

Identifying Areas to Address Multiple Chesapeake Restoration and Conservation Goals

Scott Phillips, John Wolf, Renee Thompson
(USGS)

Kristin Saunders (UMCES)

Emily Trentacoste (US EPA)

Outline

- Overview of Chesapeake ecosystem and program
- Approaches for identifying areas to address multiple goals (co-benefits)
- Use by decision makers



Chesapeake Bay Program

Federal-State Partnership

Watershed Agreement

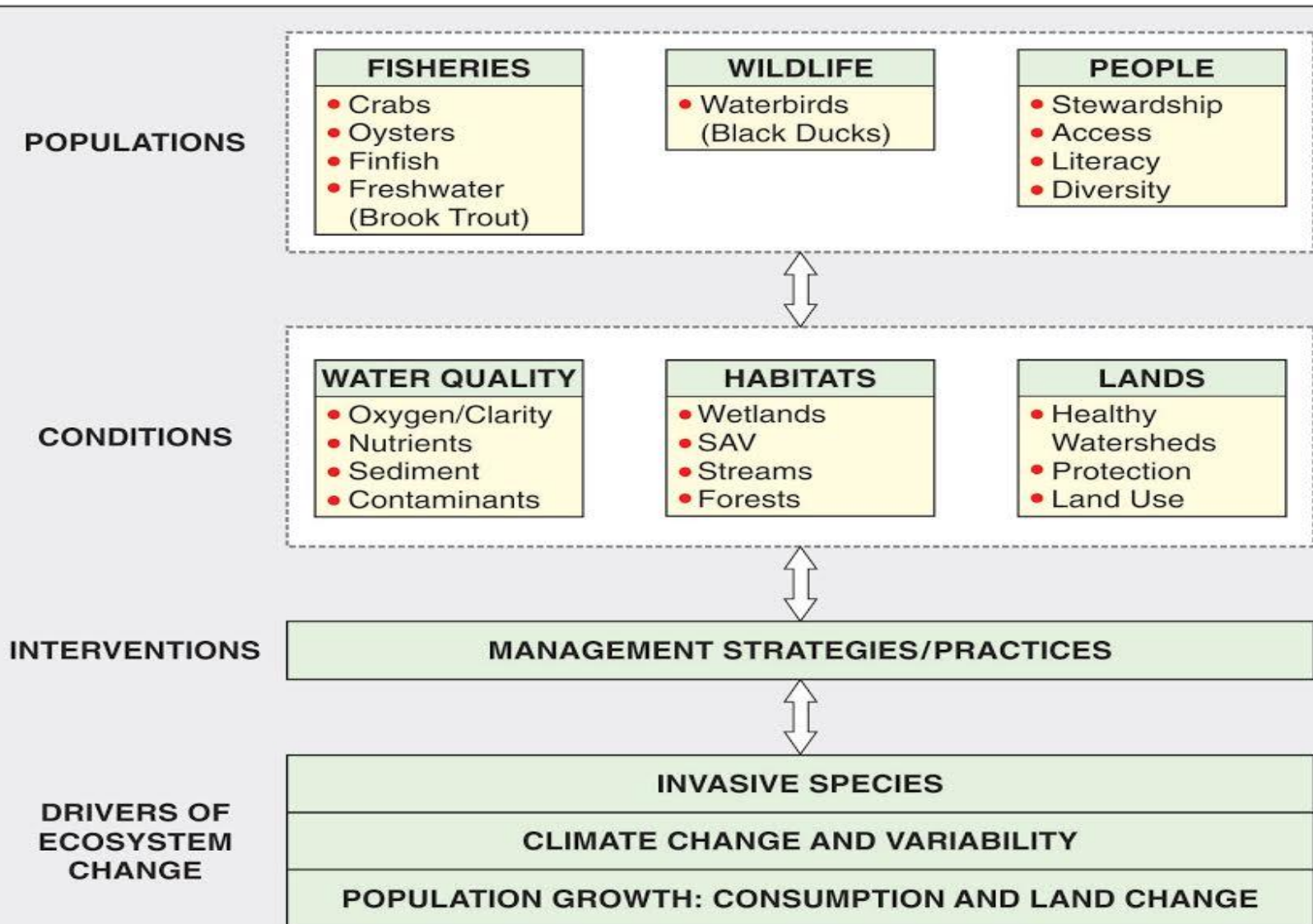
- 10 Goals
- 31 Outcomes
- Strategic manner
- Cost effective
- Place-based approaches



Mapping areas for outcomes

Striving for Co-benefits

CONCEPTUAL DIAGRAM OF CHESAPEAKE BAY ECOSYSTEM

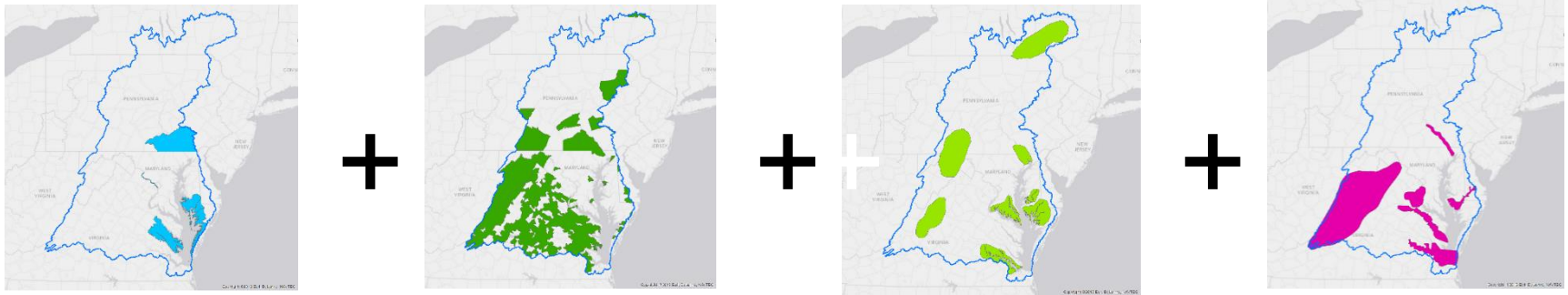


Identify Areas for Co-benefits



- Benefits to living resources
- Restoration and conservation
- Inter-related outcomes
- Consider future threats
- Interact with stakeholders

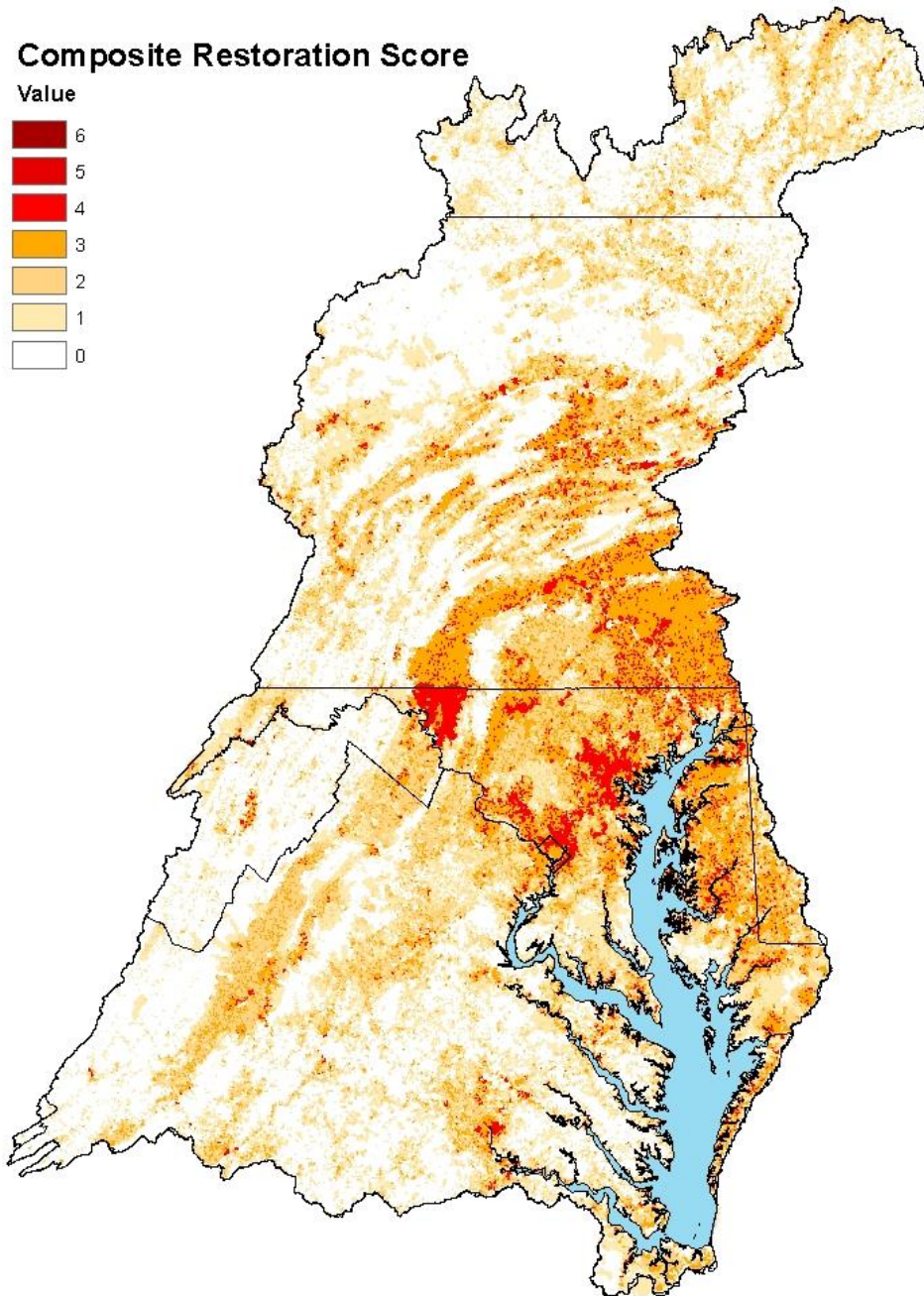
Creating “Composite” Maps



Overlay spatial data=Composite Maps

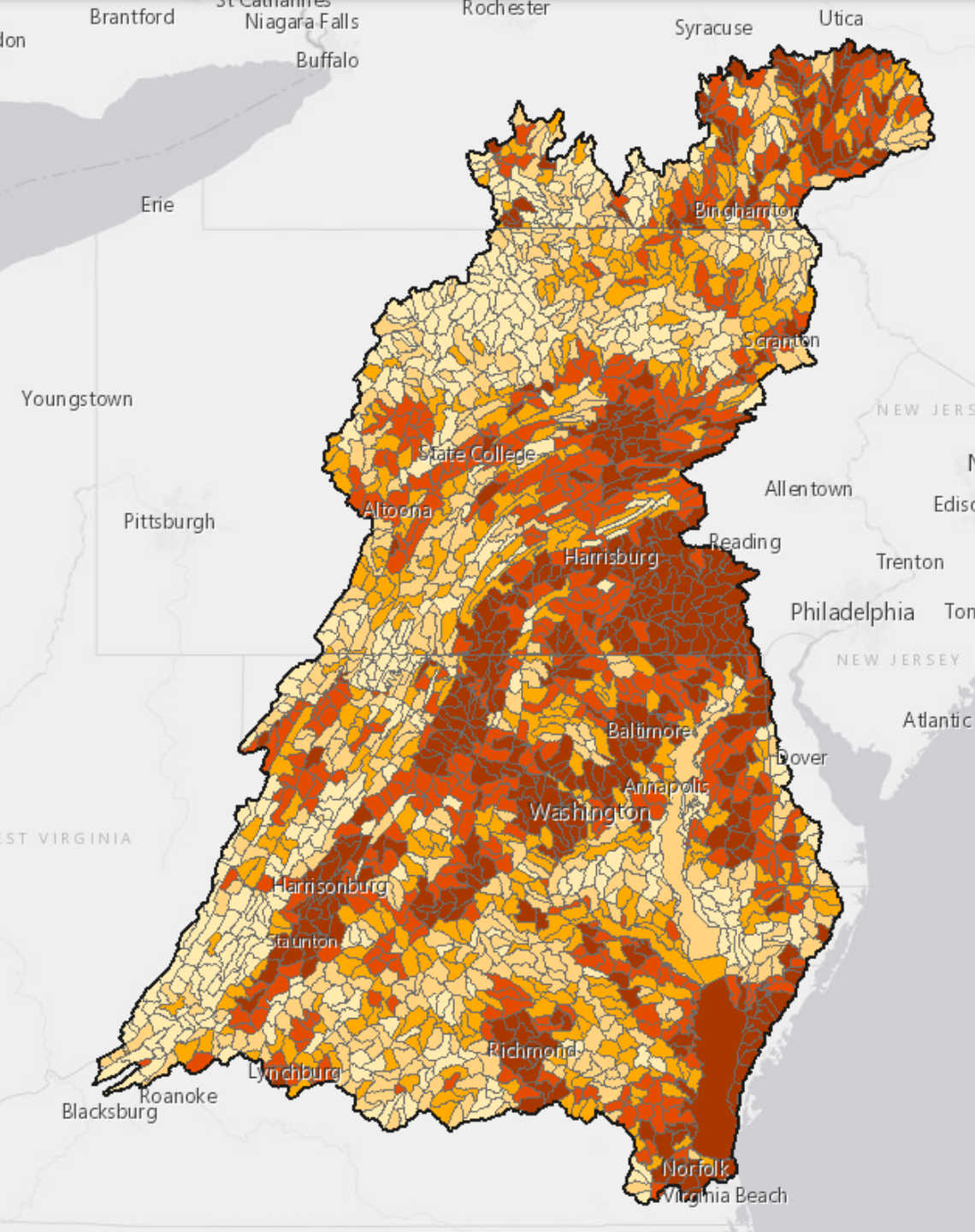
- Restoration
- Conservation

Restoration Areas



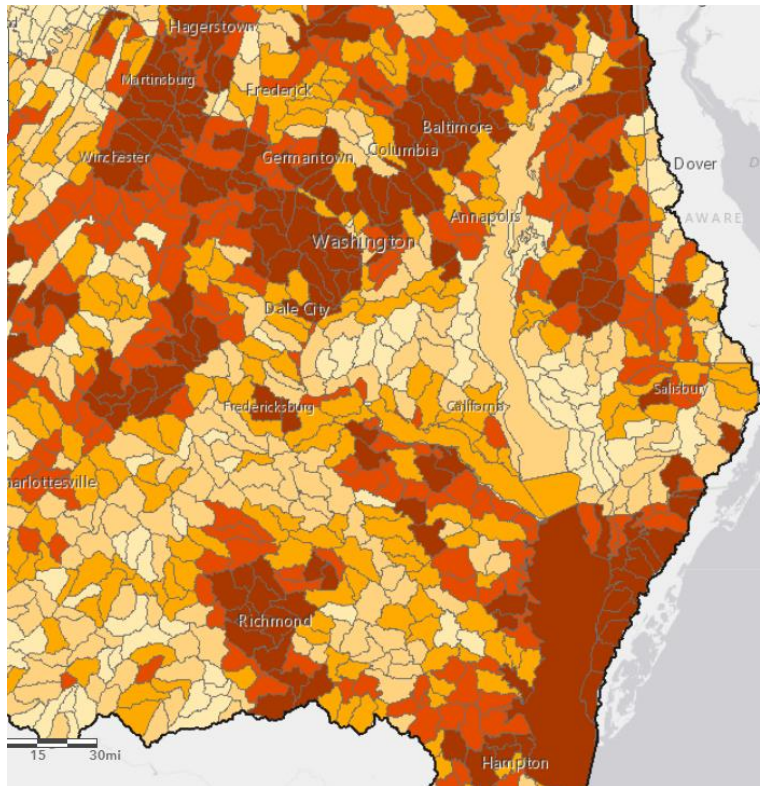
- Designated use non-attainment (tidal waters)
- Oyster restoration
- Inland fish habitat assessment
- Index of ecological integrity (<25%)
- N and P loads (top 25%)
- Toxic contaminant impairments

Restoration Areas

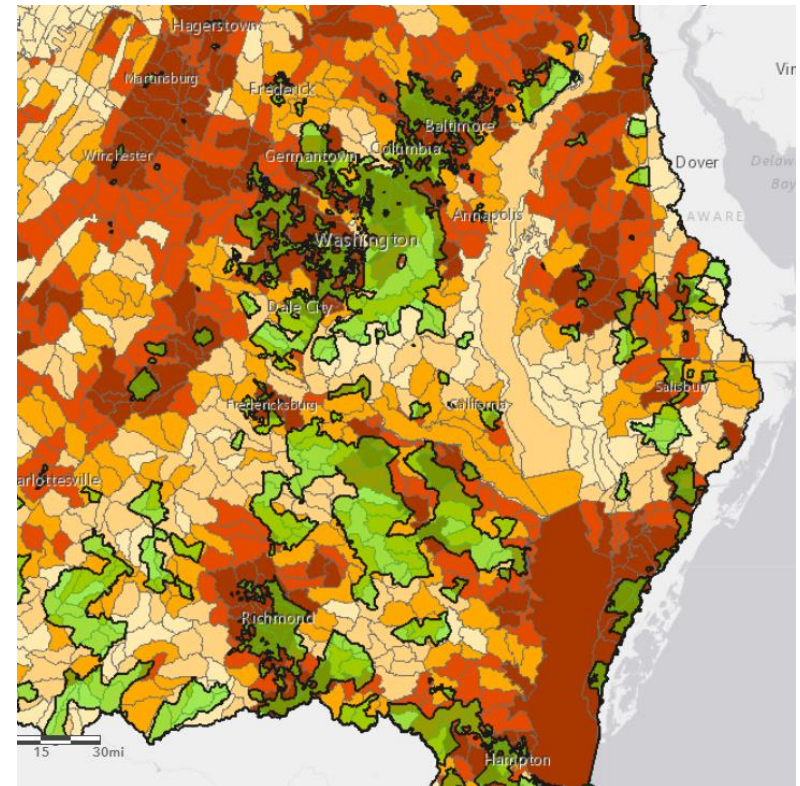


- Summarize scores to watersheds (HUC 12)
- Ranked within each jurisdiction
- Darkest watersheds represent areas with greater opportunities for co-benefits

Diversity Metrics as Overlays



Restoration Composite

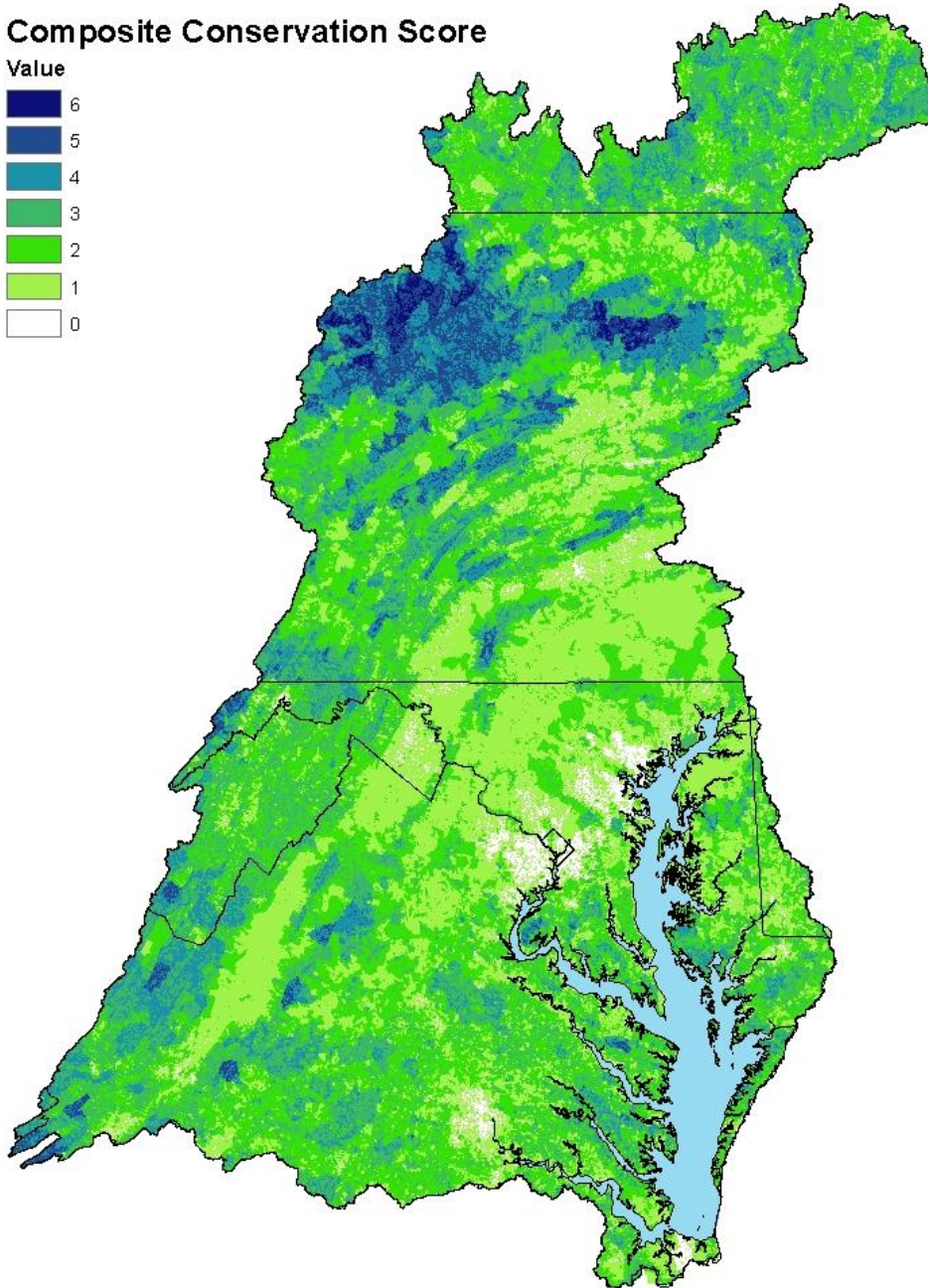
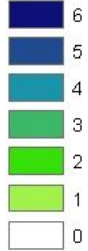


Restoration Composite
w/Minority Population
Overlay

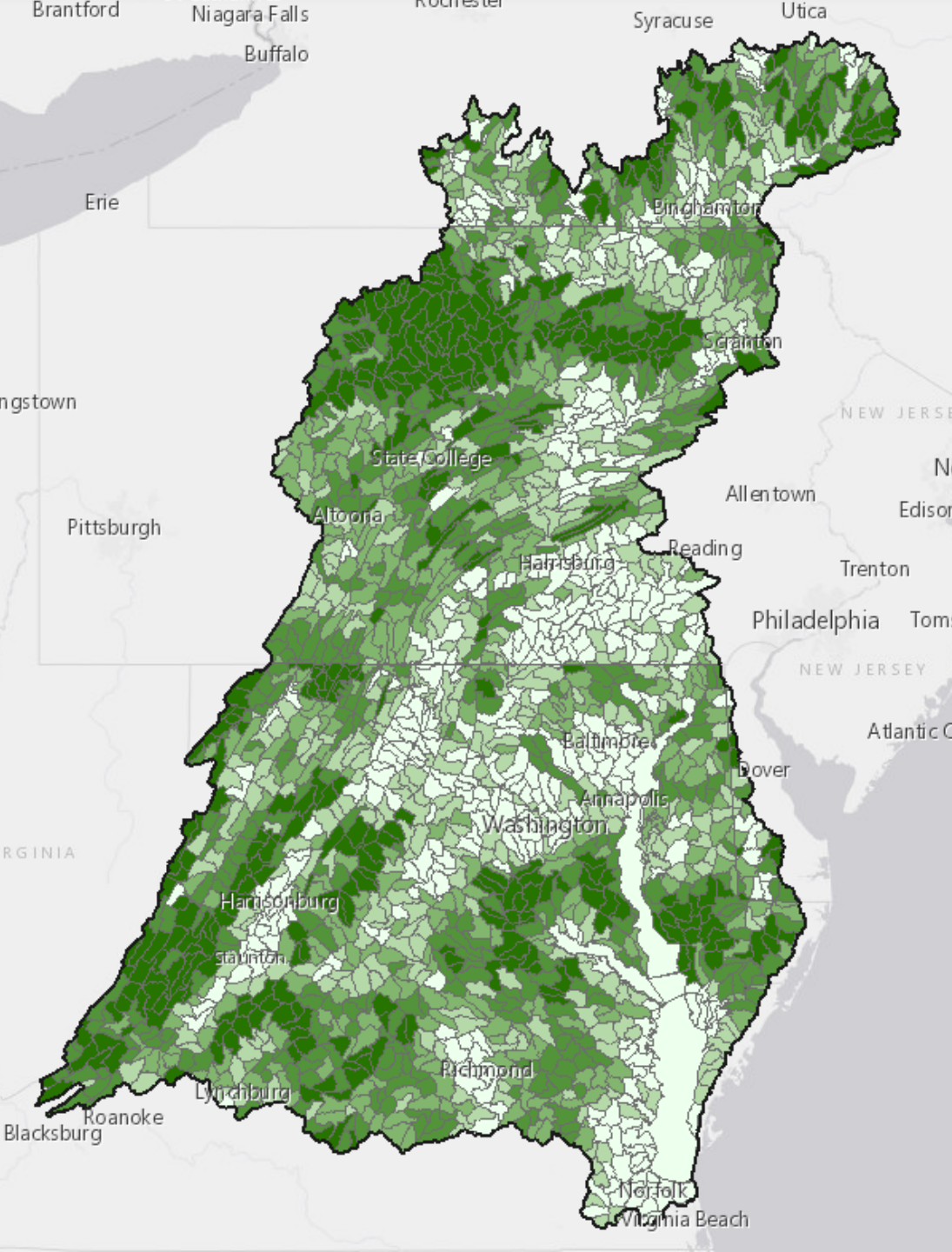
Conservation Areas

Composite Conservation Score

Value



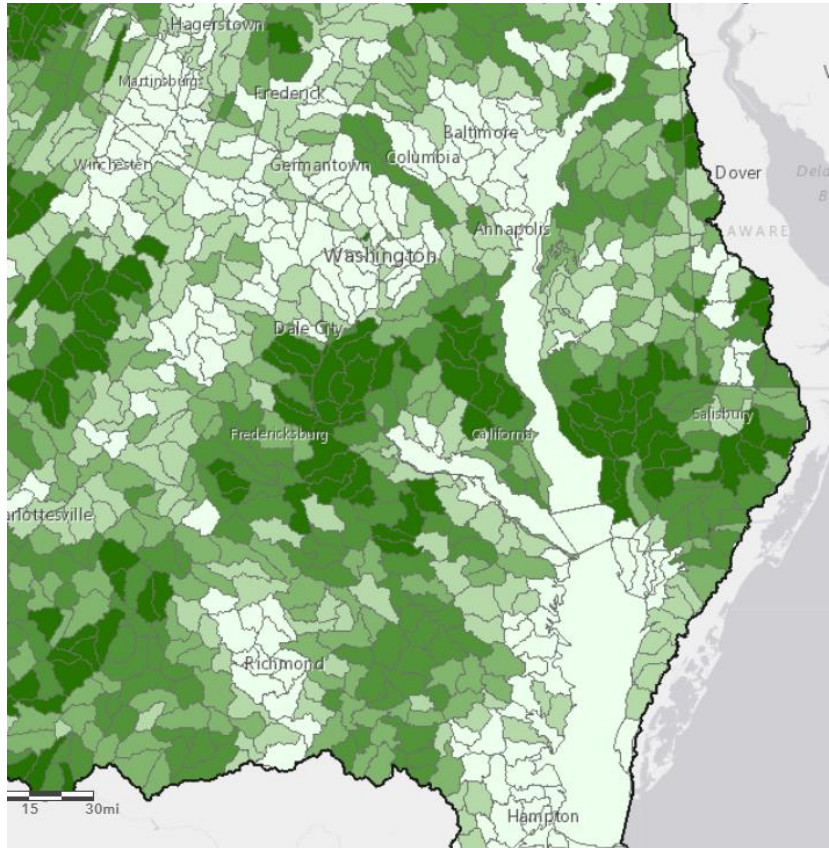
- Priority living resource areas (tidal)
- Potential oyster habitat
- Designated use attainment
- Black duck habitat
- Inland fish habitat & brook trout
- Conservation Opp. Areas
 - Ecological integrity
 - Healthy watersheds



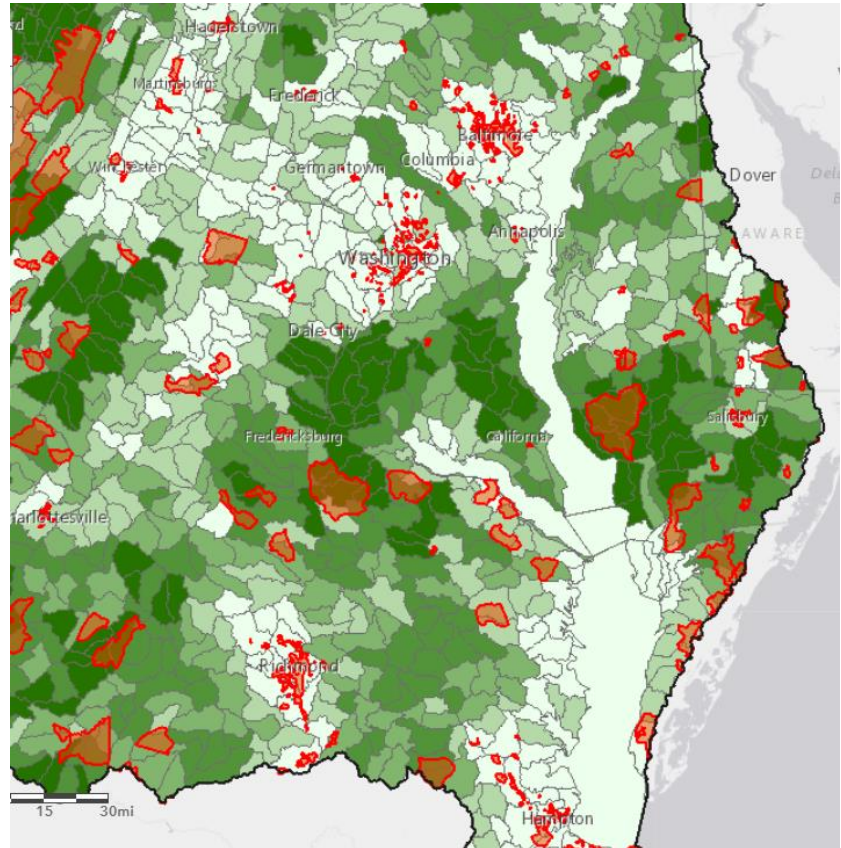
Conservation Areas

- Summarize scores to watersheds (HUC 12)
- Ranked within each jurisdiction
- Darkest watersheds represent areas with greater opportunities for co-benefits

Diversity Metrics as Overlays



Conservation Composite

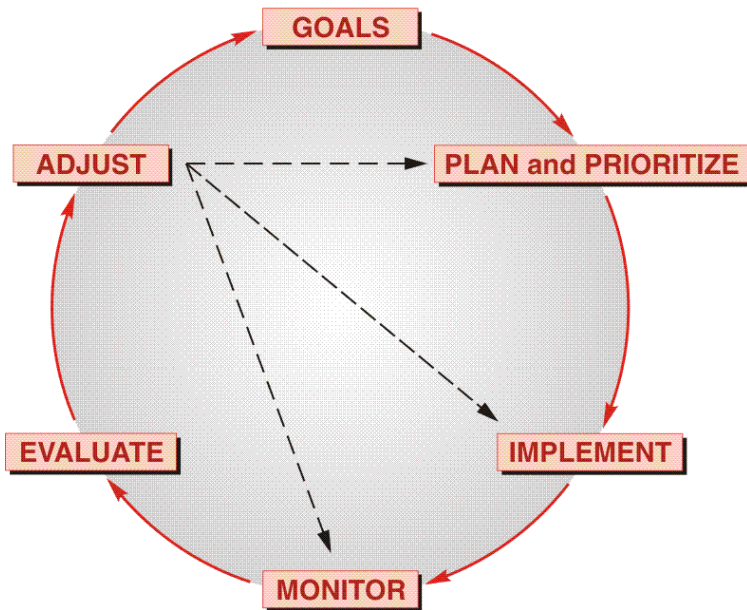


Conservation Composite
w/Low Income
Overlay

Use by Decision Makers

ADAPTIVE MANAGEMENT FOR ECOSYSTEM DECISION MAKING

[Modified from Williams and others (2007)
and Levin and others (2009)]



- CBP Goal Teams
 - Integrated place-based efforts
- USCOE comprehensive plan
- Grant providers
 - NFWF
- Opportunities for hi-res information

Identifying Areas to Address Multiple Chesapeake Restoration and Conservation Goals

John Wolf

jwolf@chesapeakebay.net