A Closer Look at Delaware Wetland Trends 1992-2007

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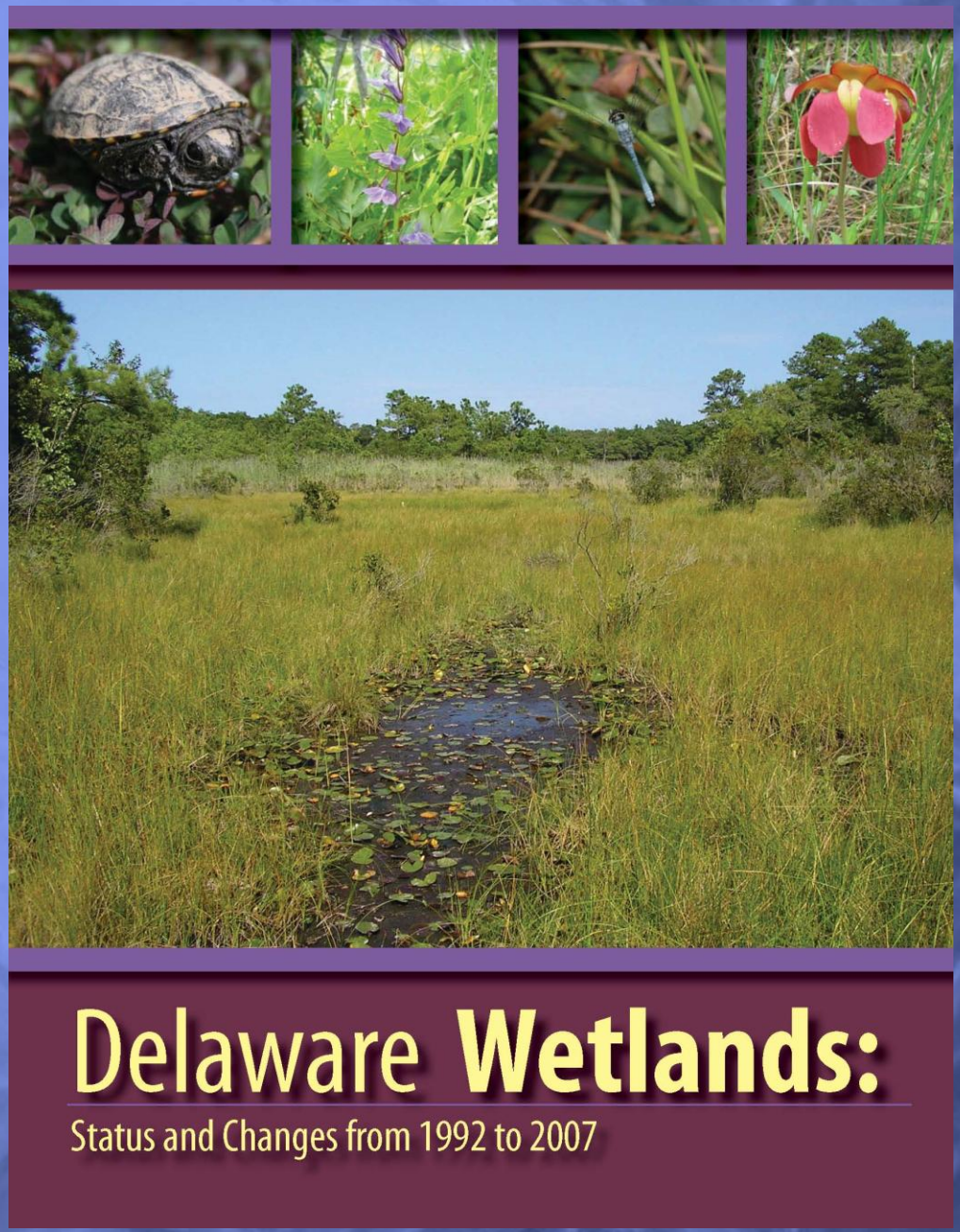


Periodic Wetland Mapping

Ideally every 5-10 years

National Mapping Standards

Ability to track wetland acreage and change in type, gains and losses

Using NWI+, can asses potential of wetlands to perform certain functions

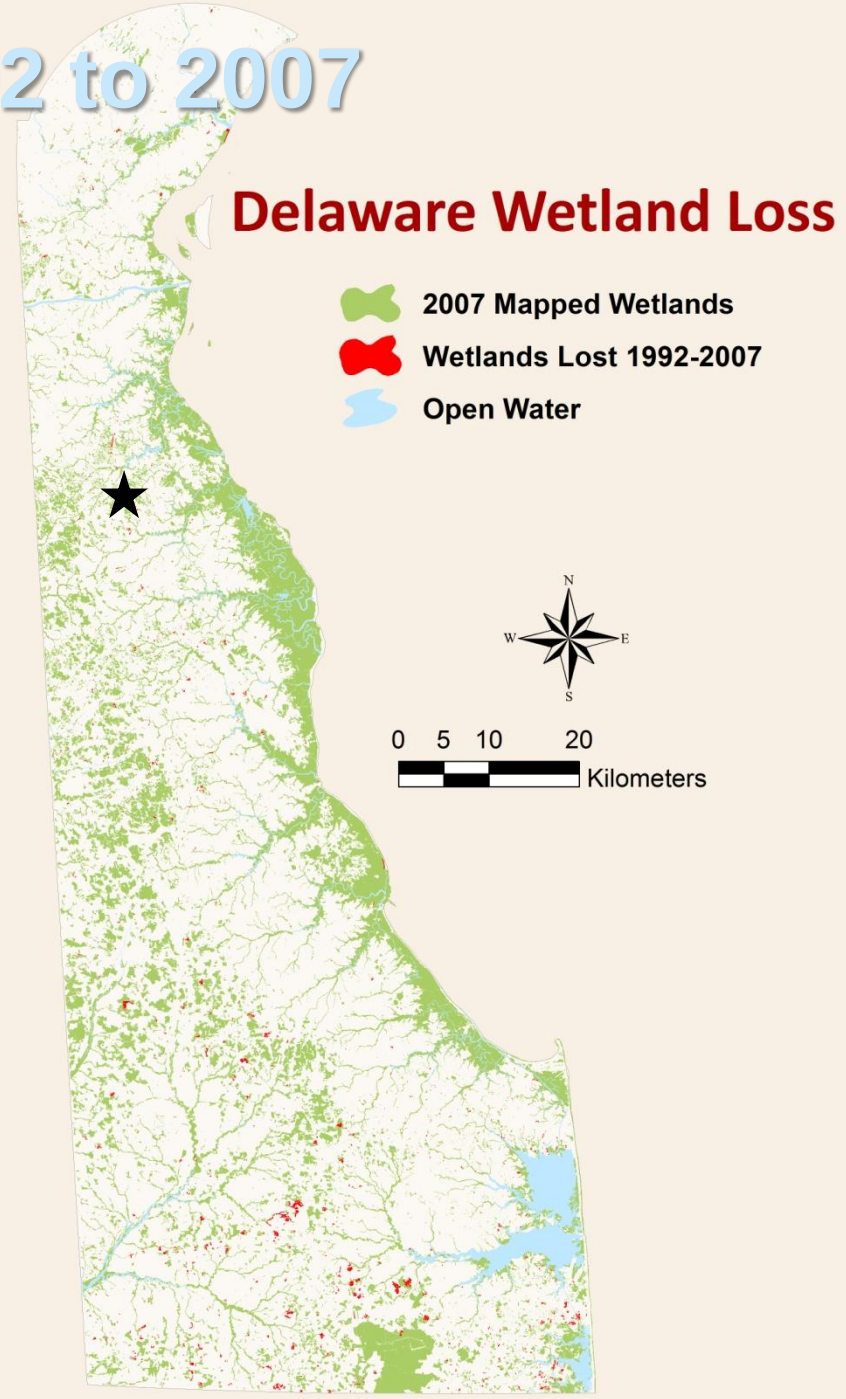
Delaware Wetlands – 1992 to 2007

- 320,076 acres of wetlands inventoried in 2007

- *vegetated wetlands*

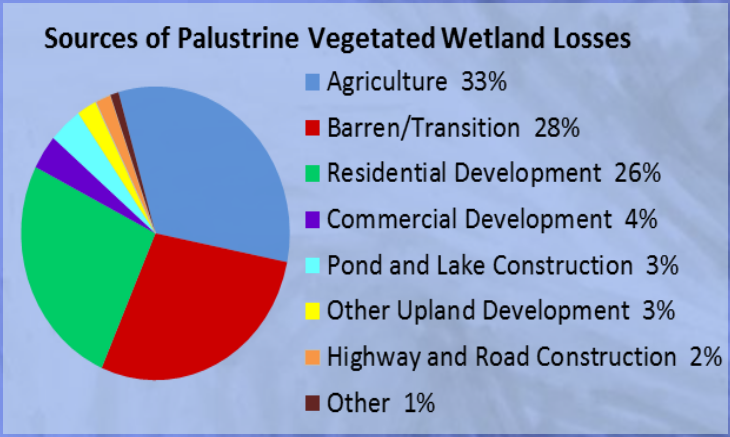
  -3,894 ac Gross loss
  +768 ac Gross gain
  -3,126 ac Net loss 1992-2007

★ Gross losses (3,894 ac)
nearly equal the size of Smyrna (3,807 ac)

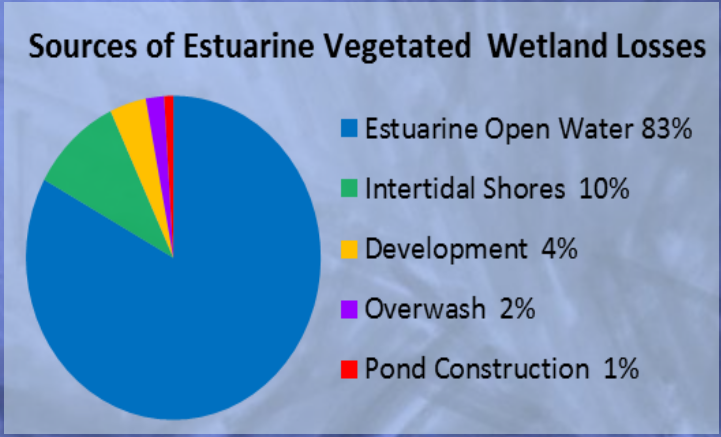


Delaware Wetlands – 1992 to 2007

92% of all losses were Palustrine wetlands (forested headwaters)

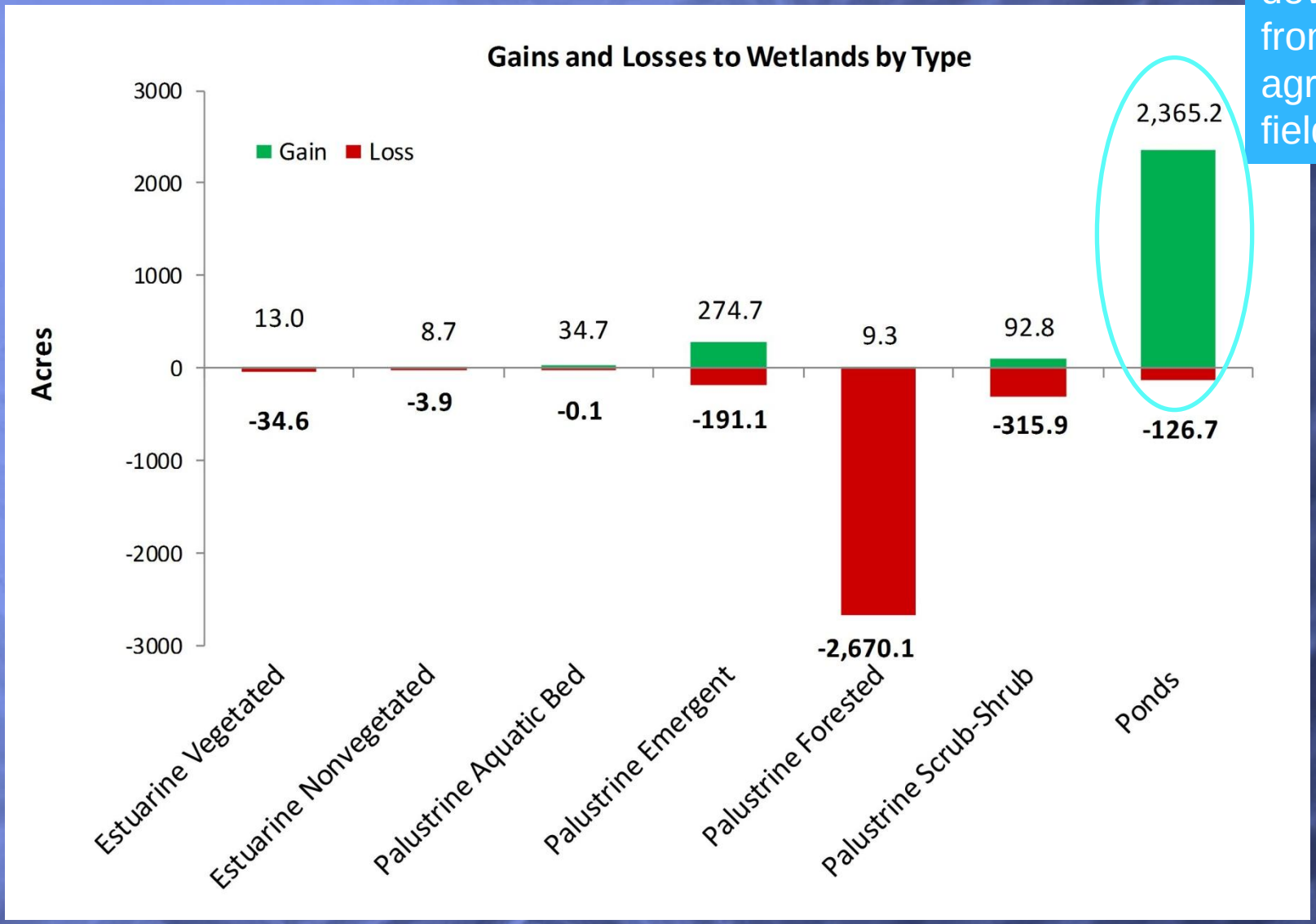


Net loss of 238 acres Estuarine wetlands fueled by submergence of marshes; gains came from emergence in open water



Delaware Wetlands – 1992 to 2007

65% of created ponds were in new developments from converted agriculture fields



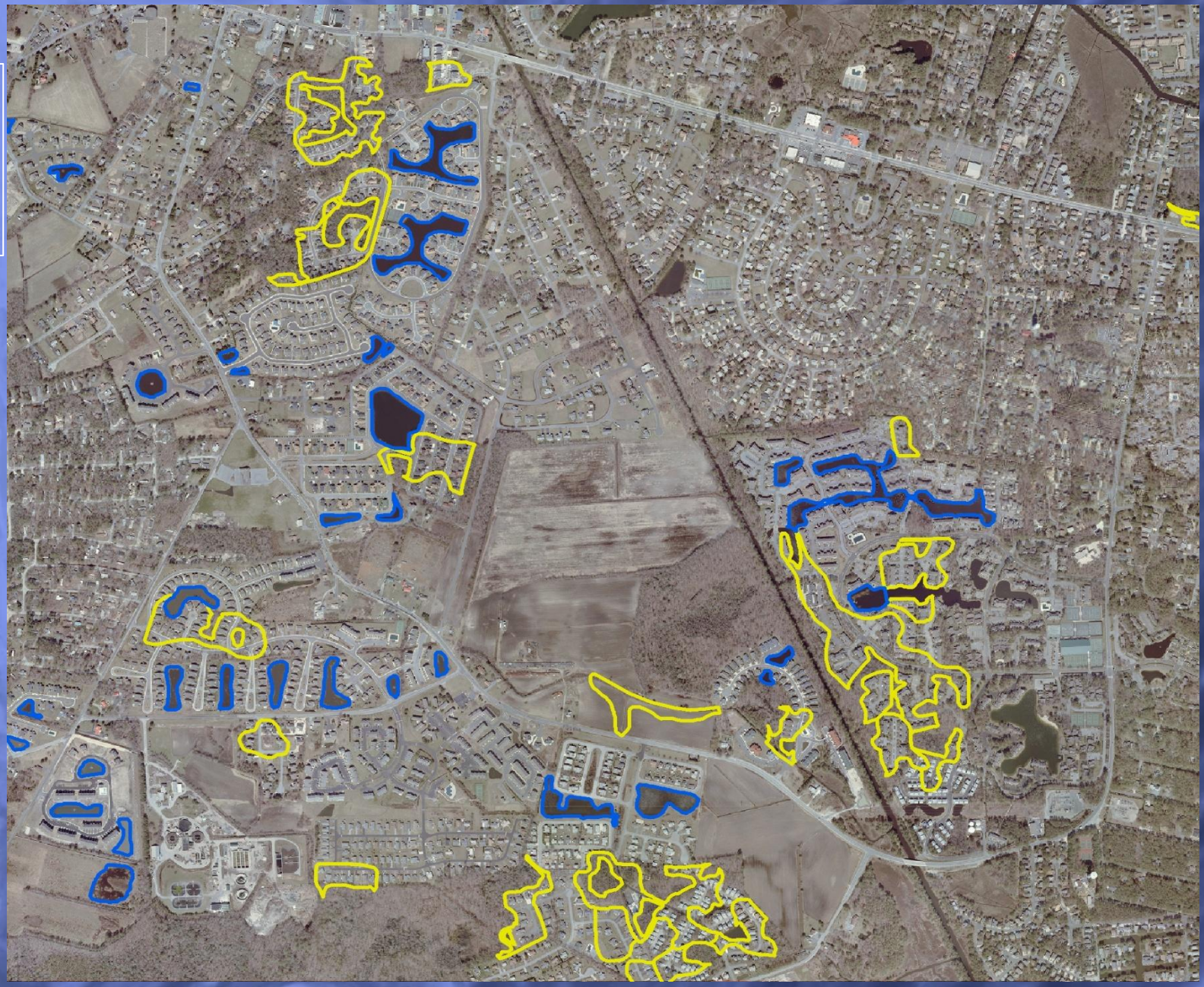
2007 Conditions – showing loss and gain

Loss

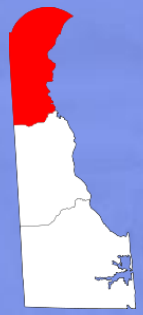
Gain

93 acres forested & emergent Lost

37 acres Ponds gained



Wetland Trends by County 1992-2007



New Castle:

least amount of loss, gain and change

-117 ac Palustrine & Estuarine vegetated

+626 ac Palustrine nonvegetated (ponds)

Kent County:

greatest loss and change in Estuarine wetland

-165 ac Estuarine vegetated

-264 ac Palustrine vegetated

+712 ac Palustrine nonvegetated

Sussex County:

led all counties in Palustrine losses and pond gains

-2,583 ac Palustrine vegetated

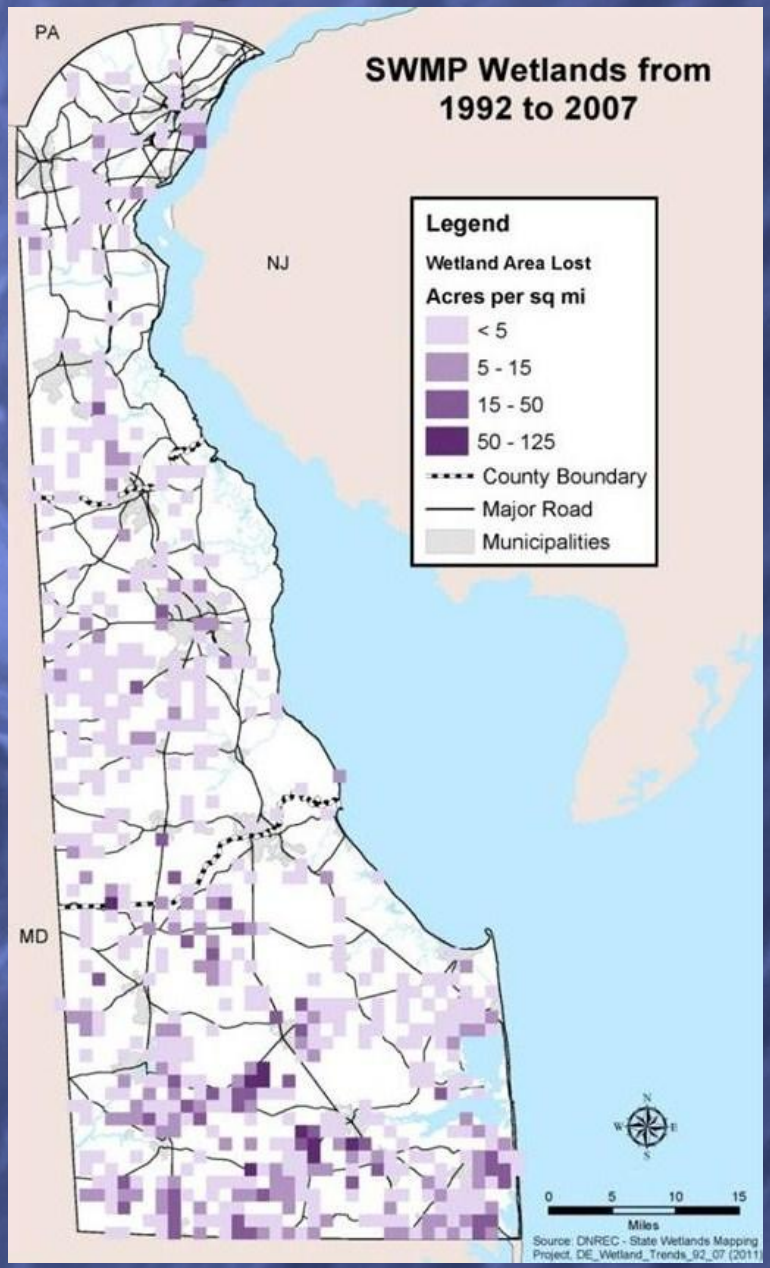
+1,124 ac Palustrine nonvegetated

Patterns of Wetland Loss by County 1992-2007

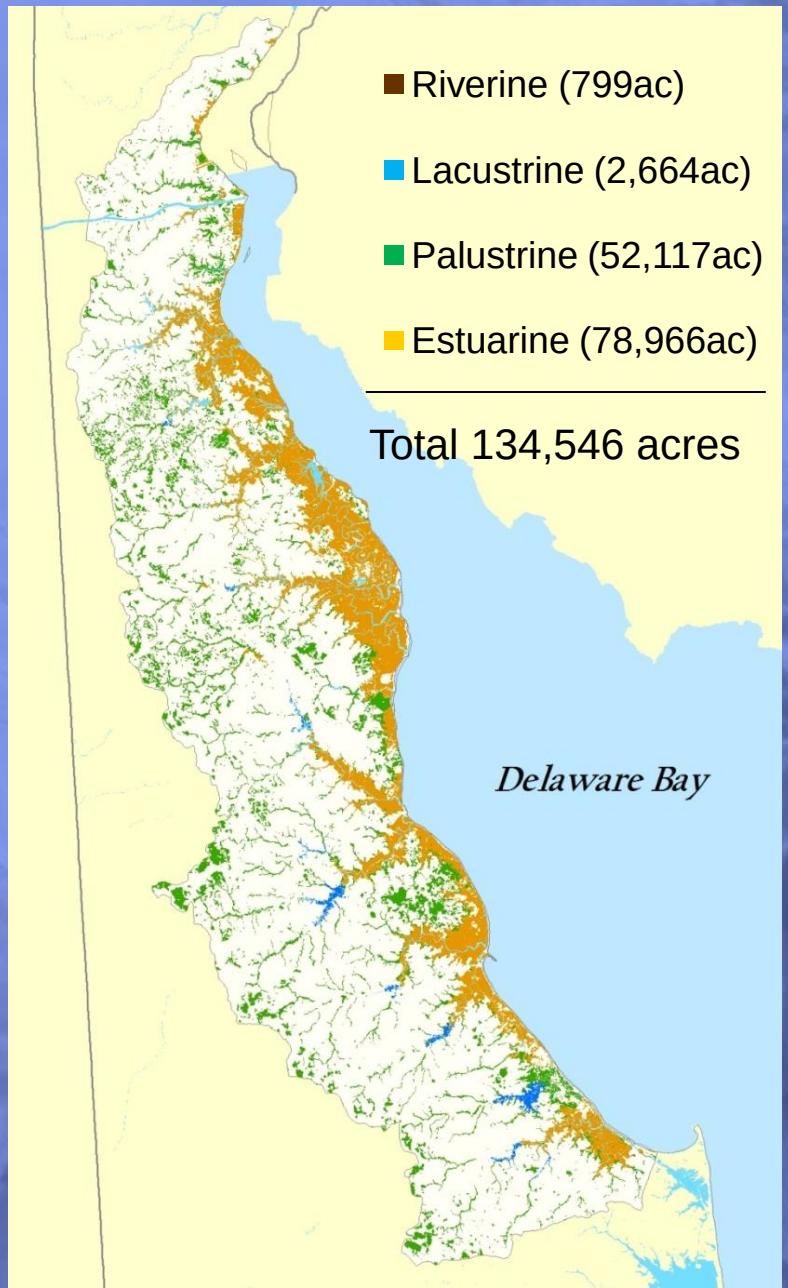
Rate of Loss by **County**:

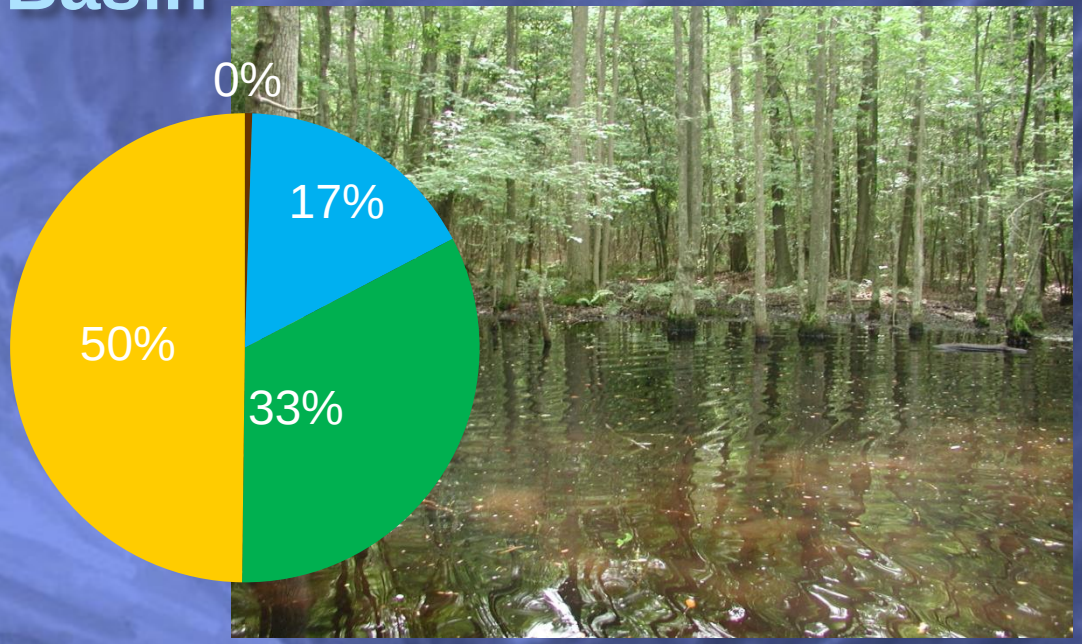
New Castle	0.51 ac/mi²
Kent	0.60 ac/mi²
Sussex	2.81 ac/mi²

- Land Use decisions are local
- Counties have their own codes, ordinances, and requirements
- Residential/Commercial development boom affected the resort areas



Trends: Delaware Bay Basin

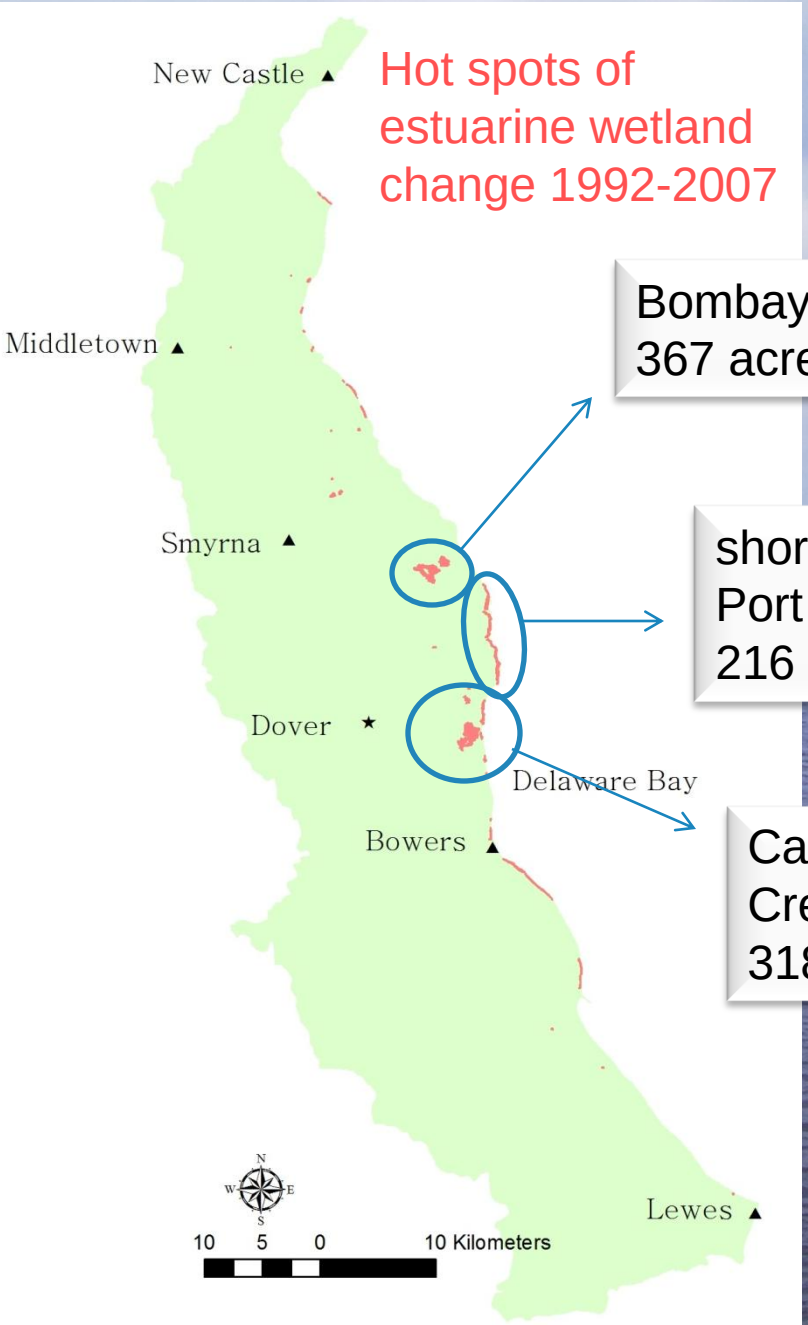




Delaware Bay Basin is host to:

- 1752 acres of coastal plain ponds mostly in the Blackbird and area West of Dover
- 1160 acres of Atlantic white cedar mostly between Harrington and Georgetown

Delaware Bay Basin- Estuarine Wetland Changes



Hot spots of estuarine wetland change 1992-2007

Bombay Hook NWR
367 acres

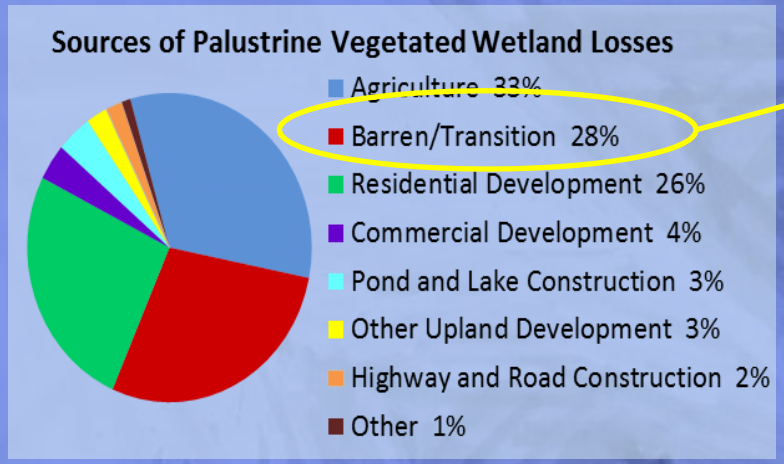
shoreline Leipsic to Port Mahon
216 acres

Cattail Gut at Little Creek Wildlife Area
318 acres

Representing changes from tidal emergent to open water wetlands

Open water wetlands are low functioning

Losses Further Categorized 2007-2010



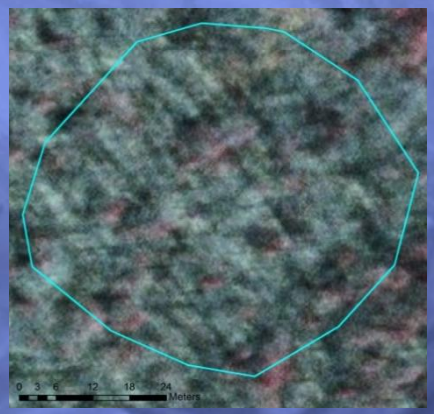
1061 acres of Palustrine vegetated wetlands were categorized "Barren/Transition" in 2007

what has become of these?

what can these losses be attributed to?

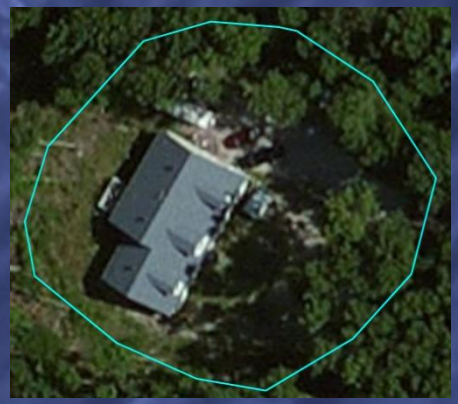
Using 2010 imagery
Determine change in use between 2007 to 2010
Example:

1992
Forested



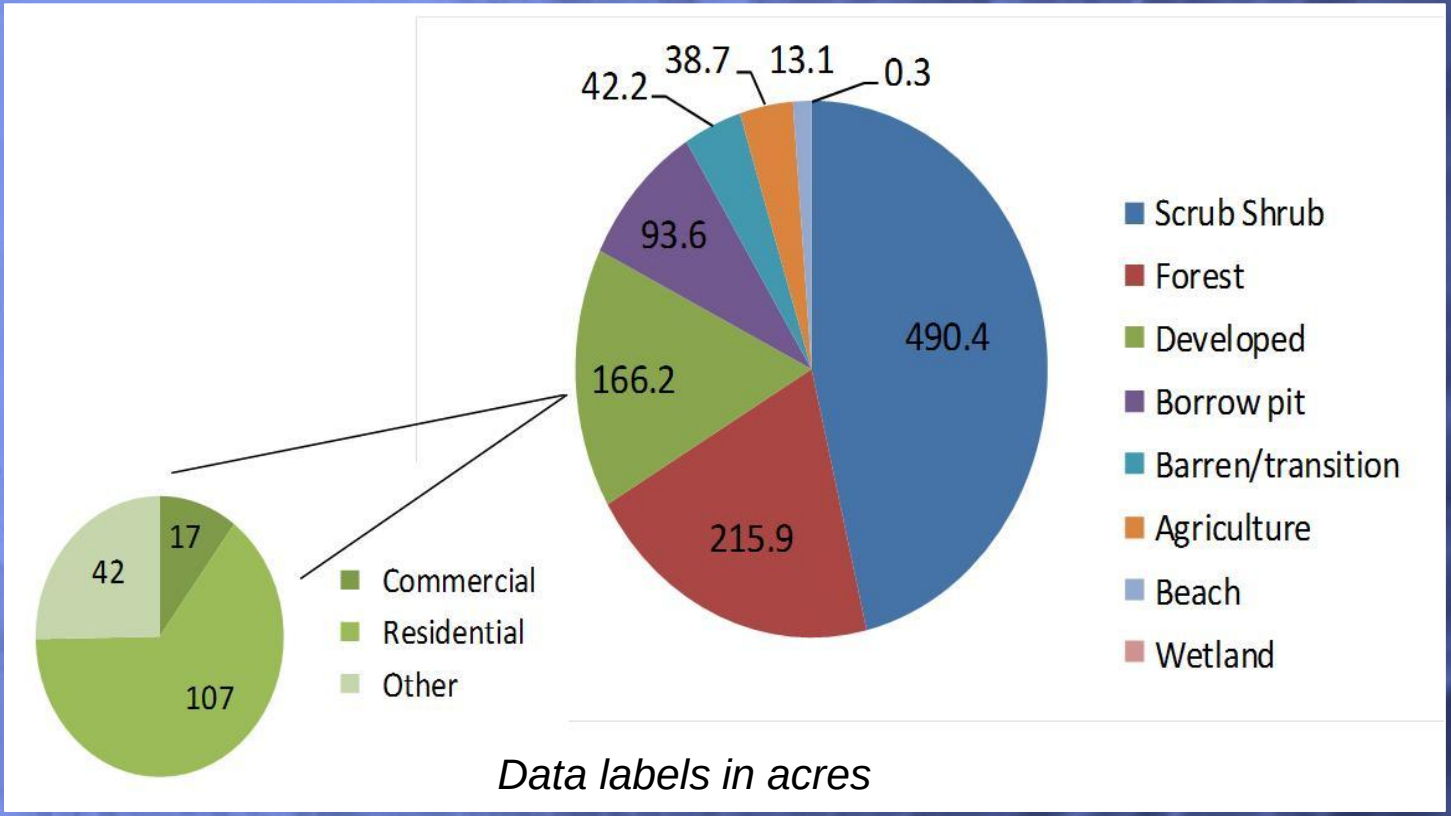
2007
In transition

2010
Residential



Losses Further Categorized 2007-2010

Landuse outcomes for 'barren/transition' lost wetlands based on 2010 aerial photography



- 66% transition land regenerated into scrub shrub or forest
- Additional 107 acres were converted to residential development

Understanding Wetland Loss

DNREC met with Corps, EPA , USFWS and NRCS to further dissect changes to wetlands and causes

Clarified how the regulatory permitting process affects wetland loss

- Exemptions
- Nationwide Permits
- Isolated Wetlands
- Lack of resources
- No regard for cumulative effects

Takeaways:

1. Regulatory programs not 100% effective at protecting wetland acreage or function

2. Most focus is on wetland acreage and type with minimal regard to functional services

DNREC Initiative

Renewed focus on developing protection mechanisms or programs

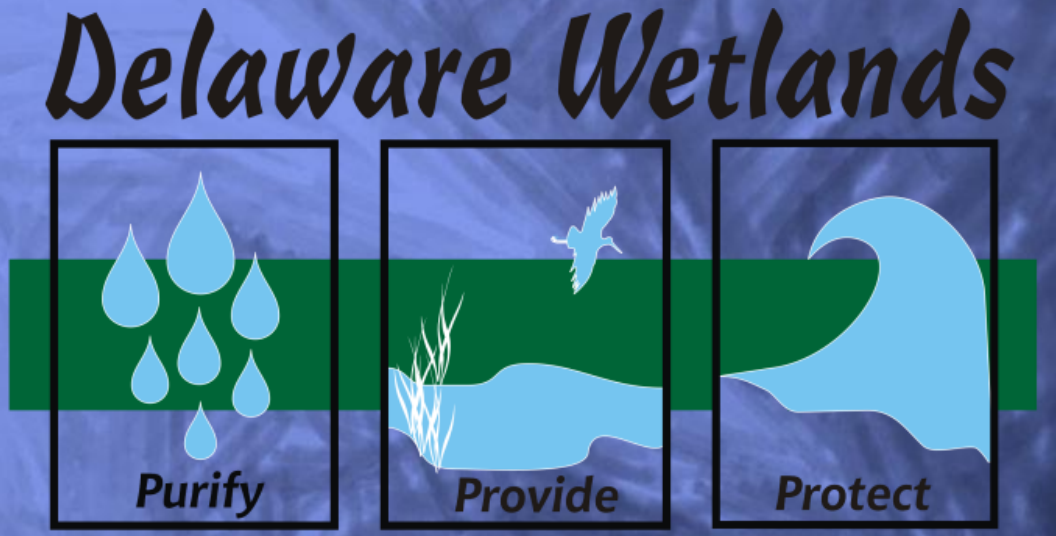
Acquisitions and Easements (over 10,000 acres of wetland from 1992-2007)

Creative incentives

Work with partners for protection

Explore multiple funding opportunities

Questions?



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