Inland Bays Wetland Restoration Strategy

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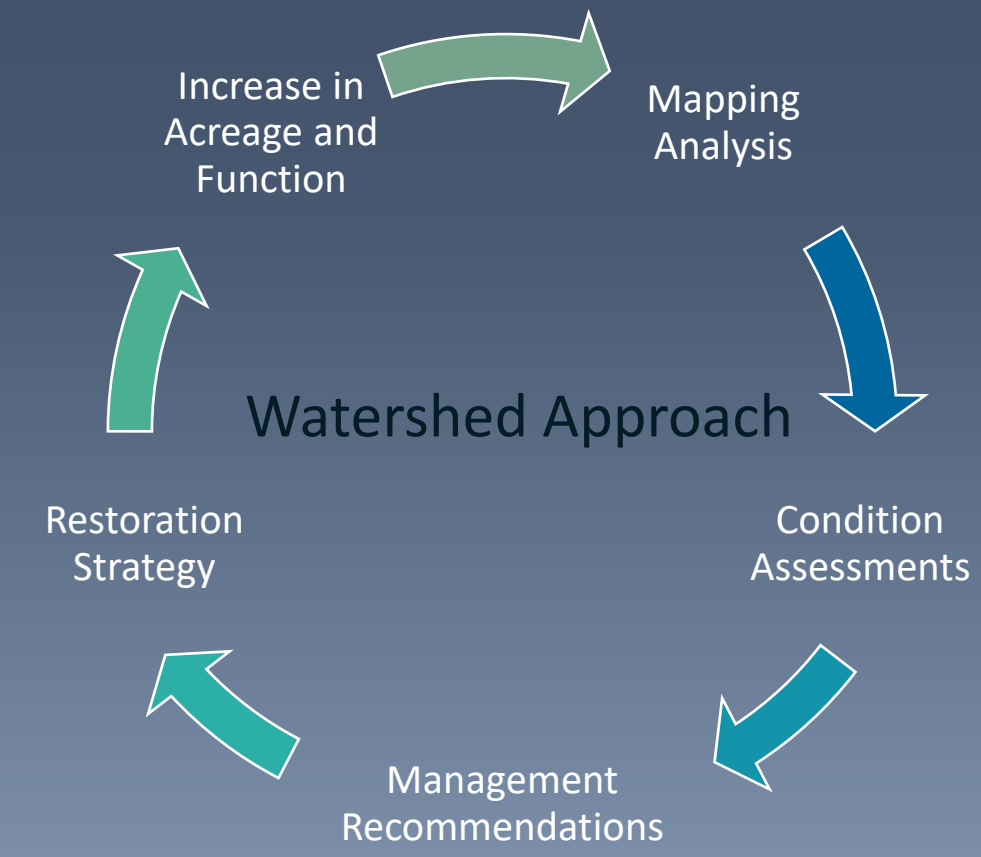
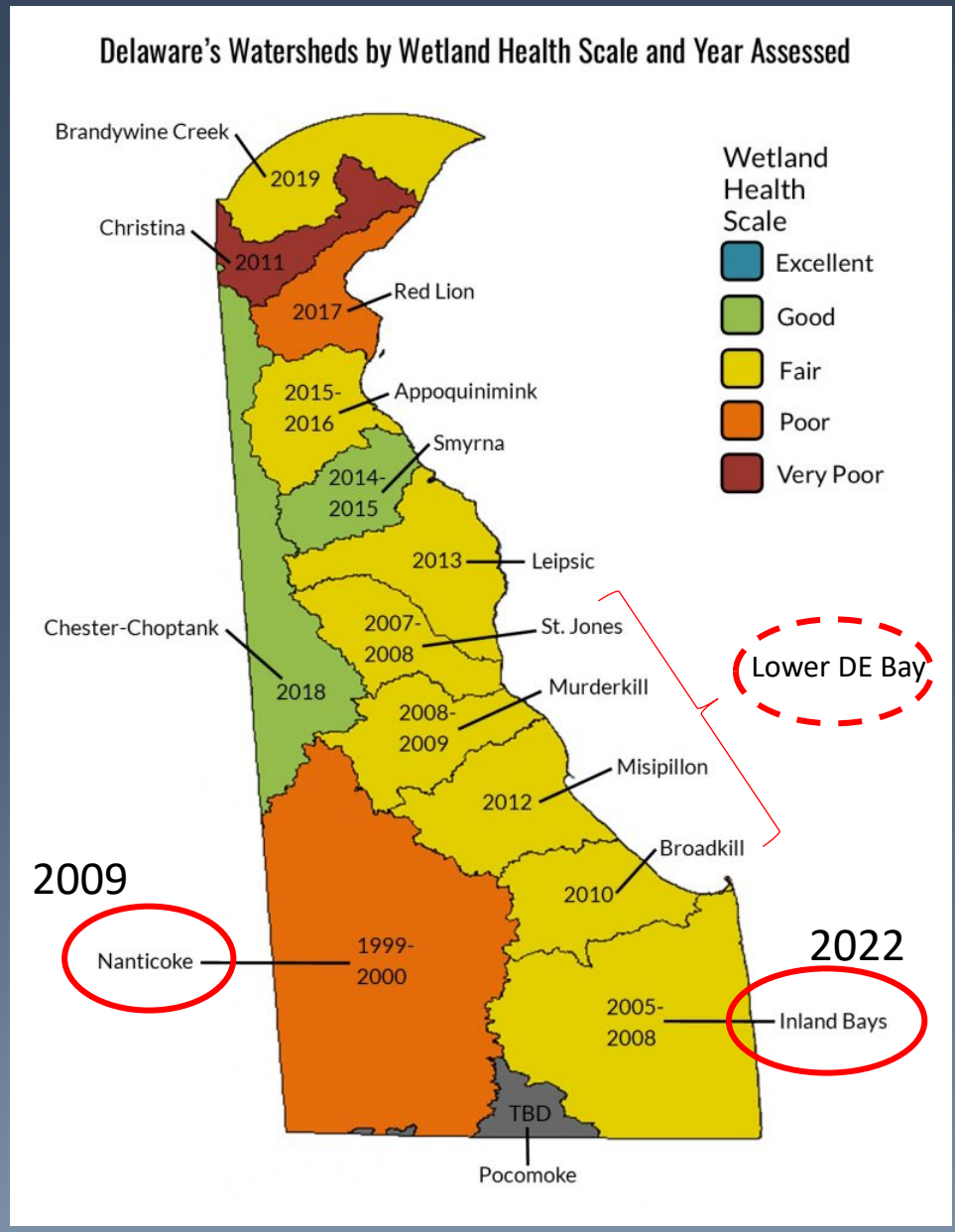
Wetland Monitoring & Assessment Program

August 3, 2022
CIB STAC

Project Context

Wetland Monitoring & Assessment Program



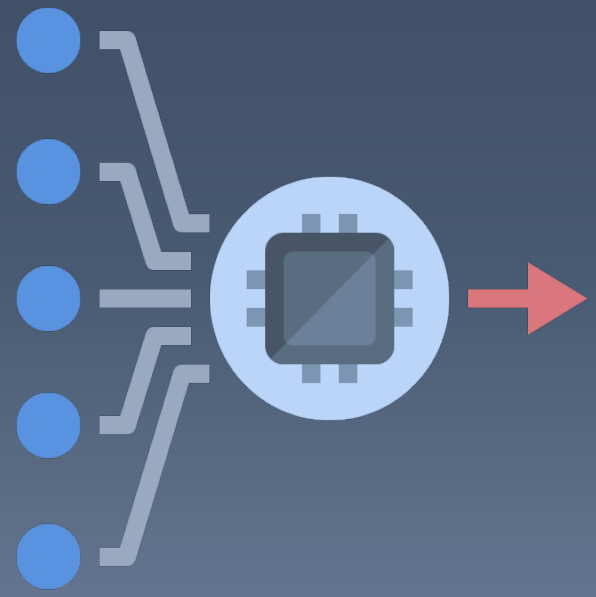


Project Goals

- Highlight greatest threats to wetlands & submerged aquatic vegetation (SAV)
- Identify key tactics to address specific issues
- Highlight priority areas for restoration work
- Create a guiding document to focus future restoration work
- Be more efficient, more aware, more collaborative
- Covers tidal and nontidal wetland, and SAV
- Restoration= creation, enhancement, rehabilitation, preservation

Inputs

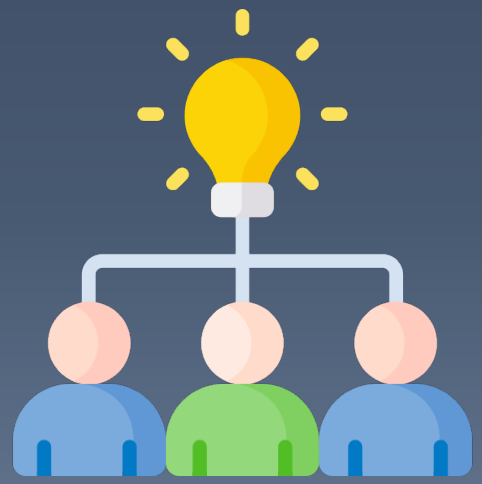
- Landuse changes 2007-2017
- Wetland trends 2007-2017
- Wetland condition assessment results
- Partner priorities
- Other Inland Bay goals
- Watershed Resource Registry opportunities



Partner Input

- 13 Stakeholder groups
  - DNREC- F&W, Mosquito Control, Conservation Programs, SAV
  - USFWS
  - NRCS
  - Sussex County
  - Sussex Conservation District
  - Forestry
  - NGO- Wild Lands, TNC, DU
  - Estuary Program
- Interviews
- Consultations
- Cross-walked existing plans and targets → Appendix B

Stakeholder Takeaways



- Many did not have formal plans including wetlands & SAV
- Partnerships and leveraging is key
- Big concern for SLR and related impacts
- Big concern for development and natural habitat loss
- Invasive species control (Phragmites)
- SAV restoration should start small
- Outreach to HOA’s and large private landholders

Threats

Tidal

- Sea level rise
- Subsidence
- Migration barriers
- Invasive species
- Hydrology alterations

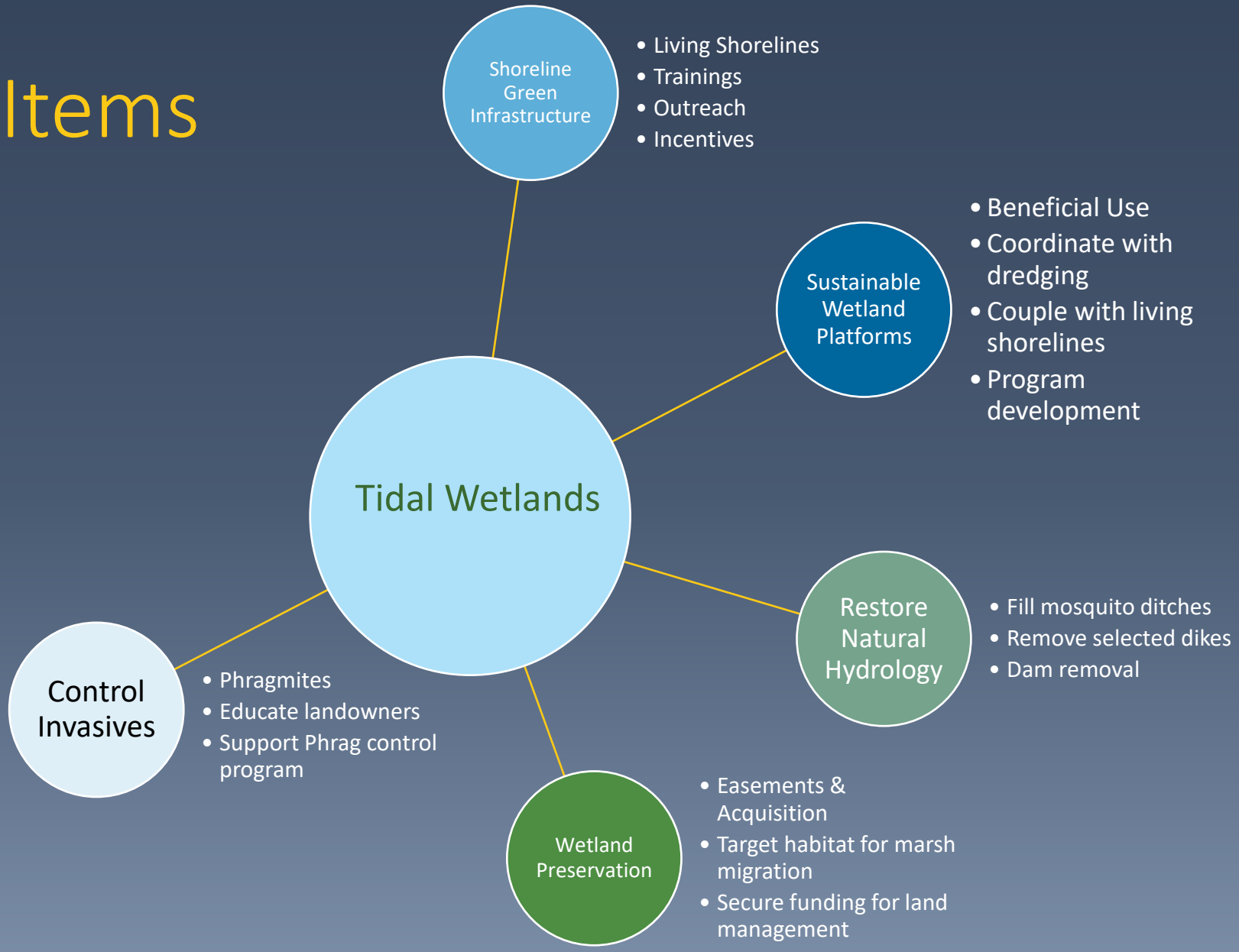
Non-tidal

- Hydrology changes
- Land conversion
- Habitat fragmentation

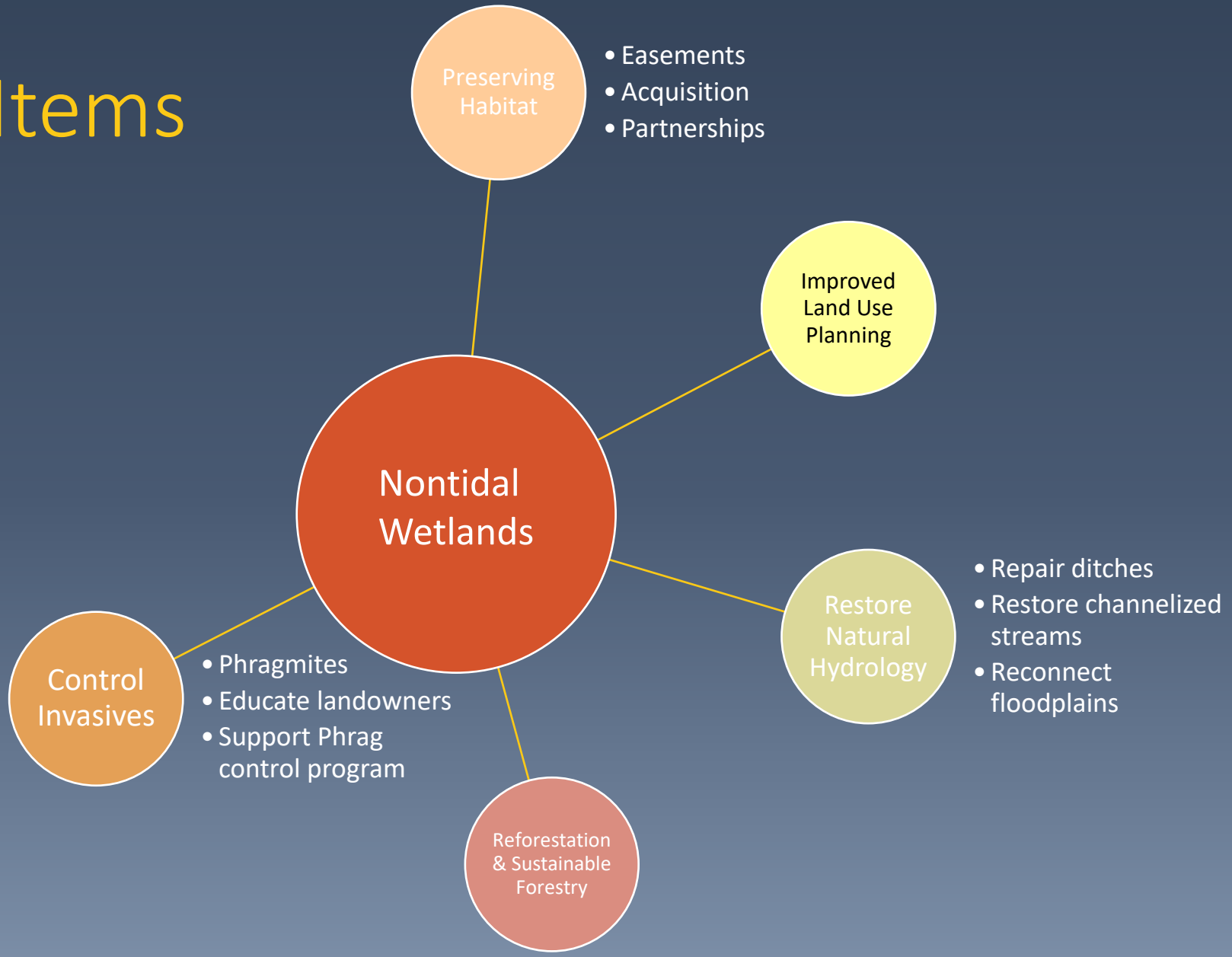
SAV

- Poor water quality
- Limited natural recruitment

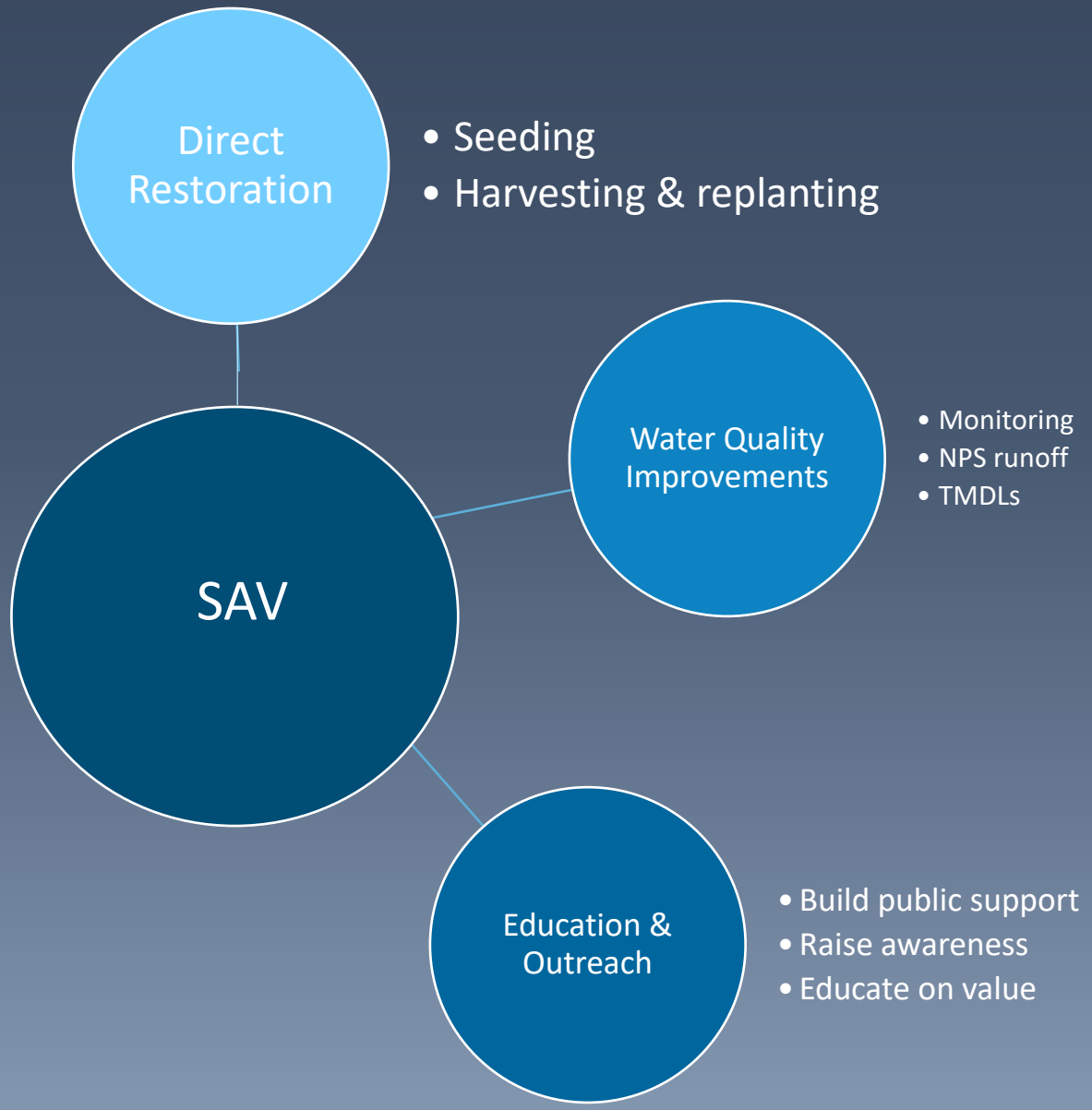
Action Items



Action Items



Action Items



Summary Tables- Appendix B

Table 4. Theme icons from Delaware's 2021-2025 Wetland Program Plan that are used in this strategy.

Theme	Icon
Mapping	
Monitoring	
Climate Adaptation	
Restoration	
Collaboration	
Education	

Table 5. Legend showing management plans and their corresponding symbols that are used in Tables 6, 7, and 8.

Management Plan	Year Published	Symbol
Delaware Wetland Program Plan (2021-2025)	2021	
CIB's Revised CCMP	2021	
Delaware Wildlife Action Plan (2015-2025)	2015	
Delaware Statewide Forest Strategy	2020	
NRCS's Delaware Strategic Plan (2020-2025)	2020	
Inland Bays PCS	2008	
Sussex County Comprehensive Plan	2019	

Summary Table- Non-Tidal

1. Seek collaborators
2. Find friends
3. Join forces

Table 7. Restoration tactics and tasks that address specific issues faced by non-tidal wetlands in the Inland Bays. Also shown are task themes (see Table 4 for key), task progress, and related management plans.

Tactic	Issues Addressed	Task	Theme	Progress	Related Management Plans
Minimize Forestry Impacts to Non-tidal Wetlands	Habitat loss and fragmentation	Continue implementing forestry BMPs			
		Allow for natural regeneration of previously forested areas			
		Reduce clear cutting in forested non-tidal wetlands			
Preserve Non-Tidal Wetlands with Easements or Land Acquisition	Habitat loss and fragmentation	Facilitate regular work by the Delaware Restoration Work Group			
		Secure more funding to support acquisition			
		Educate landowners about conservation options			
		Restore non-tidal wetlands previously converted to cropland			
Restore Natural Hydrology	Hydrology alterations	Reverse stream channelization			
		Make ecological updates to tax ditches			
		Make ecological updates to stormwater retention ponds			
		Encourage project and technique-sharing			
		Provide trainings for restoration professionals			
Control Invasive Species	Invasive species	Encourage landowners to control invasive species and promote native plants			
		Secure funding to support invasive plant control			
Improve Land Use Planning	Habitat loss and fragmentation	Support state non-tidal wetland regulations and regulation enforcement			
		Reference updated wetland maps when approving new developments			
		Work with municipalities and Sussex County to encourage wider buffers around non-tidal wetlands and riparian areas			
		Educate realtors about non-tidal wetlands			

Spatial Components

Goal: Compliment the action items with on-the-ground opportunities to help jumpstart progress.

Use available layers in combination.

Focus on habitat and water quality improvements.

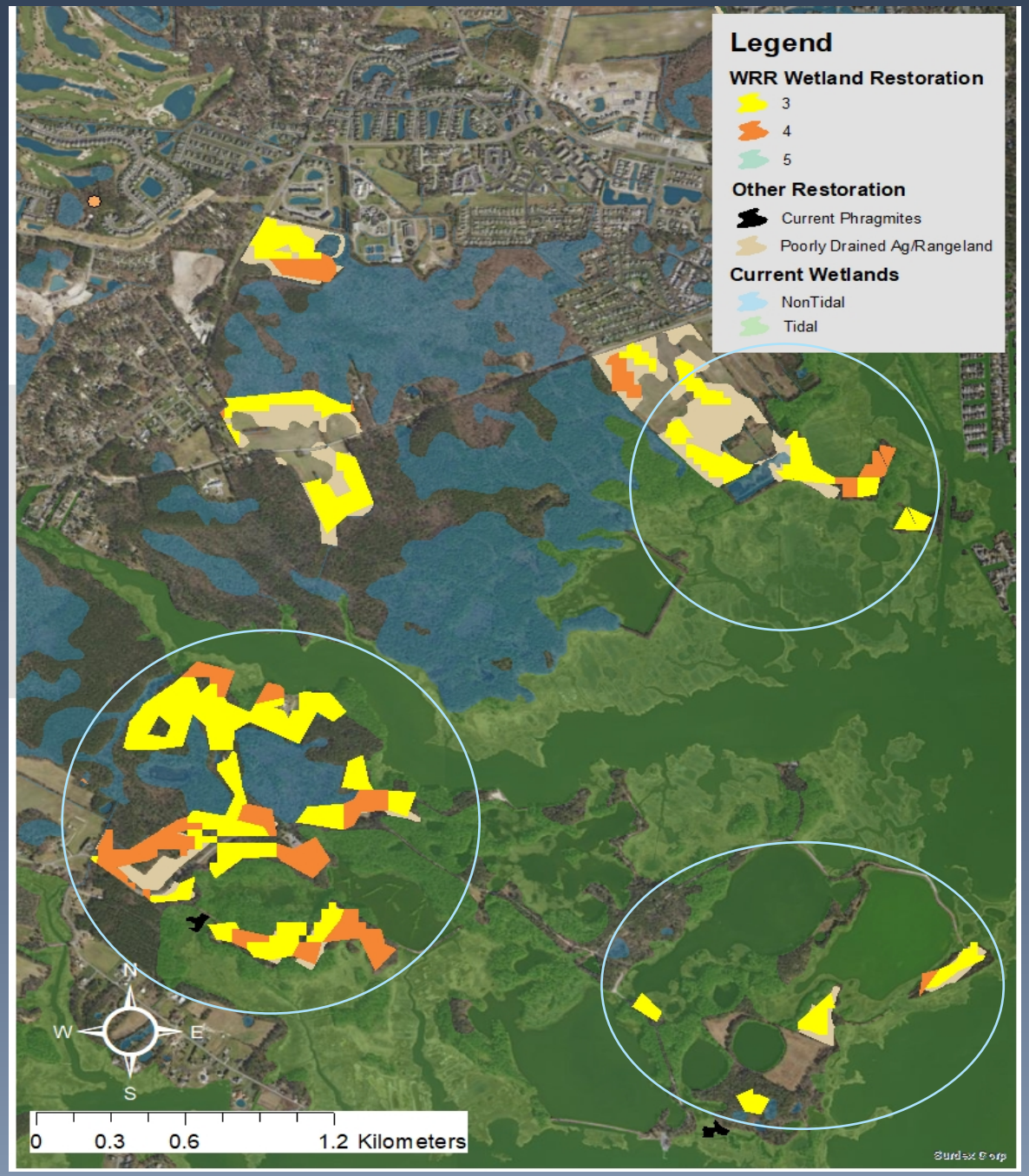
Limit prioritization to public land opportunities.

Spatial Components

1. Pull from the Watershed Resources Registry (WRR). Contacted Maryland Environmental Services (MES) to obtain wetland restoration shapefile for use in ArcMap
2. Intersected wetland restoration shapefile with public protected lands
3. Isolated opportunities 3, 4 or 5 stars, out of 5 for restoration suitability
4. Added layers:
   - Phragmites patches (isolated from 2017 wetlands layer)
   - Poorly drained ag or rangeland (soils + LULC)
   - Highly suitable marsh migration land (from 2017 model)
5. Created maps on sub-watershed basis

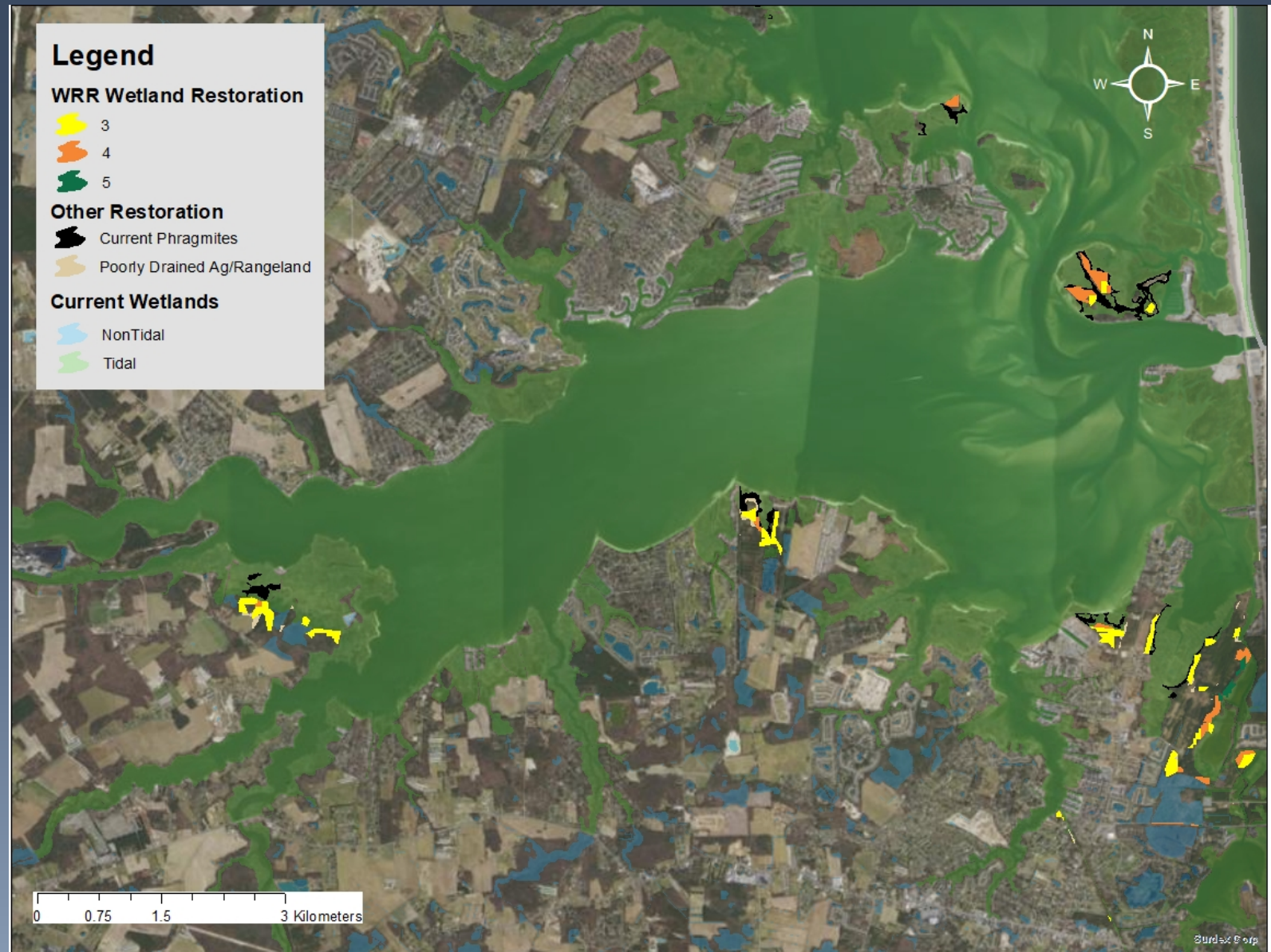
Spatial Results

- Output example for Little Assawoman Bay



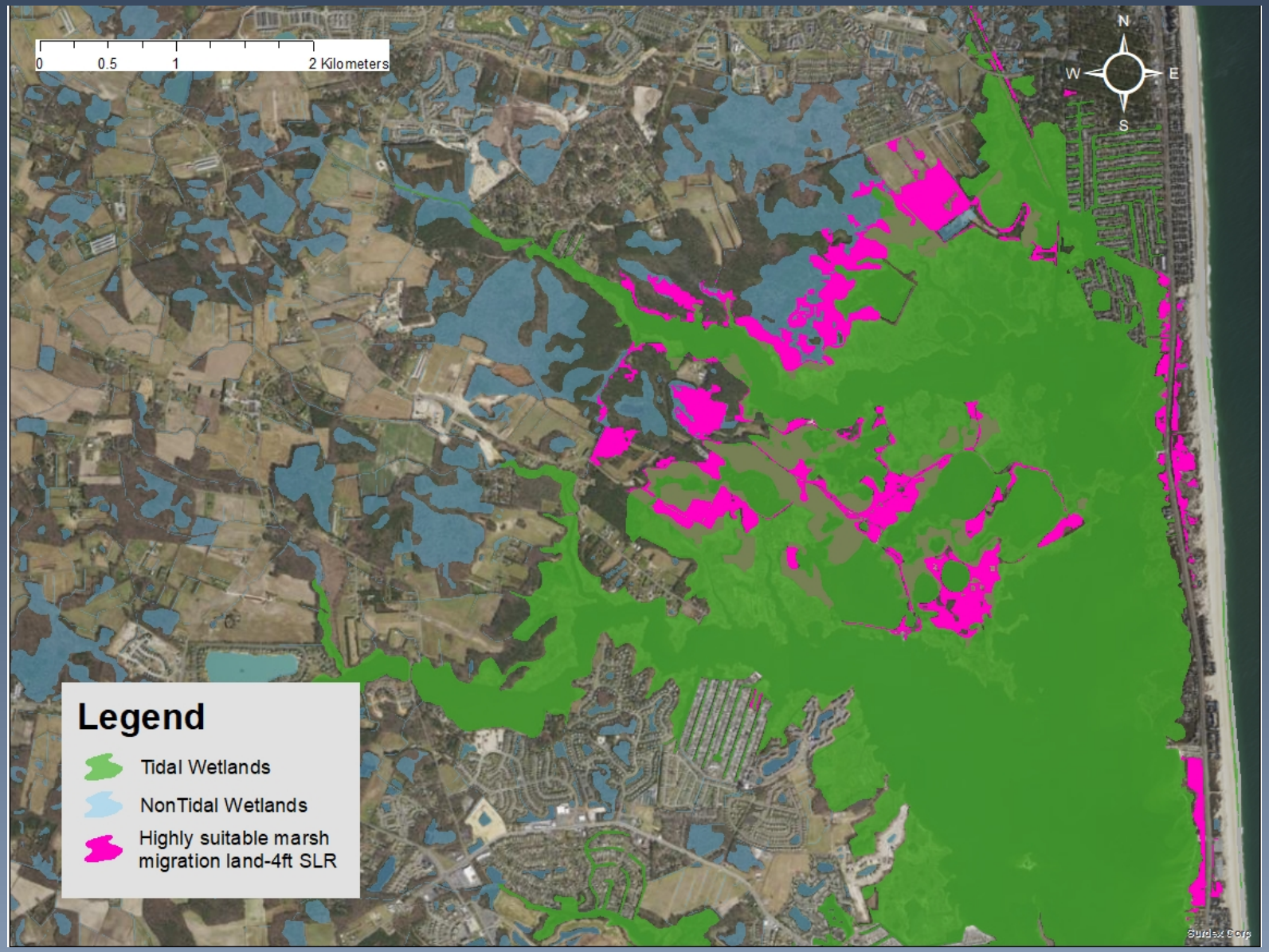
Spatial Results

- Output example for Indian River



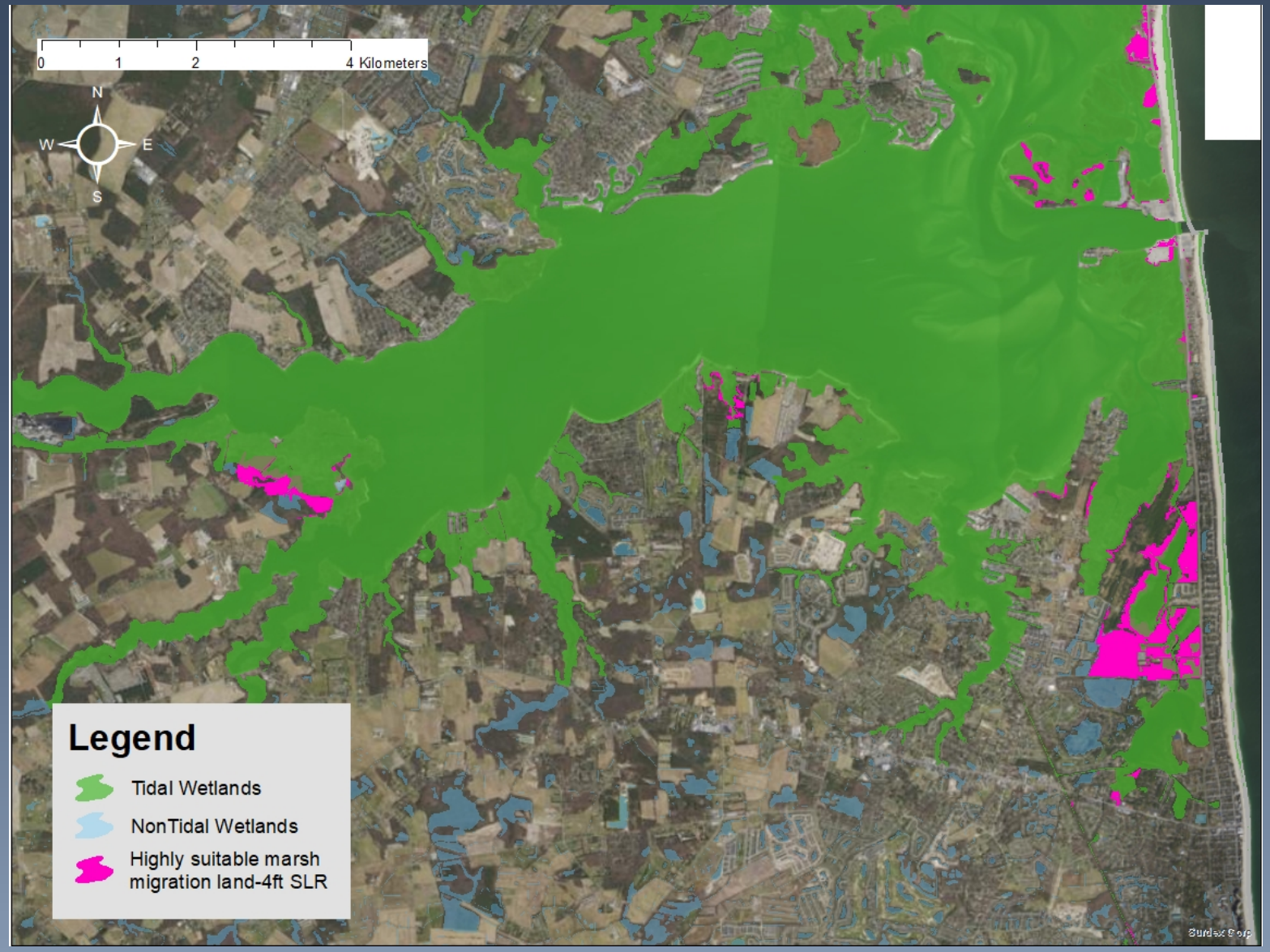
Spatial Results

- Highly suitable habitat for marsh migration in Little Assawoman



Spatial Results

- Highly suitable habitat for marsh migration in Indian River



Challenges and Limitations

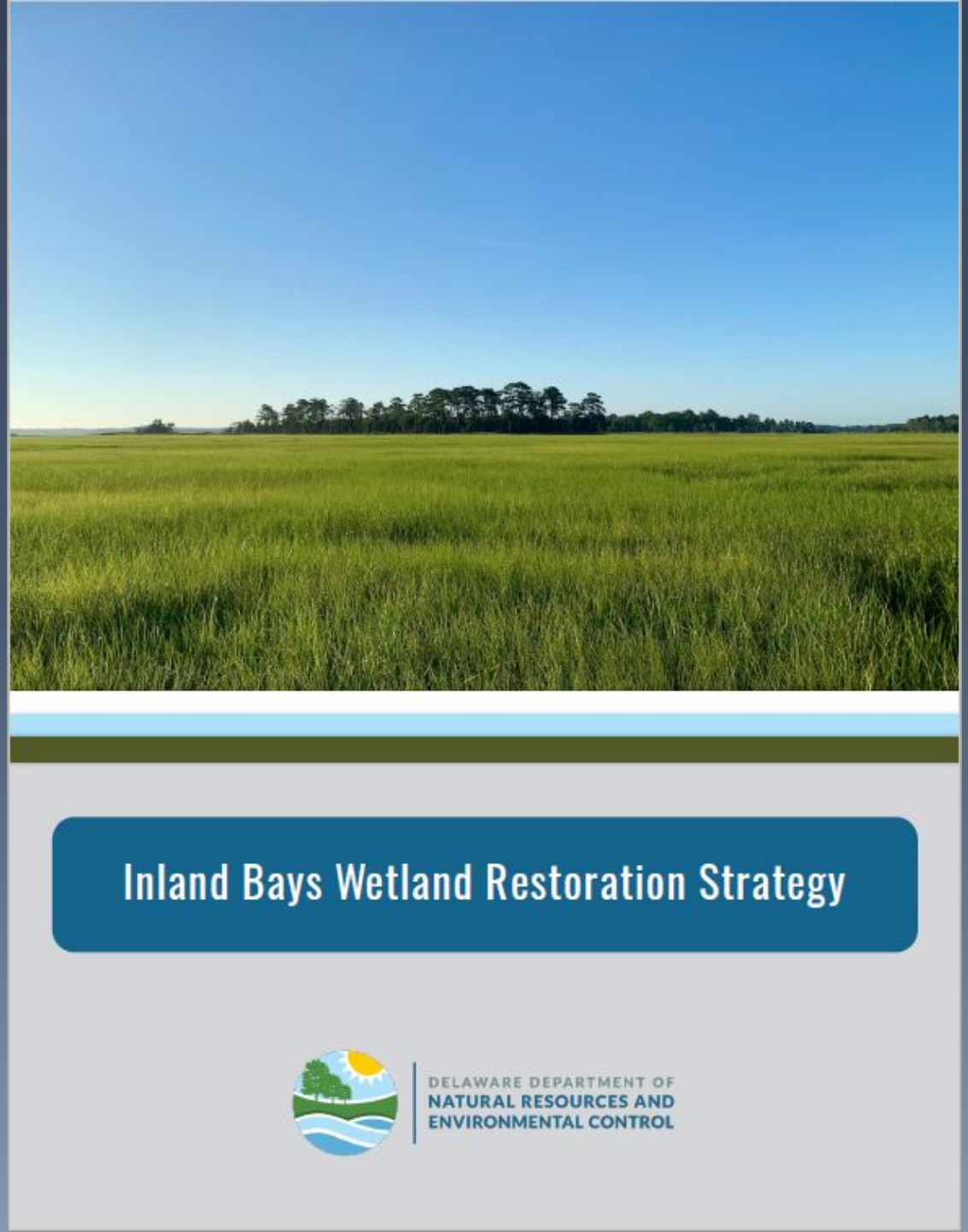
- Few existing priority plans
- WRR: cannot export feature layers
  - Limited spatial data manipulation (little clipping, no intersecting, etc)
  - Cannot read results for each polygon
  - Local details and reports require small areas (e.g. subwatersheds)
- Sensitivities to prioritizing private lands
- Combatting local land use priorities
- Voluntary, not mandated; no measurable goals

Putting the Strategy in Action

- Press release
- Posted online
- Presentations
- Custom output packets for partners

Available Outputs

- Released in spring 2022
- Technical report
- Maps
- Summary Tables
- One-page flyer



Thank you!

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dewetlands.gov
https://dnrec.alpha.delaware.gov/watershed-stewardship/wetlands/restoration-strategies/