Welcome and Workshop Context

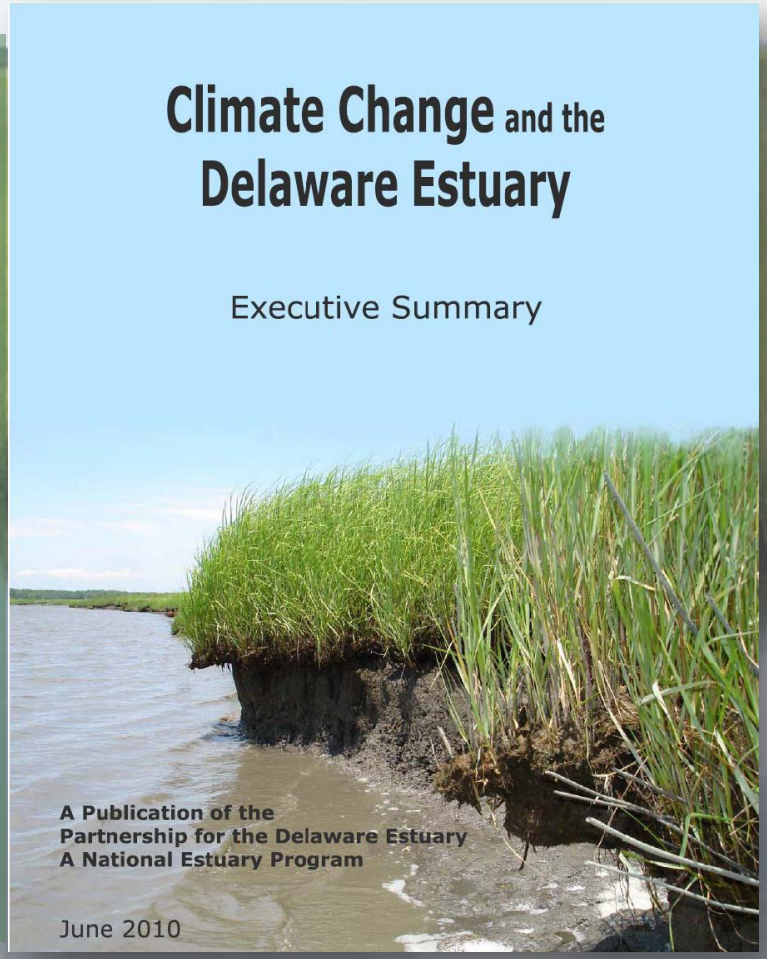
Why do we care about Living Shorelines?

Jennifer Adkins, Executive Director
Partnership for the Delaware Estuary
December 13, 2011

Regional Climate Change Impacts

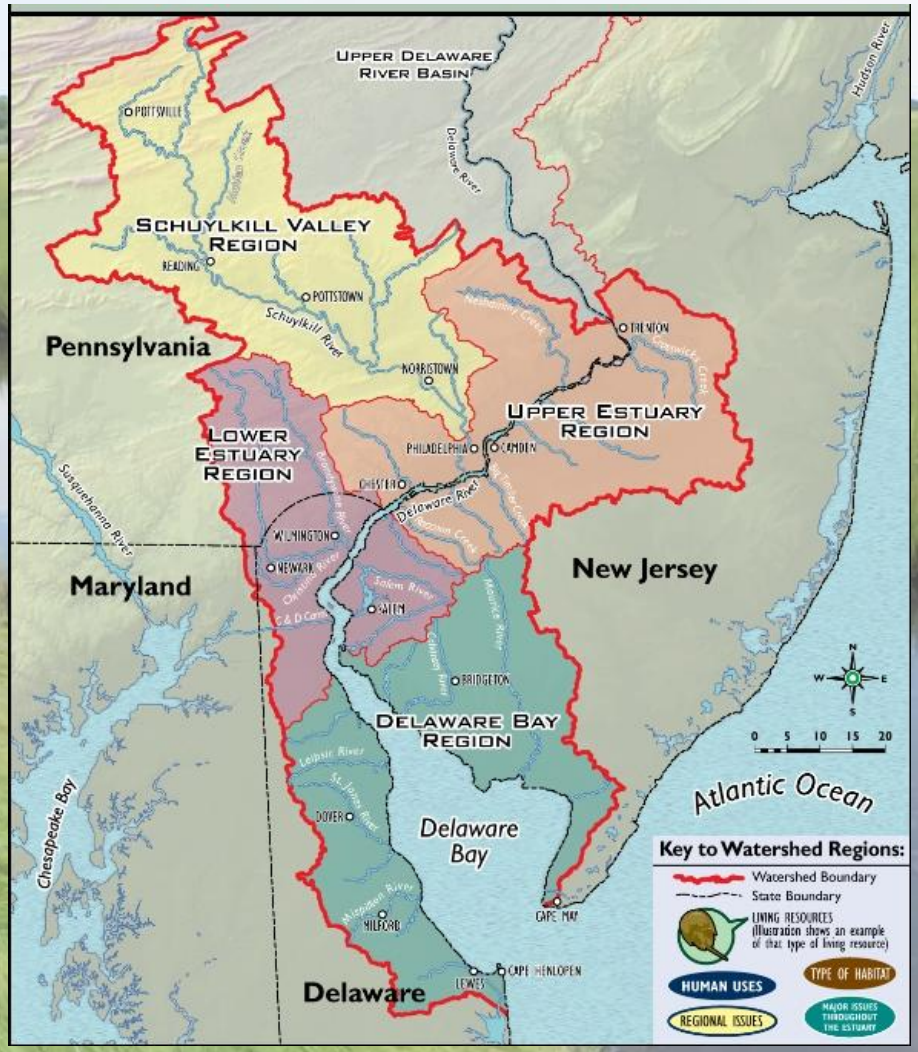
- Warmer temperatures
- More frequent/severe precipitation
- Increased rate of sea level rise
- More extreme heat days
- Fewer frost days

...these will combine to create stress on natural resources.



PARTNERSHIP FOR THE DELAWARE ESTUARY INC.

The Delaware Estuary Watershed



The Delaware Estuary

- Over 200 species of fish
- Largest breeding population of horseshoe crabs
- 2nd highest concentration shorebirds

The Delaware Estuary

- > $10 Billion in economic activity
- > $10 Billion in jobs
- > $12 Billion in ecosystem goods and services

The Delaware Estuary

- Drinking Water
- Bivalve Shellfish
- Tidal Wetlands

Drinking Water

The Delaware River, its bay, and tributaries provide a source of drinking water for

17 MILLION PEOPLE

--over 5% of the entire U.S. population.

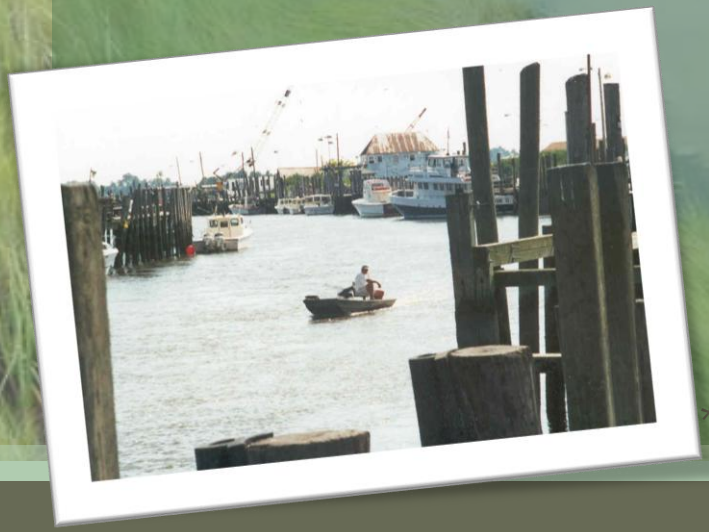
Bivalve Shellfish

Bivalves filter water, stabilize sediment, and recycle nutrients.

New Jersey's shellfish industry is worth

$790 MILLION*

a year.



**http://www.nj.gov/dep/newsrel/2010/10_0053.htm*

Tidal Wetlands

Tidal wetlands filter water, grow fish, sequester carbon, and protect coastal communities from floods and storms.

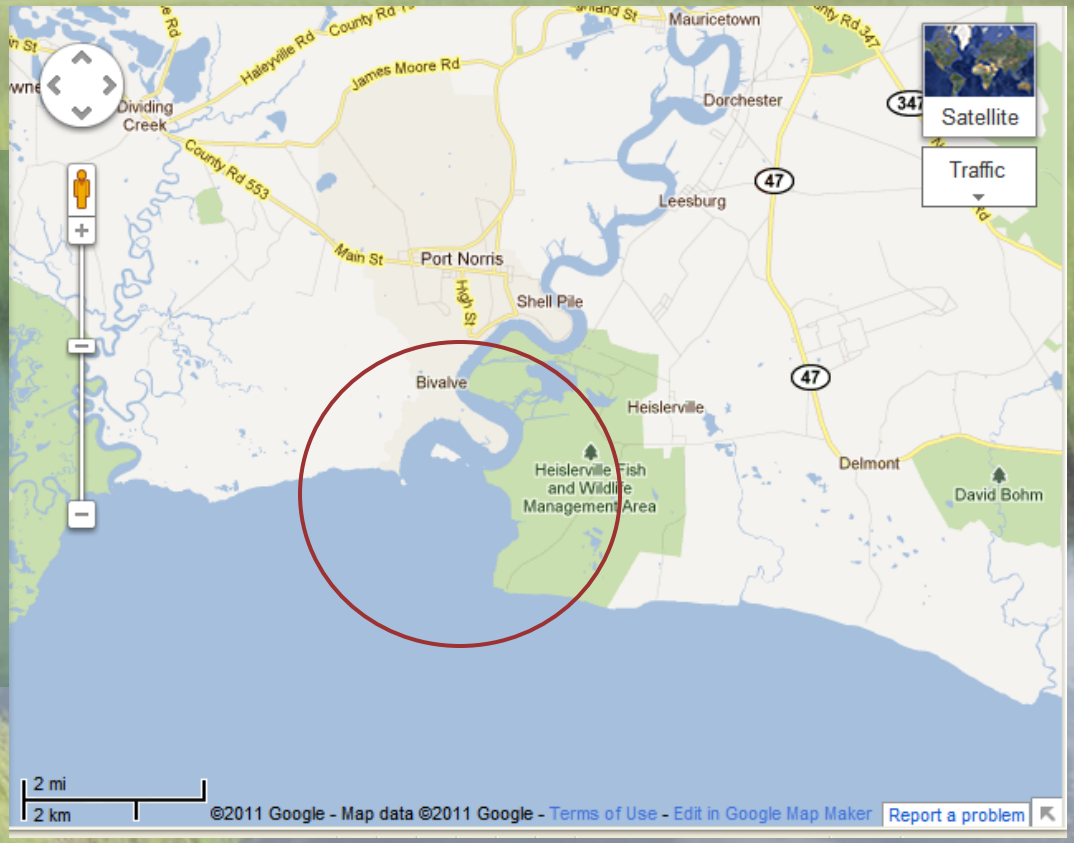
The Delaware Estuary's tidal wetlands provide ecosystem services of

$1 BILLION

a year.

How Will Climate Change Impact Tidal Wetlands?

Erosion due to sea level rise is the biggest threat to salt water tidal wetlands




3/10/1991
1991
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Miller Ave
Bivalve, NJ 08349
Bivalve
1991
Image U.S. Geological Survey
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Imagery Date: 3/9/1991
1991
39°13'31.28" N 75°01'47.17" W elev 3 ft
Eye alt 10450 ft


3/24/1995
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Miller Ave
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Bivalve
1995
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Imagery Date: 3/24/1995
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39°13'31.28" N 75°01'47.17" W elev 3 ft
Eye alt 10450 ft


12/30/2002
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Miller Ave
Bivalve, NJ 08349
Bivalve
2001
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8/12/2006
Miller Ave
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7/21/2010
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1991
39°13'31.28" N 75°01'47.17" W elev 3 ft
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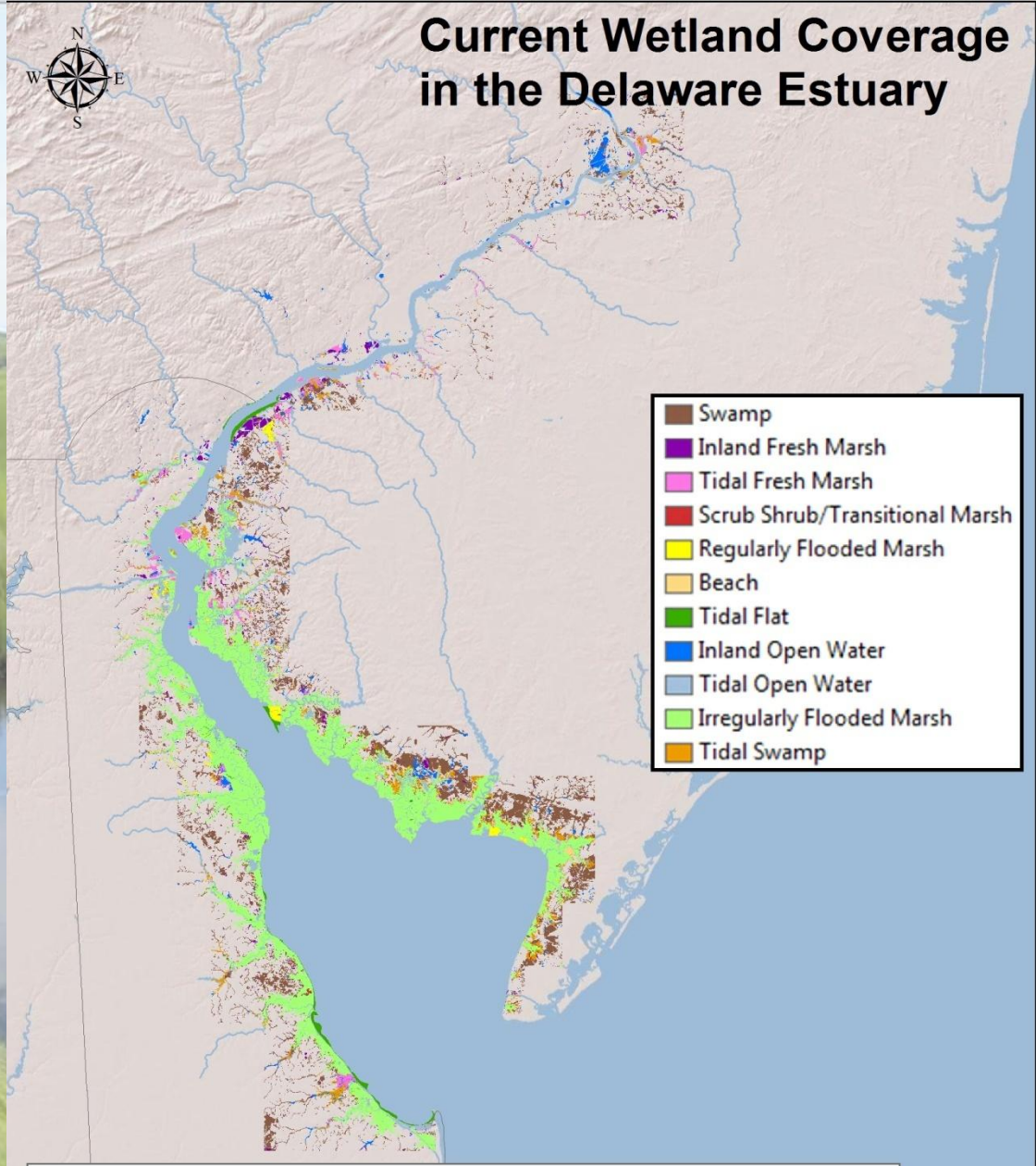
Wetlands

If this much shoreline has eroded since 1991, what can we expect for wetlands 50 or 100 years in the future?

Wetlands

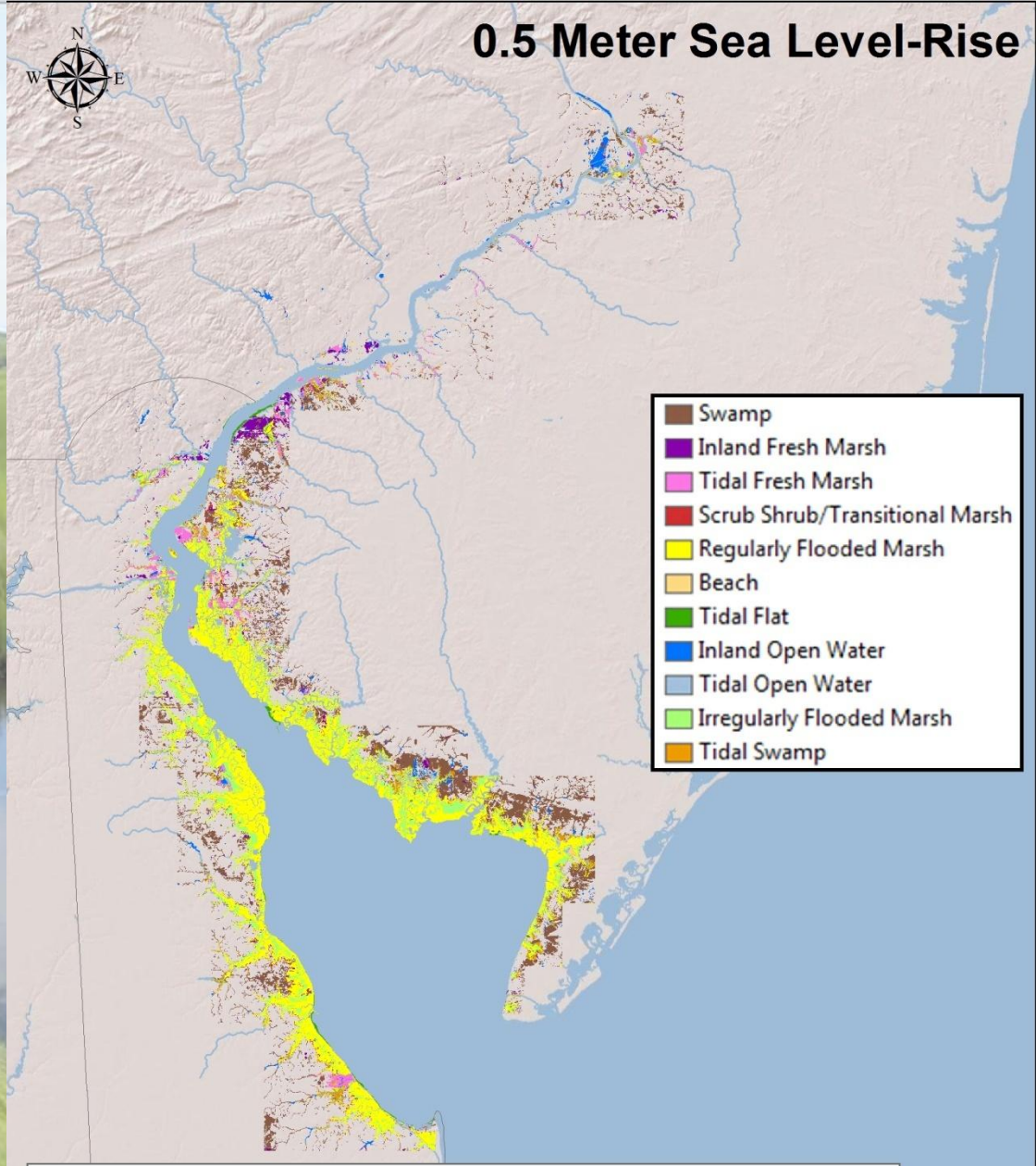
Current conditions. Light green means ‘irregularly flooded marsh.’



Sources:
-Industrial Economics (2010). Appendix G: Application of Ecological and Economic Models of the Impacts of Sea-Level Rise to the Delaware Estuary. In Partnership for the Delaware Estuary, Climate Change and the Delaware Estuary: Three Case Studies in Vulnerability Assessment and Adaptation Planning. Wilmington, DE: PDE, Re. No. 10-01.
-National Wetlands Inventory, U.S. Fish & Wildlife Service 1981-1999

Wetlands

At 0.5 meter sea level rise. Yellow means ‘regularly flooded marsh.’



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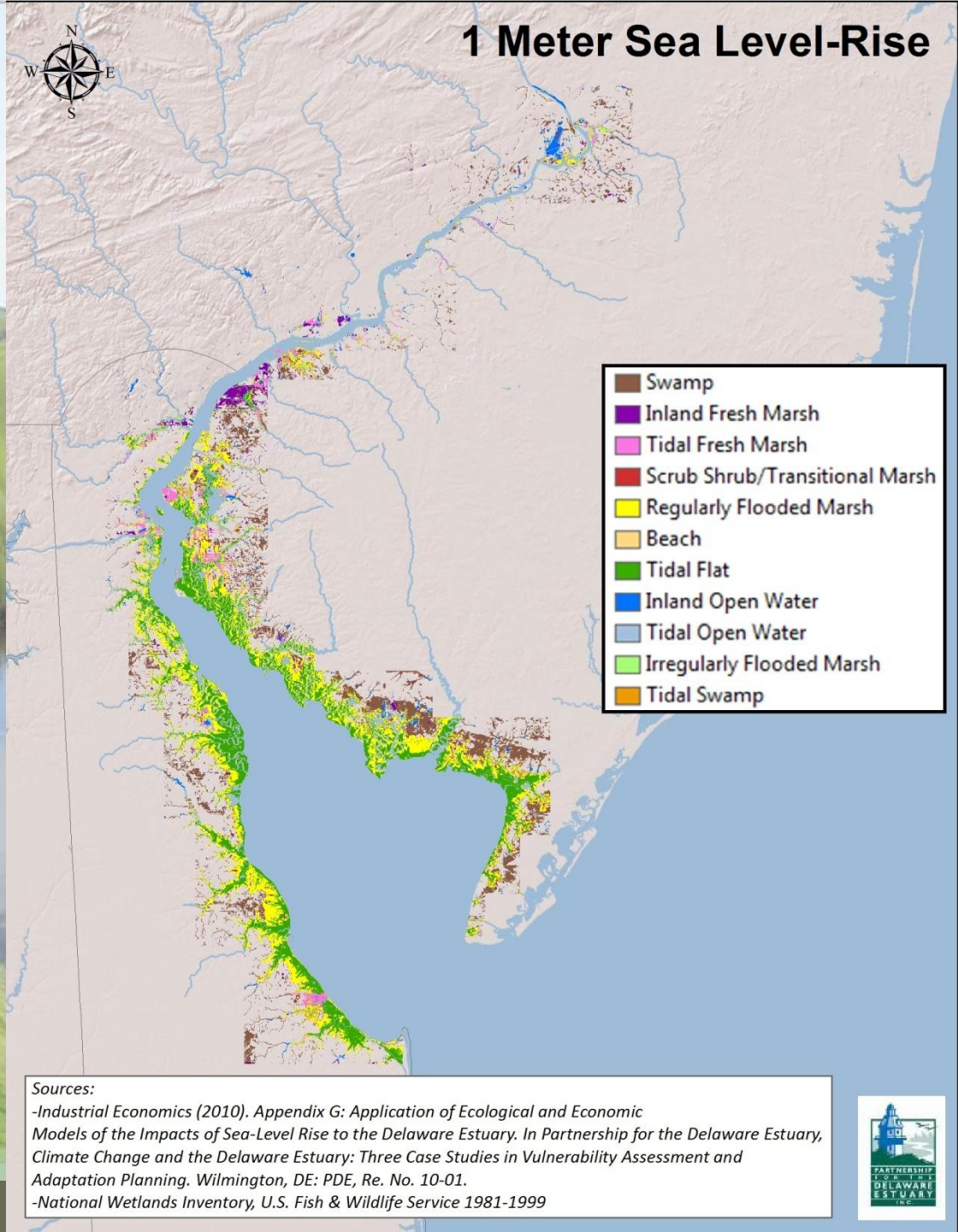
Wetlands

At 1 meter sea level rise. Green means ‘tidal flat’ or mud flat.



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Wetlands

With 1 meter of sea level rise

83,500 acres

of tidal wetlands will be flooded by 2100.

Wetlands

Wetlands

83,500 acres

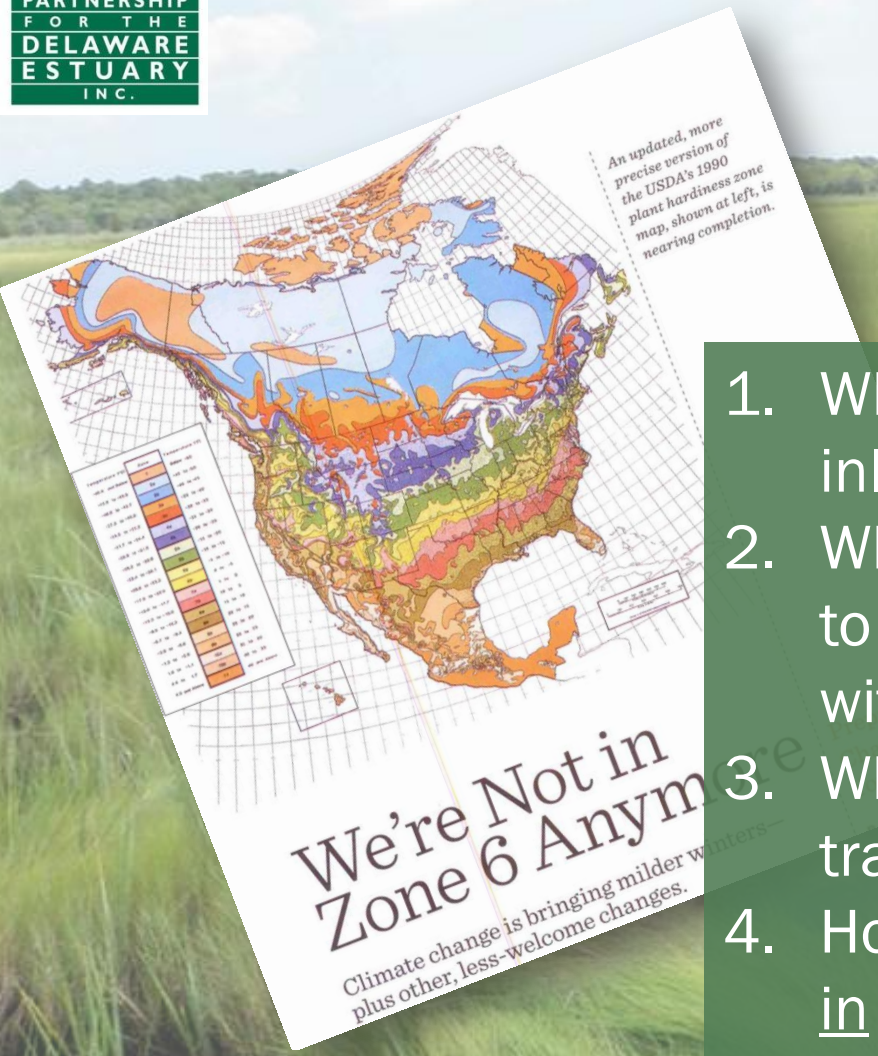
is over 7.6 x the size of Wilmington, DE.

Wetlands

83,500 acres

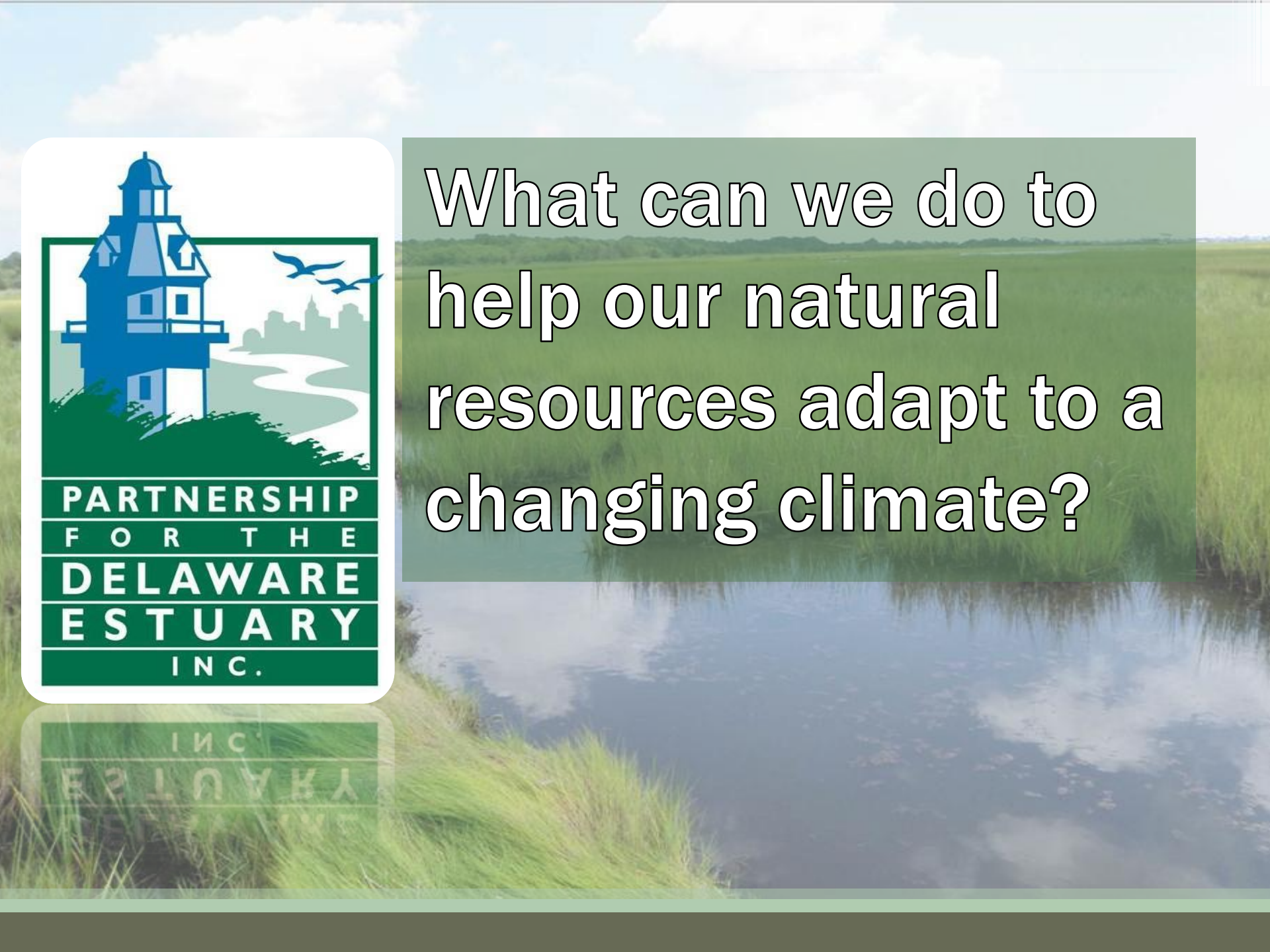
is almost the same size as Las Vegas.

Wetlands



We still don't know:

1. Whether/where wetlands can migrate inland.
2. Whether some wetlands will be able to keep pace with sea level rise without our help.
3. Whether freshwater wetlands will transition (or die?) with higher salinity
4. How many acres of wetlands are even <u>in</u> the Delaware Estuary, or how many acres we've already lost.



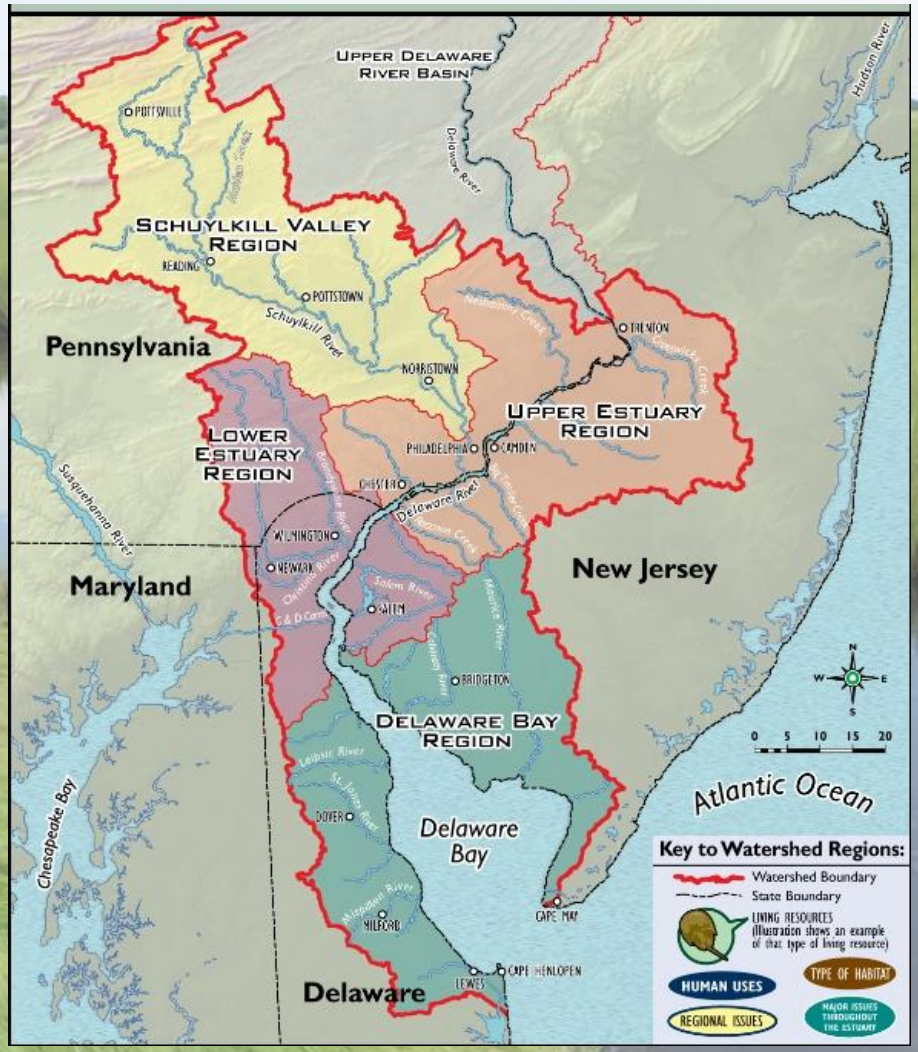
What can we do to help our natural resources adapt to a changing climate?

Delaware Estuary Living Shoreline Initiative

Help Communities Weather Change with Green Infrastructure

PARTNERSHIP FOR THE DELAWARE ESTUARY INC.

The Delaware Estuary Watershed



Thanks!

www.DelawareEstuary.org

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