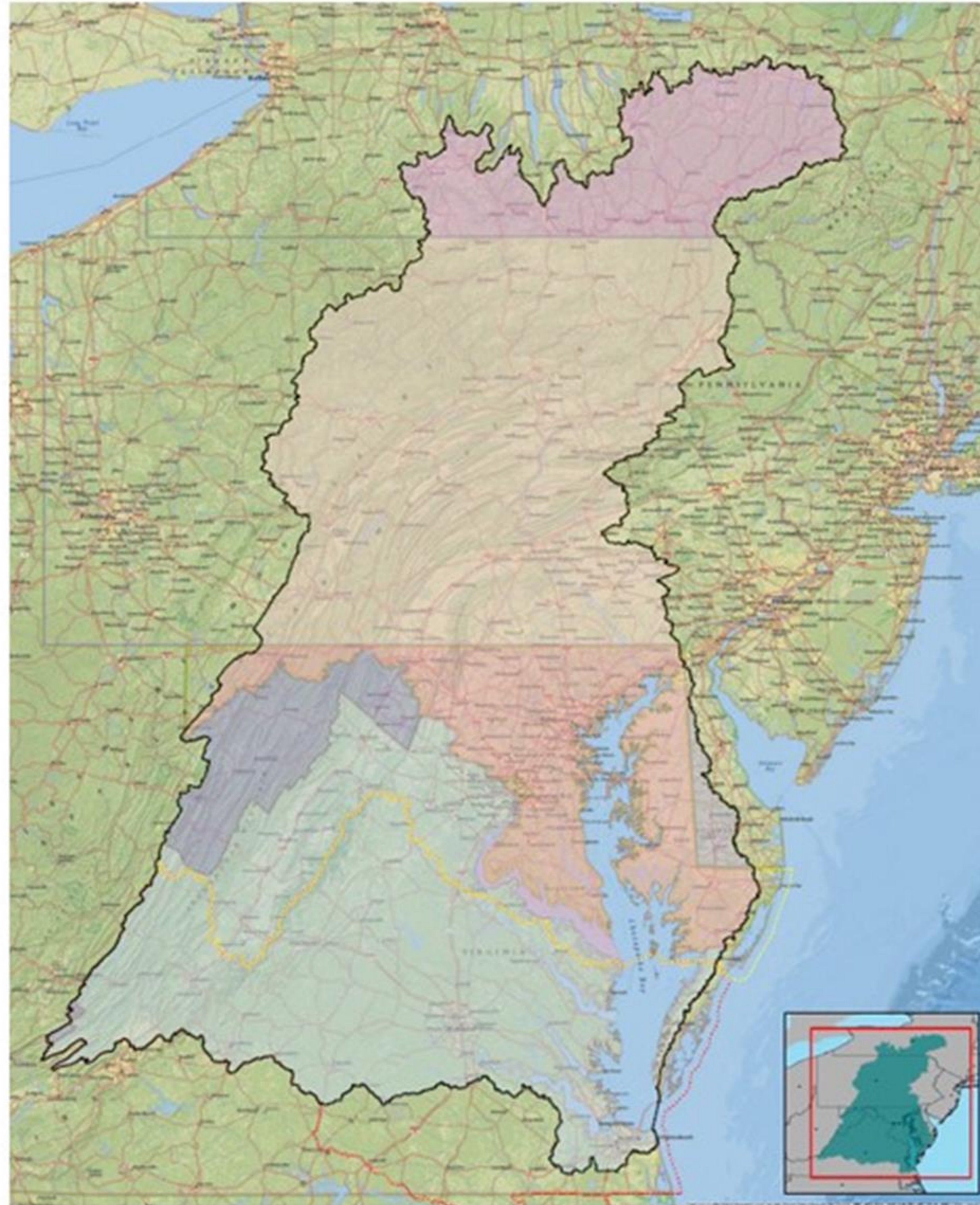
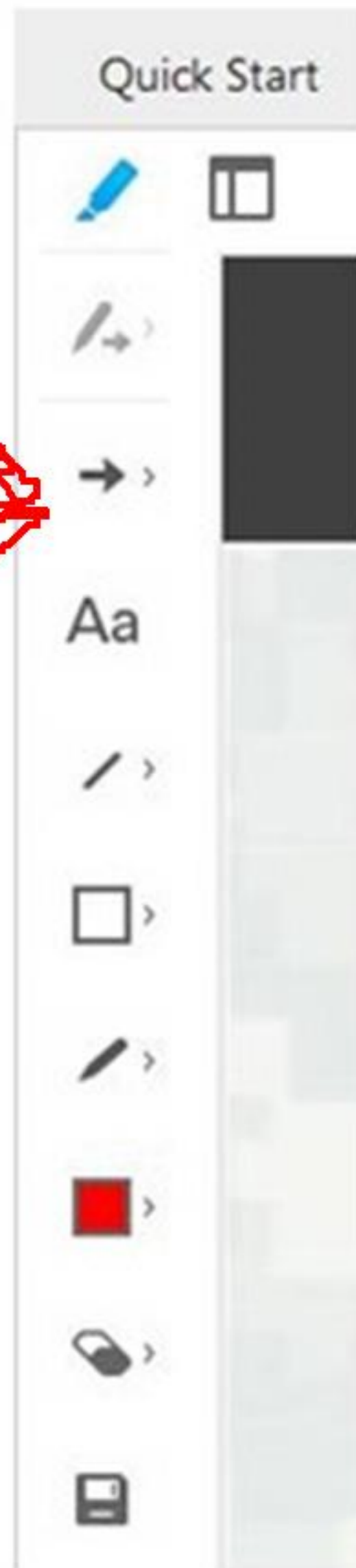


INTRODUCTION/PLACE MARK ON YOUR LOCATION

1

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organization,
Academia,
etc. place your
mark here:

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Participants


Chat

Notes


Participants

Jodi Creswell HQ PCoP (Host, me)


Topic: 822797001



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CHESAPEAKE BAY COMPREHENSIVE WATER RESOURCES AND RESTORATION PLAN

Webinar

20 April 2017

"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."

Chesapeake Bay Comprehensive Water
Resources and Restoration Plan



US Army Corps
of Engineers
Norfolk District



US Army Corps
of Engineers
Baltimore District



AGENDA

- Overview
- Updated Plan Formulation and Maps
- U.S. Fish and Wildlife Service Activities
- Q & A
- Next Steps



BENEFITS OF THE PLAN

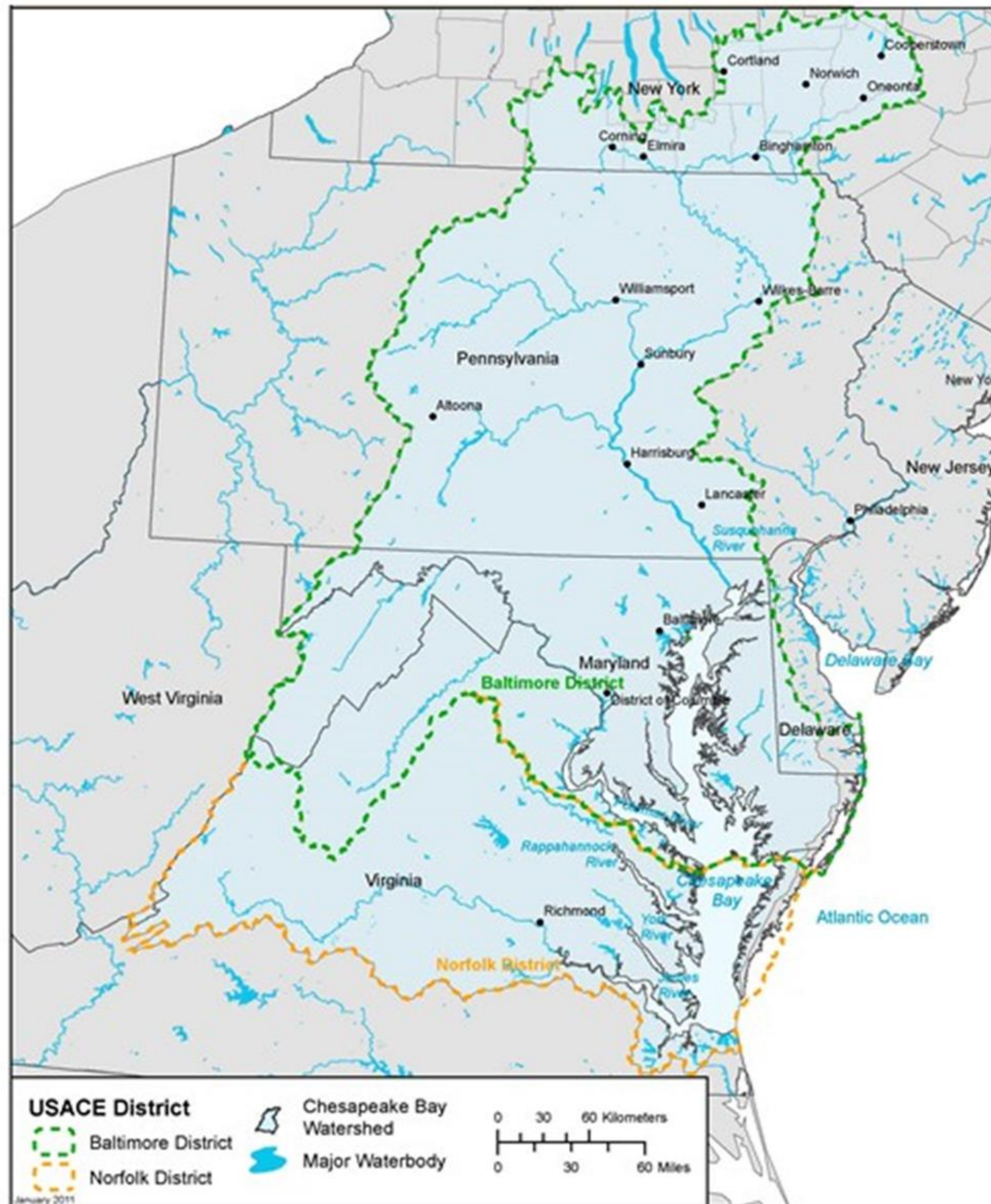


- ❑ Establishes a program through which USACE can best deploy its technical, design, and construction experience and funding to partner with watershed stakeholders to help achieve the shared vision for the Chesapeake Bay watershed.
- ❑ Identifies opportunities for USACE technical assistance and funding by priority watershed:
 - Tier 1 and Tier 2 analyses at a larger scale present broad project types and opportunities for action among the Chesapeake Bay Partnership stakeholders and USACE.
 - Tier 3 analyses at a more local scale highlight how action at a more local level could assist regional partners achieve restoration goals and outcomes.

KEY AUTHORITIES AND DOCUMENTS

- ☐ United States Senate Committee on Environment and Public Works, Committee Resolution - 26 September 2002
- ☐ Section 4010(a) Water Resources Reform and Development Act (WRRDA) 2014 - Implementation Guidance - 8 December 2015
- ☐ Planning Bulletin 2016 Watershed Studies - 30 September 2016
- ☐ Chesapeake Bay Agreement 2014
- ☐ Executive Order 13508 Strategy 2010

STUDY AREA



BACKGROUND

CBCP will result in a single, integrated restoration plan to:

- **Guide** implementation of actions that **protect, restore** and **preserve** the Bay
- **Adopt and Align** actions with what others are doing
- **Avoid duplication** of ongoing or planned actions by others
- Make maximum use of **existing information**
- **Identify** ecological problems, needs, and opportunities
- **Identify** projects for **further study** and **implementation**, including at least one for each Bay state and the District of Columbia

STAKEHOLDER COLLABORATION

- ✓ Webpage:
<http://www.nab.usace.army.mil/Missions/Civil-Works/Chesapeake-Bay-Comprehensive-Plan/>
- ✓ Email distribution list
- ✓ November Interagency Watershed Planning Collaboration Workshop
- ✓ Webinars (February 27 & April 20)

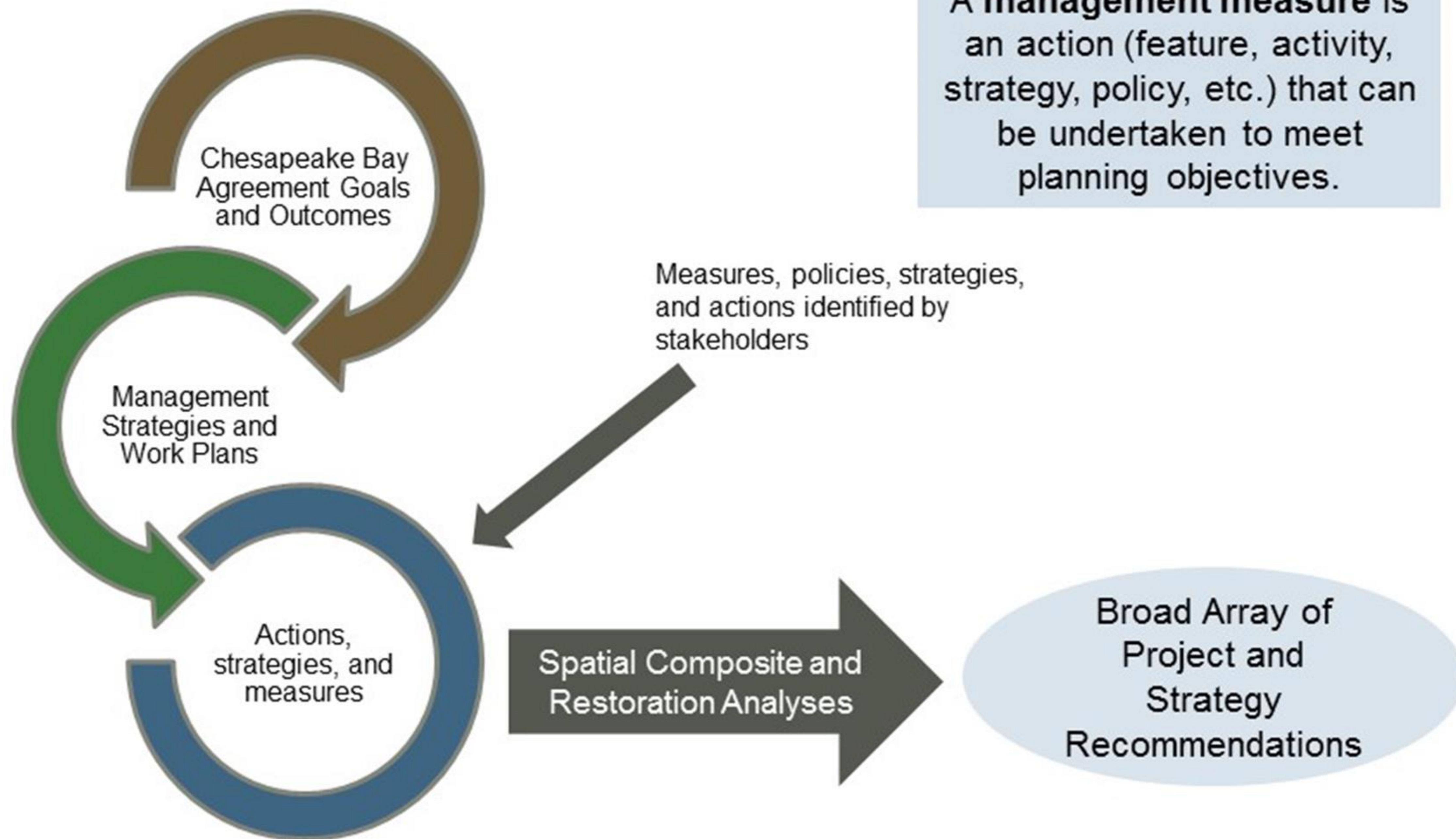
Upcoming:

- Webinar (June)
- Review of Draft Plan



POTENTIAL ENVIRONMENTAL RESTORATION AND PRESERVATION MEASURES

A **management measure** is an action (feature, activity, strategy, policy, etc.) that can be undertaken to meet planning objectives.



Chat to everyone:

What innovative measures or techniques do you know about, have heard about, or have implemented that could be used in the Chesapeake Bay watershed?

Example: Rolling easements

Three ways to provide comments:

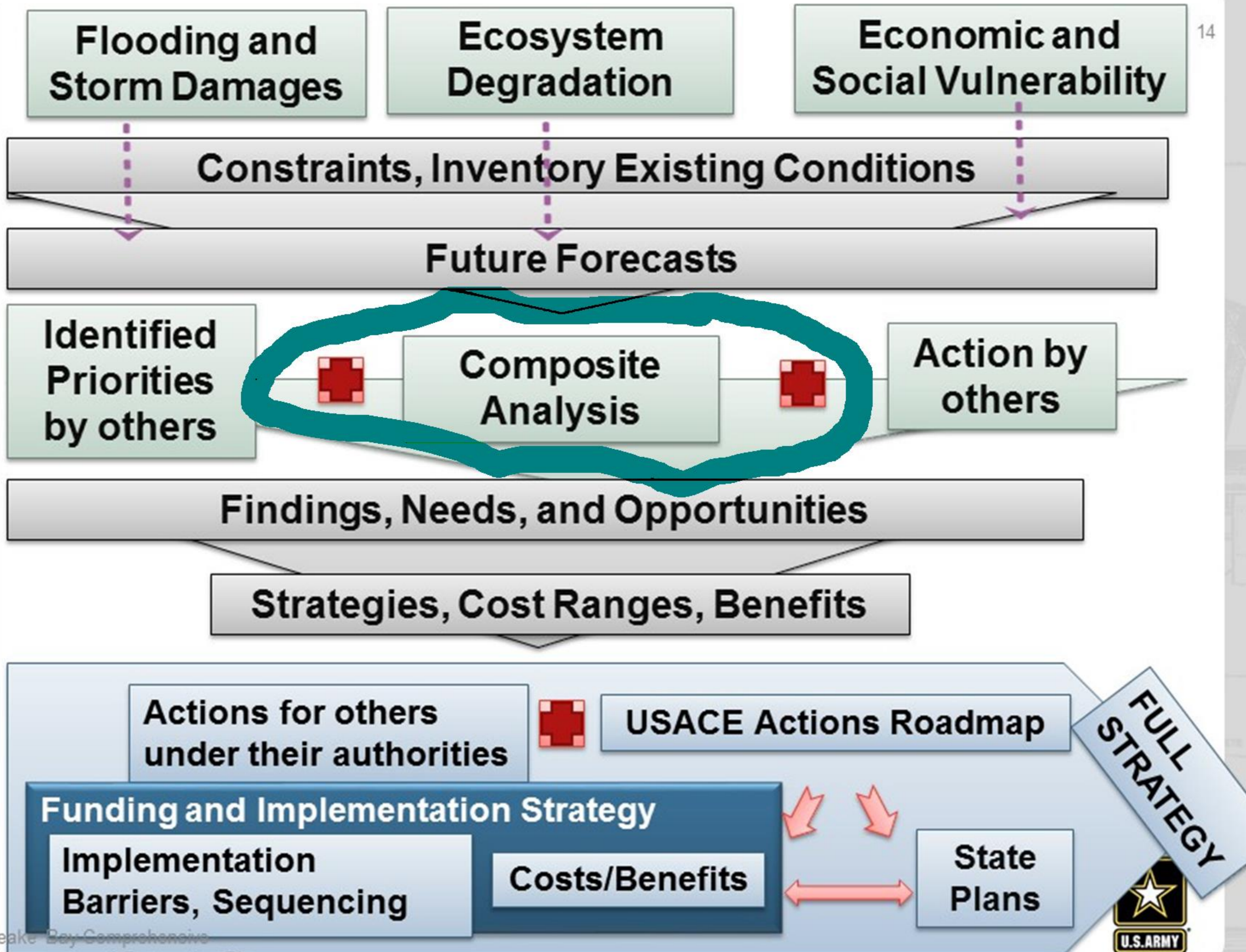
- Provide in chat box
- Verbal comments
- Email to Anna.M.Compton@usace.army.mil



A **management measure** is an action (feature, activity, strategy, policy, etc.) that can be undertaken to meet planning objectives.

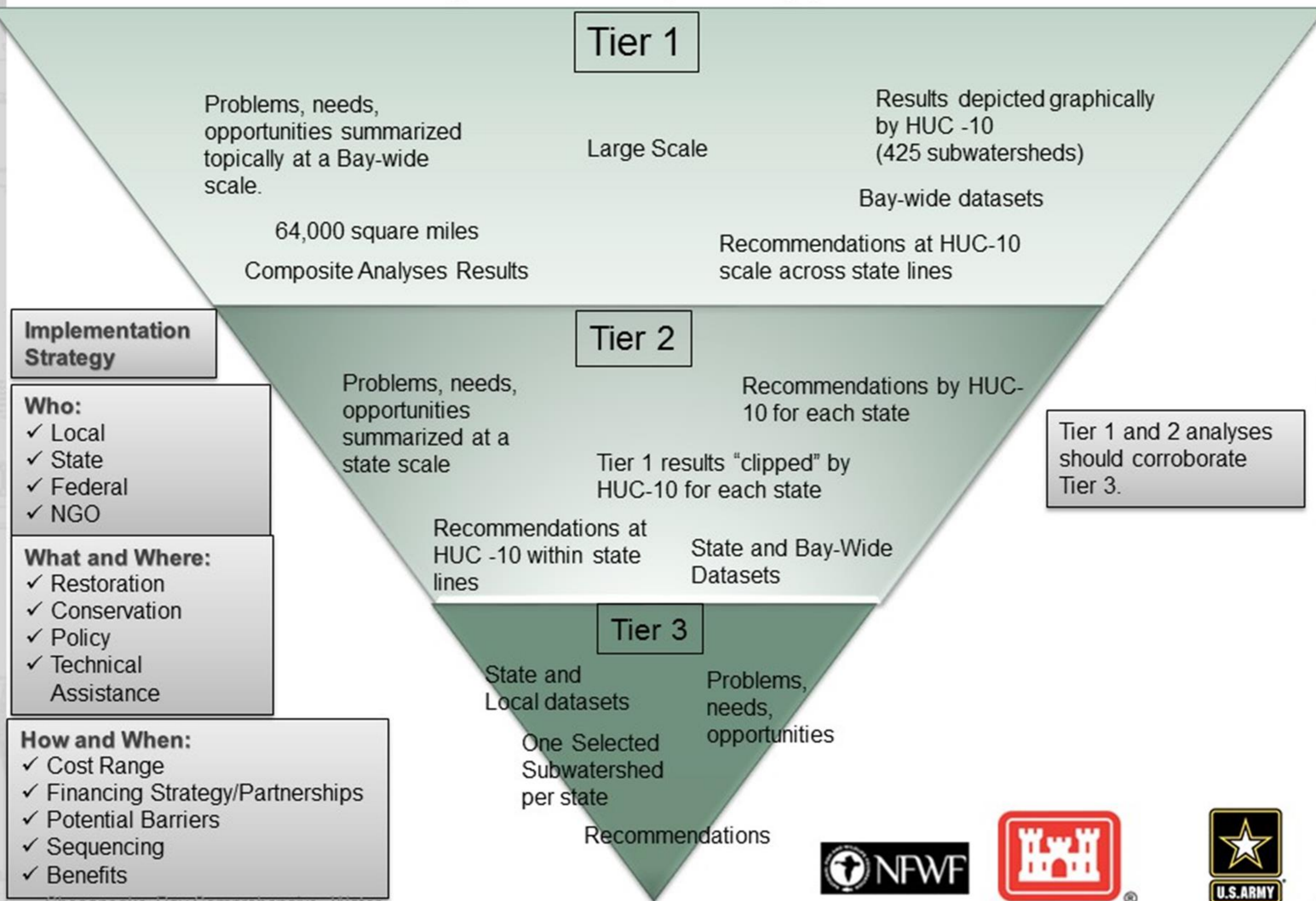
STAKEHOLDER INPUT

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Geospatial Analysis Approach

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PRIORITY SUBWATERSHEDS-TIER 3 ANALYSIS

State	Priority Subwatershed	Primary Restoration Focus/Product
NY	Upper Susquehanna River Watershed (including Upper Susquehanna & Chemung River sub-basins)	Stream restoration, wetland creation/restoration, riparian forest buffers
PA	Lower Susquehanna River Watershed	Stream restoration, legacy sediment, wetland creation/restoration
WV	Opequon Creek Watershed	Technical services & possible design-build opportunities – focus on green infrastructure
MD	Choptank River Watershed	Stream restoration & wetland creation, agricultural BMPs, blue/green infrastructure
DE	Nanticoke River	Stream restoration & wetland creation, agricultural BMPs
DC	TBD	
VA	N/A – Interested in evaluation opportunities across the Chesapeake Bay drainage area to address problems	Wetlands restoration & creation/coastal shoreline erosion & management for resilience planning/fish passage

COMPOSITE ANALYSES

Identified
Priorities by
others

Action by
others

GIS cluster analysis or other processes for these evaluations such as a scoring scheme or density analyses to identify hot regions of focused activity (or lack of activity).

USACE Mission Analyses

Connectivity Analysis

Healthy/High Value Habitats Analysis

Watershed Degradation Analysis

Threats Analysis

Socioeconomic Analysis

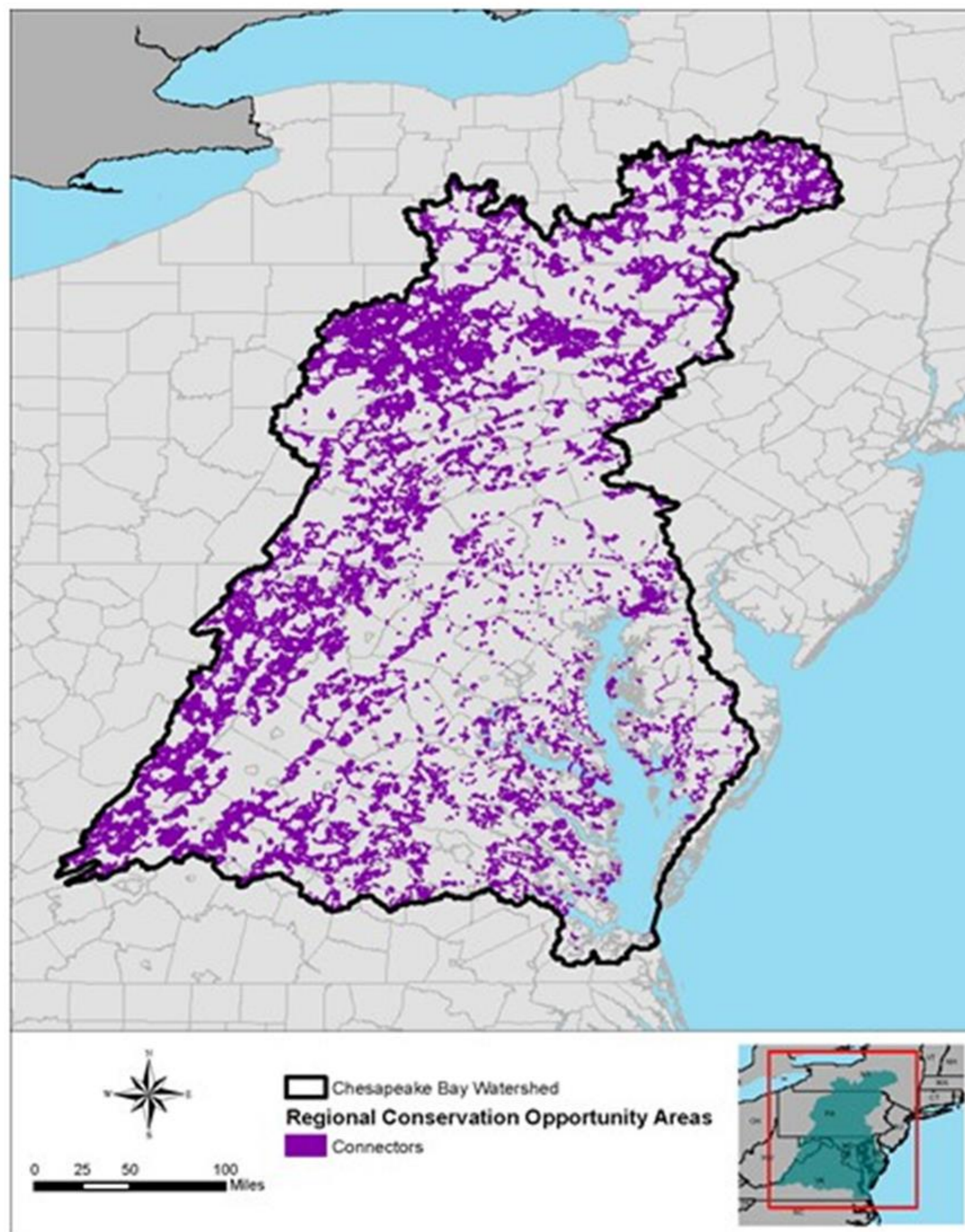
Restoration Opportunities Analysis

These analyses would be completed independently. The results will then be used with results from other analyses to answer questions and develop recommendations.

RESTORATION OPPORTUNITIES ANALYSES

- ☐ Where do opportunities exist to implement habitat restoration opportunities (streams, freshwater fish, SAV, Oysters, black duck, riparian buffer) to further Chesapeake Bay Agreement 2014 Goals and outcomes, maximize/optimize aquatic ecosystem restoration, flood risk management, and community resilience benefits?
- ☐ Where do opportunities exist to implement wetland restoration opportunities and protect existing wetlands to further Chesapeake Bay Agreement 2014 Goals and outcomes, maximize/optimize aquatic ecosystem restoration, flood risk management, beneficial use of dredged material and community resilience benefits?
- ☐ Where do opportunities exist to improve habitat connectivity and human connectivity to healthy habitats?
- ☐ Where do conservation opportunities exist to increase connectivity, enhance restoration success, and address social and economic vulnerabilities.
- ☐ Where can shoreline and streambank opportunities for restoration and conservation be implemented to maximize/optimize aquatic ecosystem restoration and community resilience?

CONNECTIVITY ANALYSIS

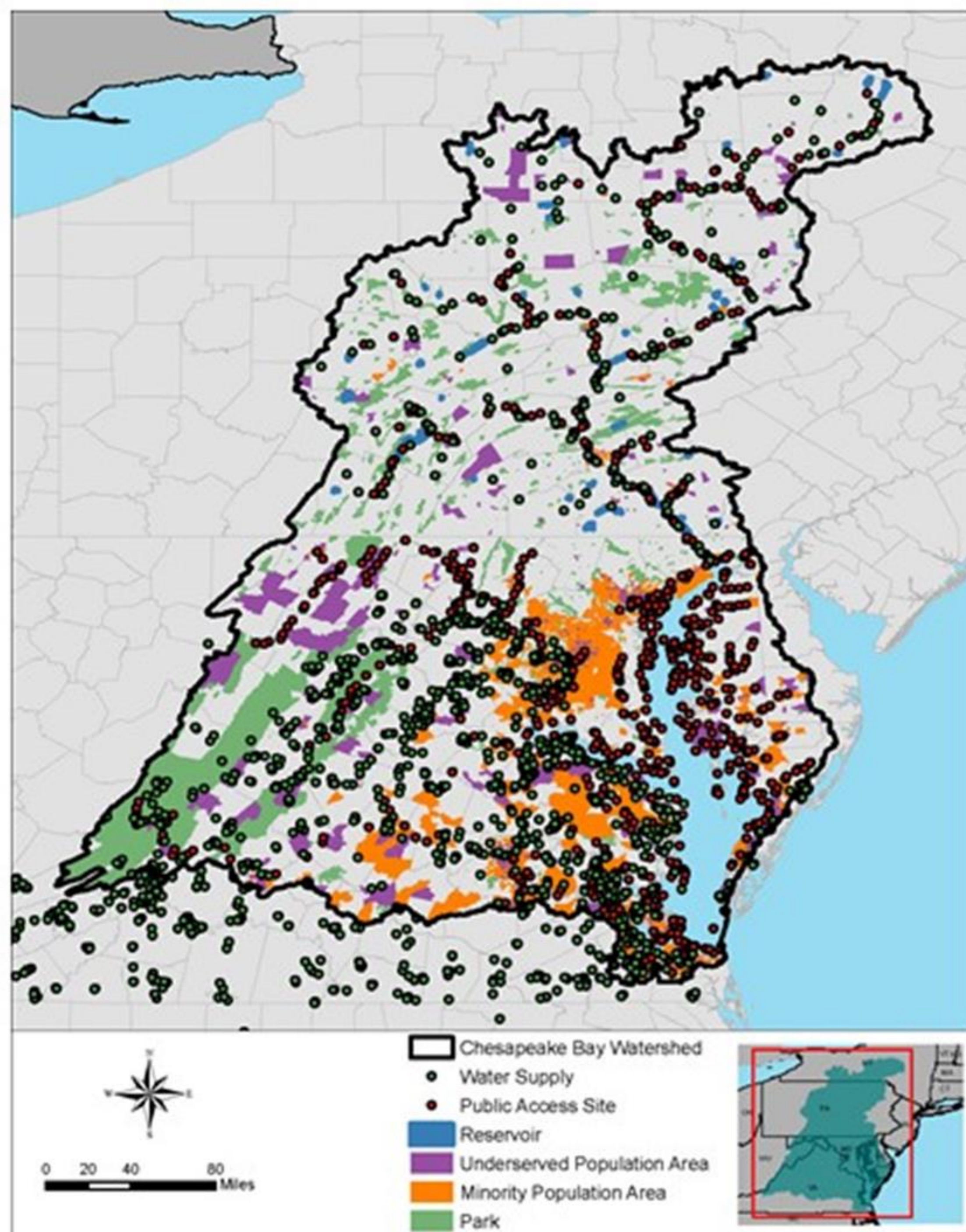


Where are the corridors and other landscape features that are critical connectors in the watershed?

Pertinent Data:

- RCOA (Regional Conservation Opportunity Areas) core and connector habitats

SOCIOECONOMIC ANALYSIS

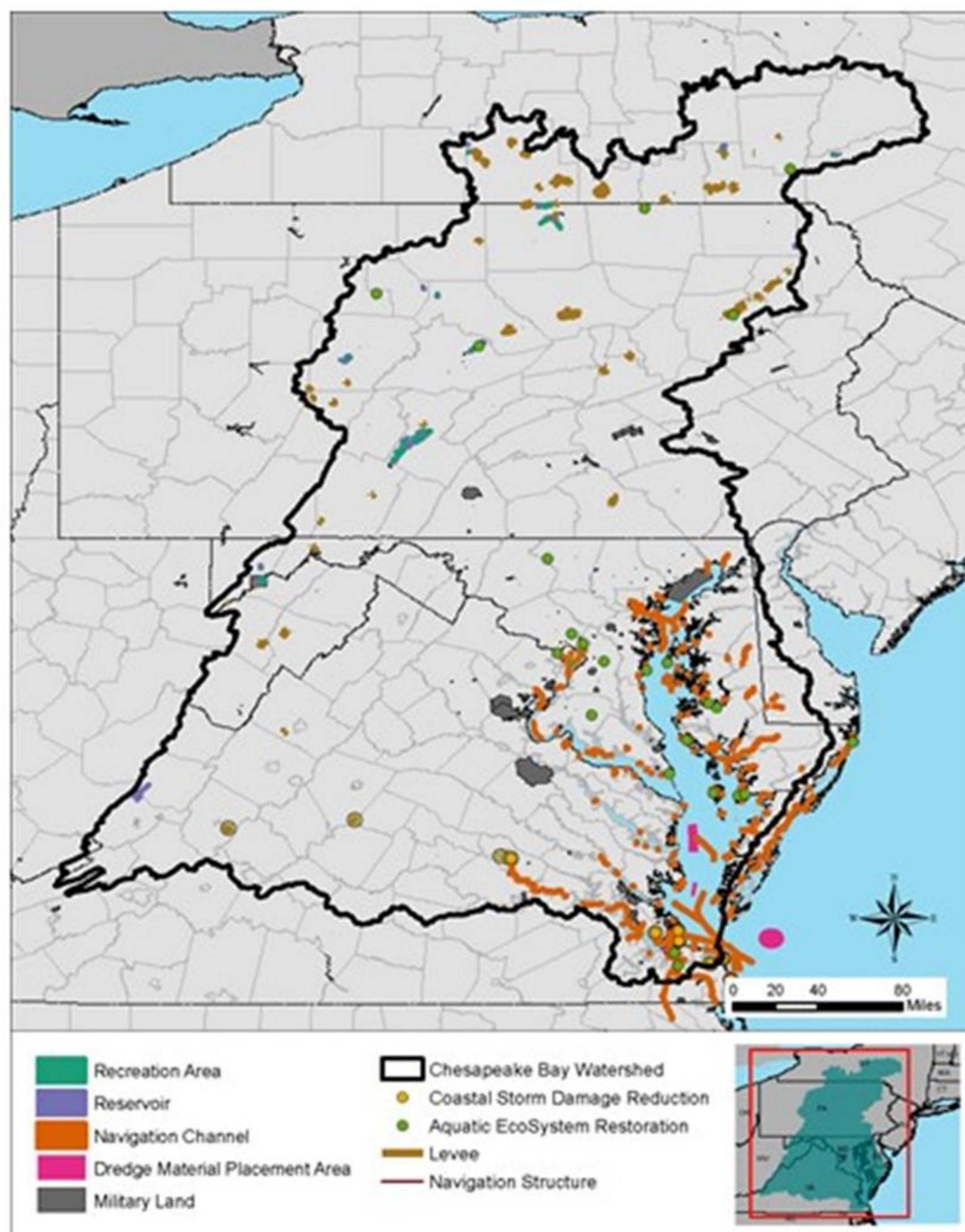


- ❖ What locations are important for recreation and public access?
- ❖ Where are minority and low income populations located (underserved)?
- ❖ What locations are important for water supply and source water protection?
- ❖ What locations are important due to cultural or historical significance?

Pertinent Data:

- Water quality protection areas
- National, state, and local parks
- Public access points
- Minority populations
- Low income populations

USACE MISSION AND MILITARY LANDS ANALYSIS



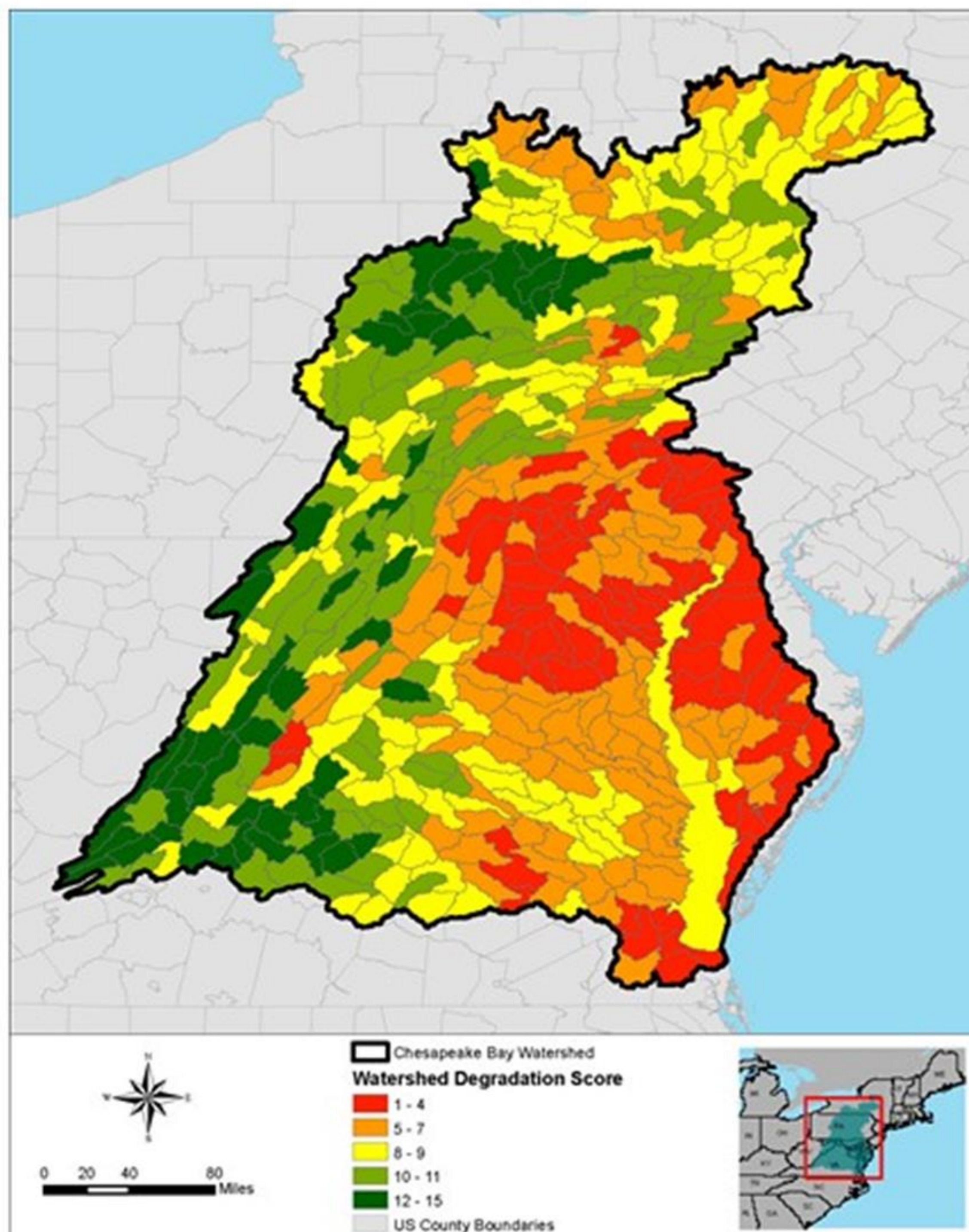
Where do USACE projects exist (ecosystem restoration, flood risk management, navigation, military, water supply, reservoirs, etc.)?

What are the geographic boundaries of each USACE authority?

Pertinent Data:

- Existing dams and reservoirs
- Existing restoration projects
- Navigational channels and structures
- Military lands
- Existing levees
- Existing coastal storm damage reduction features
- Existing dredged material placement sites

WATERSHED DEGRADATION



- ❖ What subwatersheds are the most degraded?
- ❖ Can we summarize the primary problems regionally?

Pertinent data:

- Percent impervious cover
- Percent forest
- Percent forested riparian buffer
- Impaired streams on 303(d) list - % of stream length impaired in subwatershed
- Chesapeake Bay Program (CBP) – Stream Index of Biotic Integrity (IBI) – rating in subwatershed
- CBP - Nitrogen (N) and Phosphorus (P) – top 25% of all Chesapeake Bay National Hydrography Dataset (NHD) catchments for N and P yields, respectively

WATERSHED DEGRADATION - PROPOSED SCORING SCHEME

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Parameter	Data Source	Metric	Scoring
Landuse (measures of landscape alterations from development)	Chesapeake Conservancy 2016	Percent impervious cover. Scoring based on MDNR General Guidelines for Impervious Surface Thresholds.	0 = >25% 1 = 10- 25% 2 = 2-10 % 3 = <2 %
	Chesapeake Conservancy 2016	Percent forest cover. Scoring based on goals set and relationships determined in USFS State of Chesapeake Forests (2006)	0 = 0-30% 1 =>30-37 2 =>37-51% 3 = >51
	EPA 2010 (Army Comp Plan)	Percent of stream network within subwatershed with forest (riparian buffer). Scoring based on goals set and relationships determined in USFS State of Chesapeake Forests (2006).	0 = 0-56% 1 = >56-63% 2 = >63-70% 3 = >70%
Stream health- water quality	303(d) Impaired waterways list (EPA)	Stream miles listed as impaired within subwatershed (scoring based on groups determined using Natural Breaks Method (Jenks) in GIS).	0 = 84.64 - 183.33 1 = 34.45 - 84.64 2 = 0.02 - 34.45 3 = 0
Stream health- biological integrity	Chesapeake Bay Program Benthic Index of Biotic Integrity 2000-2010 (watershed-wide B-IBI)	Subwatershed rating assigned by Chesapeake Bay Program based on B-IBI determined by stream monitoring.	0 = NA 1 = poor or very poor 2 = good or fair 3 = excellent
Nitrogen and Phosphorus Impairments	SPARROW model output	Top 25 % of all Chesapeake Bay NHD catchments for nitrogen and phosphorus yields	0 = a subwatershed in the top 25% for N and P 1 = a subwatershed in the top 25% for N or P 3 = not a subwatershed in the top 25% for N or P

THREATS ANALYSIS

- ❖ What areas are threatened by urbanization and climate change in the watershed?
- ❖ What areas are prone to increased/persistent flooding in the future?

Pertinent data:

- Eroding shorelines/vulnerable shorelines
- Uncontrolled N and P loads
- USACE SLR curves
- Areas threatened by more frequent normal flooding
- Resources at risk to coastal storms
- Non-tidal flooding
- Tidal marsh migration corridors
- Future projected development
- National Fish Habitat Assessment (risk of current habitat degradation)
- U.S. Fish and Wildlife Service (USFWS) data



PRIORITIES BY OTHERS

- ❖ What do compiled agency priorities look like spatially?
- ❖ How do the initiatives of various agencies align?

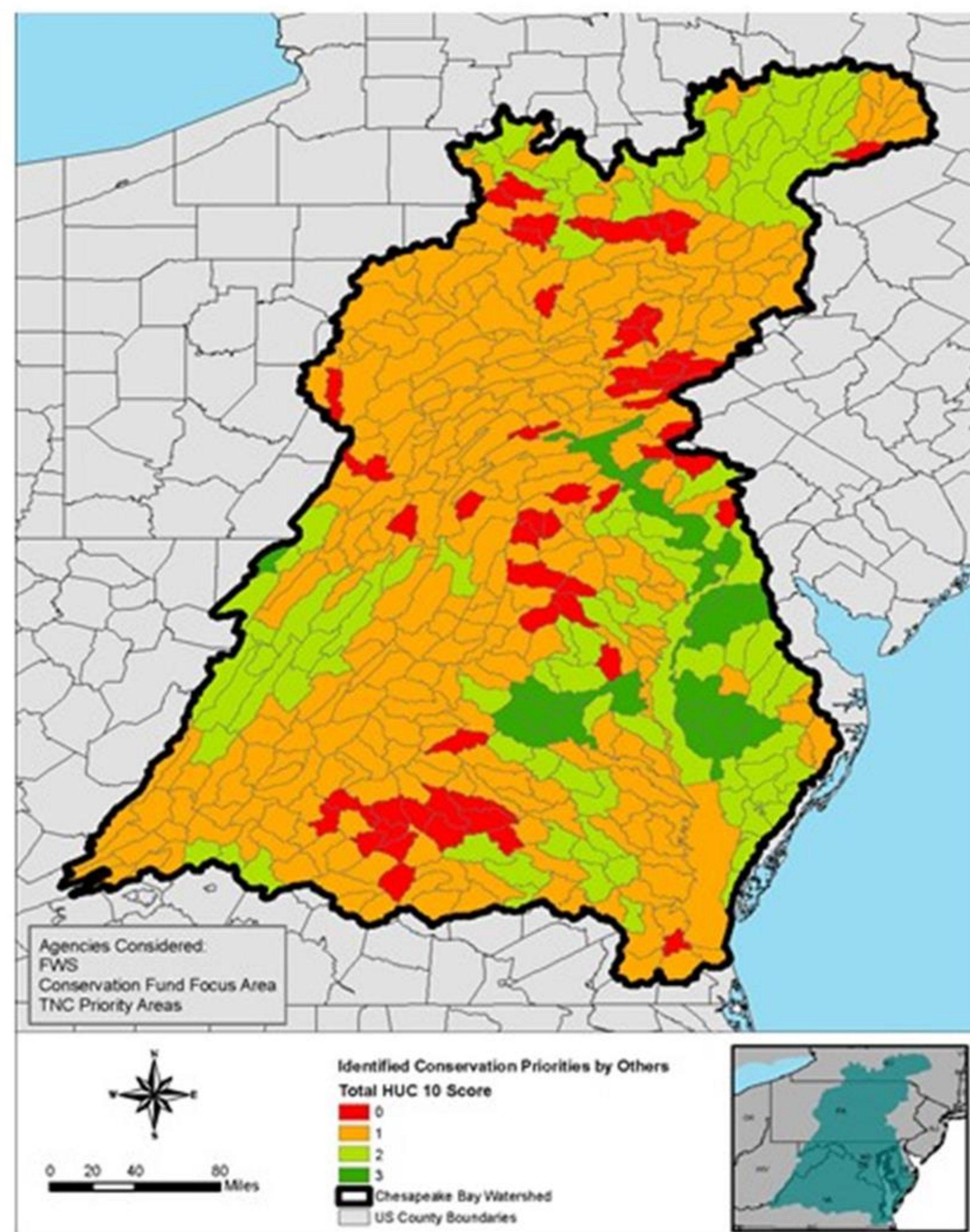
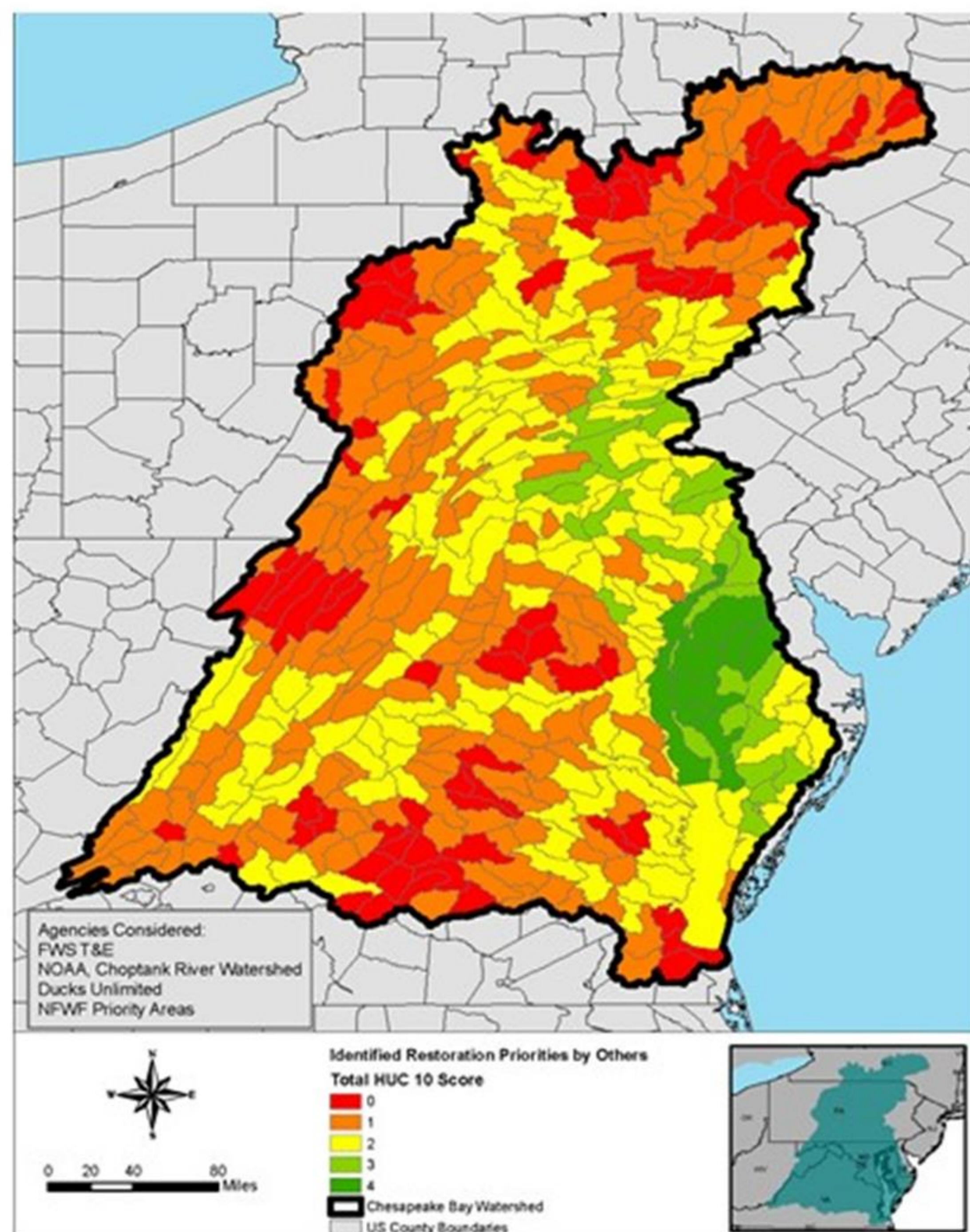


Agency Priorities (one layer/map)

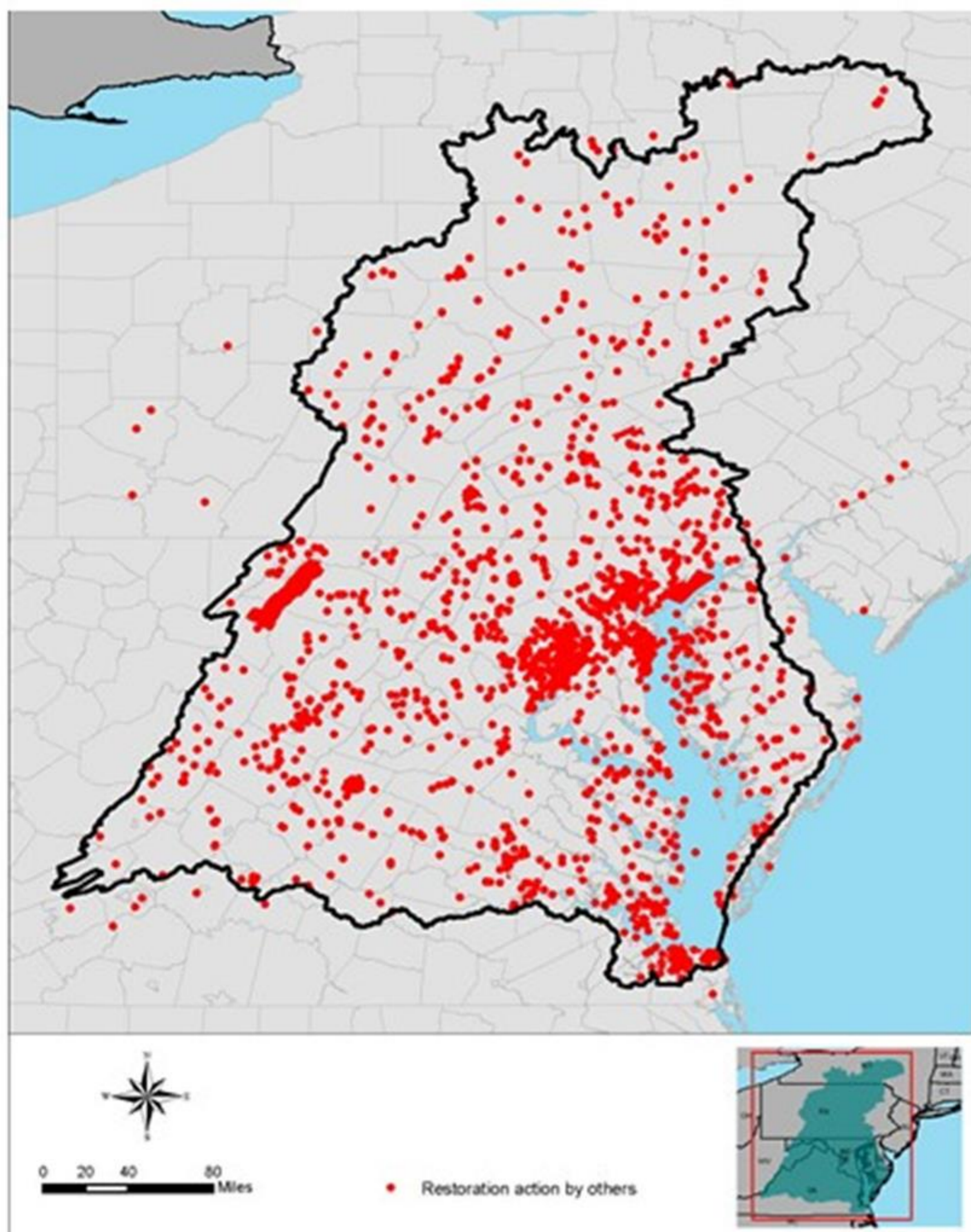
- Federal agency prioritized areas:
 - USFWS
 - National Oceanic & Atmospheric Administration (NOAA) - Choptank River Watershed
 - U.S. Department of Agriculture (USDA) - Forest Legacy Areas
 - Department of Defense (DOD) - Sentinel Landscapes Army Compatible Use Buffers (ACUB)
 - National Fish and Wildlife Foundation (NFWF) - Business Plan Focus Areas
- Ducks Unlimited Focus/Project Areas
- Conservation Fund Focus Areas
- The Nature Conservancy (TNC) Priority Areas
- Input from February webinar
- Input from November workshop

PRIORITIES BY OTHERS

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RESTORATION ACTIONS BY OTHERS



- ❖ What/where have projects been implemented to meet Bay agreement goals?
- ❖ What/where are projects planned to be implemented to meet Bay agreement goals?
- ❖ What do the Management Strategies look like spatially?

Pertinent data:

- BMP/WIP project information
- Other federal agency implemented projects
- State projects
- Projects by others
- SAGE projects
- NWP 27 projects
- Restoration projects provided through data call
- Existing Management Strategies work: Cross GIT project layer*, brook trout prioritized subwatersheds*, oyster restoration tributaries*, black duck

HEALTHY/HIGH VALUE HABITATS

- ❖ Where are the healthy habitats in the watershed?
- ❖ Performed 2 analyses – one focused on the watershed and one focused on the mainstem and shoreline

Pertinent data-watershed compilation:

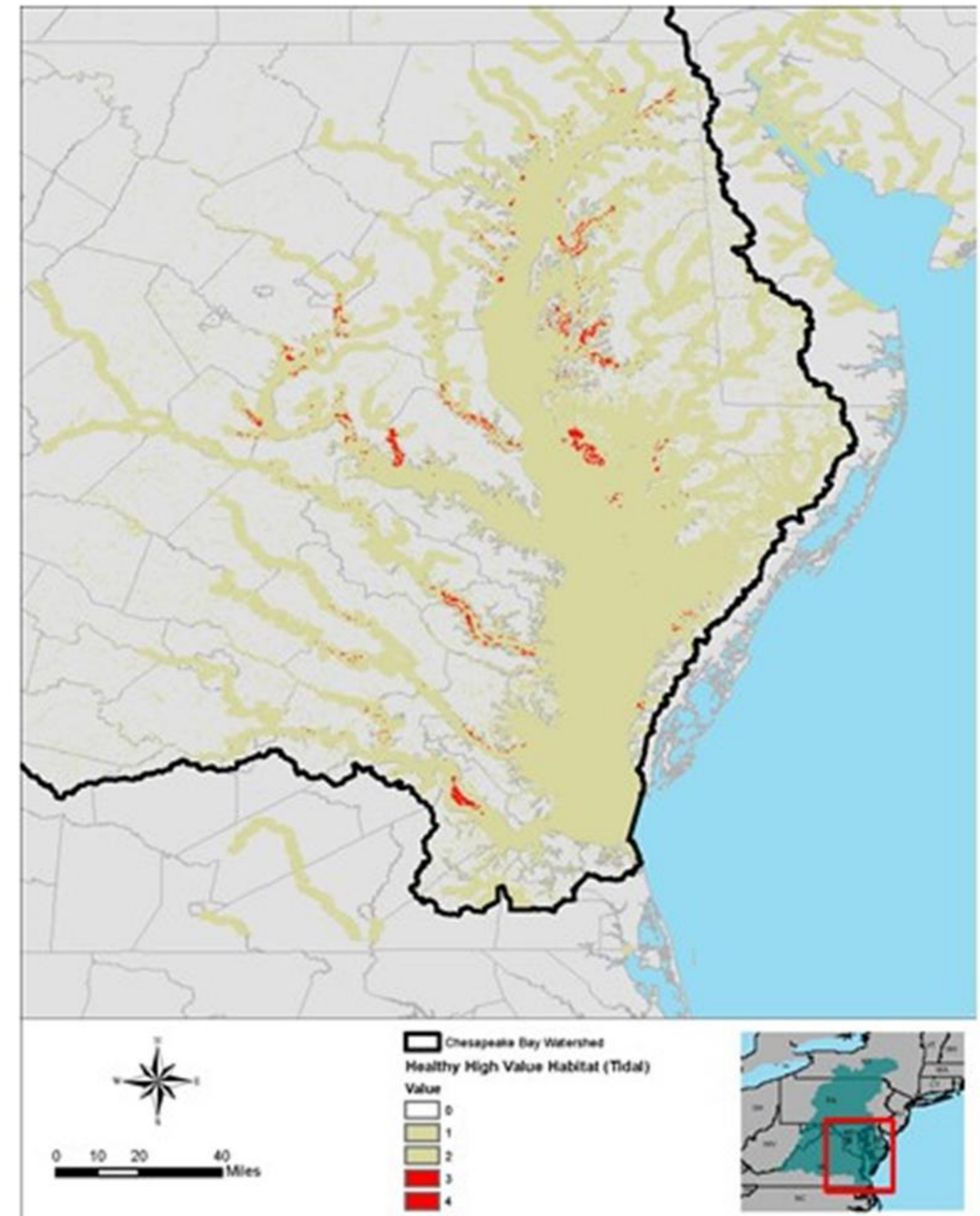
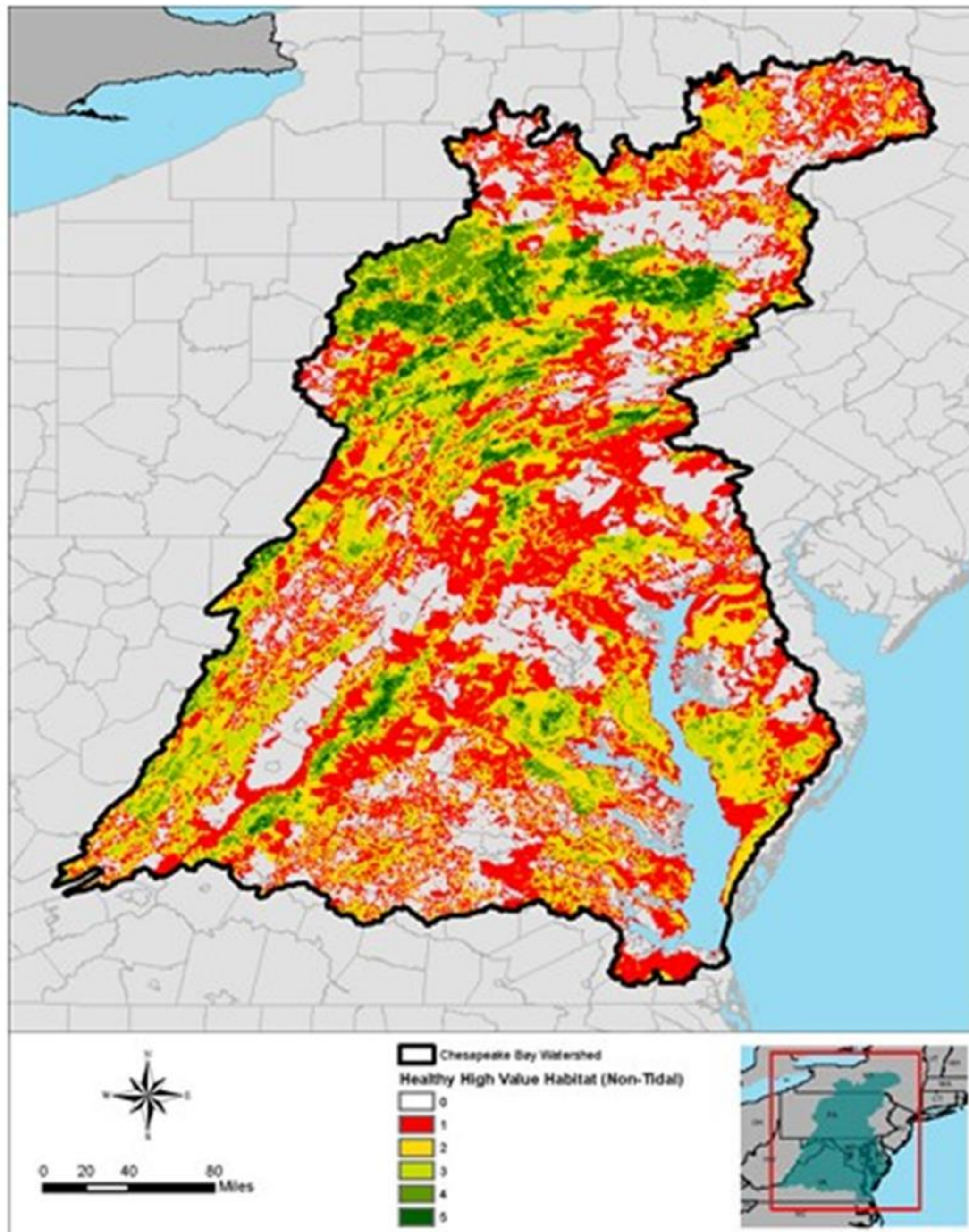
- State-identified healthy watersheds
- Brook Trout catchments
- Index of Ecological Integrity
- Audubon Important Bird Areas
- RCOA Core and connectors
- Black Duck Focus Areas

Pertinent data – mainstem/shoreline

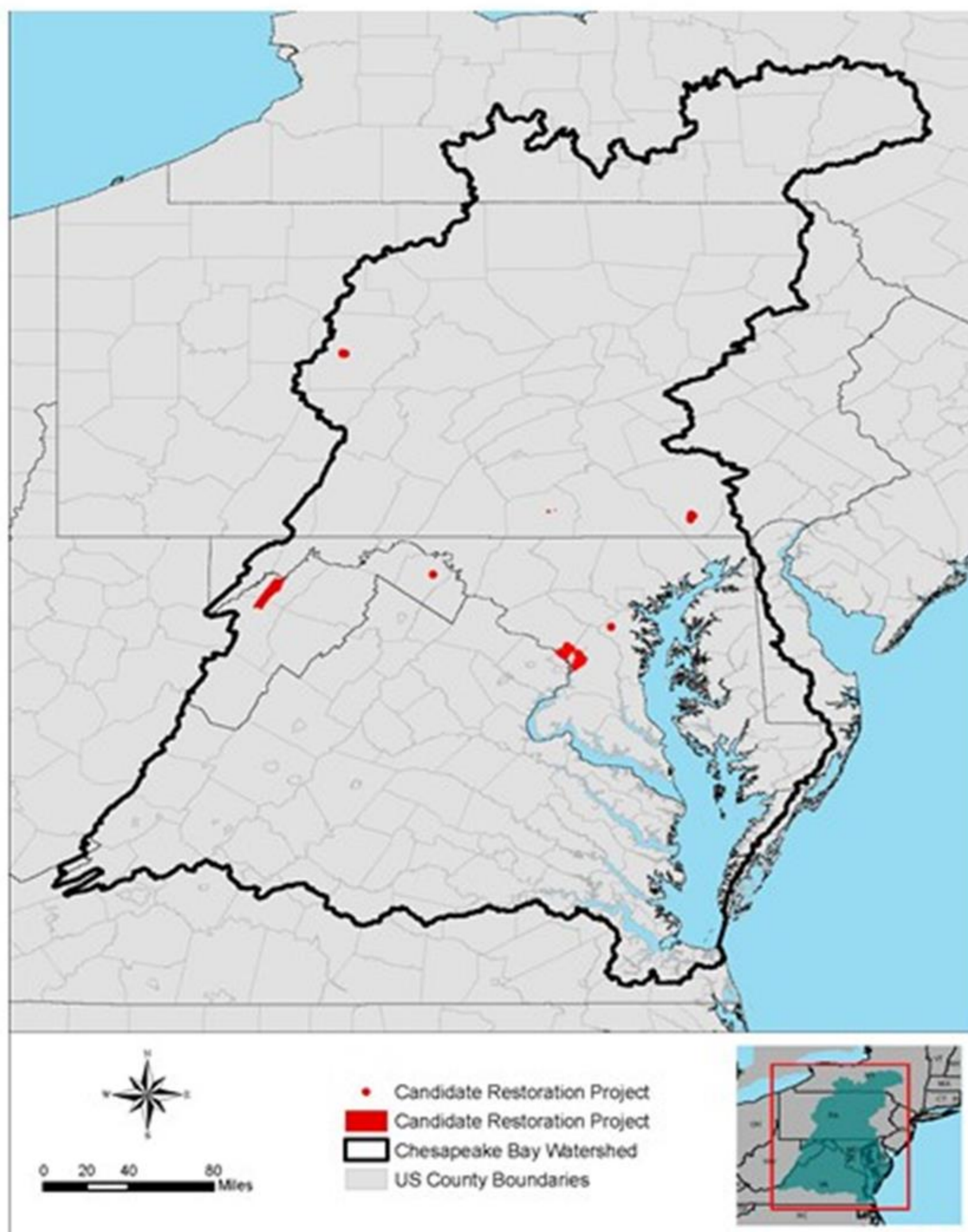
- Oyster reefs – potential oyster habitat
- Existing brook trout streams
- Submerged aquatic vegetation (SAV) beds
- Nesting locations of wading and waterbirds



HEALTHY/HIGH VALUE HABITATS



CANDIDATE RESTORATION PROJECTS



- ❑ Received 14 candidate restoration projects from 11 agencies
- ❑ Cost range: \$40K - \$30M
- ❑ Screening process
- ❑ Incorporate into implementation strategy
- ❑ FY 2019 budget

Questions?



ECOSYSTEM SERVICES

Ecosystem goods and services are socially valued aspects or outputs of ecosystems that depend on self-regulating or managed ecosystem structures and processes.

Some examples: water purification & waste treatment, human health, natural hazard mitigation, property & infrastructure protection, human safety, navigation, recreation, climate regulation, carbon sequestration

Chat to everyone:

1. What are good resources/references that provide information on ecosystem services, preferably in the Chesapeake Bay?
2. What projects have you implemented or planned where you evaluated ecosystem services?
3. Did you have funding partners, and if so, who that were interested in implementation for eco services?

Three ways to provide comments:

Provide in chat box

Verbal comments

Email to Anna.M.Compton@usace.army.mil

Chesapeake Bay Comprehensive Water
Resources and Restoration Plan



IMPLEMENTATION *PROGRAMS AND FINANCING*

Chat to everyone:

1) Partnership programs that have helped you implement a project?

Examples:

PA - Growing greener program

EPA - Section 319



2) Are there innovative financing strategies that you have used to implement projects?

Three ways to provide comments:

Provide in chat box

Verbal comments

Email to Anna.M.Compton@usace.army.mil

NEXT STEPS

- ☐ Stakeholder webinar - June
- ☐ Draft Report for review – Fall 2017
- ☐ Final Report - Summer 2018



WE WANT TO HEAR FROM YOU!



All the slides and content (including some additional background slides) will be posted on the study website and add website.

Email ChesBayCompPlan@usace.army.mil or Anna.M.Compton@usace.army.mil with follow-up questions.

Priority feedback:

- Restoration Opportunity Analyses.
- Selected subwatersheds for Tier 3 analyses for each jurisdiction.

Thank you for participating in the webinar!



BACKGROUND SLIDES

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STUDY AUTHORITY

*“Resolved by the Committee on Environment and Public Works on the United States Senate, that the Secretary of the Army is requested to review the report of the Army Corps of Engineers on the Chesapeake Bay Study, dated September 1984, and other pertinent reports, with a view to developing a coordinated, comprehensive **master plan** within the Corps mission areas for **restoring, preserving and protecting** the Chesapeake Bay ecosystem. The plan shall focus on **integrating existing and future work of the Corps of Engineers**, shall be developed **in cooperation** with State and local governments, other Federal agencies, the Chesapeake Bay Program, the Chesapeake Bay Commission, and the Chesapeake Executive Council, and shall encompass all Corps actions necessary **to assist in the implementation of the goals of the 2000 Chesapeake Bay Agreement**. The plan shall identify additional feasibility studies and research efforts required to better understand and solve the environmental problems of the Chesapeake Bay.”*

SHARED VISION

- June 16, 2014, the Chesapeake Bay Watershed Agreement was signed.
- Signatories from all Bay states and the Federal Leadership committee.
- Chesapeake Bay Comprehensive Plan (CBCP) will ALIGN with the Vision established in the 2014 Agreement with a slight change per stakeholder collaboration.



“We envision an environmentally and economically sustainable AND RESILIENT Chesapeake Bay watershed with clean water, abundant life, conserved lands and access to the water, a vibrant cultural heritage, and a diversity of engaged citizens and stakeholders.”

GOAL

Develop a comprehensive and integrated master plan that would assist with implementation of the 2014 Chesapeake Bay Agreement.

- Effectively and efficiently engage Bay stakeholders to identify ecological problems, needs and opportunities in the watershed and avoid duplication of ongoing or planned actions by others.
- Determine where and how USACE mission areas could be utilized in the watershed to support the goals of the 2014 Chesapeake Bay Agreement.
- Identify actions by other federal, state, and local government agencies and non-governmental organizations (NGOs) in the watershed to address problems outside of USACE mission areas.



OBJECTIVES



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- Develop a comprehensive and strategic, integrated water resources plan to guide the implementation of projects that will assist in meeting the 2014 Chesapeake Bay Agreement.
- Identify areas for aquatic ecosystem restoration, protection or preservation that will assist in meeting the 2014 Chesapeake Bay Agreement.
- Identify at least one project in each state and D.C. that can be considered for implementation or technical assistance by the U.S. Army Corps of Engineers and supports the Bay Agreement.
- Identify new policies or programs or improve upon existing policies and programs that will help achieve an environmentally and economically sustainable and resilient Chesapeake Bay watershed.

Flooding and Storm Damages

- Eroding shorelines
- Flood inundation
- Loss of life/life safety
- Direct and indirect infrastructure damages

Ecosystem Degradation

- Wetlands
- SAV
- Oysters
- Stream health
- Connected habitat/corridors
- Anadromous/diadromous fish
- Brook trout
- Black duck
- Degraded streams
- Forested riparian buffers
- Fish passage
- Rare, threatened, and endangered species
- Bird habitat
- Water quality
- Chemical contaminants
- Legacy sediment
- Tidal fisheries
- Benthic habitats
- Tree canopy/forests
- Preserve healthy landscapes

Economic and Social Vulnerabilities

- Limited public access/recreation
- Limited education and stewardship
- Aging infrastructure
- Navigation issues—inefficiencies, vessel damages
- Vessel damages due to shoaling
- Water supply
- Source water protection

Constraints, Inventory Existing Conditions

Future Forecast and Stakeholder Input

Composite Analysis