

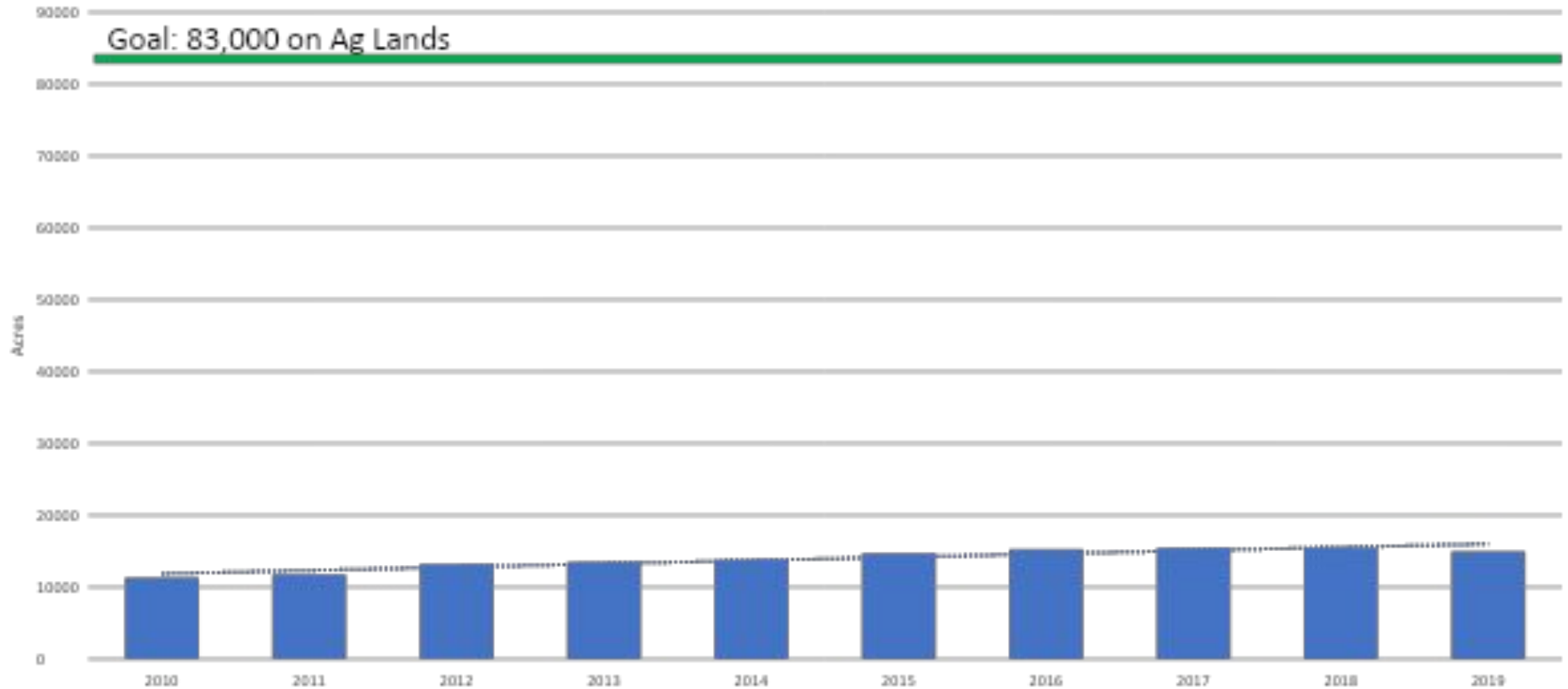


Using Structured Decision Making to Accelerate Wetland Restoration Outcomes

Chesapeake Bay Habitat GIT Meeting
April 27, 2023

Amy Jacobs
Dave Martin
The Nature Conservancy

Progress toward CBP Wetland Restoration Goal



Benefits of Targeting

CBP Wetland Expert Panel

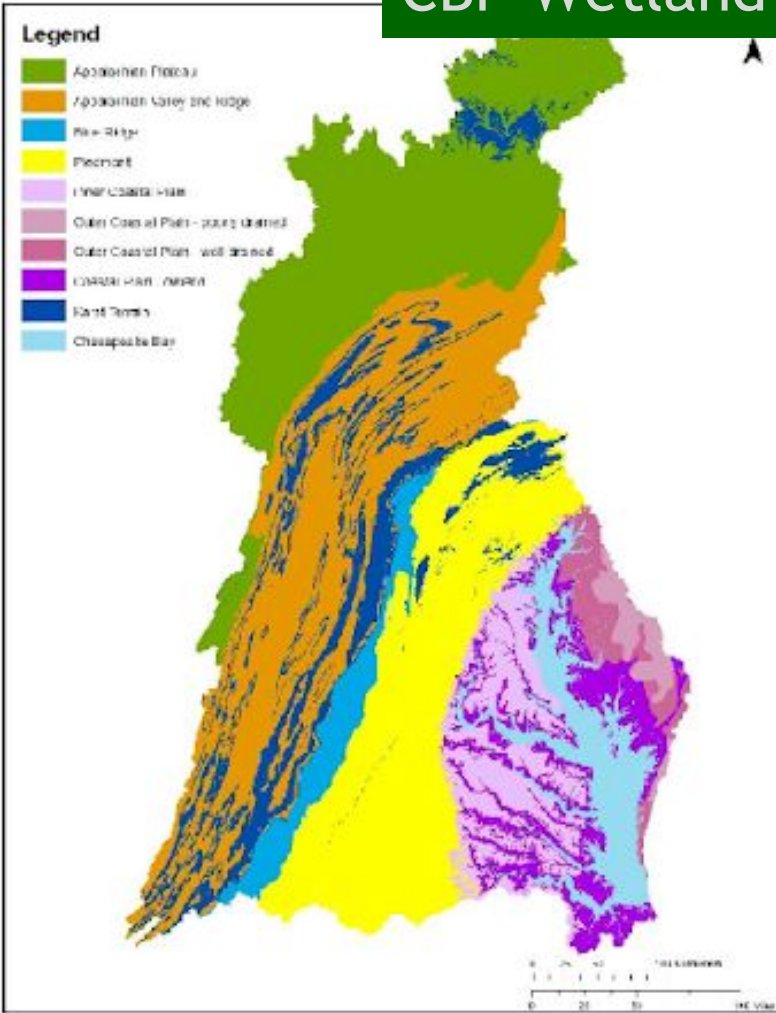


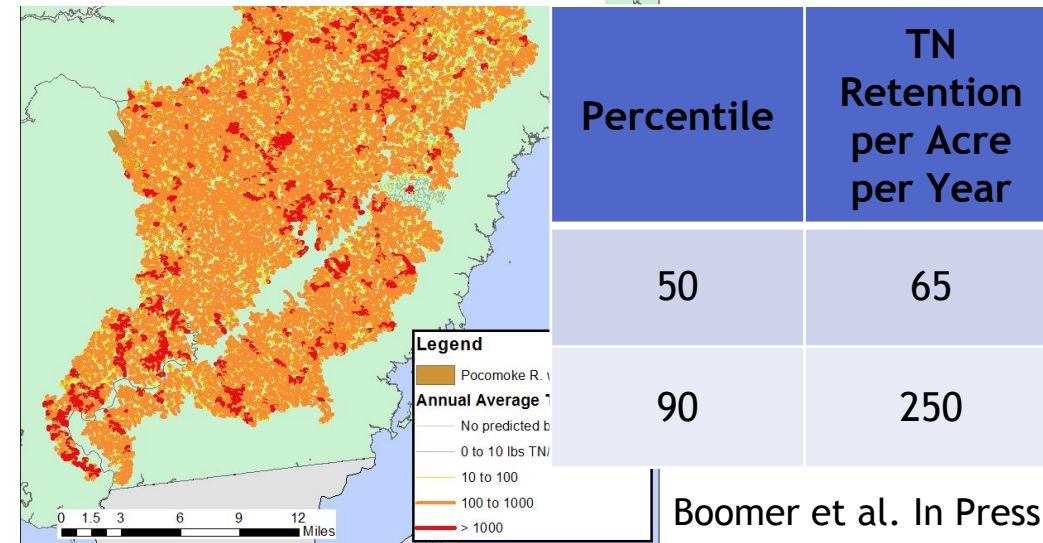
Figure 2. Physiographic settings in the Chesapeake Bay Watershed. Map generated by Quartz Stubbs, USGS. Modified from Benkehill and Kelley (2000).

Retention efficiencies and upland acres treated by each acre of wetland by wetland type and physiographic subregion.

Physiographic Subregion	Retention Efficiency			Upland Acres Treated	
	TN	TP	TSS	Other Wetlands	Floodplain Wetlands
Appalachian Plateau	42	40	31	1	2
Appalachian Ridge and Valley	42	40	31	1	2
Blue Ridge	42	40	31	2	3
Piedmont	42	40	31	2	3
Inner Coastal Plain	42	40	31	4	6
Outer Coastal Plain- Poorly Drained	42	40	31	1	2
Outer Coastal Plain- Well Drained	42	40	31	2	3
Coastal Plain Lowland	42	40	31	2	
Karst Terrain	42	40	31	2	

Field scale Targeting

WWG Management Approach 4.2: Identify areas where wetland restoration would greatly benefit water quality, other complementary living resource commitments, and habitat.



Boomer et al. In Press



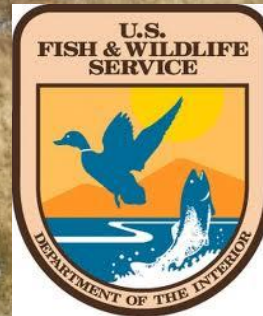
How to engage private landowners?



Delmarva Wetland Partnership

The Nature Conservancy 
Protecting nature. Preserving life.®

  NRCS
United States Department of Agriculture
Natural Resources Conservation Service



 MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

 DUCKS UNLIMITED

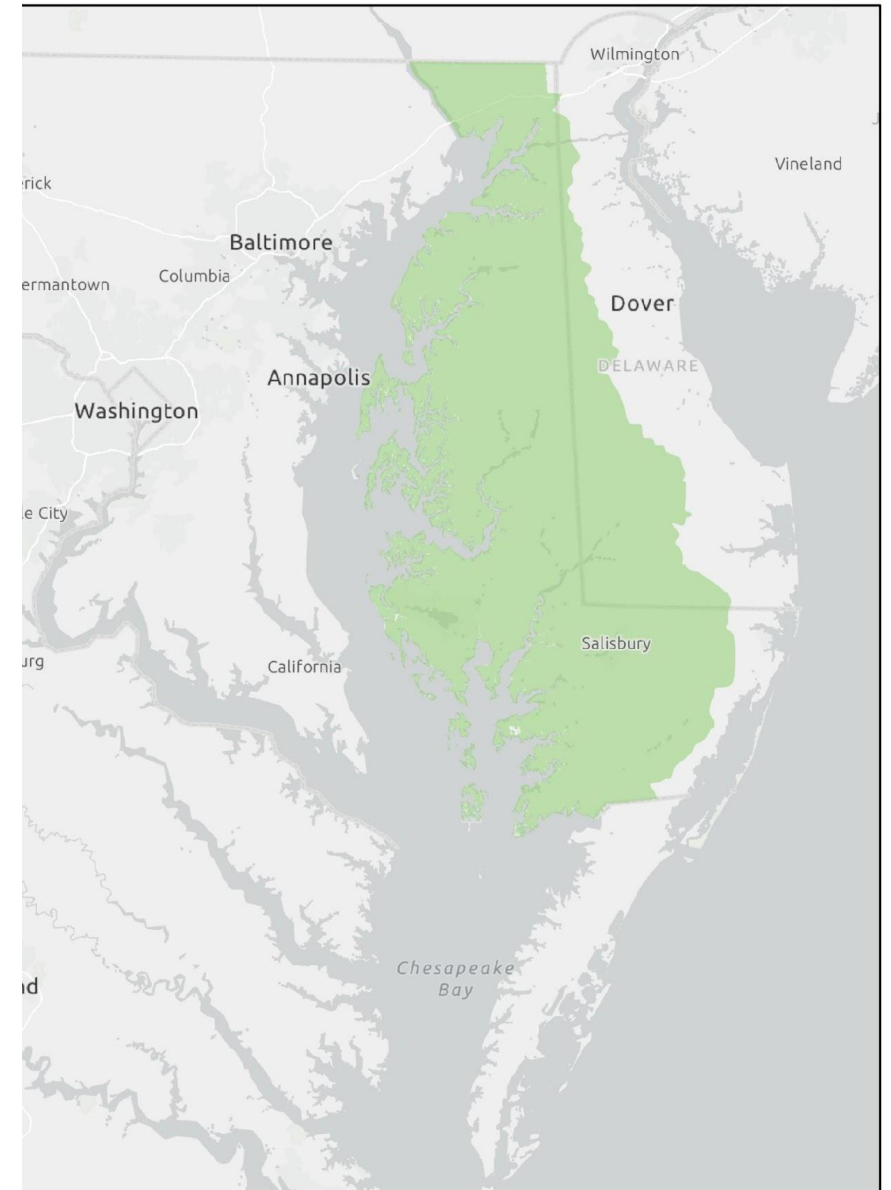
 NATIONAL FISH AND WILDLIFE FOUNDATION
NFWF

PrOACT Structured Decision Making



Accelerate Large-Scale Wetland Restoration for Water Quality Benefits & Climate Resilience

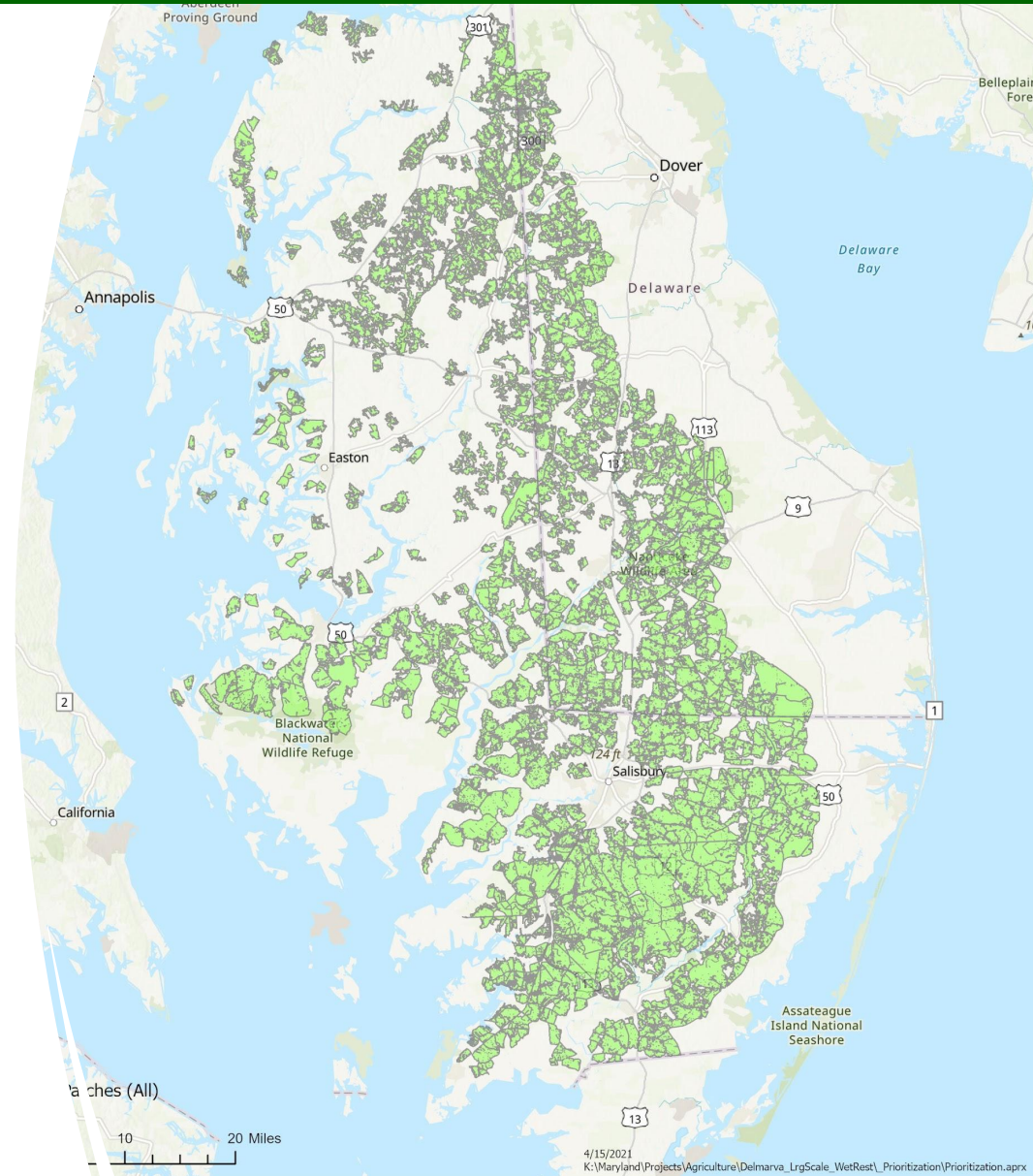
- Objectives
 - Water Quality
 - Climate Resiliency
- Both objectives also support habitat, specific species information will be used to guide restoration outreach and design



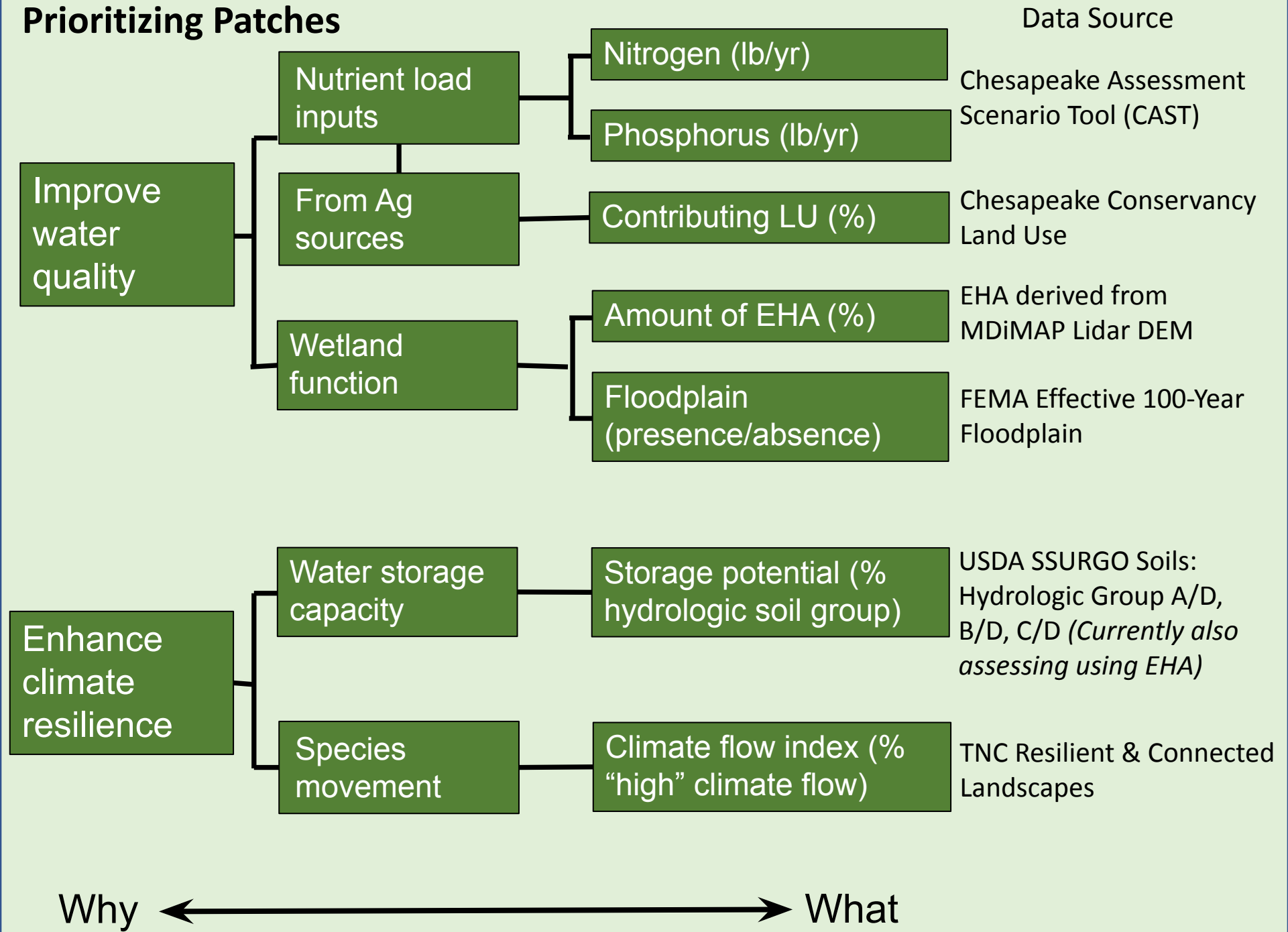
Accelerate Large-Scale Wetland Restoration for Water Quality Benefits & Climate Resilience

Restoration Opportunities

- > 300 acres restorable land use (forest, agriculture [excluded prime ag lands], other)
- > 150 acres ecohydro-active areas
- >2ft mean elevation
- 964 potentially restorable patches



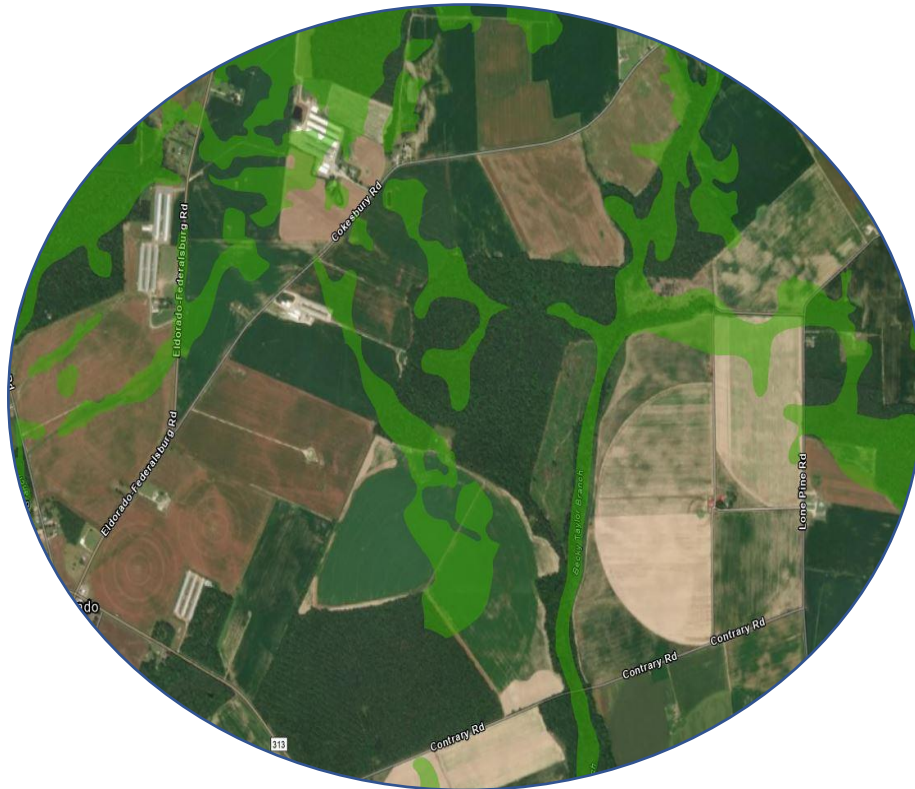
Prioritizing Patches



Climate Resiliency Metrics

Water Storage

SSURGO Hydrologic Soils Groups



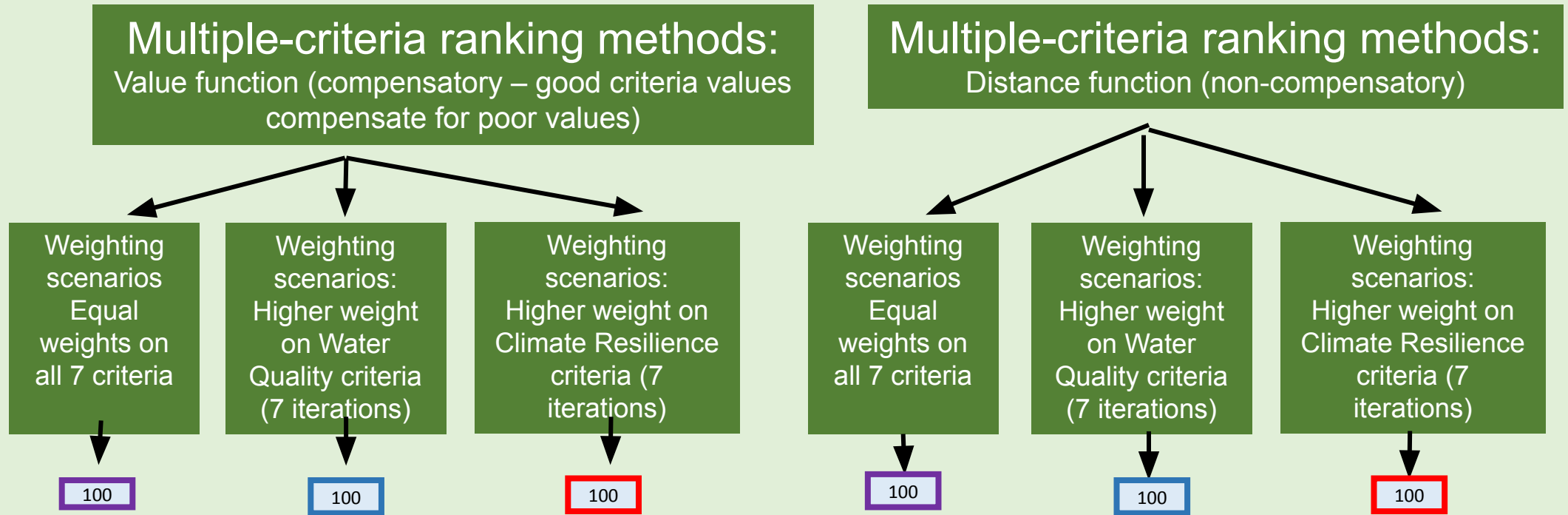
Connected Habitat

Climate Flow

(M. Anderson et al.)

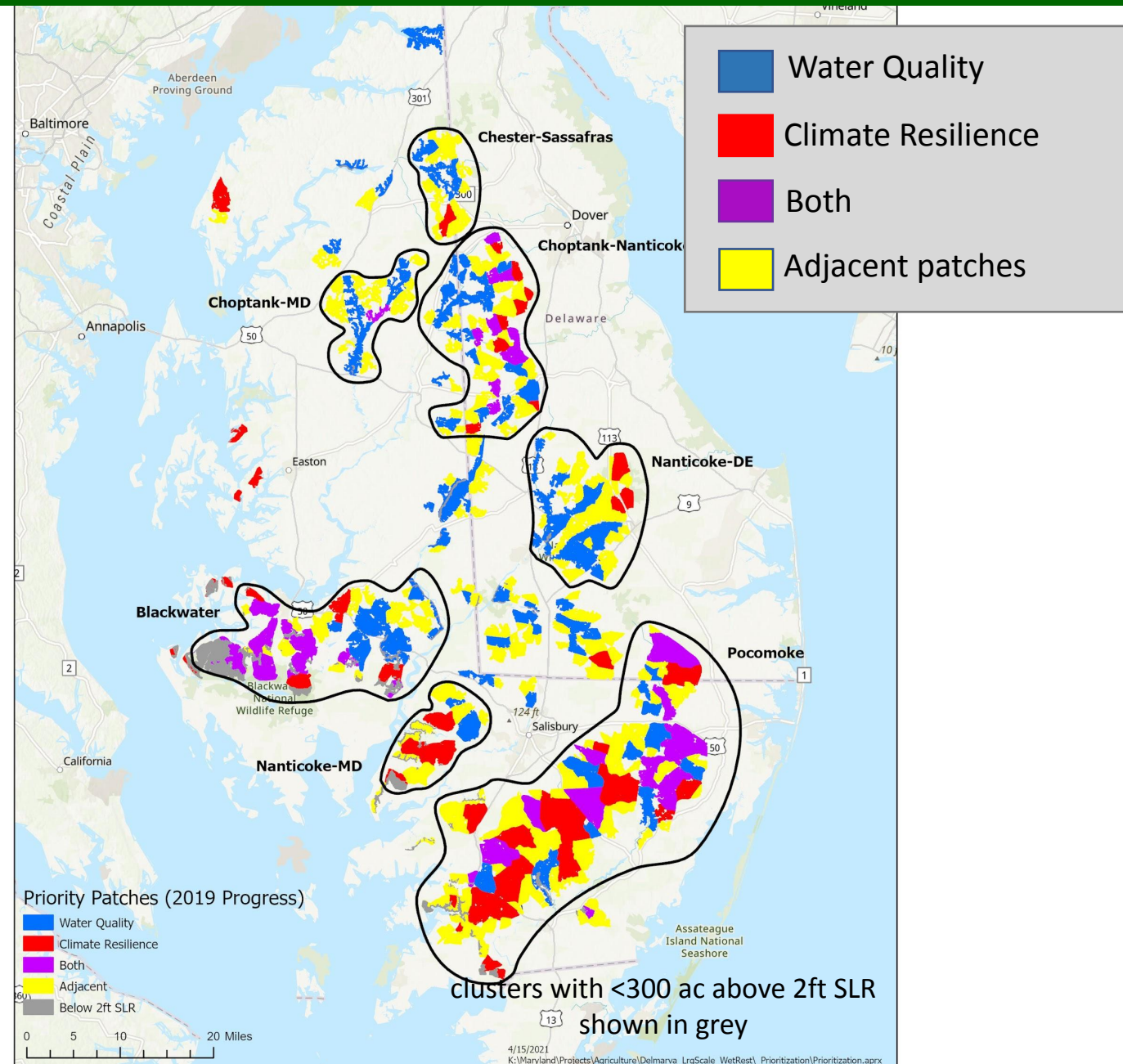


Ranking Opportunities



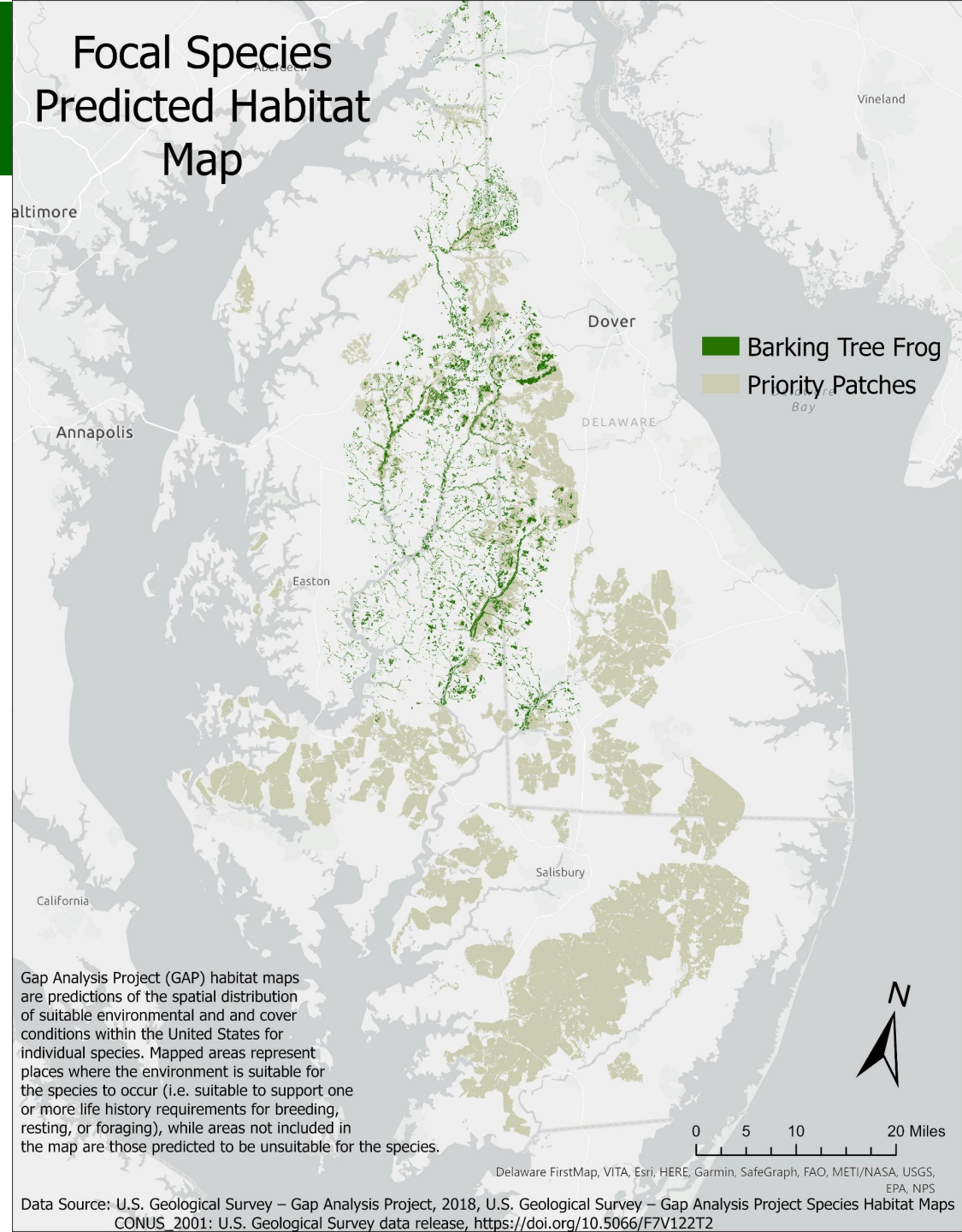
Priority Map

- Ranked patches in accordance to their weighted average value across water quality and climate metrics.
- “Water Quality Priority” include the nonoverlapping patches that consistently ranked in the top 100 under the Water Quality weighting scenario.
- “Climate Resilience priority” include the nonoverlapping patches that consistently ranked in the top 100 under the Climate Resilience weighting scenario.
- “Both” include the overlapping patches that consistently ranked in the top 100 under all weighting scenarios.
- Patches highlighted as “Adjacent” are adjacent (within 30m) of any priority patch.



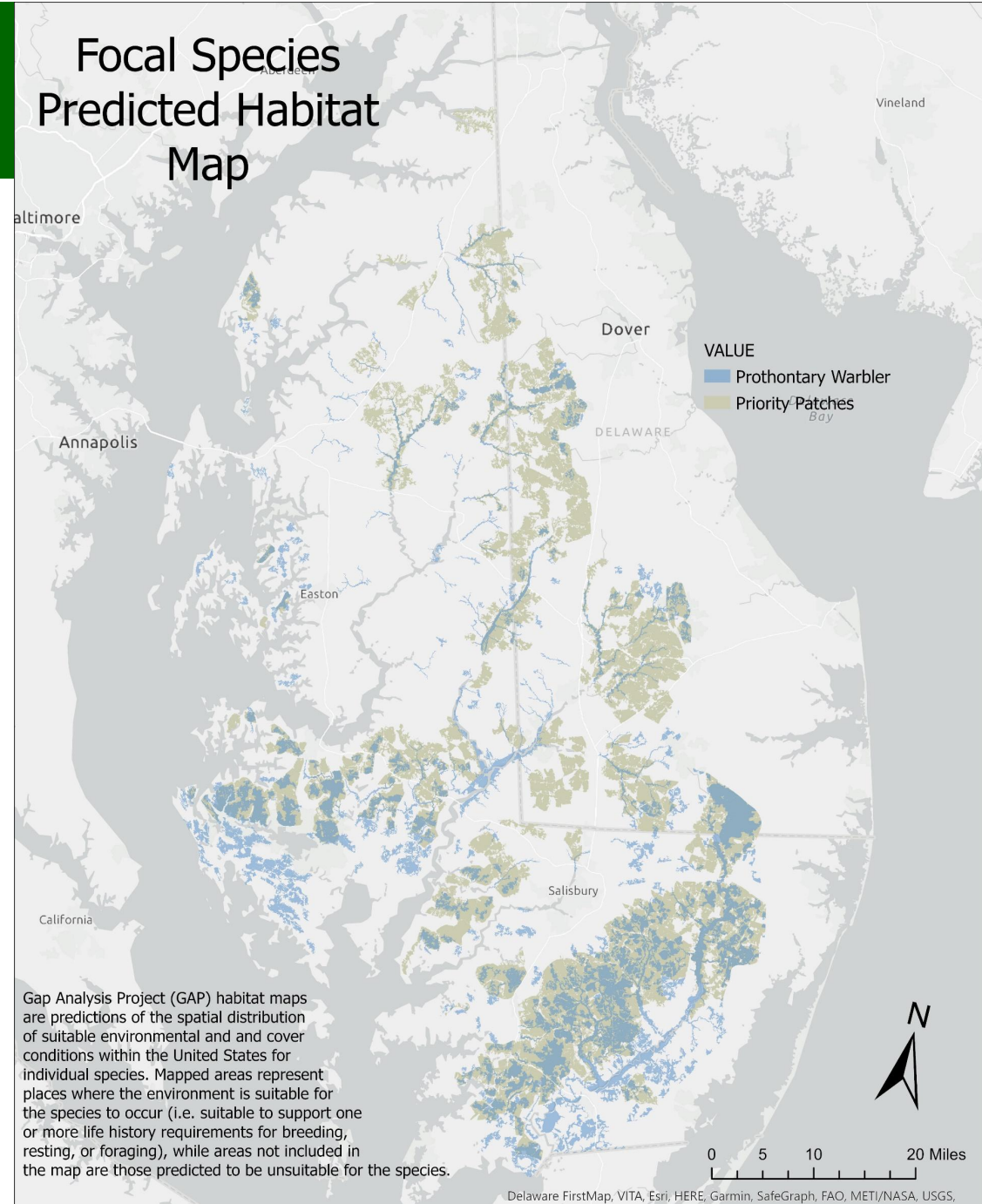
Habitat/ Species Overlays

- Barking tree frog
- Prothonotary Warbler
- Spotted Turtle
- Tiger Salamander
- Salt Marsh Sparrow
- Black duck (in progress)



Habitat/ Species Overlays

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Priority Landowner Survey

- Sent to all priority landowners - 2,293
- 373 respondents; 16.3% response rate
- 60% of respondents live on Delmarva full time
- 236 acres owned on average
- 66 years old



Priority Landowner Survey

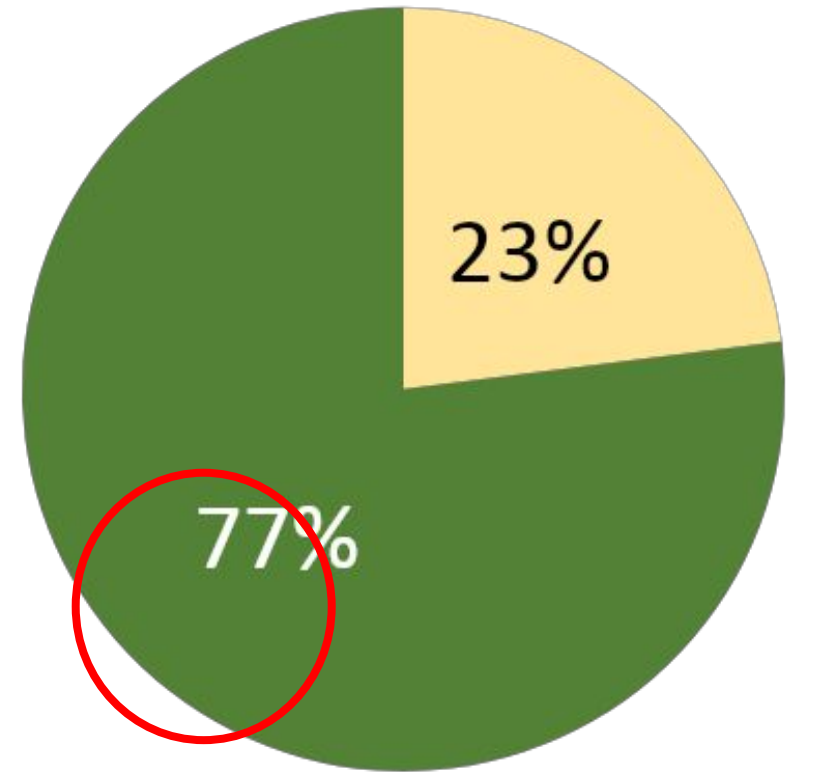
Most Landowners
Never Contacted
about Restoration
Opportunities



Priority Landowner Survey

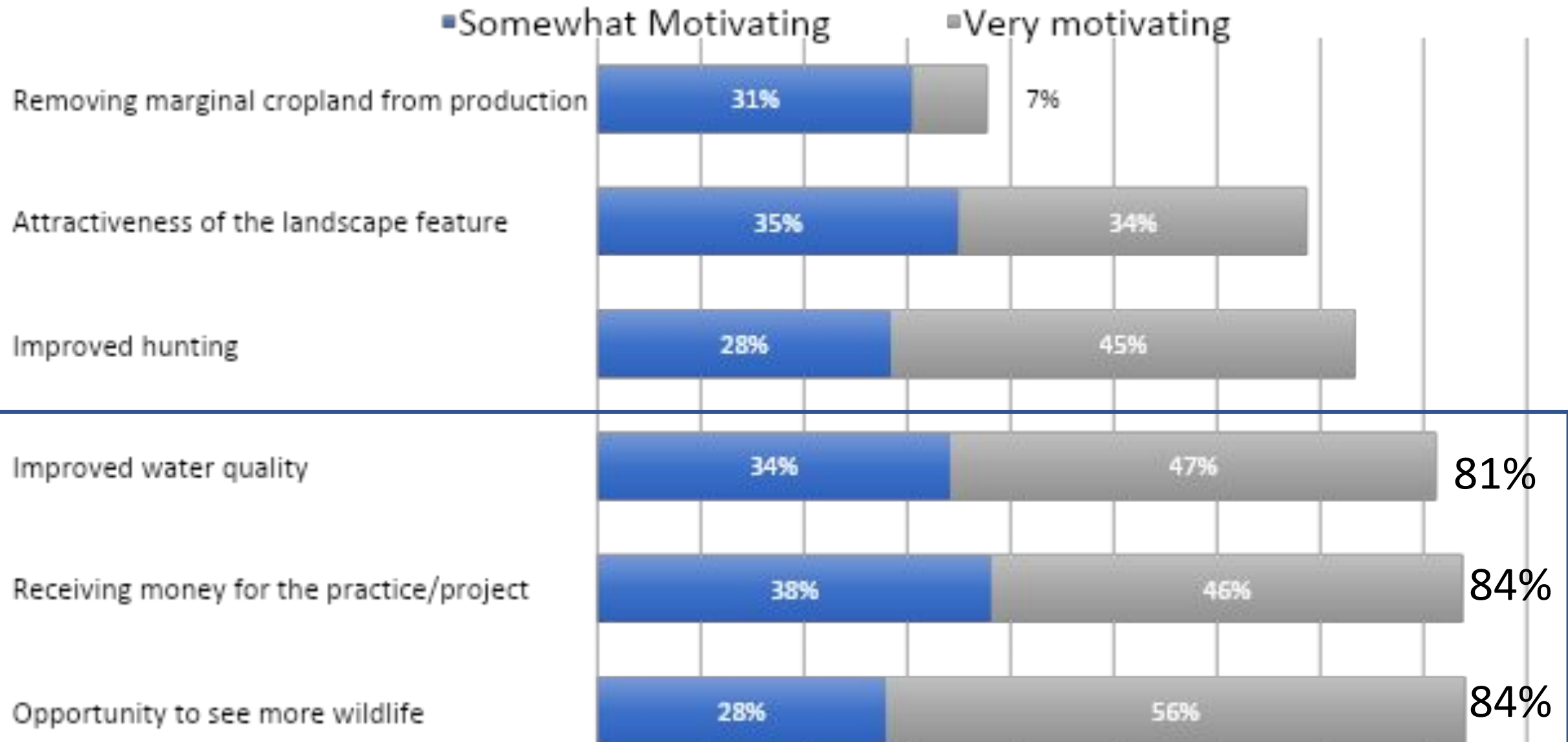
"Never contacted" landowners interested in restoration

Of 65% who were "never contacted" ...



■ No follow up ■ Requested follow up

Priority Landowner Survey



Engaging Priority Landowners



Mail-based social marketing effort

- **Approximately 1,200 sent to deliverable addresses**
- 43 landowner responses
 - 3.6% response rate

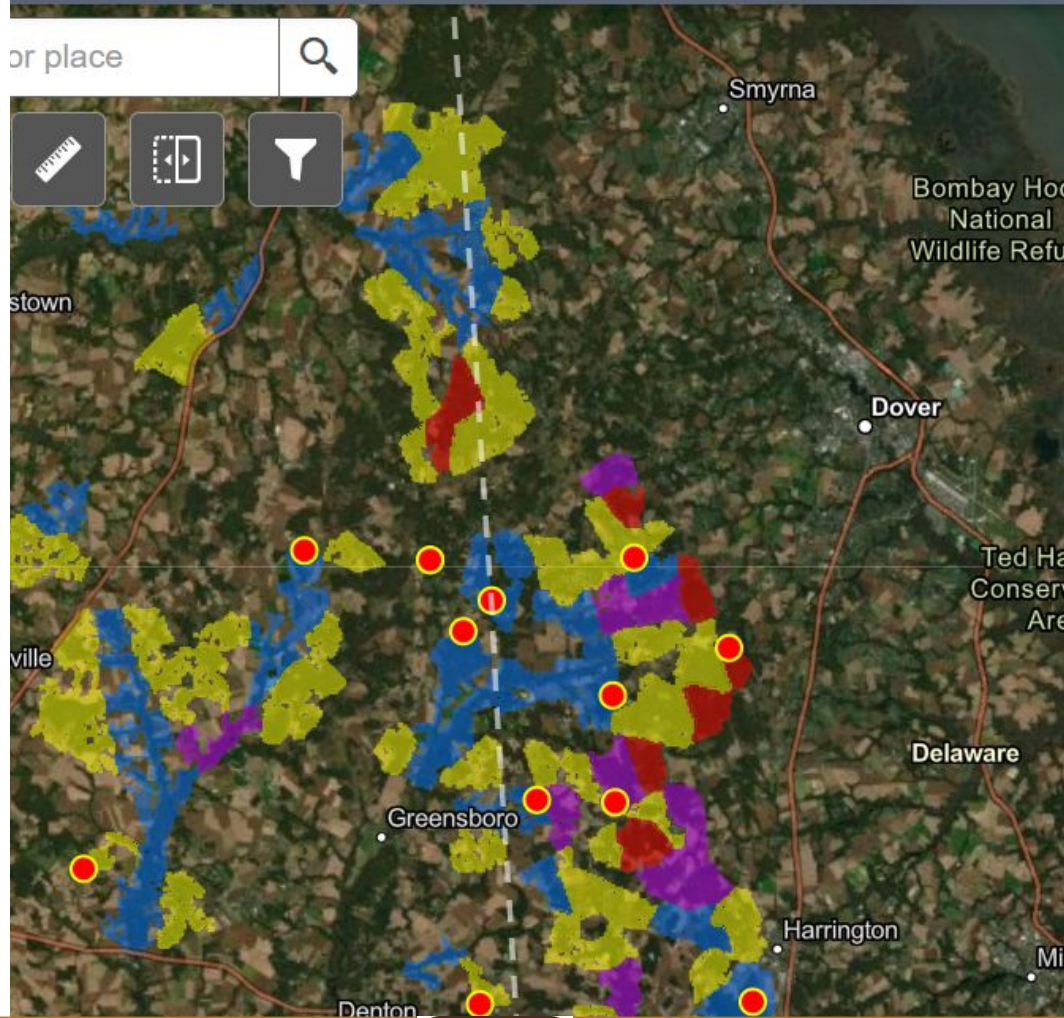
Rickenbach et al. 2017

GET PAID
TO SUPPORT
WILDLIFE AND
WATER QUALITY
ON YOUR LAND.

DUCKS UNLIMITED
USDA United States Department of Agriculture
Natural Resources Conservation Service
The Nature Conservancy
U.S. FISH & WILDLIFE SERVICE

Increasing Engagement and Identifying Barriers

Large Scale Wetland Analysis Web Map



- 3 outreach specialists
- Tracking outreach and engagement through Survey 123

What has a 3.6% response rate gotten us?

15-20 new project sites in total

500-700 new acres of restored land over next 3 years

370-518 acres of wetland

VA, MD, DE = 427 acres from 2017-2019

- **Quickly exceeded capacity to advance projects**

USDA and DOI Federal Bay Spending on Wetlands



	FY2016	FY2017	FY2018	FY2019	FY2020	TOTAL
Farm Service Agency (FSA)	\$43,000,000	\$33,400,000	\$33,700,000	\$33,700,000	\$33,700,000	\$177,500,000
Natural Resources Conservation Service (NRCS)	\$94,800,000	\$95,000,000	\$97,600,000	\$110,500,000	\$101,000,000	\$498,900,000
U.S. Fish and Wildlife Service (FWS)	\$18,300,000	\$17,300,000	\$16,200,000	\$16,200,000	\$15,200,000	\$83,200,000
Total, USDA + FWS Funds	\$156,100,000	\$145,700,000	\$147,500,000	\$160,400,000	\$149,900,000	\$759,600,000
Estimated federal funding obligated for wetlands	\$4,141,671	\$3,037,737	\$2,122,080	\$1,177,007	\$1,588,607	\$12,067,103
Percent of total USDA + FWS funds for wetlands	2.7%	2.1%	1.4%	0.7%	1.1%	1.6%

[1] Source: Chesapeake Bay Restoration Spending Crosscut: Federal Data

Application of Structured Decision Making to Delmarva Wetland Partnership

- Helped articulate objectives
- Provided transparency on decision process
- Quickly identified barriers
- Accelerated progress of multi-stakeholder team
- Created framework that team can continually refine and improve

Amy Jacobs ajacobs@tnc.org

Virginia Wetlands Action Plan

Wetlands Tracking

- Effective monitoring and reporting system
- Develop measurable targets towards outcome
- Set specific performance targets for tidal and non-tidal

Strategic Planning

- DWR to lead diverse partnership focused on wetlands outcome
- Guided by existing plans and tools
- Acknowledge climate change and focus on at-risk areas
- Seek to restore/enhance habitat for SCGN species
- Implement on both private and public lands with emphasis on private lands

Capacity Building

- Build on existing diverse regional partnerships
- Increase staff focused on wetland restoration
- Low barrier applications for voluntary efforts
- Expand native nursery / other restoration capacity

Outreach

- Landowner interest is critical
- Identify and promote demonstration sites
- Target grant funding focal areas
- Coordinate with PDCs and SWCDs

Sustainable Funding

- Current funding increases for private and public
- Match is limiting factor
- Need to establish dedicated funding source

NY, PA, VA, MD, DE, and DC all submitted a Wetland Action Plan

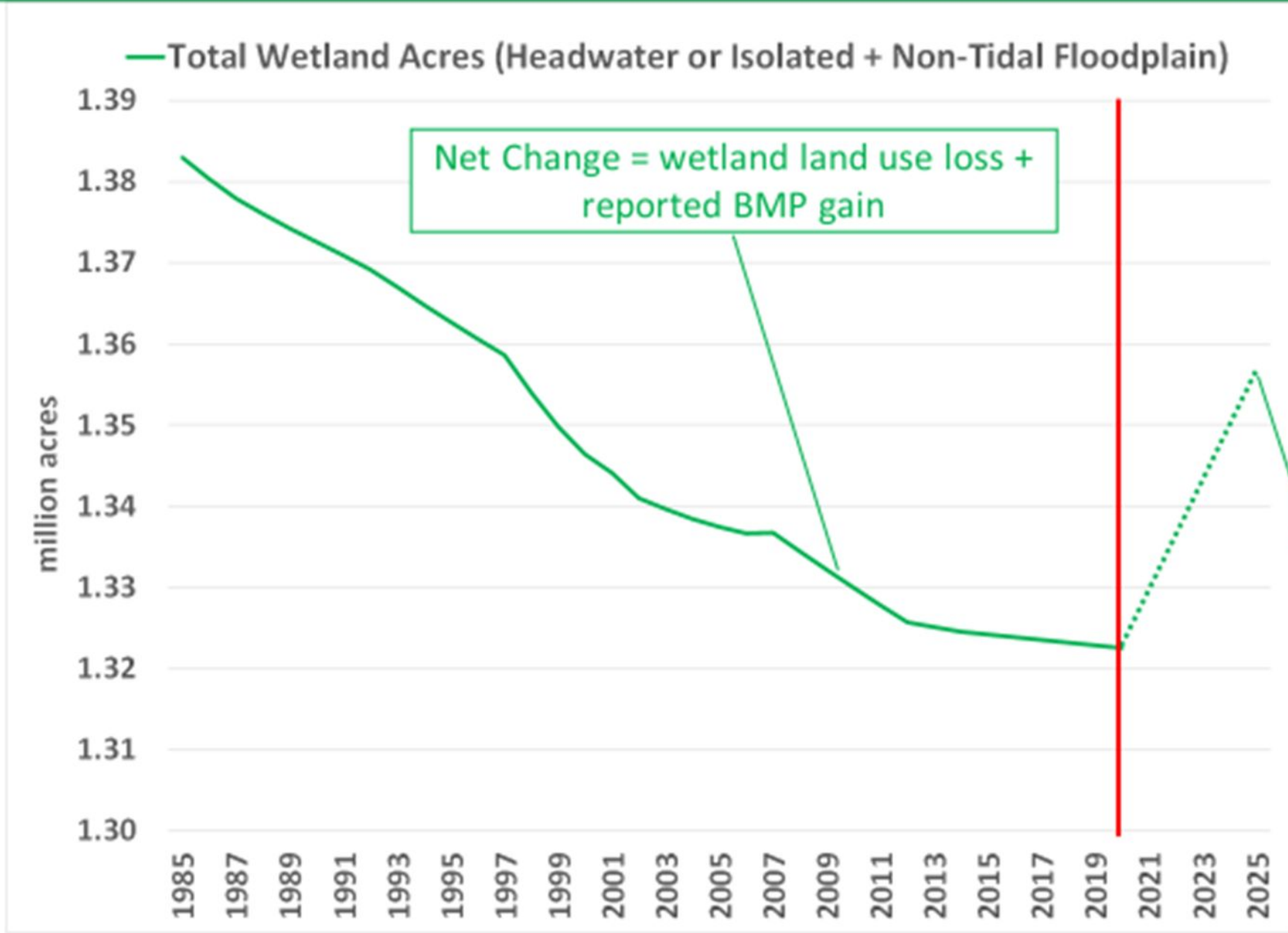


Link to all jurisdiction plans:

<https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2022.12.08-2022-Wetlands-Action-Plan.pdf>



CBW Wetland Acre Changes (1985–2020 + 2025)



Planned 2020-2025