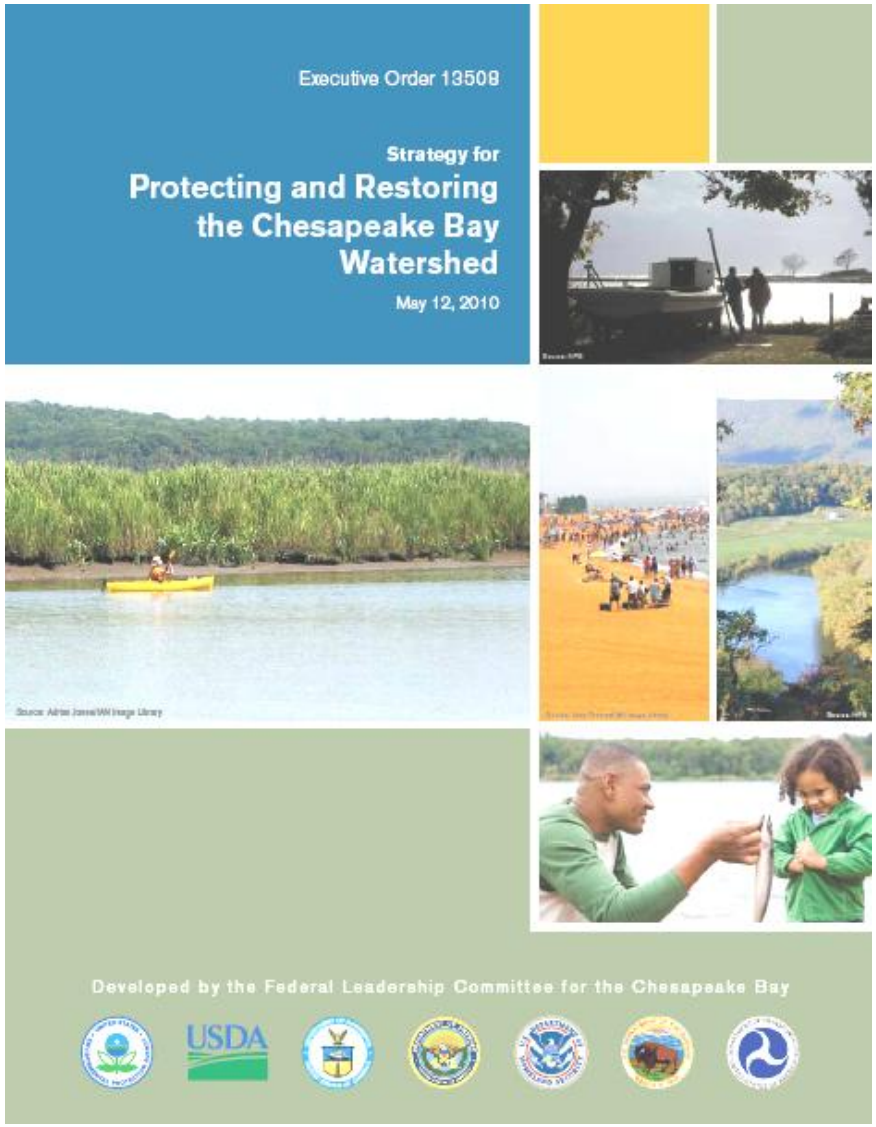
Chesapeake's Future Forests:

Crafting a Forest Restoration Strategy for the Bay Watershed

Chesapeake Bay Program
A Watershed Partnership

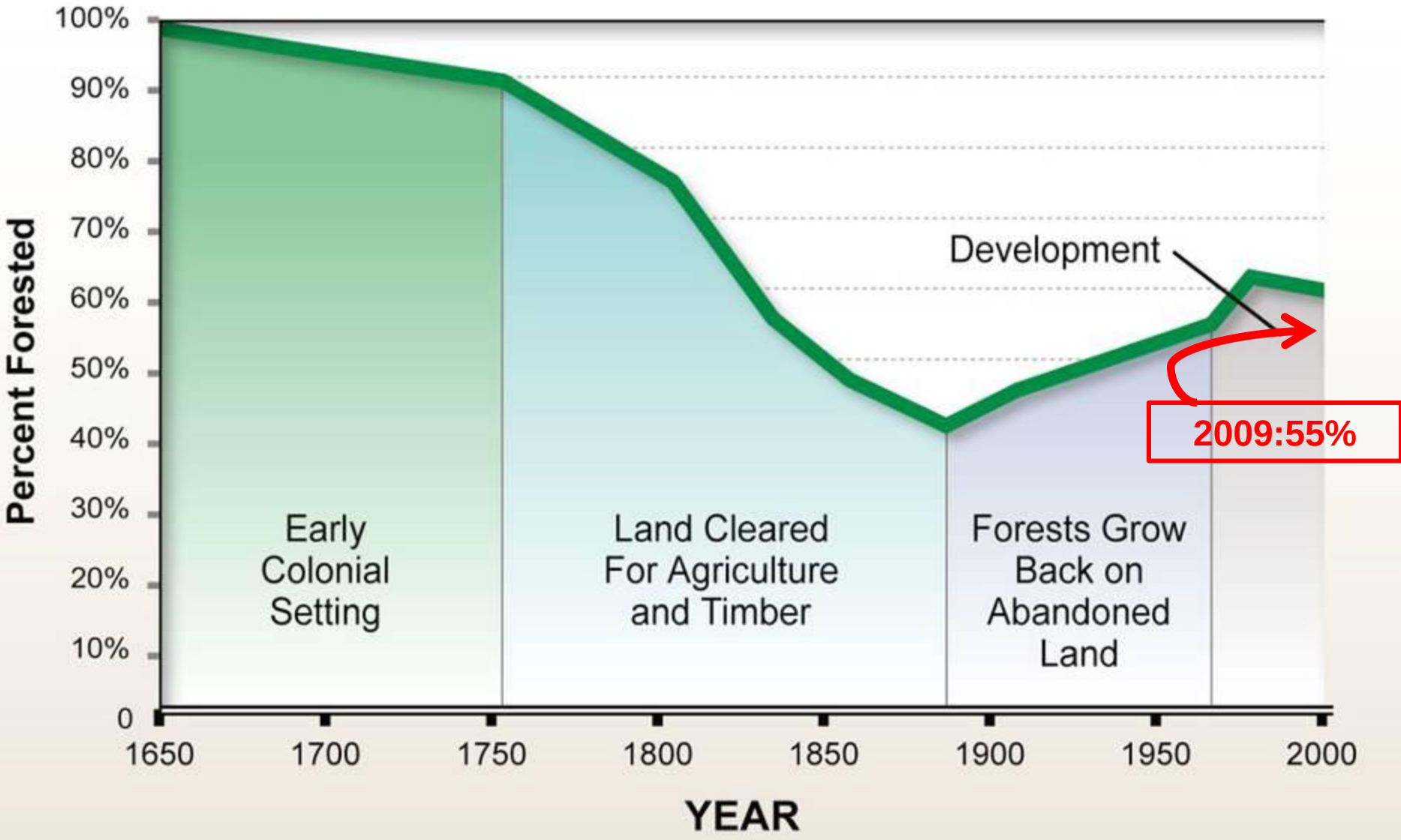


Goal: Recover Habitat

"By 2012, USDA will work with Dept. of Interior and other entities to develop a Chesapeake Bay watershed strategy to maximize forest restoration in priority areas… "

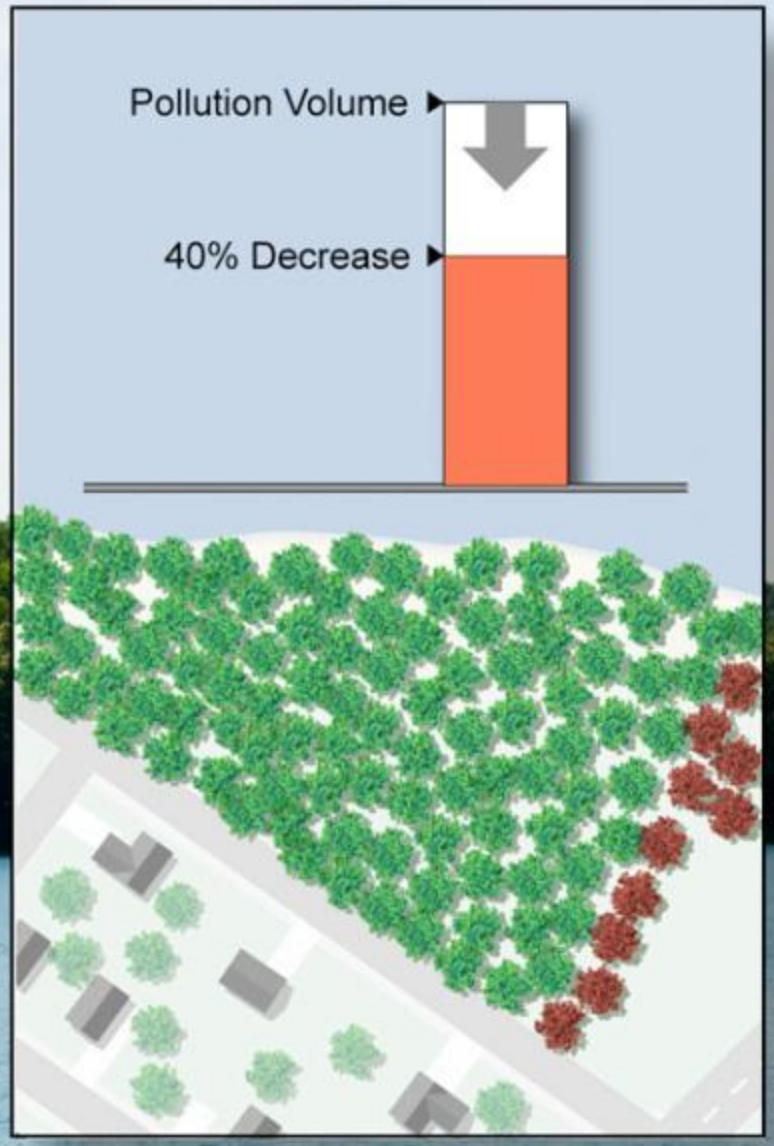
Priority areas =
Urban, green infrastructure, wildlife habitat, mine lands, brownfields, agroforestry

Forest Cover in the Chesapeake Bay Watershed: 1650 - 2000



Source: Todd and Mountford 1994

Benefits of Trees and Forest Cover



Reduced Nitrogen Pollution

A 10% increase in forest cover can reduce the amount of nitrogen runoff by 40%

Chesapeake NEMO








100 Trees remove
430 Pounds Per Year

Why a Forest Restoration Strategy for the Chesapeake Bay watershed?

- ✓ Building on successes
- ✓ Responding to new opportunities
- ✓ Focusing on priority areas

General Outline of Strategy Sections

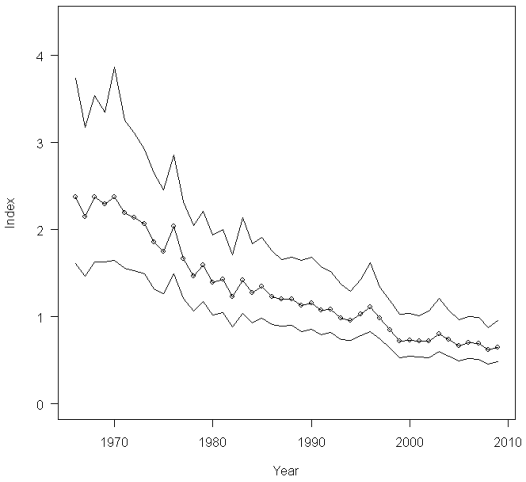
Concise summary that covers:

- **Why** is this a priority for forest restoration?
- **Where** are these areas on the landscape?
- **How** – what programs and tools are available to help?
- **What actions** are needed to promote forest restoration in these areas? (will help guide Forestry Workgroup and partner priorities)

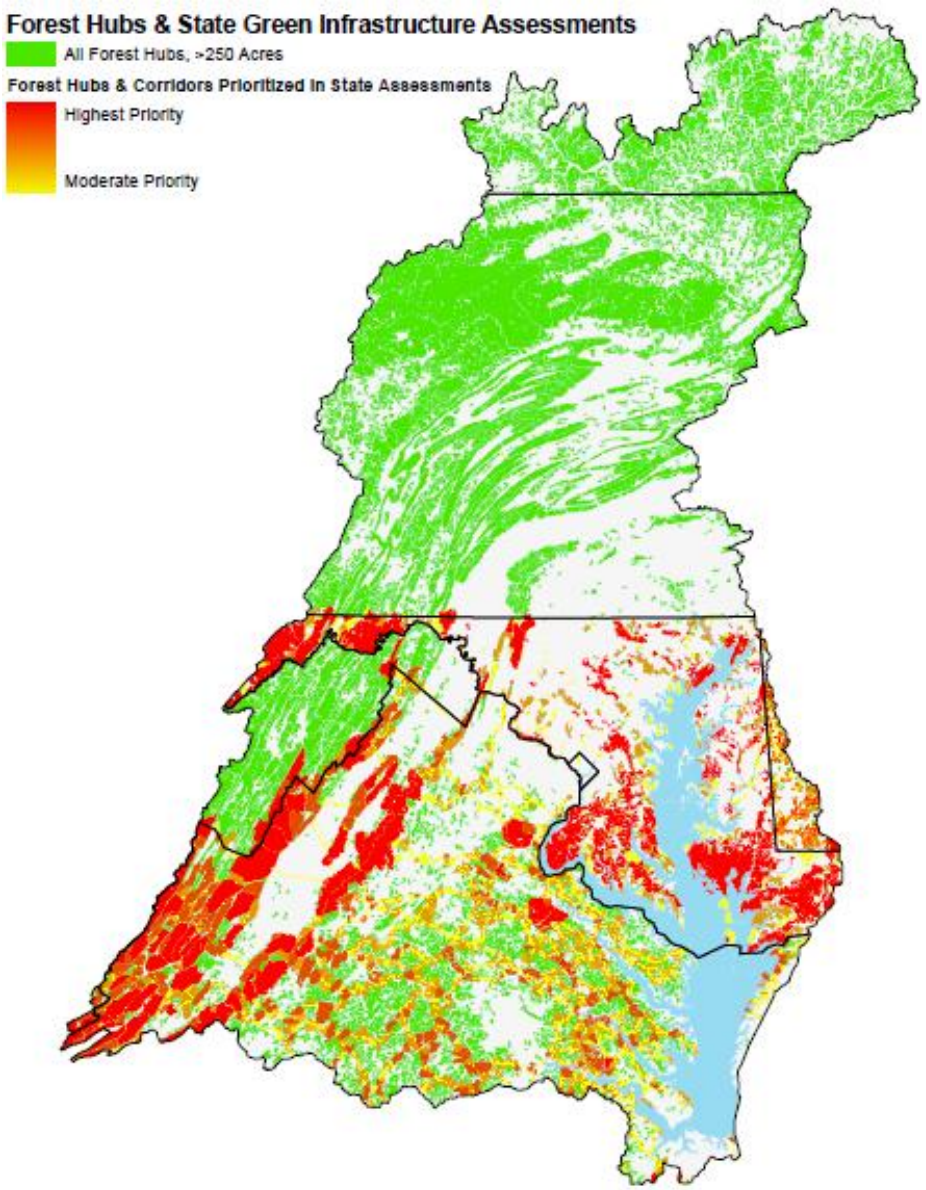
****Wildlife Habitat; Mine Lands; Agroforestry; Urban & Community Trees; Contaminated Sites****

WILDLIFE HABITAT - WHY

- Loss and fragmentation of forest habitat for host of species
- Importance of large forest blocks **(hubs)** for interior dependent species and forested c**orridors** connecting patches
- Forested **riparian** habitat is especially for aquatic species like brook trout
- Amount of forest cover important, but so is forest type, age, and connectivity



WILDLIFE HABITAT - WHERE



Green Infrastructure

- Target restoration to expand network of forest hubs and corridors

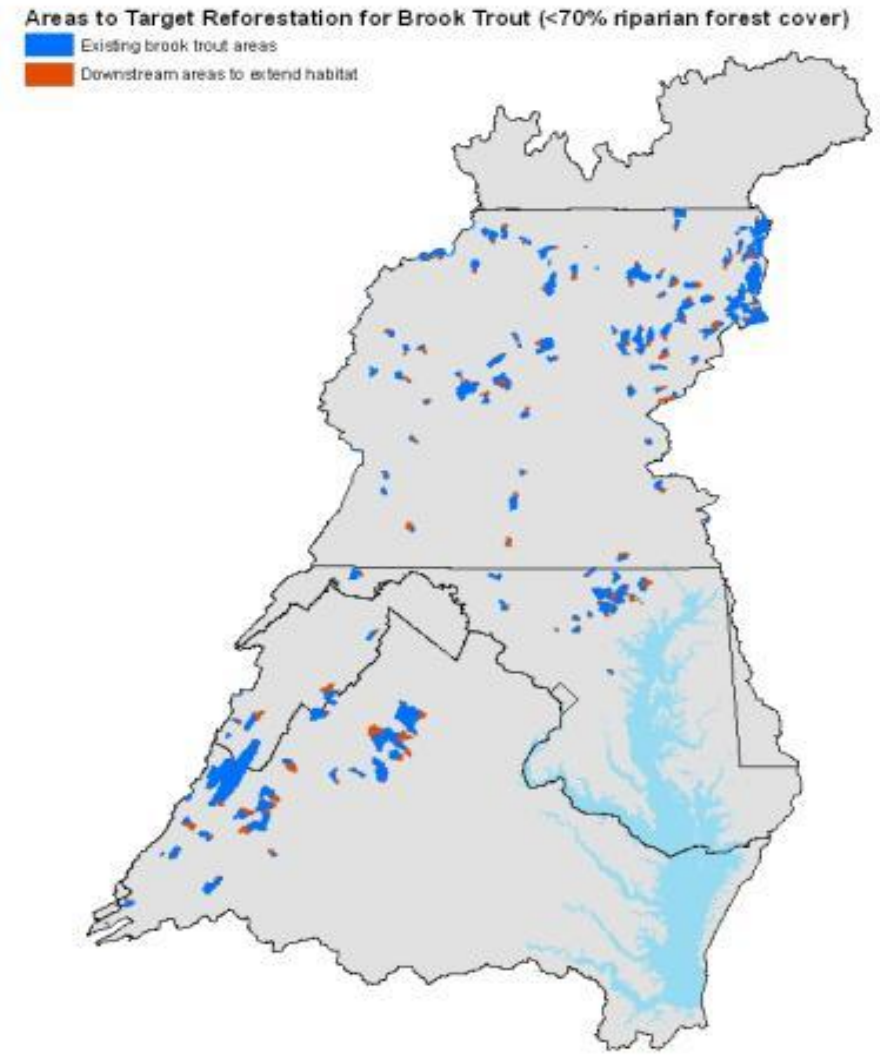
VA, MD and DE have complete, prioritized Green Infrastructure assessments; other states are developing these

WILDLIFE HABITAT - WHERE

<u>Riparian Buffers</u>

Brook trout targeting

- Important indicator species and target in Exec Order
- Riparian forests greatly improve habitat



Map: Mark Hudy, USFS

WILDLIFE HABITAT - HOW

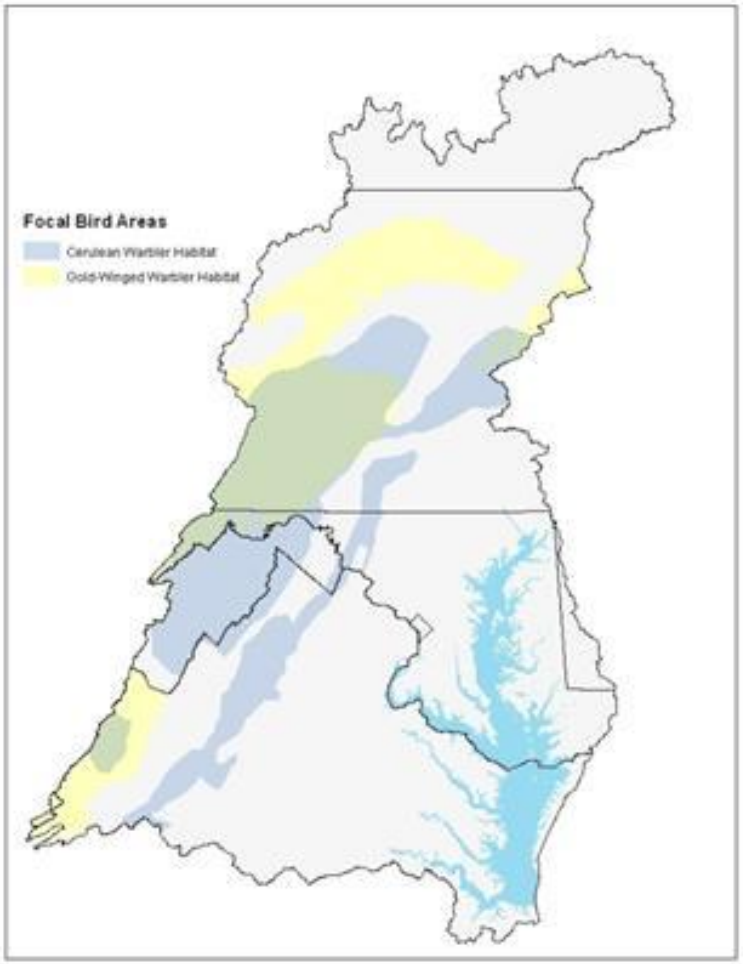
- Cost-share programs – USDA CREP, EQIP, WHIP, WRP, etc.
- Partnership opportunities
  - USFWS Partners for Fish & Wildlife Program
  - National Fish & Wildlife Foundation Grants
  - Joint Venture Partnerships - Eastern Brook Trout, Appalachian Mountain, Atlantic Coast
  - State and local Green Infrastructure Plans

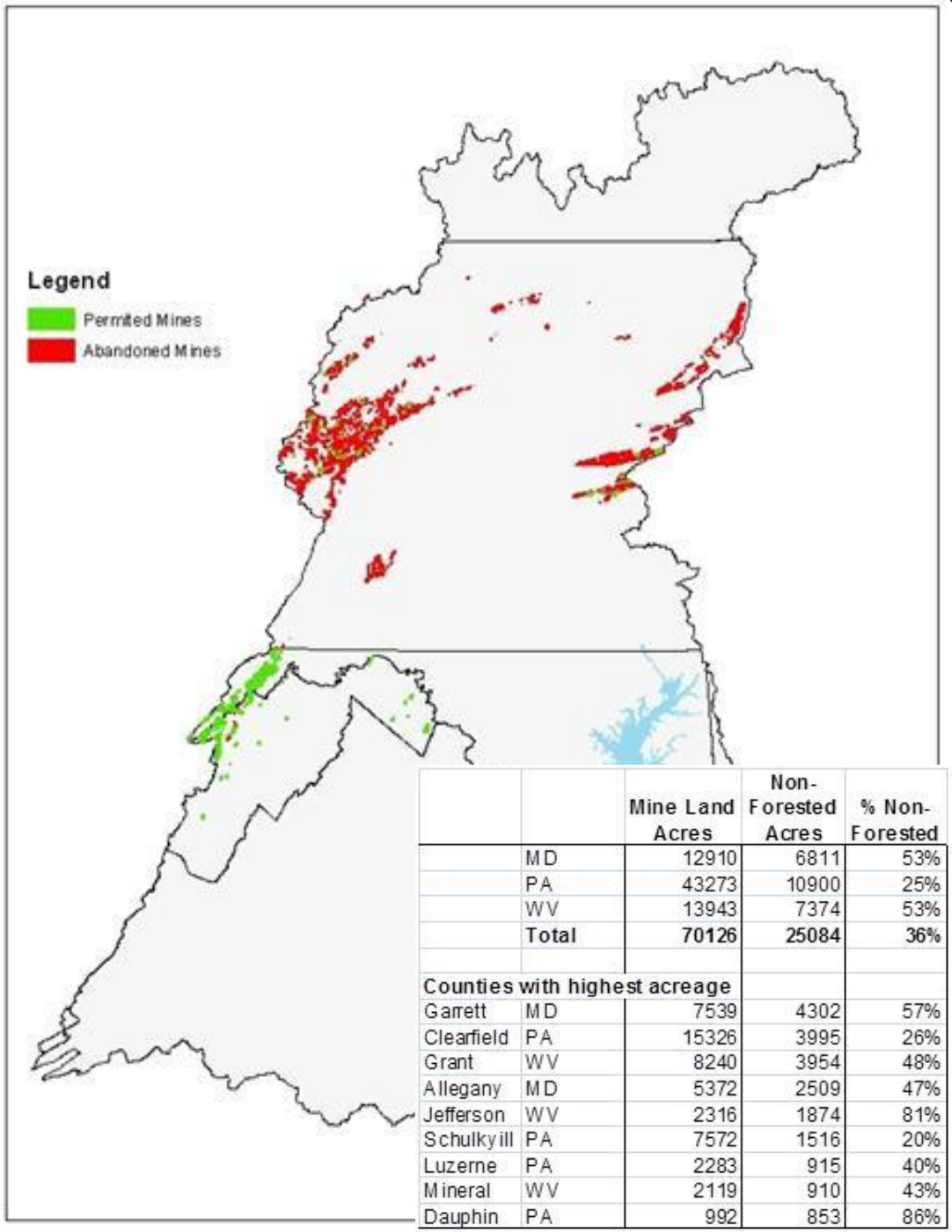
MINE LANDS

- Coal mine lands exist in high value Appalachian forest habitat, headwaters of Chesapeake Bay
- Post SMCRA reclamation has been predominantly grass, with high soil compaction and limited regeneration of trees
- Opportunities on different types of sites: Abandoned Mine Lands, historic permitted/post SMCRA, active mining sites

Note: Not recommending reforestation of ALL mine lands – some provide important grassland habitat, or ag production

MINE LANDS - WHERE





		Mine Land Acres	Non-Forested Acres	% Non-Forested
	MD	12910	6811	53%
	PA	43273	10900	25%
	WV	13943	7374	53%
	Total	**70126**	**25084**	**36%**
Counties with highest acreage				
Garrett	MD	7539	4302	57%
Clearfield	PA	15326	3995	26%
Grant	WV	8240	3954	48%
Allegany	MD	5372	2509	47%
Jefferson	WV	2316	1874	81%
Schulkyill	PA	7572	1516	20%
Luzerne	PA	2283	915	40%
Mineral	WV	2119	910	43%
Dauphin	PA	992	853	86%

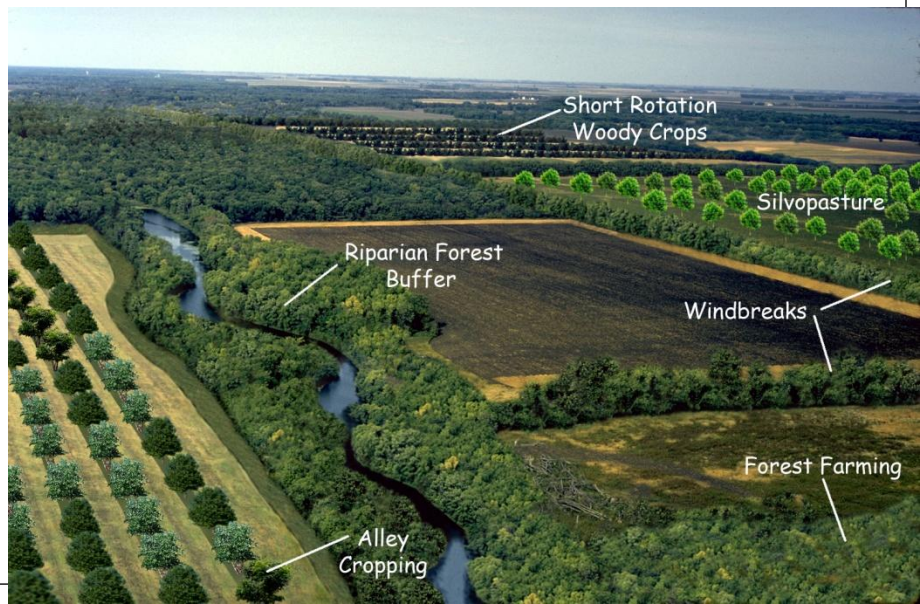
MINE LANDS - HOW

- Appalachian Regional Reforestation Initiative (ARRI) – provides strong science, technical guidance, and partnership strategies for reforesting mine lands
- Possible Funding Sources –
  - Fed/state cost share (EQIP, WHIP, etc)
  - EPA Brownfields, 319 grants; OSM Abandoned Mine Lands
  - Private – foundations, utility companies seeking carbon credits
- Critical role of watershed/community groups to identify reforestation sites, seek grants, and plant trees (e.g. OSM VISTA Appalachian Coal Country Teams)

AGROFORESTRY - WHY

Agroforestry is the intentional mixing of trees and shrubs into crop and animal production systems to create environmental, economic and social benefits:

- Provide protection for valuable topsoil, livestock, crops, wildlife
- Increase productivity of agricultural and horticultural crops
- Reduce inputs of energy and chemicals
- Improve water quality
- Diversify local economies

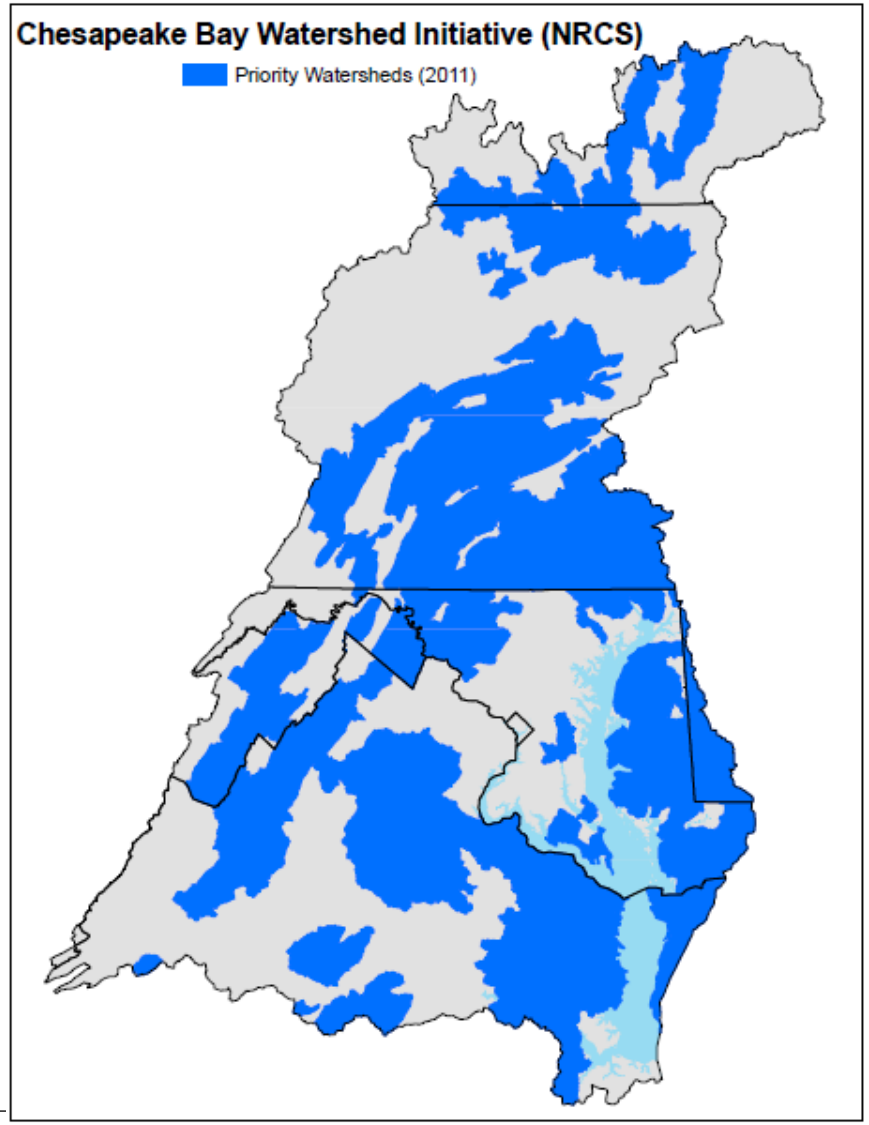


AGROFORESTRY PRACTICES

- Riparian Forest Buffers
- Windbreaks/Shelterbelts
- Alley Cropping
- Silvopasture
- Forest Farming

AGROFORESTRY - WHERE

- NRCS Priority Watersheds
  - High pollutant loading
  - Add'l Tech Asst
  - Apply finer scale forest buffer targeting tools
  - Look for overlapping reforestation priorities



AGROFORESTRY - HOW

- NRCS/FSA Cost Share Programs
- Need for more awareness: examples of how PA partners have promoted agroforestry through:
  - Demonstration sites
  - Trainings for field staff
  - Incorporate into NRCS Tech Guidance

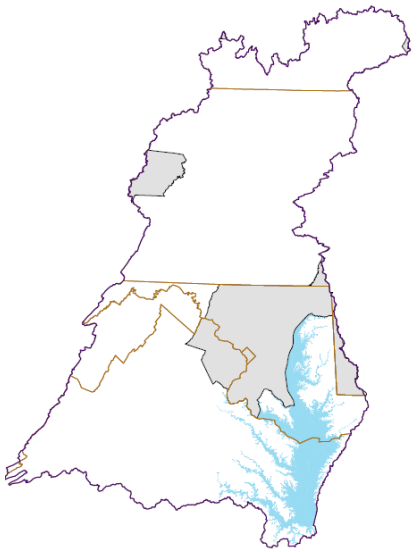
URBAN/COMMUNITY - WHY

- Maximize tree benefits for people
  - Reduce stormwater
  - Mitigate air quality problems and related public health concerns
  - Reduces urban heat island effect and energy costs
  - Improve aesthetics, recreation, property values, etc. etc.
- Trees are most cost-effective means to meet multiple community goals and regulations (MS4, TMDL, etc)

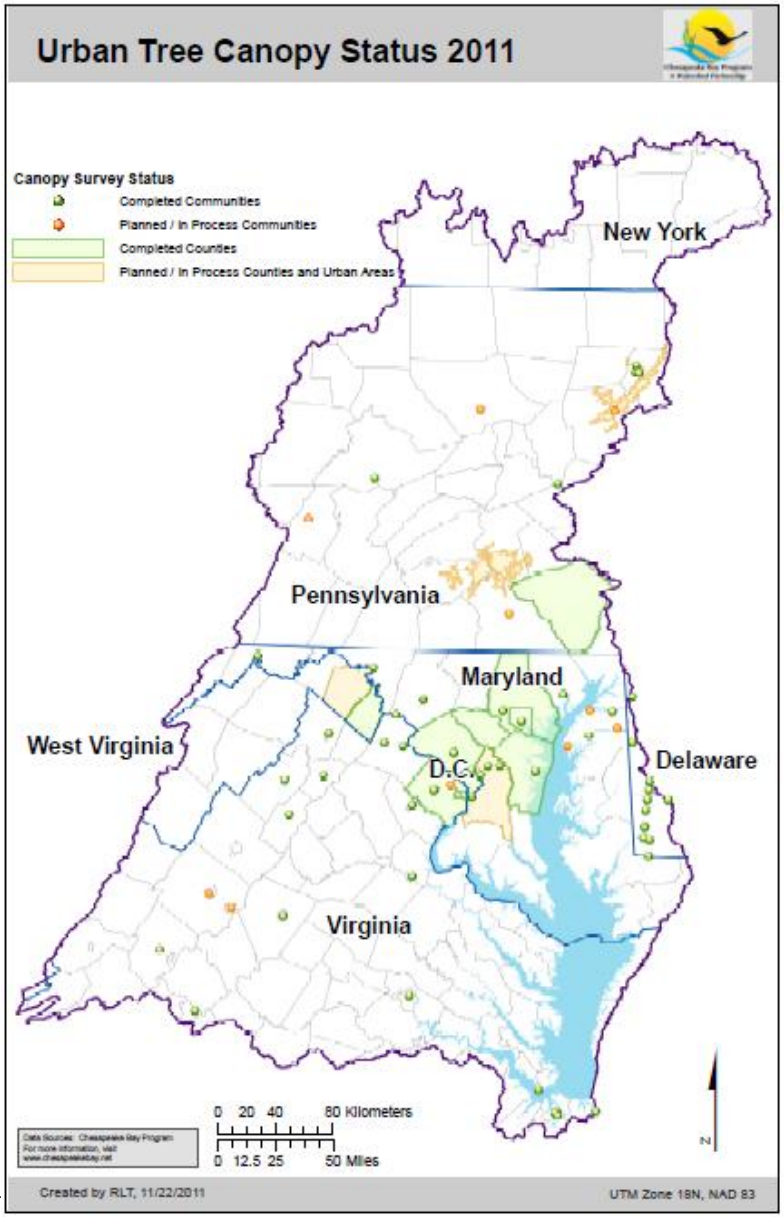
URBAN/COMMUNITY - WHERE

Urban Tree Canopy Assessments

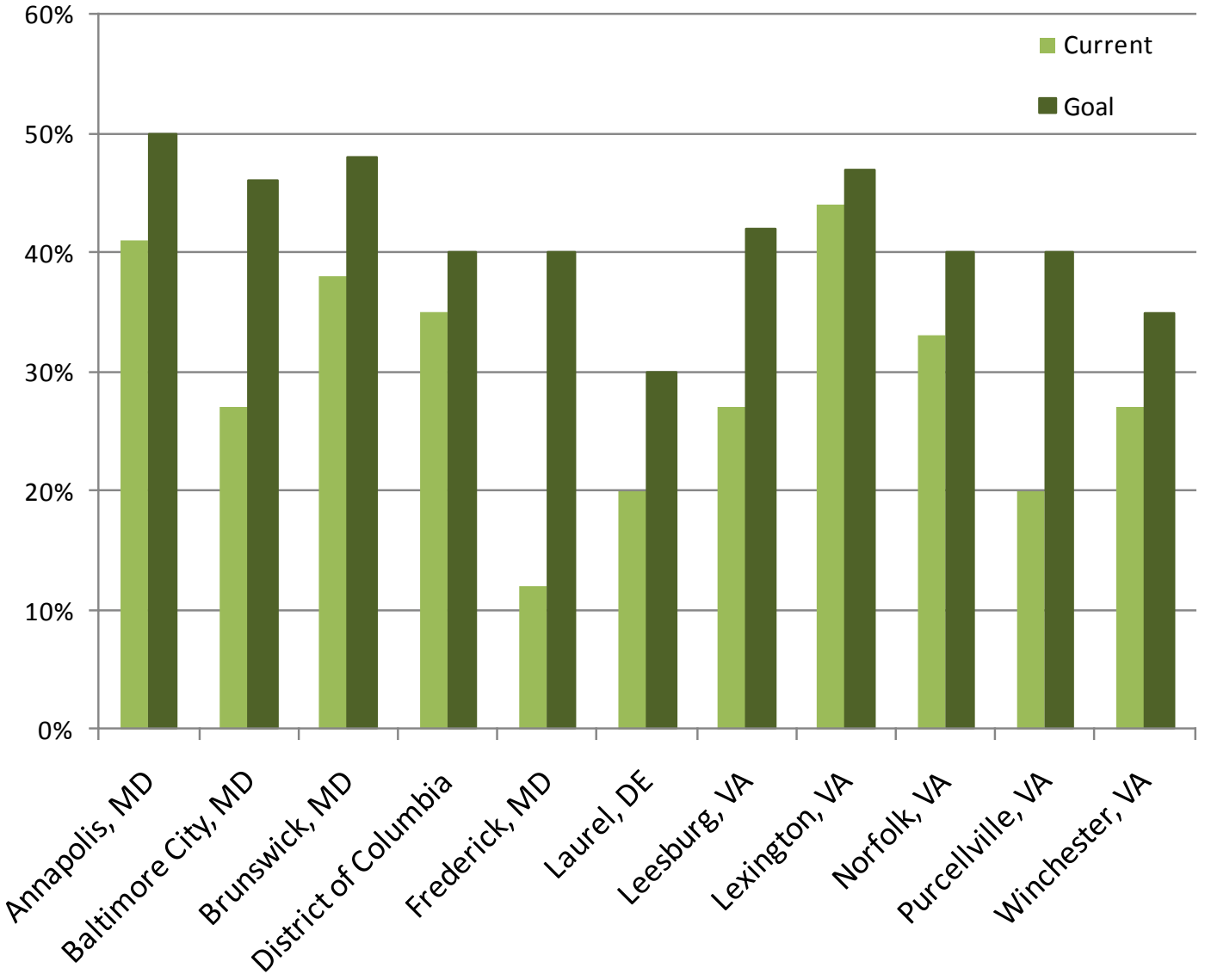
- 57 cities and 7 counties have completed assessments
- 25 cities/counties have set draft or final UTC % goals



Air Quality – Non-Attainment Areas, 8 Hour Ozone



Urban Tree Canopy Status & Goals



URBAN AND COMMUNITY - HOW

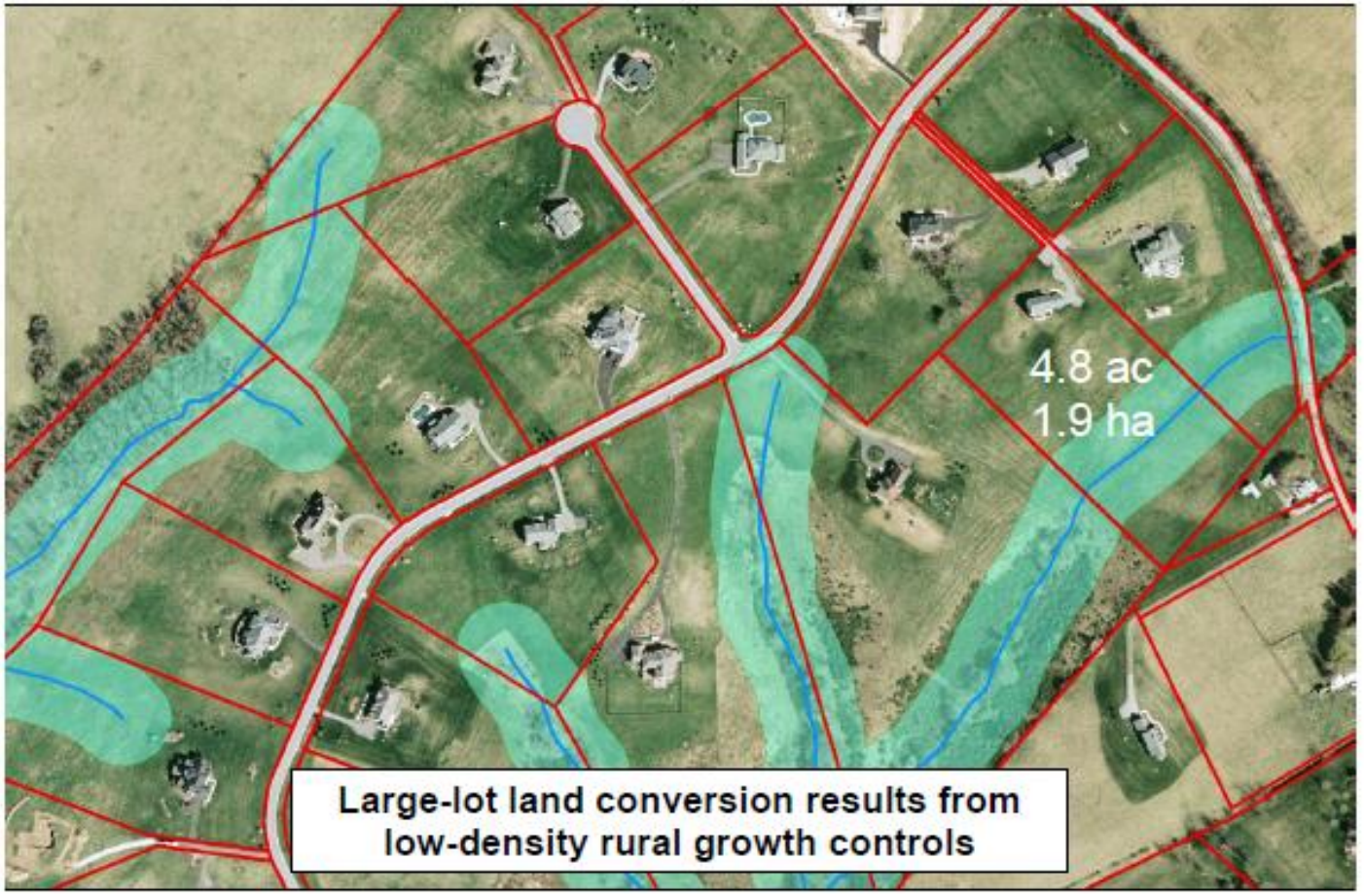
- UTC assessment→goal setting →implementation process (can be simple or complex)
- Tie to MS4/TMDL/Air SIP and local goals
- Tools/programs available to help:
  - Federal (iTree)
  - State programs (PA Treevitalize),
  - NGO(CB Trust Community Greening Grants),
  - Appendix includes full list of program resources

Turf to Trees

Rural Residential Reforestation in Baltimore County

- County offers tree planting on large lots in exchange for landowner commitment

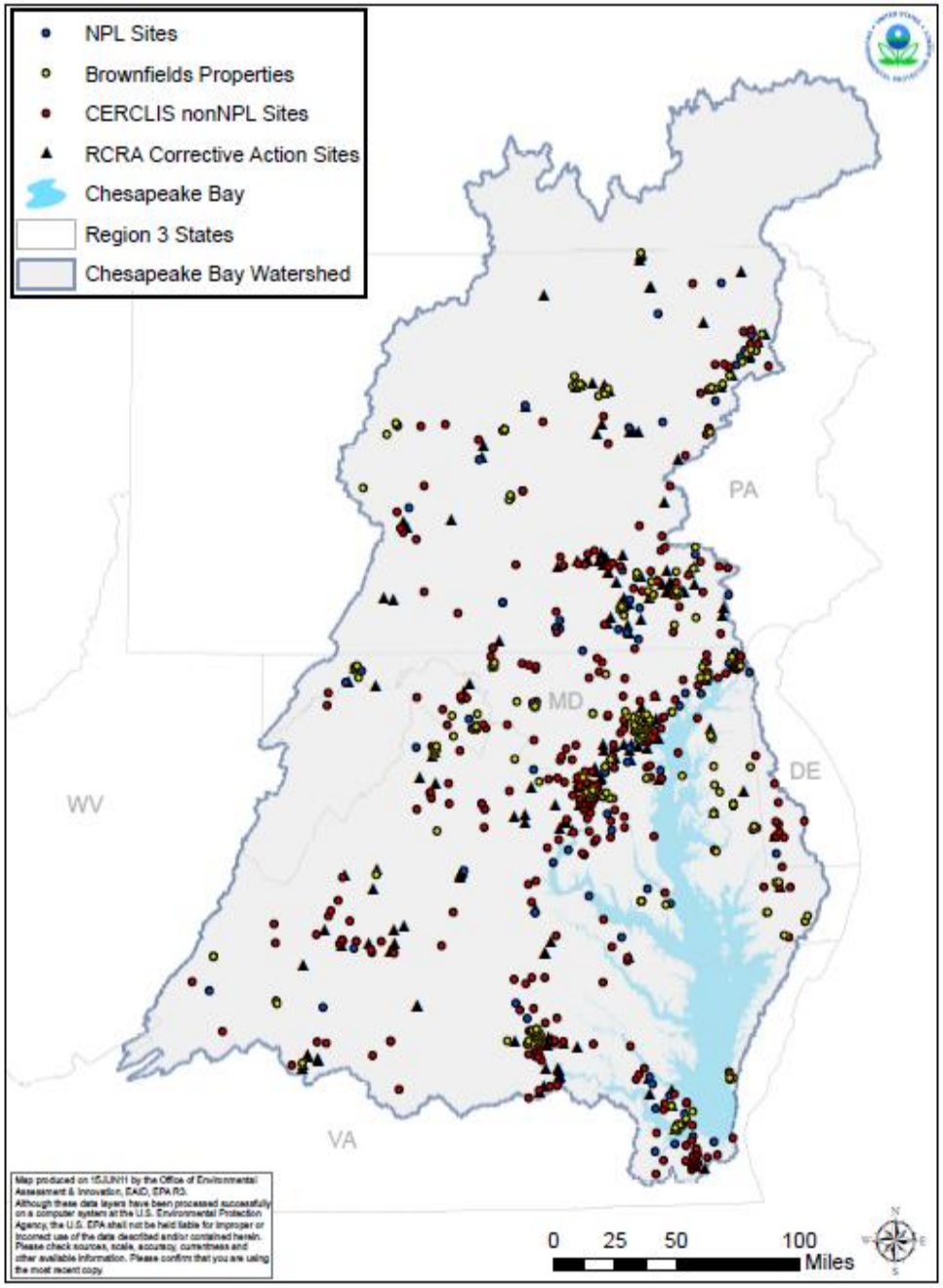
"I didn't want all of this land, it just came with the house."



Contaminated Sites

WHERE

- Every site can benefit from tree planting whether small parcels or large scale
- Sites along waterways or in green infrastructure network could be targeted

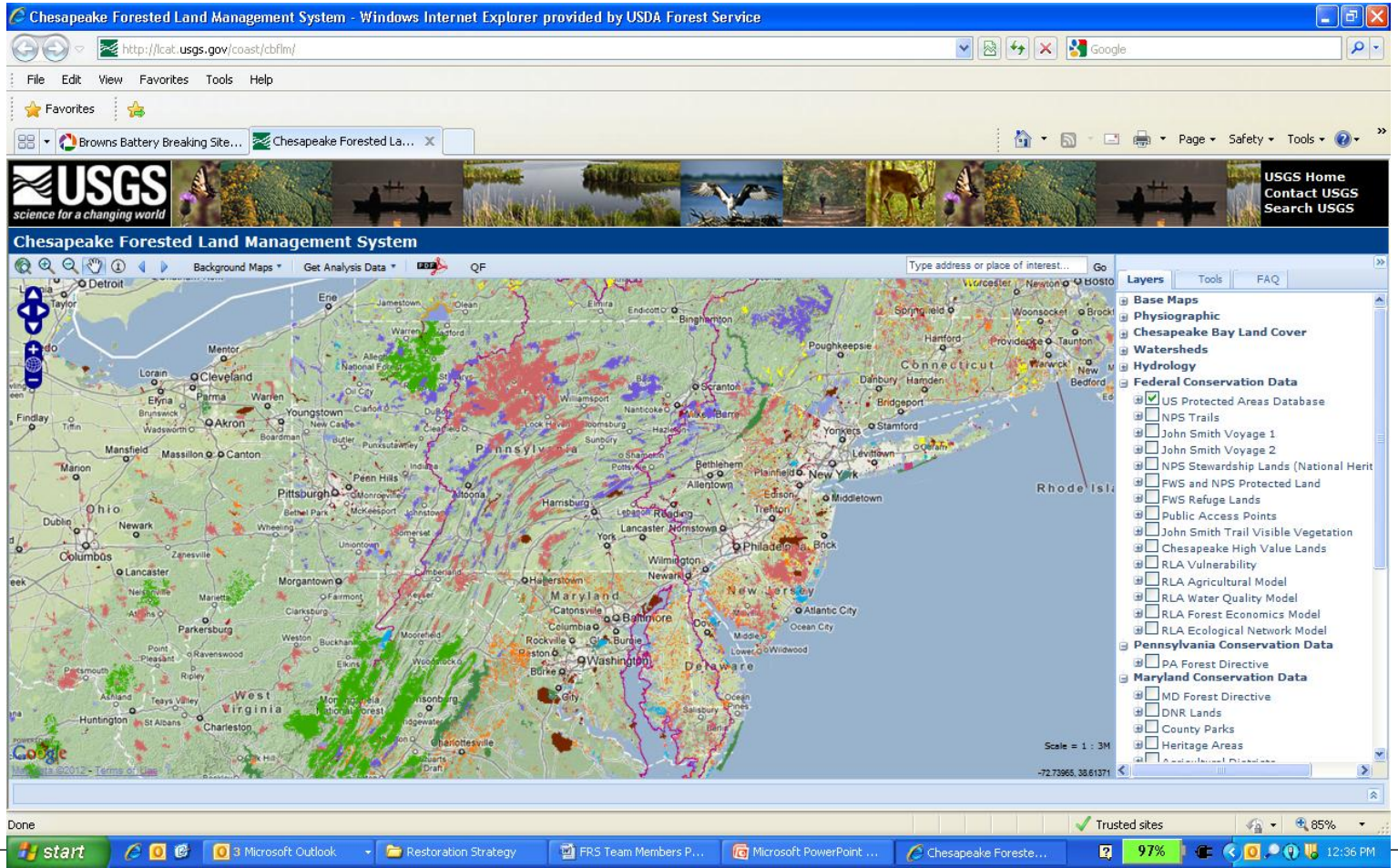


CONTAMINATED SITES - HOW

- Programs – EPA reuse/revitalization, Greener Clean-up Goals, Trustee efforts
- Make technical guidance and tools available to support reforestation of contaminated sites
- Connect to urban tree canopy initiatives and green infrastructure priorities
- Educate/partner with key groups

Integrating Across Priorities

- COAST Forest Mapping tool (USGS) will be revised with Strategy GIS layers



Next Steps

- Incorporate comments from public and Goal Teams/MB
- Issue Final Document
- Develop set of FY2013 actions to be pursued with partners
- Complete the companion Working Lands Conservation Strategy

QUESTIONS?

IDEAS?