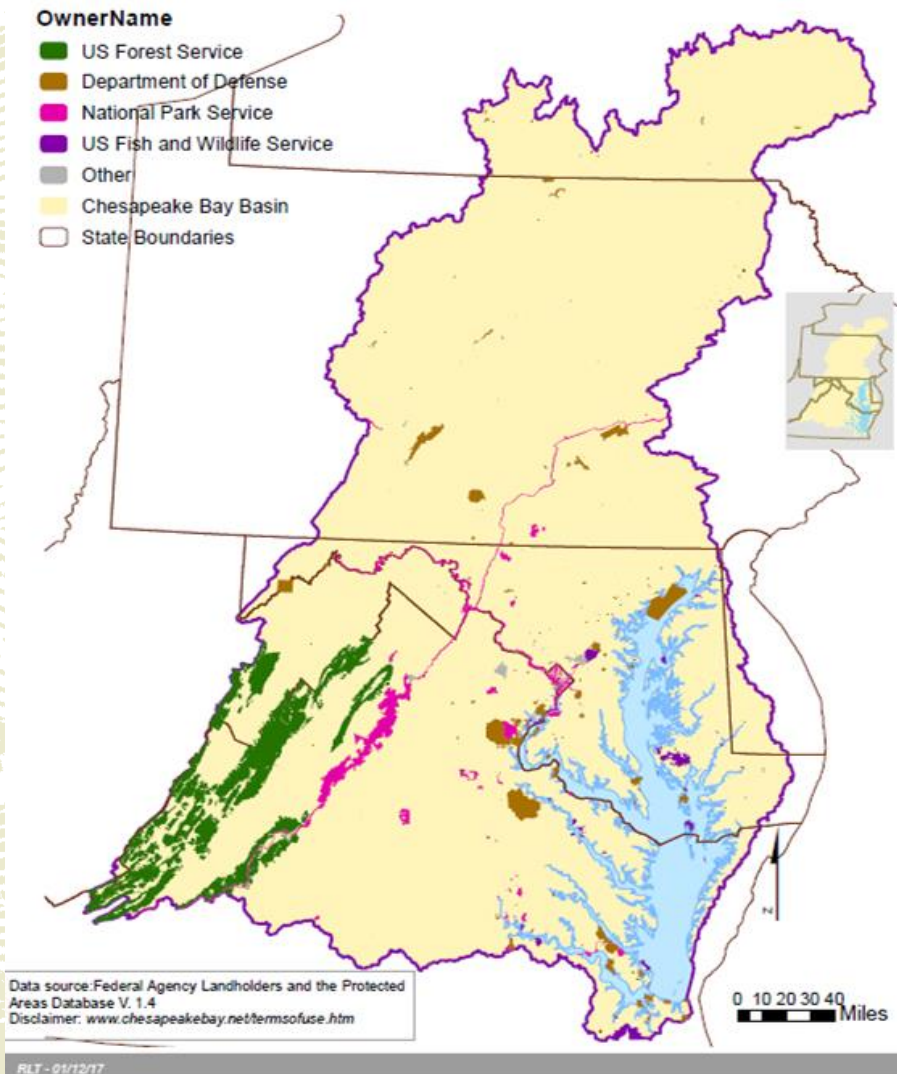- ■ Questions & Answers

NPS Team Members
- René Senos (National Capital Area): Project Manager for Wood Chesapeake Bay WIP III task order
- Shawn Norton: Current Federal Facilities Workgroup NPS representative
- Wendy O'Sullivan, Superintendent, NPS Chesapeake Bay Office
- Jonathan Meade, Associate Regional Director, Resource Stewardship and Science, Interior Region 1
- Tanya Gossett, Associate Regional Director, Resource Stewardship and Science, National Capital Area
- Danny Filer (Chesapeake Watershed CESU Research Coordinator): Previous Federal Facilities Workgroup NPS representative
- Britt Slattery, NPS Chesapeake Bay Office, Fostering Chesapeake Stewardship Coordinator
- Cynthia Wanschura, GIS Specialist – National Capital Area
- Abbi Huntzinger, Northeast Landscape Architect
- Lynne Mowery (Wood): Project Manager for Wood Chesapeake Bay WIP III task order
- Christina Davis (Wood)
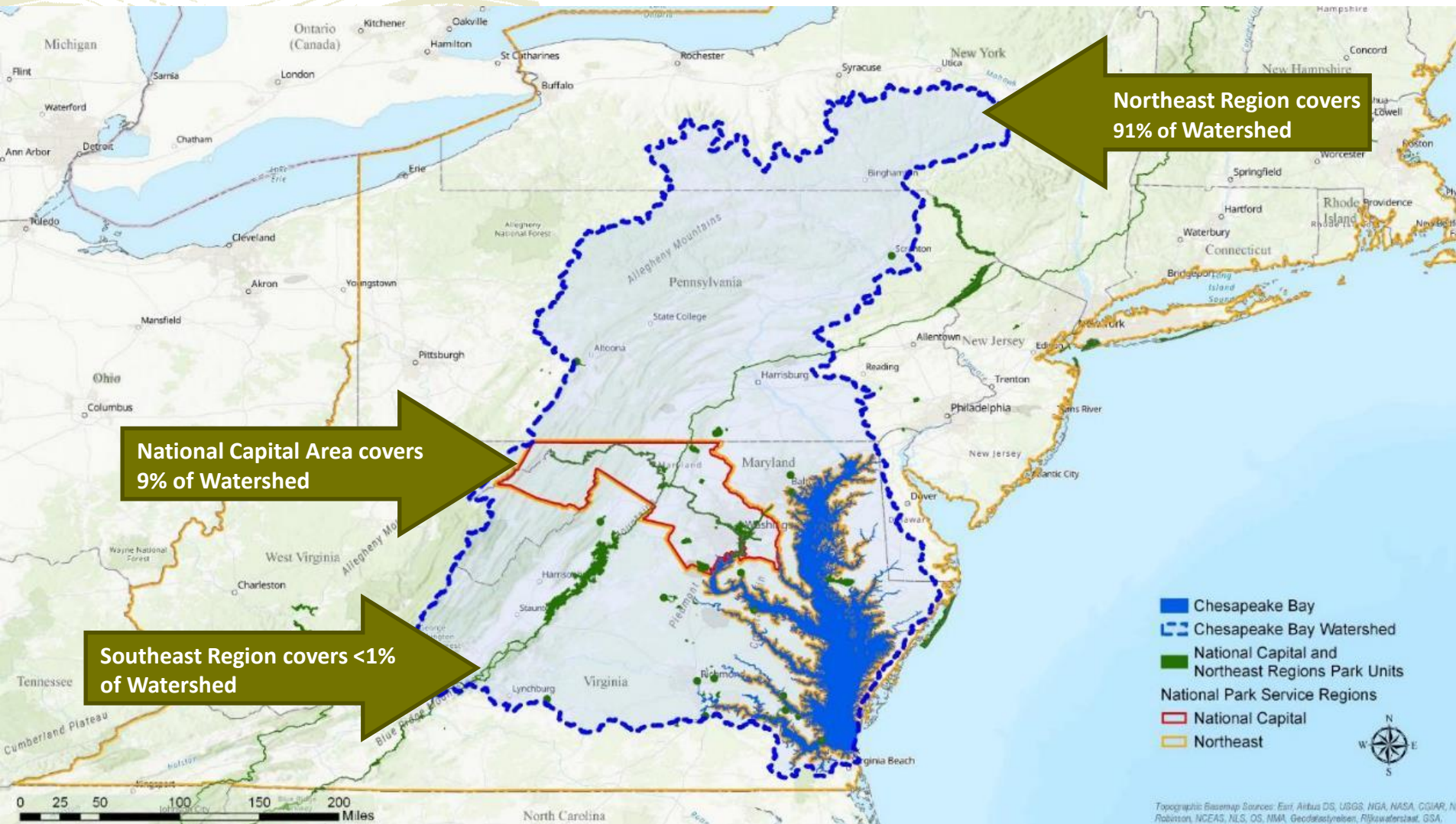- Ben Green (Wood)

NPS AND THE CHESAPEAKE

René Senos, Program Manager, Landscape Architect
National Capital Area

NPS Lands in Chesapeake Region

OwnerName
- US Forest Service
- Department of Defense
- National Park Service
- US Fish and Wildlife Service
- Other
- Chesapeake Bay Basin
- State Boundaries

Data source: Federal Agency Landholders and the Protected
Areas Database V. 1.4
Disclaimer: www.chesapeakebay.net/termsofuse.htm

0 10 20 30 40 Miles

Federal Department	Total Acres
FS	2,543,167.69
DoD	484,631.74
NPS	410,635.97
FWS	223,288.95
Other	23,834.87
ARS	6,949.81
SI	3,966.73
GSA	2,596.51
NASA	2,000.17

RLT - 01/12/17

Parks in Chesapeake Bay Watershed

Northeast Region covers 91% of Watershed

National Capital Area covers 9% of Watershed

Southeast Region covers <1% of Watershed

Legend:
- Chesapeake Bay
- Chesapeake Bay Watershed
- National Capital and Northeast Regions Park Units

National Park Service Regions
- National Capital
- Northeast

Topographic Basemap Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA,

NPS Scope of BMP Data Collection

- Parks in DC, MD, PA, VA, WV
  - No parks in watershed in DE & NY
- Chesapeake Bay Parks primarily in two different NPS regions (National Capital and Northeast)
  - Small portion of Blue Ridge Parkway is in the Southeast Region
- BMPs not tracked as facility type in PMIS/FMSS systems
- Diverse park units in the Bay watershed (rural & urban)

BMP Data Gathering Process

2012 - 2015

- Center for Urban Ecology (CUE) BMP Data Gathering

2019

- Wood hired late 2018
- BMP data refinement – questionnaires to parks in April 2019
- WIP III submittals in June 2019

2020

- BMP Database Development

2021

- Database roll-out to parks, training in May 2021
- Evaluations of BMP opportunities at 6 parks in May-July 2021
- Database used for annual reports to jurisdictions in September 2021

Use of Database

- Staff can use the web-based tool at desk or field, track maintenance, create reports

- NPS can respond to various jurisdictional data requests

- Partnership collaboration

- Parks can identify new multi-value BMP opportunities

- Field Assessments at 6 parks in NER and NCA in 2021

- Capture data for Park BMPs throughout Region 1 – not just the Bay

Park Project Examples

York Shoreline Protection and Enhancement – Colonial National Historical Park

Park Project Examples

CATO Camp Greentop Swimming Pool

NAMA National Mall Cistern
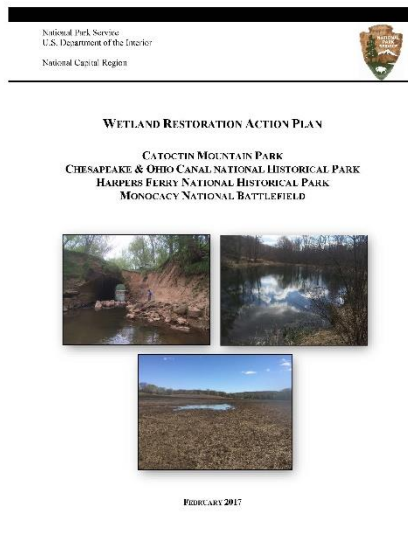
Wetland Restoration Action Plan

Rock Creek Park Tennis Courts Bioretention

Park Project Examples
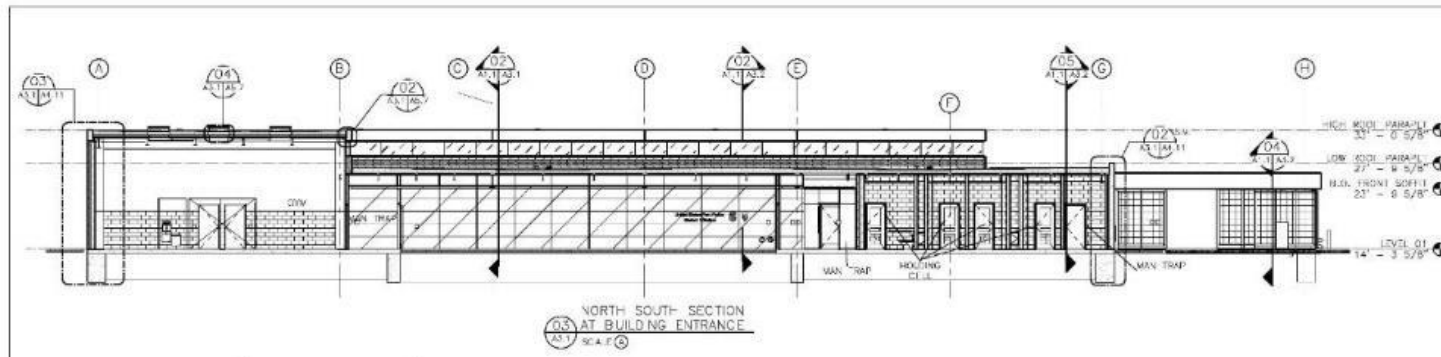
NCRO USPP D1 Station – Bioretention, Reduce Flood Risk at Hains Point

NPS Stormwater BMP Opportunity Assessment in the Parks

Chesapeake Bay BMP Opportunity Assessment
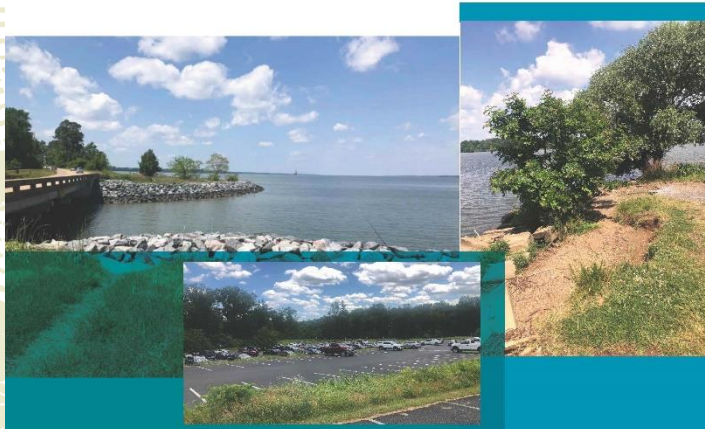
Submitted to:
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Attn: Rene Senos

Submitted by:
Wood Environment & Infrastructure Solutions, Inc.
4795 Meadow Wood Lane, Suite 310 East
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August 23, 2021
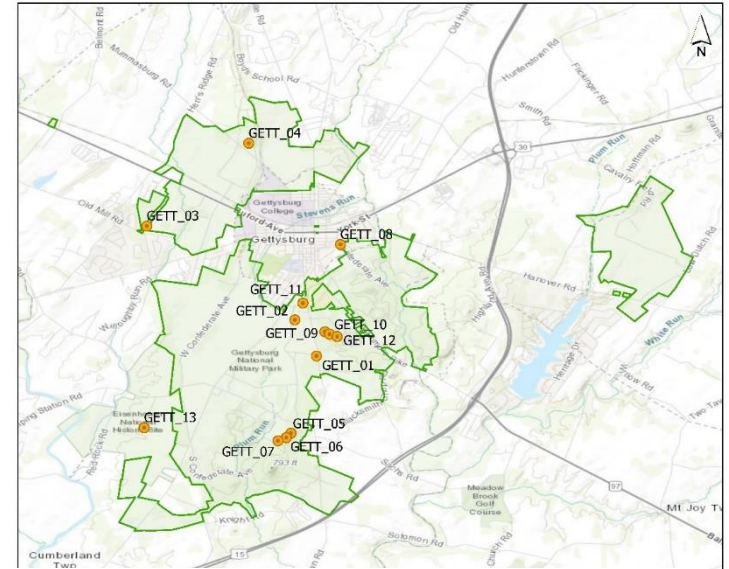
Gettysburg National Military Park
Project Site Map

Chesapeake Bay BMP Opportunity Assessment – Six Park Assessment

DATABASE DEVELOPMENT PROCESS

Lynne Mowery, Wood

Database Features

- Geodatabase contains previously collected BMP data

- ArcGIS Online BMP Database Features

  - Customized data entry forms (per state and BMP type) for parks to record and edit park BMP projects and practices

  - Parks must report data by individual BMP not by project – there can be multiple BMPs reported for one project

  - How-to guide available in the database

  - Base map can be selected

- Ability to add future functionality to track partnerships and educational opportunities

BMP Types

- Created general BMP types consistent with Bay reporting templates
- More detailed BMP types and associated data is requested to comply with jurisdiction annual reporting templates

Alternative crops	Filter strip	Permeable pavement	Stream restoration
Bioretention (underdrain or no underdrain)	Impervious surface disconnection/reduction	Ponds (wet, dry, extended detention)	Street sweeping
Bioswale	Infiltration	Proprietary practice (describe)	Tree planting and preservation
Conservation landscaping	Land conversion/ retirement	Septic/sewer (describe)	Rainwater harvesting
Erosion and sediment control	Open channel	Shoreline erosion control	Wetlands
Filtering system	Other stormwater treatment (describe)		

NPS BMP Reporting challenges

- Parks staff report a variety of BMPs implemented on their park landscapes that may not be available in the state reporting templates. Examples of BMP types reported:
    - No mow zones
    - Septic system upgrades
    - Alternative crops
- Park staff report projects completed in partnership with jurisdictions, especially in DC. These are not shown in CAST as NPS BMPs.
- Annual data calls to ensure parks staff are updating the database

Pollutant Reduction Goals

- Submitted BMP data from the database in 2021
  - Waiting on CAST 2021 progress run to evaluate
- 2021 EPA Federal Agency Evaluation Progress Evaluation Report
  - NPS progress based on NPS data available in 2019, before database was complete
  - Federal Planning Goals section – different methodologies presented (EPA Default Method, Phase III WIP, WIP 3 Final CAST scenario)
  - Next steps for selecting Planning Goal?

Pollutant Reduction Goals

Table 3-7. NPS Percent Reductions Required, 2019-2025 (%)				
Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
MD Patuxent River Basin	2.9%	3.7%	4.6%	23.9%
MD Potomac River Basin	1.0%	1.8%	2.6%	7.7%
MD Western Shore of Chesapeake Bay	2.5%	0.1%	2.3%	0.7%
PA Potomac River Basin	0.0%	3.8%	0.0%	11.2%
PA Susquehanna River Basin	0.5%	2.7%	0.0%	19.4%
VA James River Basin	7.2%	7.0%	6.3%	17.0%
VA Potomac River Basin	7.3%	4.1%	6.5%	8.1%
VA Rappahannock River Basin	4.2%	2.6%	2.0%	7.6%
VA York River Basin	7.8%	7.1%	4.4%	12.2%
DC Potomac River Basin	4.4%	3.5%	6.8%	3.7%
WV Potomac River Basin	0.0%	0.8%	6.1%	11.3%

GIS DATABASE DEMONSTRATION

Christina Davis, Wood

Questions and Answers

NPS Questions

- How are other agencies tracking and reporting BMPs especially in more rural areas?

- Is EPA planning to provide clearer guidance on planning goals? The EPA method and WIP methods do not agree in many subwatersheds/states