Delaware Wetlands

CIB STAC
February 7, 2025

Alison Rogerson – Environmental Scientist V

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NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL

About Me

B.S. Wildlife Management

Minor Water Resources Management

Texas

New Zealand

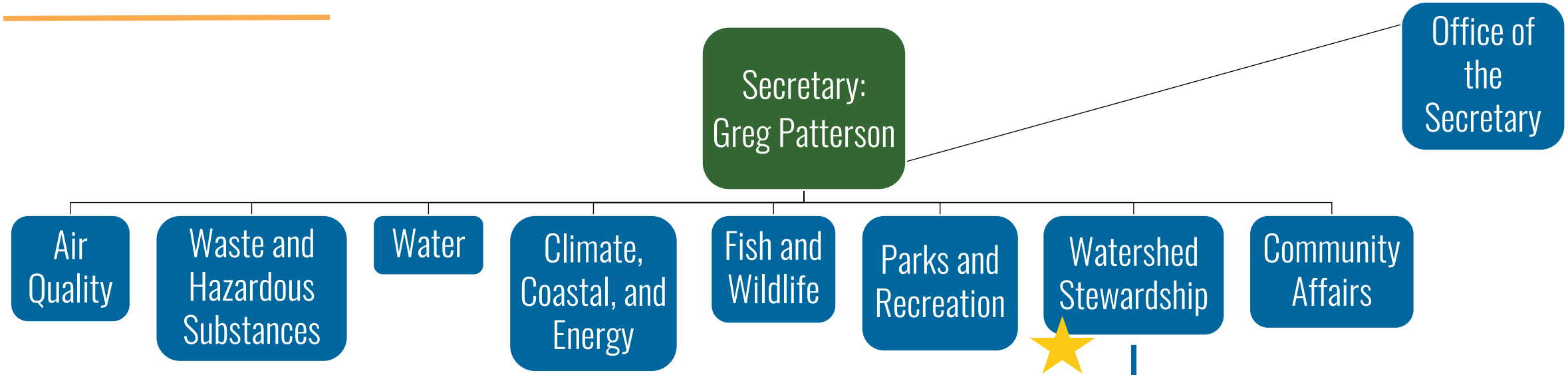
Hawaii

M.S. Wildlife Ecology

Research Thesis: Impact of long piers on tidal marsh birds in Worcester County, MD

Wetland Monitoring & Assessment Program

Who Is DNREC?



- Shoreline and Waterway Management
- Conservation Programs
- Watershed Assessment and Management

Wetland Monitoring and Assessment Program

- Track health and acreage of wetlands across Delaware
- Research wetland restoration, conservation, and management techniques
- Collaborate with other government agencies, businesses, non-profits and universities
- Education and Outreach – host trainings, workshops, and public events for professionals and public
- Support regulatory programs as able

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Wetland Monitoring and Assessment Program

- Delaware Living Shorelines Committee
- Delaware Restoration Work Group
- Dredge & Beneficial Use Coordination Group
- DE SAV Work Group
- Chesapeake Bay Wetland WG
- CIB STAC & DE Estuary STAC

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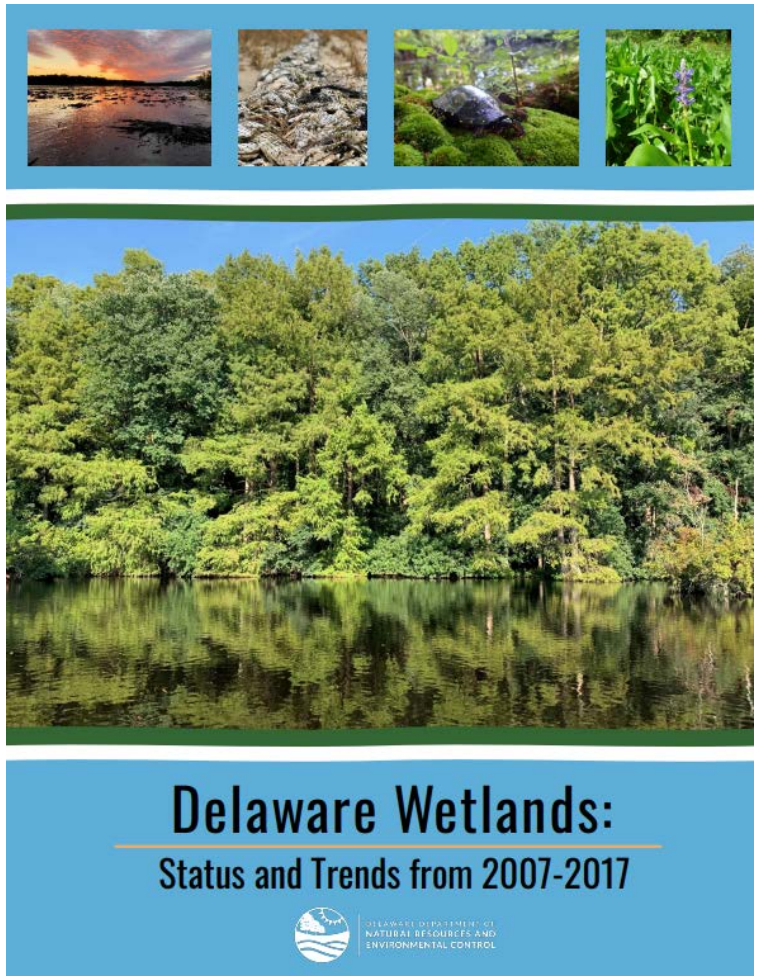
Current Status

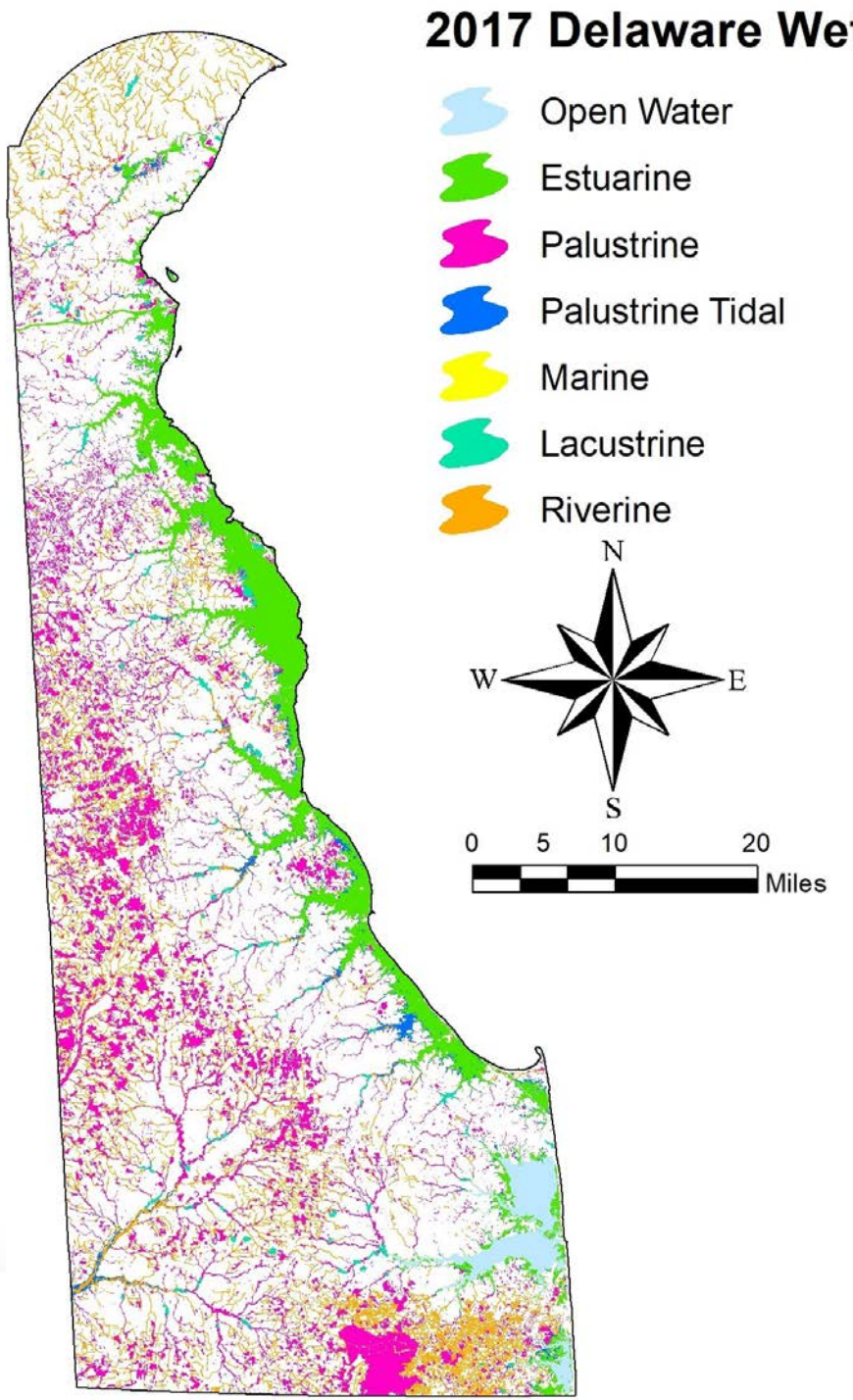


Statewide Wetland Mapping Project

- Maps publicly available on Delaware FirstMap

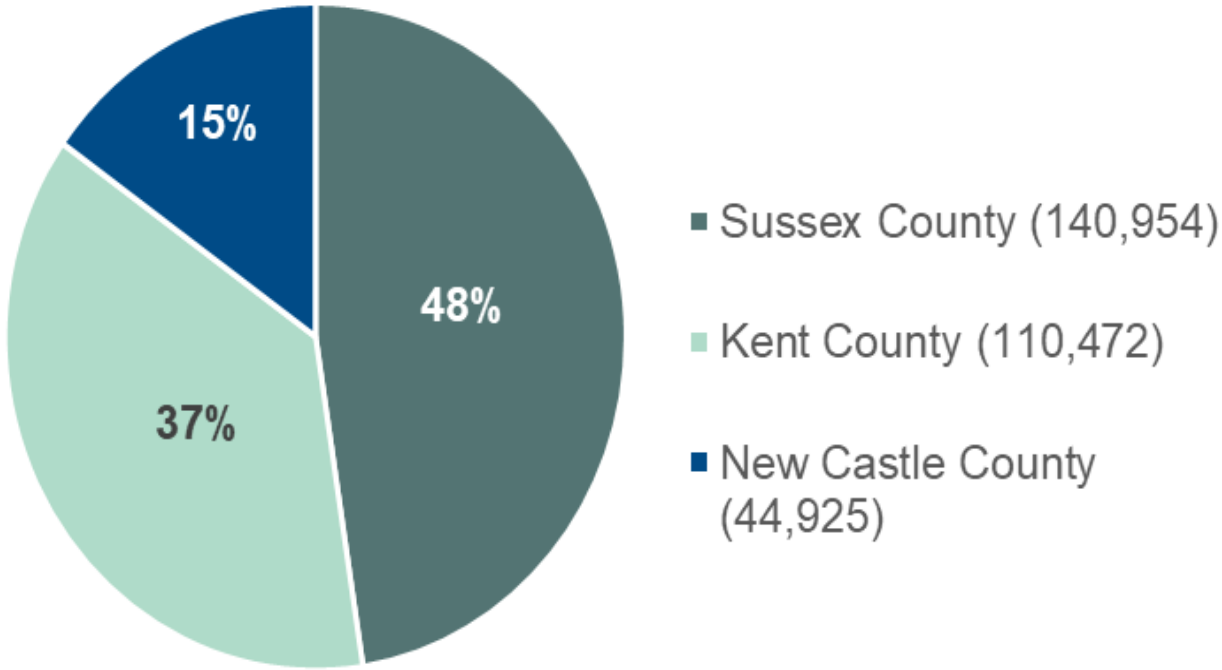
What do we do with these maps?

- Estimate statewide acreage (2017)
- Compare to last mapping (2007)
- Investigate how/where wetlands were lost/gained/changed
- Report out all findings



Statewide

296,351 acres as of 2017



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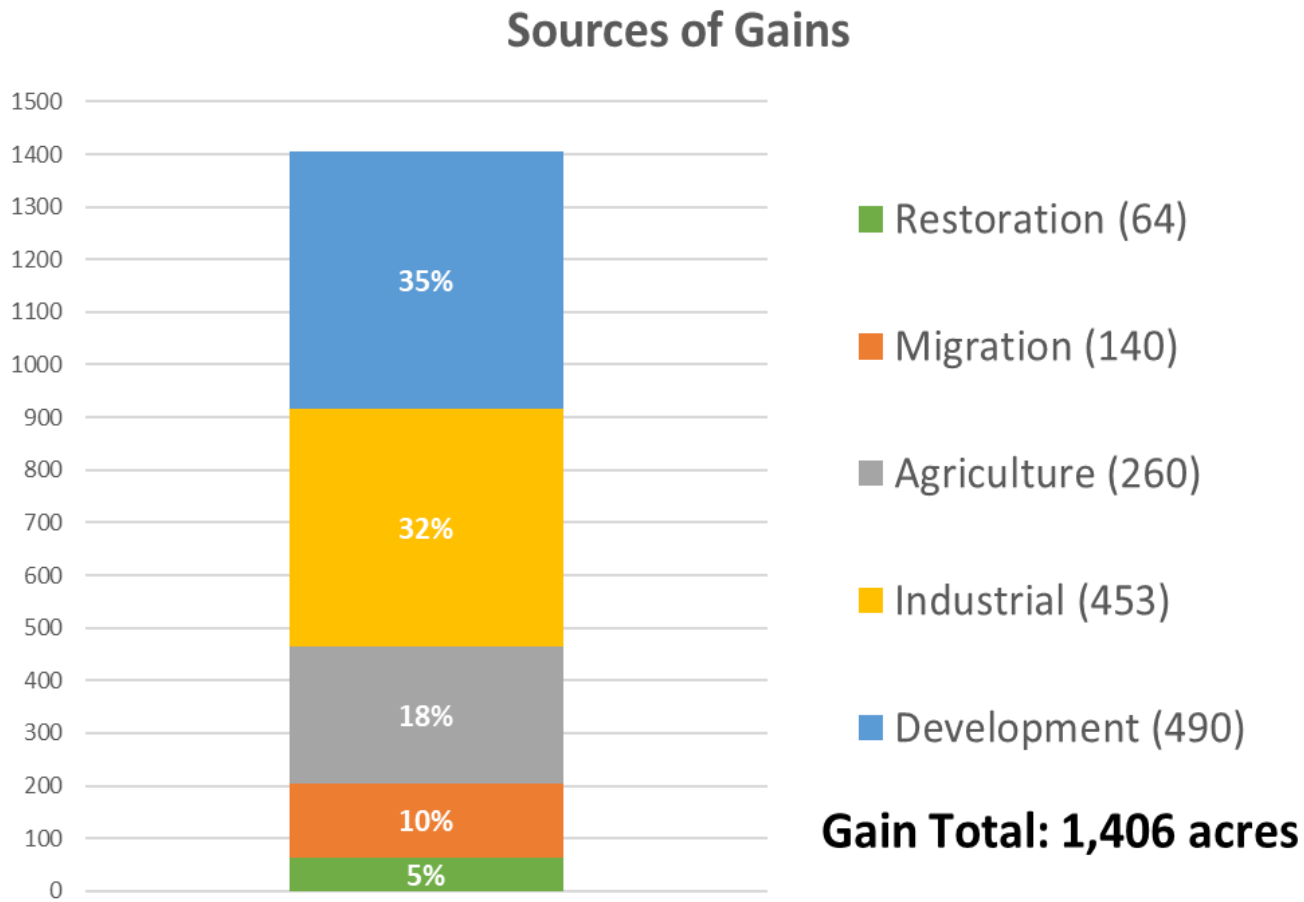
Where Do Wetlands Stand?

Gains 2007-2017

- 1,406 acres



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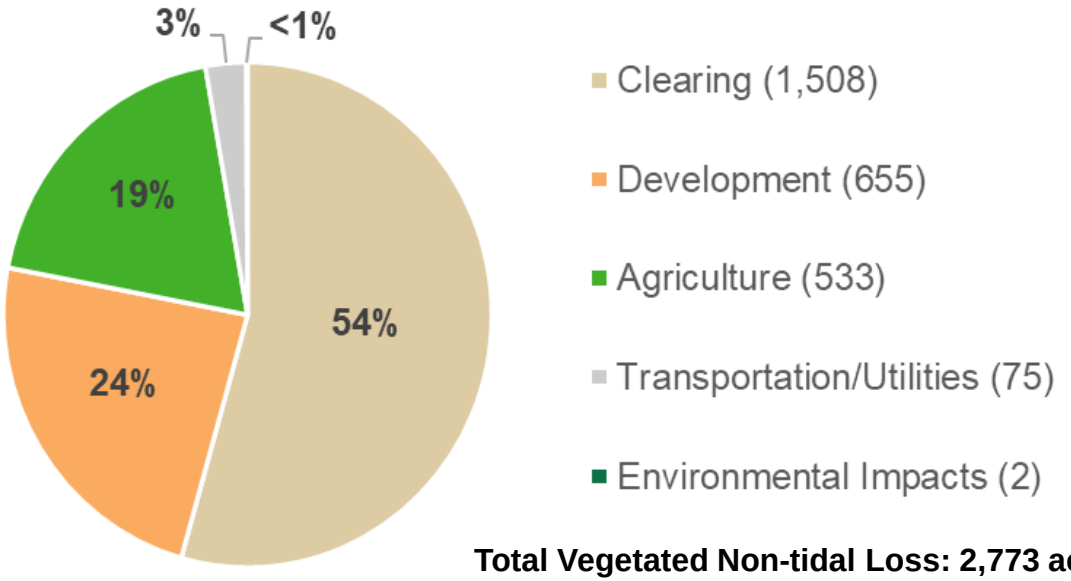
Where Do Wetlands Stand?

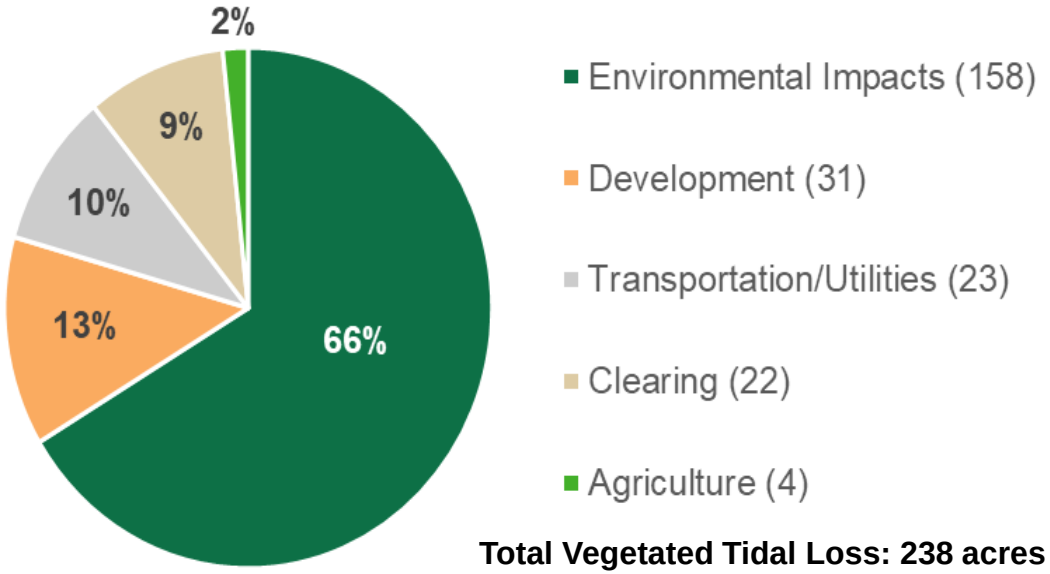
Losses 2007-2017

Causes for non-tidal wetland losses



Total Vegetated Non-tidal Loss: 2,773 acres

Causes for tidal wetland losses



Total Vegetated Tidal Loss: 238 acres

What is at Play?

Gains and Losses

Development

Climate change

A variety of industries impact both

Policy and Regulation

Poorly planned practices

Increase in population

Changing administrations at all levels

Learning Nature

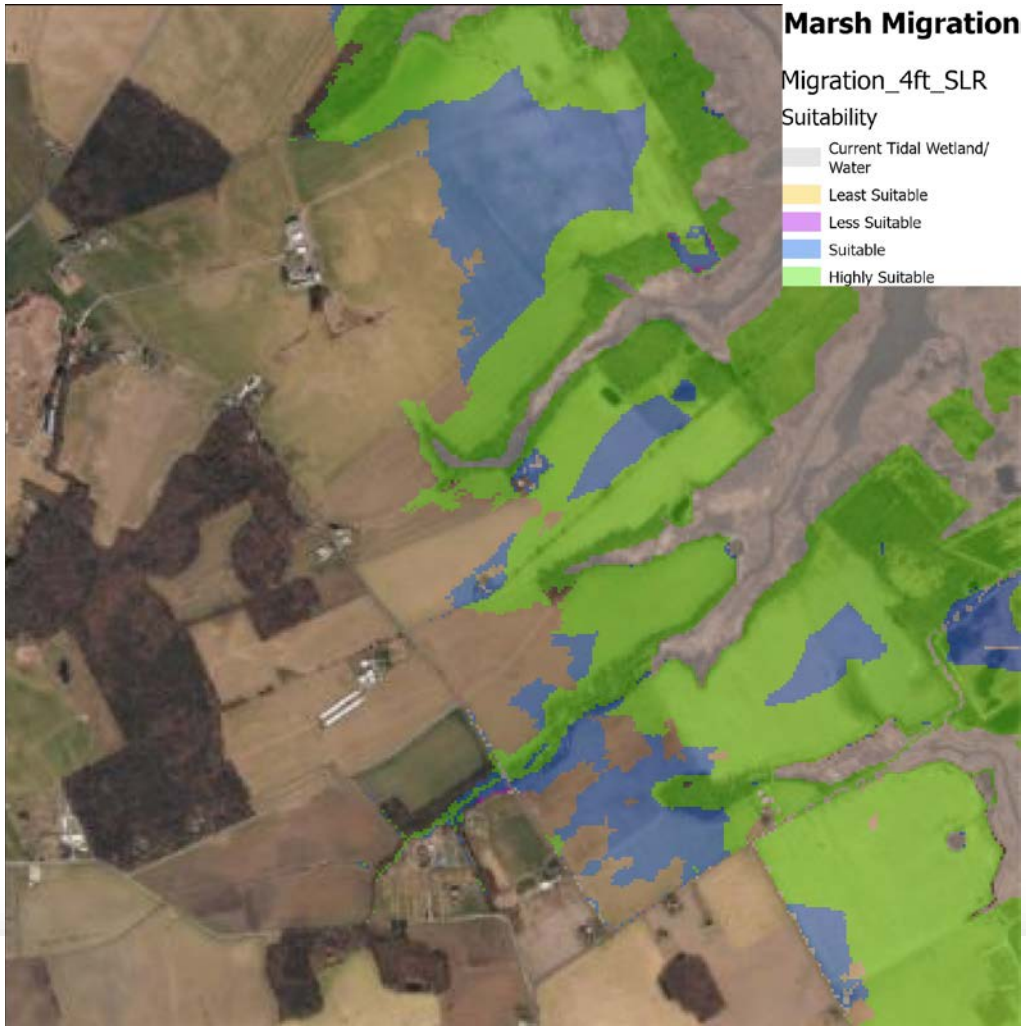
Education and knowledge sharing

Appreciation/value

Conservation incentives

Marsh Migration Model

Wetland Monitoring & Assessment Program & Delaware Coastal Management Program
Update of 2017 model

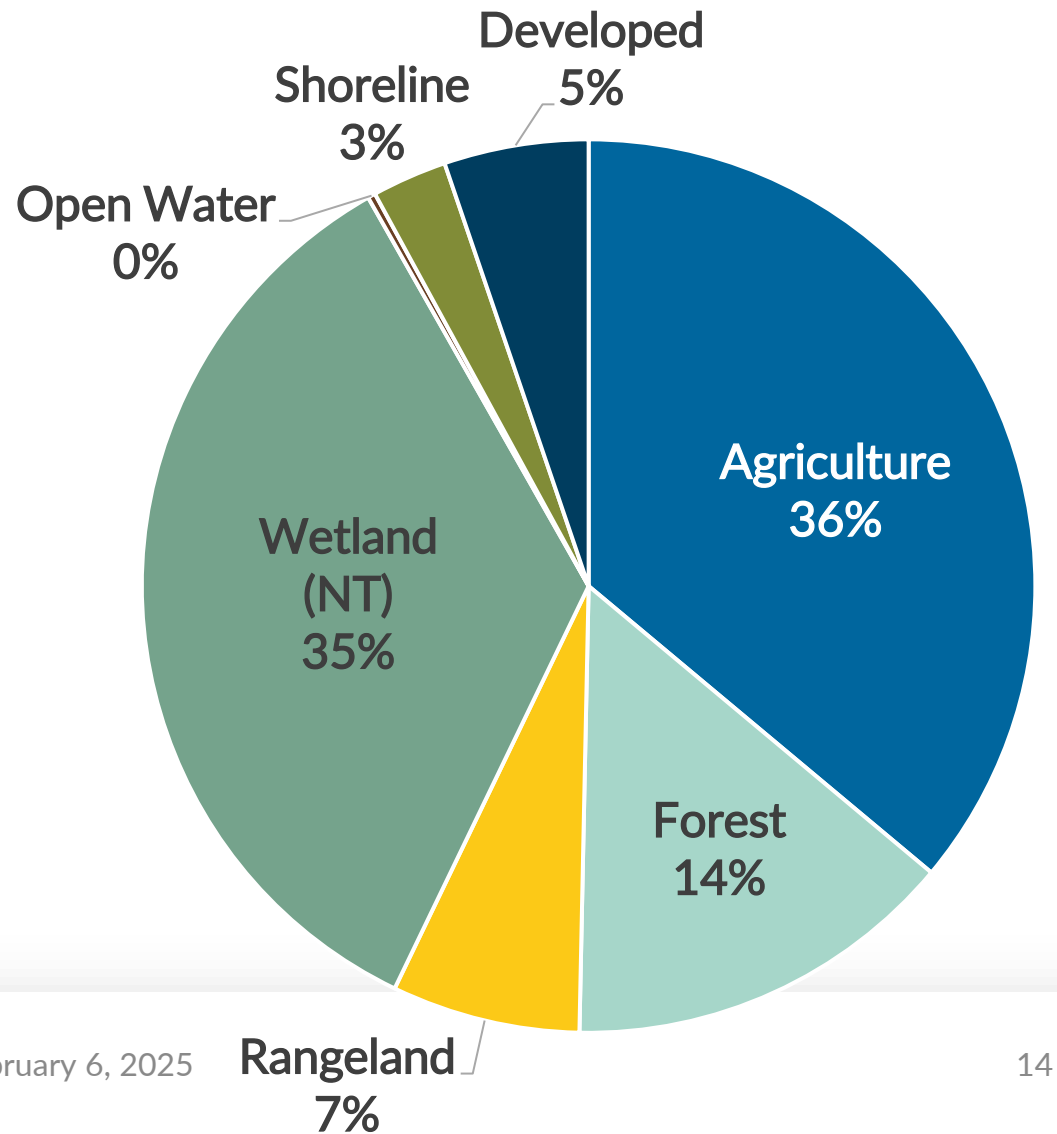


1. Statewide wetland maps 2017
2. Impervious Surface 2017
3. Soils 2023
4. Land Use Land Cover 2022
5. Slope 2017
6. DEM (LiDAR) 2017
7. Delaware SLR Scenarios 4ft 2016
8. Statewide aerial imagery 2022*

* Aerial imagery used in background, not in model

Marsh Migration Model

21,449 acres statewide scoring as 'highly suitable'



72% of highly suitable areas are located on private property

Privately owned ag lands make up 32% of all highly suitable areas.

Privately owned wetlands make up 22%.

Millsboro Wetland Restoration

Combined high marsh Phragmites restoration & low marsh recreation beneficial use

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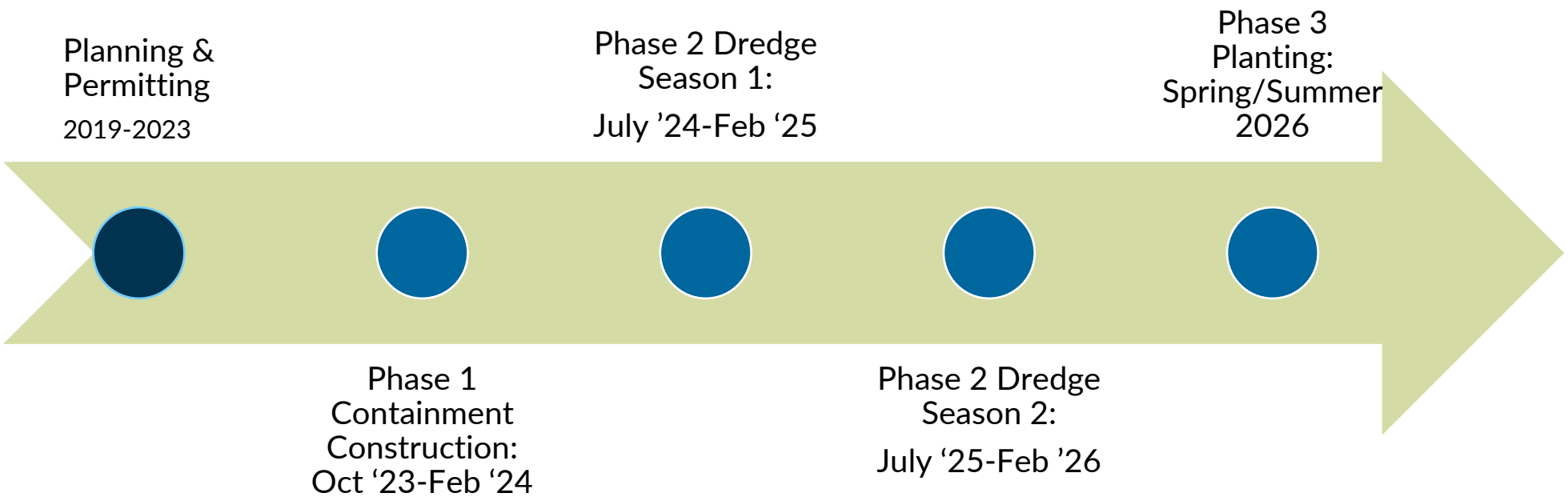
Millsboro Anticipated Project Timeline



Millsboro High marsh plant community restoration

Phragmites -> *Spartina, Pluchea, Amaranthus, Schoenoplectus, Hibiscus*

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Millsboro Low Marsh Recreation

Dredged 1,500ft of channel, delivered ~14,000yd^3

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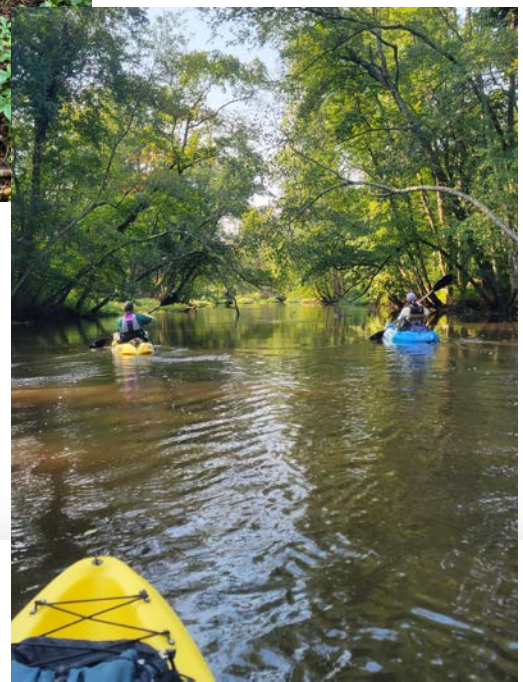
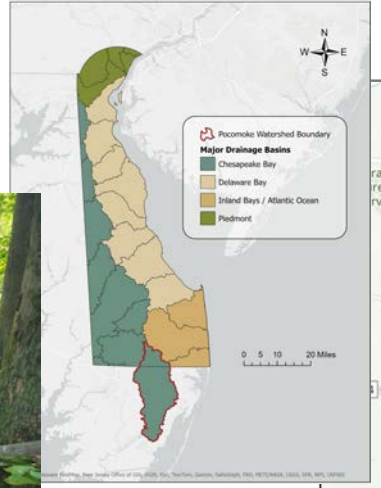
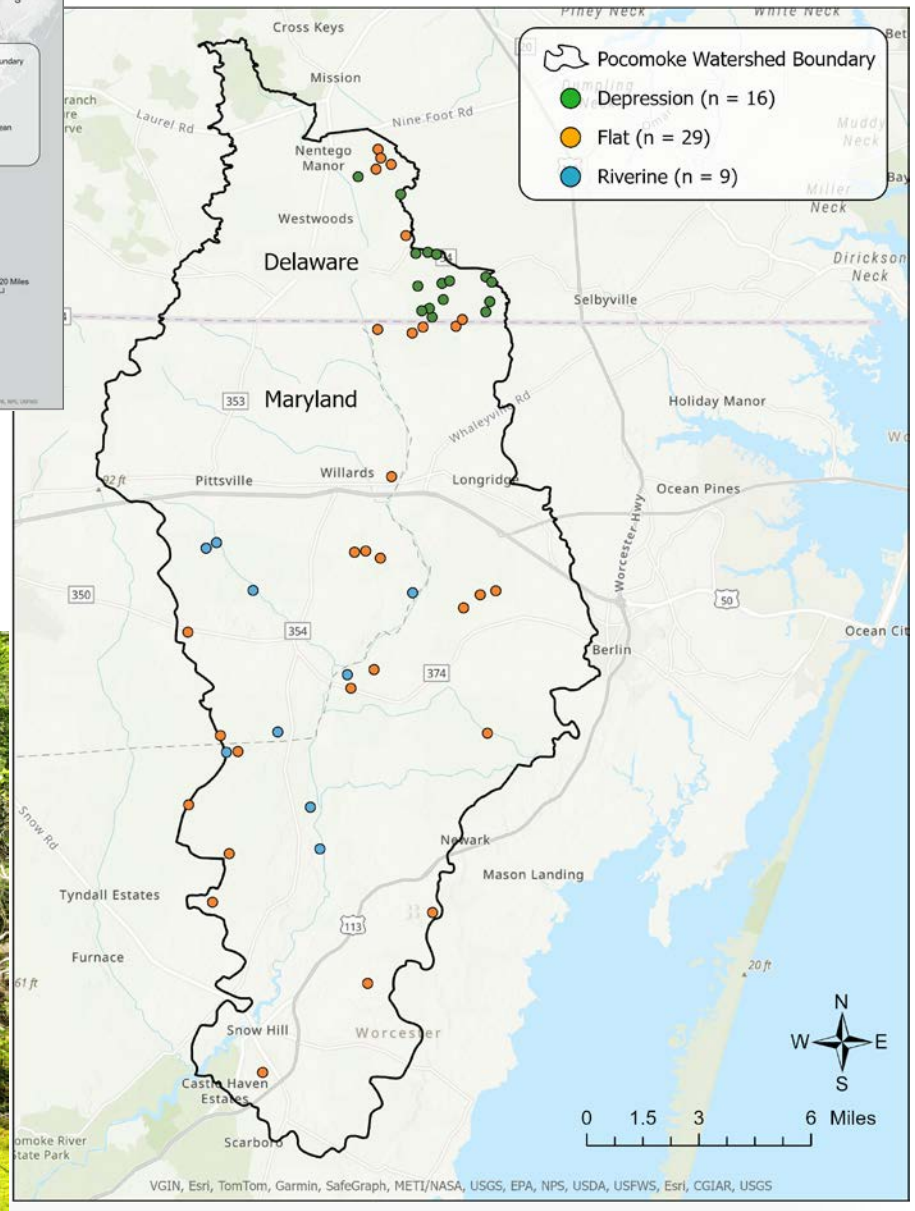
Millsboro Monitoring

Metric	Method	Frequency
Vegetation percent cover	1x1m quadrats along transects	Once per year (summer)
Vegetation species composition	1x1m quadrats along transects	Once per year (summer)
Vegetation thickness	Horizontal veg obstruction board along transects	Once per year (summer)
Nekton	Seine and minnow traps	3 times per summer
Biomass	Cores at specific points	Before and after (summer)
Bird surveys	Sunrise point count surveys	3 times per summer
Bearing capacity	Slide hammer along transects	Once per year (summer)
Marsh elevation	RTK along transects	Once per year (summer or winter)
Photo points	Photos from fixed markers	4 times per year
Turbidity	Handheld turbidimeter	4x/day during dredging*

Pocomoke Watershed Report







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Pocomoke Watershed Report

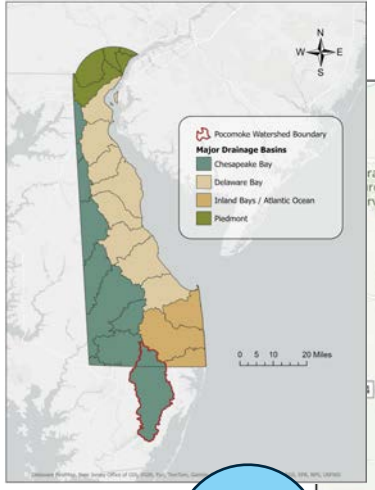
Surveyed in 2022

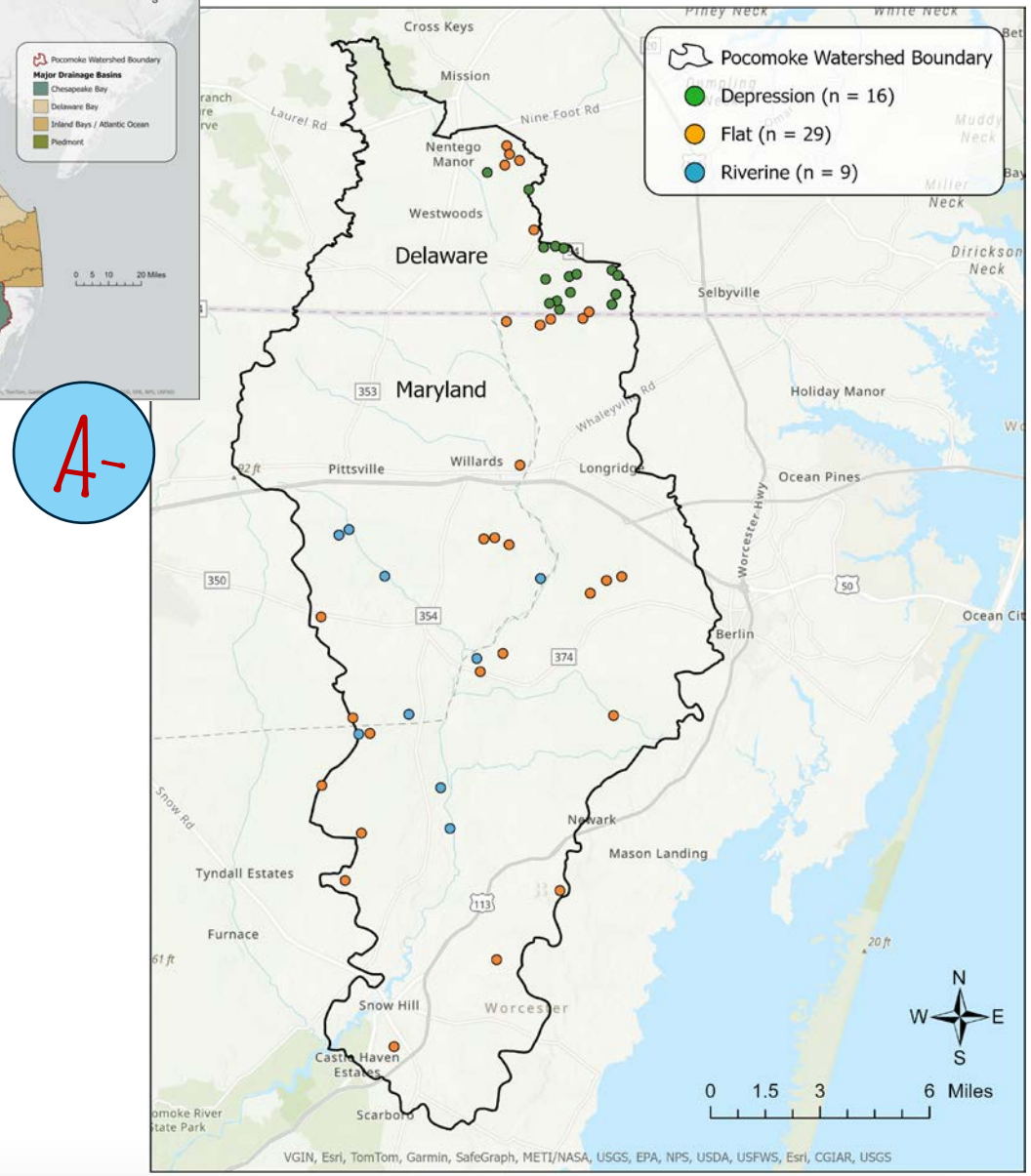
Overall healthy condition

Wetlands heavily privately owned

Acreage: Conversion of FO and SS to ag and pine plantations

Health: Stream channelization and ditching, buffer disturbances & forestry impacts





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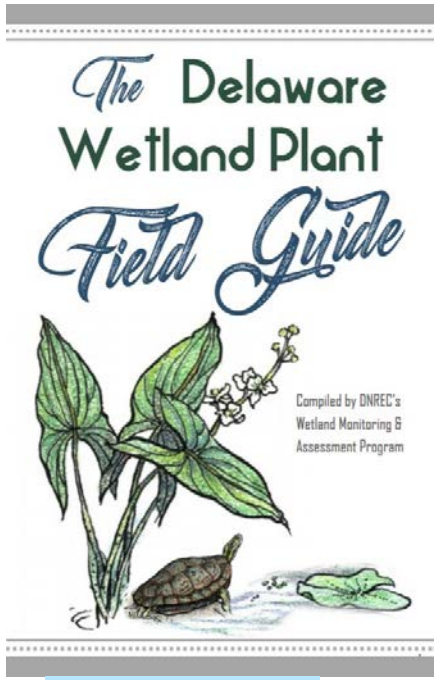
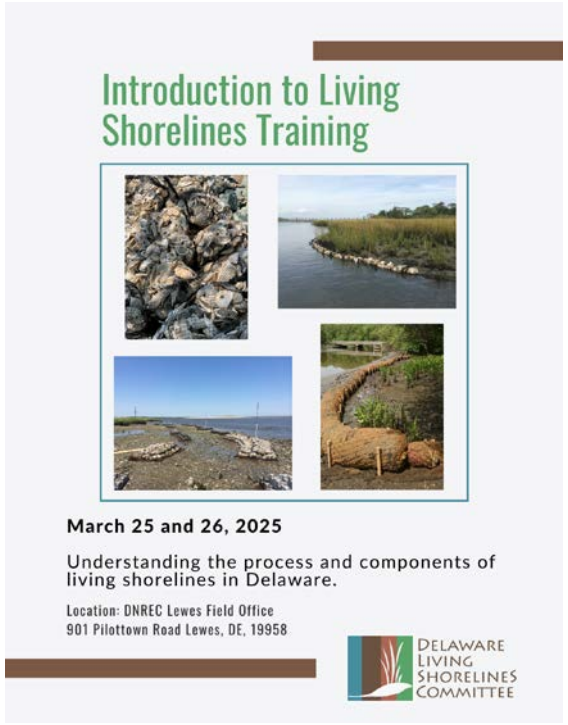
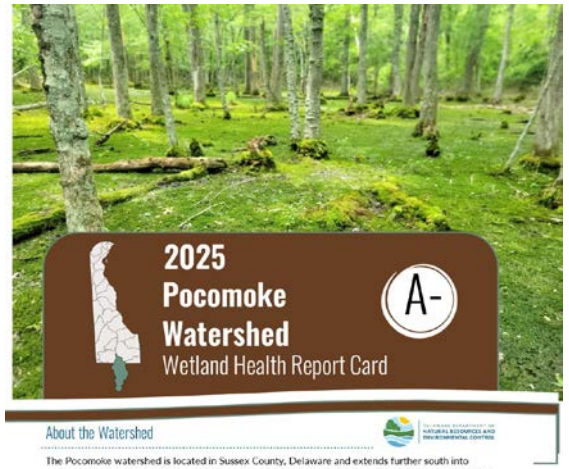
Education & Outreach



2nd edition

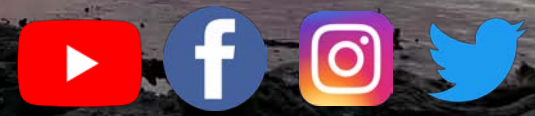


February 2026



Thank You!

Follow us!



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