

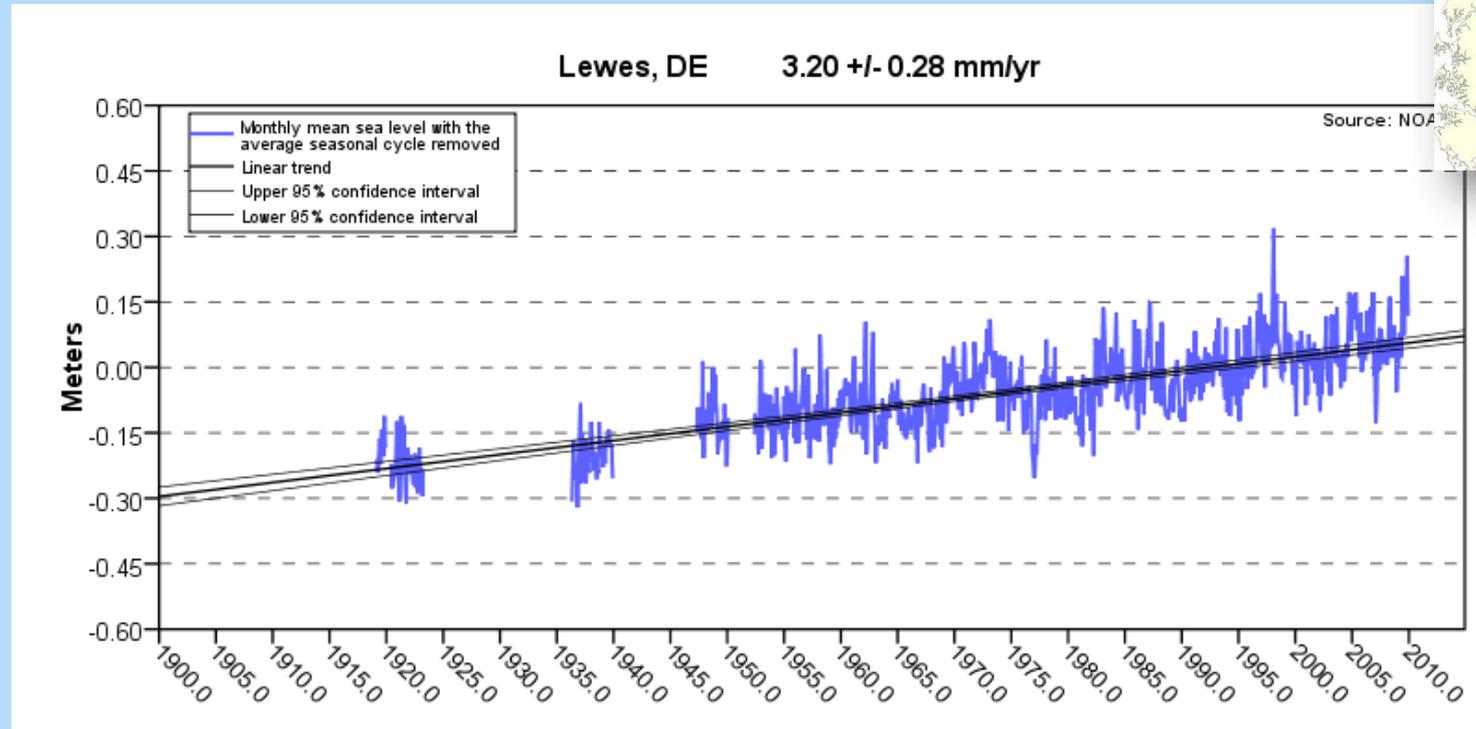
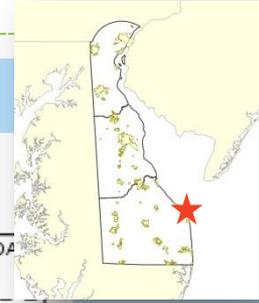
# Survey Says!



## **DELAWARE STATEWIDE SURVEY OF RESIDENTS' OPINIONS ON CLIMATE CHANGE AND SEA LEVEL RISE**

**KELLY VALENCIK**  
**DELAWARE COASTAL PROGRAMS**  
PRESENTATION FOR THE  
PARTNERSHIP FOR THE DELAWARE ESTUARY'S  
SCIENCE AND ENVIRONMENTAL SUMMIT  
JANUARY 26, 2015

# Sea Level Rise at Lewes, Delaware



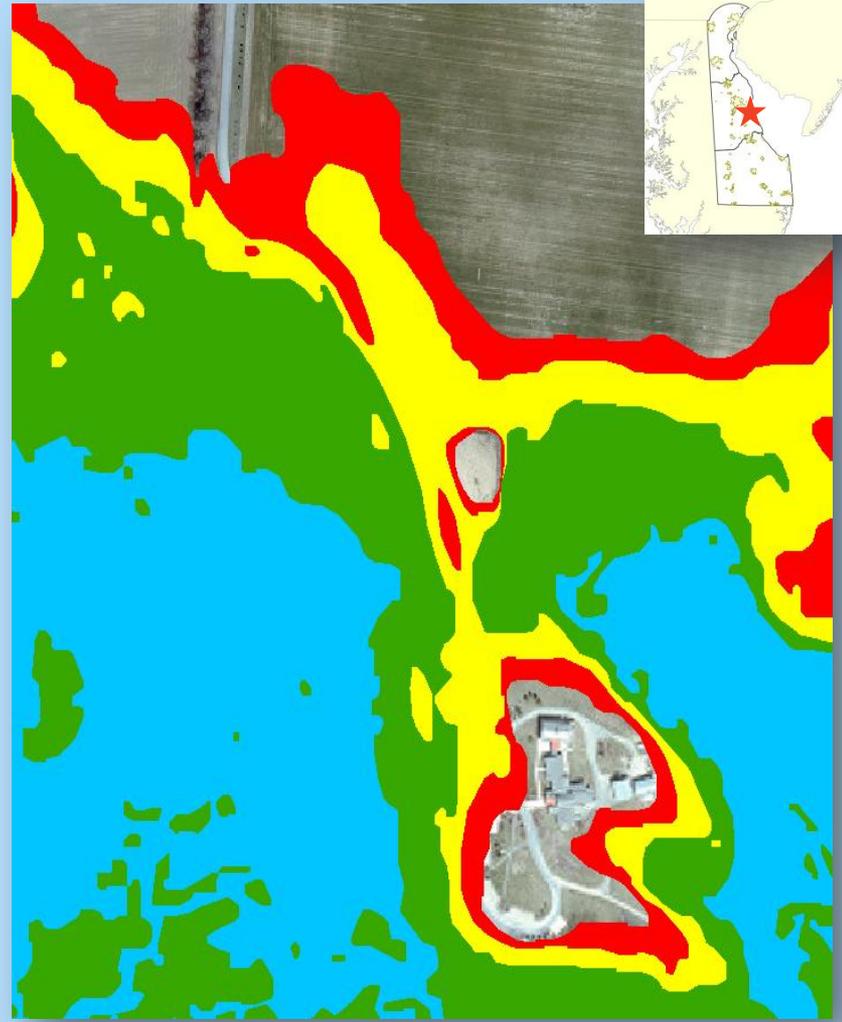
**Global rate = 1.7 mm/yr**

**Delaware rate = 3.35 mm/yr (13 Inches/100 years)**

# Rates of sea level rise are very likely to accelerate in the future



- **Scenarios for 2100**
  - 0.5 meter increase (Green)
  - 1.0 meter increase (Yellow)
  - 1.5 meter increase (Red)
- **Scenario Maps**
  - Bath-tub Model
  - For planning purposes only
  - **Available online:**  
<http://de.gov/slrmap>
  - **New – check out Surging Seas tool for Delaware!**  
<http://sealevel.climatecentral.org>



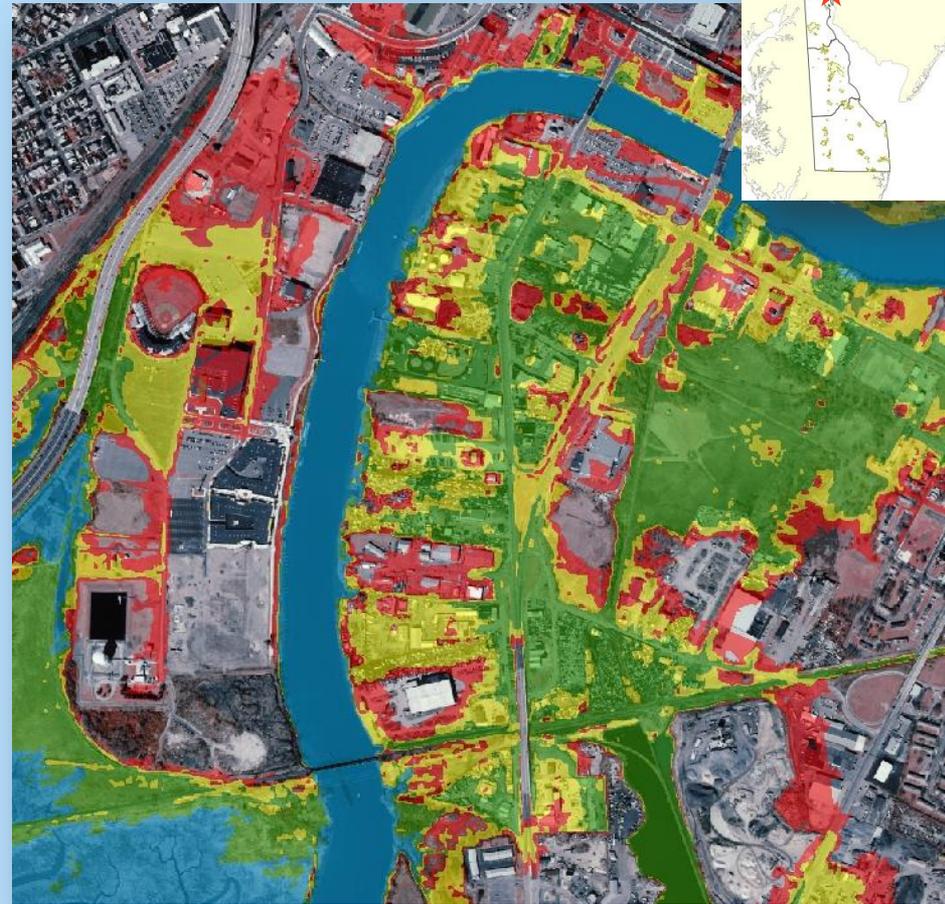
*St. Jones Reserve, Dover DE*

# Sea level rise will affect all of Delaware



- Urban Areas in Northern Delaware:

- Transportation Networks
- Neighborhoods
- Economic Development Zones
- Contaminated soils
- Public Safety Facilities
- Sewer Capacity

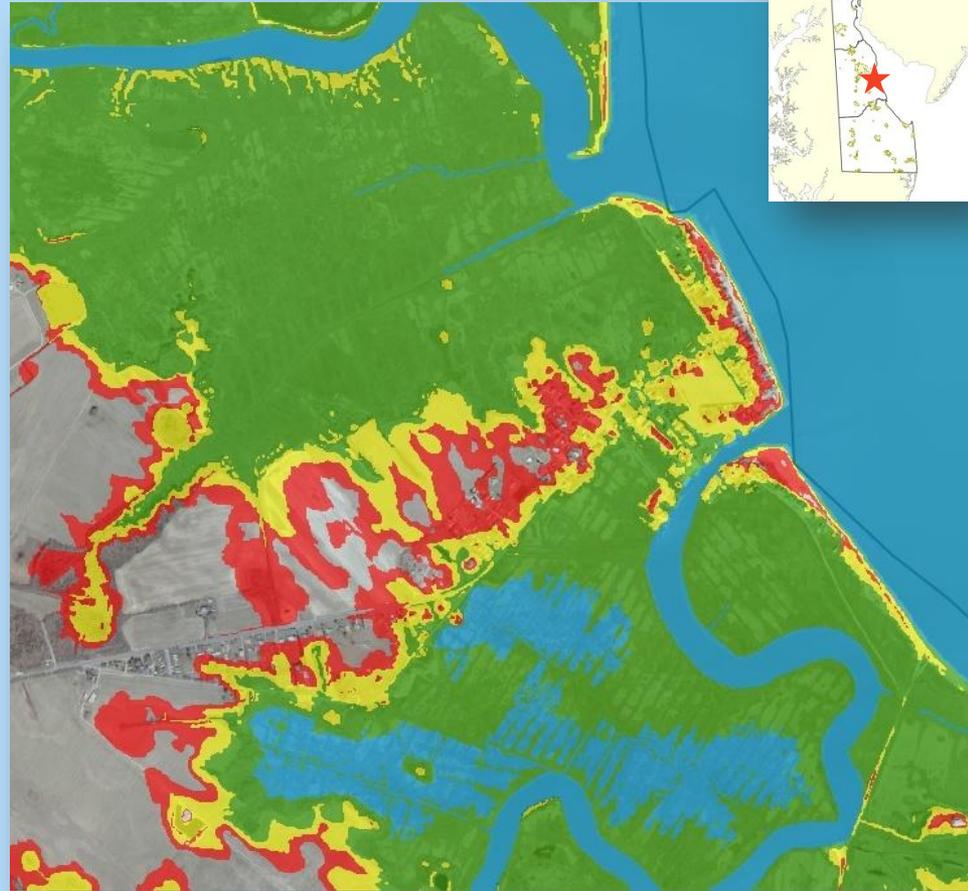


South Wilmington and Surrounding Areas with 0.5, 1.0 and 1.5 meters of SLR to 2100

# Sea Level Rise will affect all of Delaware



- At risk in Coastal Kent County:
  - Commercial/Recreational Fishing Docks
  - Residences
  - Habitat
    - ✦ Wetlands
    - ✦ Shorebirds
    - ✦ Horseshoe Crabs
  - Way of Life

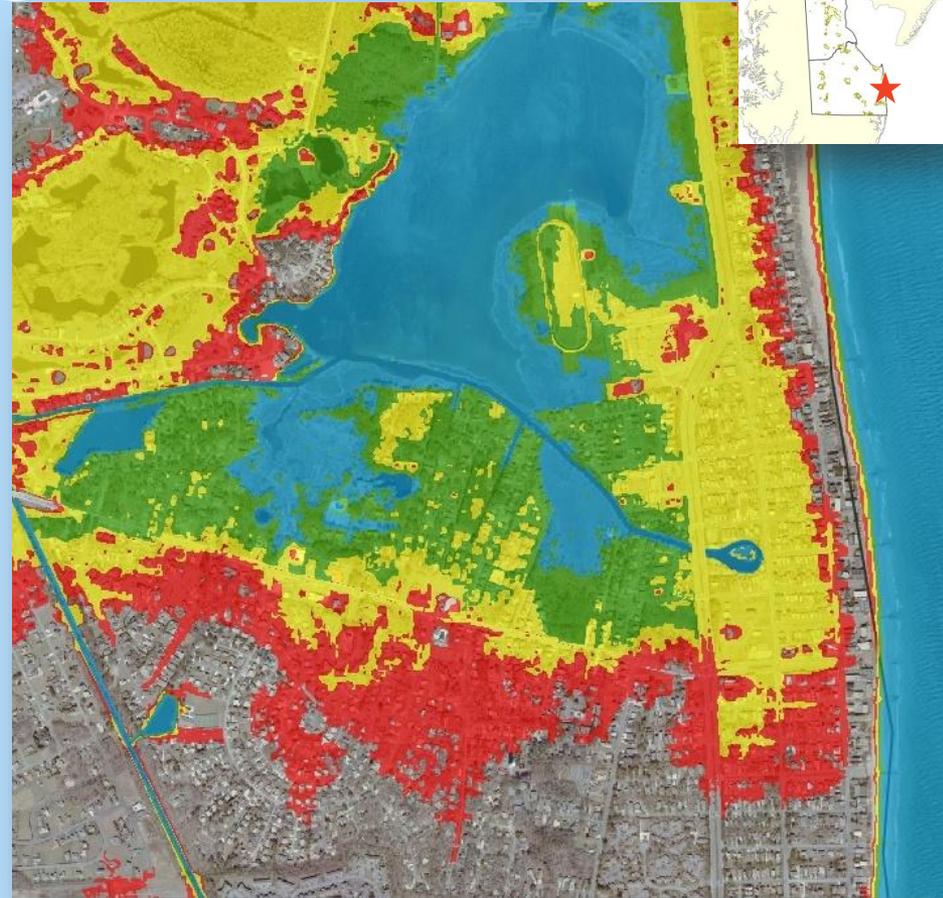


Bowers Beach and Surrounding Areas with 0.5, 1.0 and 1.5 meters of SLR to 2100

# Sea Level Rise will affect all of Delaware



- At risk in the Sussex Coastal Area:
  - Homeowners
    - ✦ Bayfront and Oceanfront
    - ✦ Septic Systems
  - Tidal Wetlands and riparian areas
    - ✦ Habitat
    - ✦ Flood Attenuation
    - ✦ Water Quality
  - Transportation Networks
  - DE National Guard

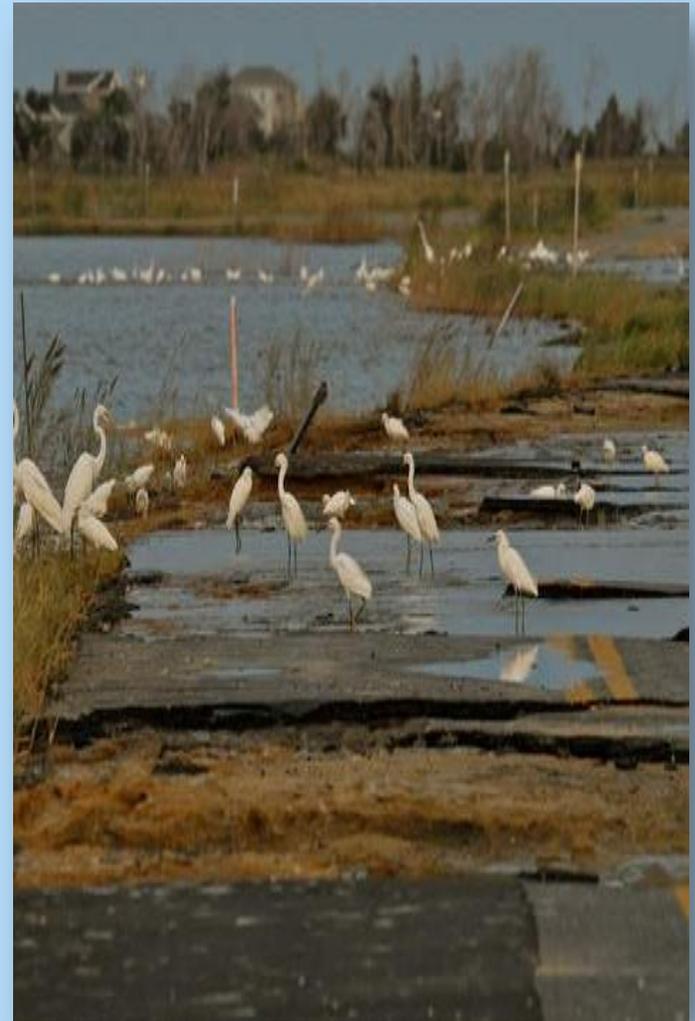


Bethany Beach and Surrounding Areas with 0.5, 1.0 and 1.5 meters of SLR to 2100

# Proactive Planning for Sea Level Rise is necessary to ensure future quality of life



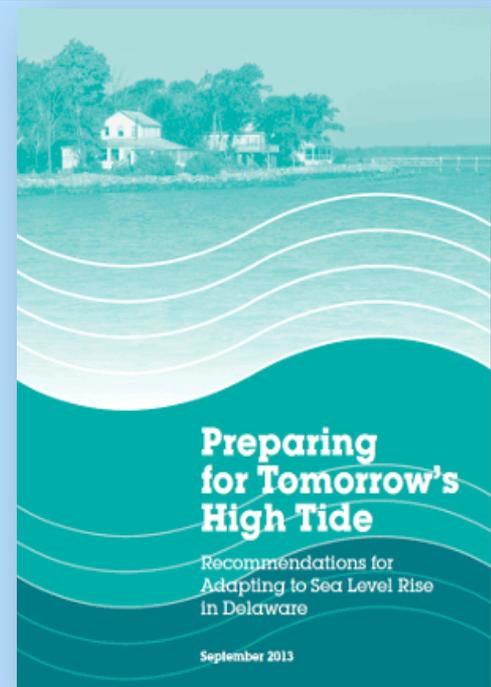
- Sea levels are rising now and expected to accelerate
- Land use & public works decisions have long life-span
- Two-for-one
  - Planning for SLR helps mitigate today's flood risk



# Delaware's Coastal Resiliency Initiative



- Building the Foundation for Adaptation
  - Implementation Actions (Pilot Projects)
  - Scientific – Technical and Support Actions
  - Communication, Training, and Public Involvement Actions
  - Coordinated SLR Policy Development



<http://de.gov/slradaptplan>



# National Surveys on Climate Opinions



- **6 Americas Survey** (George Mason & Yale Universities, 2009)
  - 51 % either alarmed or concerned
- **Pew Research Center** (2009)
  - 65% say climate change serious or somewhat serious
  - 57% say there is solid evidence for warming



# Delaware Survey Goals



- **Understand (then apply):**
  - Basic level of belief, knowledge and understanding of CC & SLR
  - Importance of CC & SLR with respect to other issues and in their own lives
  - Perceptions about taking action to mitigate or adapt
- **Interpret trends in how DE is perceiving these issues – compare 2014 results with 2009**
  - More or less concerning to residents?
  - Do they support more action/planning?
  - Has our previous outreach worked?



# Survey Methods



- Telephone Survey
  - N=1,508
  - Cell and Landlines
  - 153 questions
  - Crosstab analysis
  - Nonparametric analysis for behavioral and demographic characteristics
  - 95% confidence interval

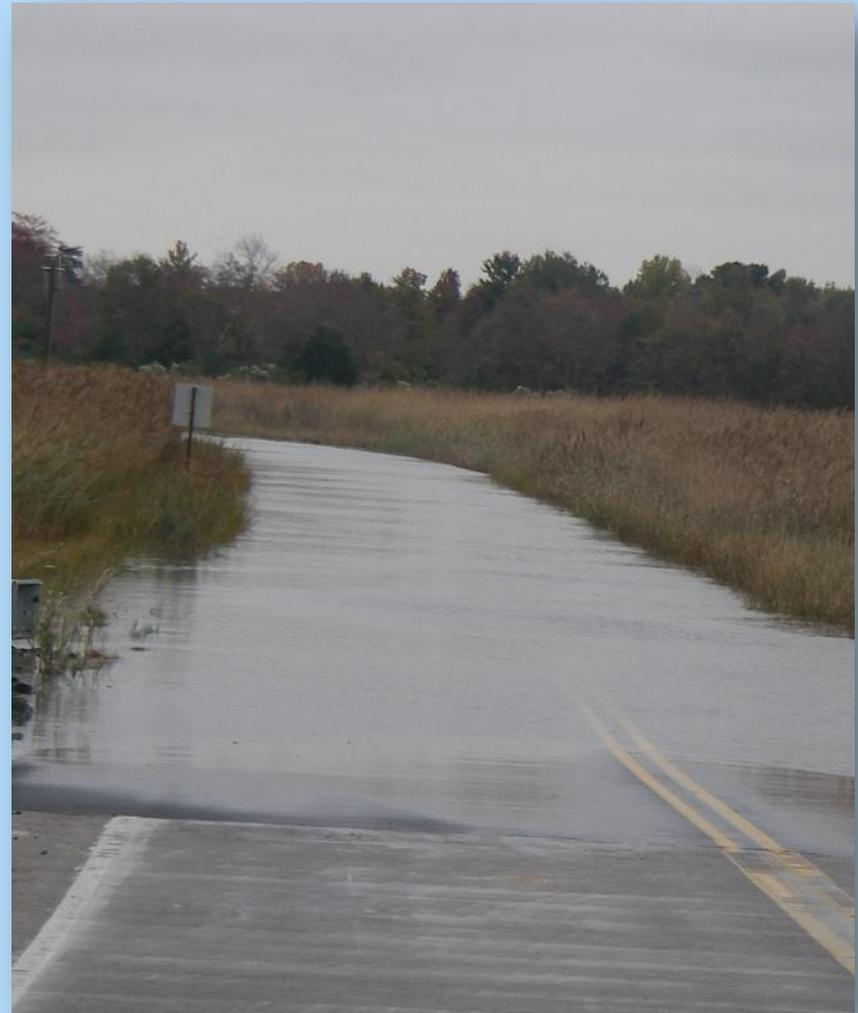
Mommy, the government wants to ask you some questions!



# The results



- Delaware residents believe that climate change and sea level rise are real and they have experienced it.
  - 79% of Delawareans are completely or mostly convinced that **climate change** is happening
  - 70% of Delawareans are completely or mostly convinced that **sea level rise** is happening



Odessa, Del. October 16, 2009

# Feeling the heat



- Residents have increasingly felt impacts:
  - 53% agree they have personally felt the impacts of climate change
  - 28% agree they have personally felt the impacts of sea level rise
    - ✦ Increase of 8% in past 5 years!



# And they don't like it!



- 79% think that climate change is a threat
- Slight increase degree of threat since 2009
  - 7% more said CC is a VERY serious threat than somewhat serious
  - Highest concern about impacts on:
    - ✦ Health
    - ✦ Agriculture
    - ✦ Safety
    - ✦ Natural Resources



# Not one bit!



- 68% worry about sea level rise
  - 5% more than in 2009
  - Highest concern about impacts on
    - ✦ Ocean-front cities and towns
    - ✦ Delaware's beaches
    - ✦ Marsh/wetland areas
    - ✦ Riverfront cities and town



Slaughter Beach, November 2011

# Delaware is optimistic!



- 3/4 agree that Climate Change impacts can be reduced by human efforts
  - And they can personally action
- Strong majority feel the same about sea level rise



# And we are ready to act!



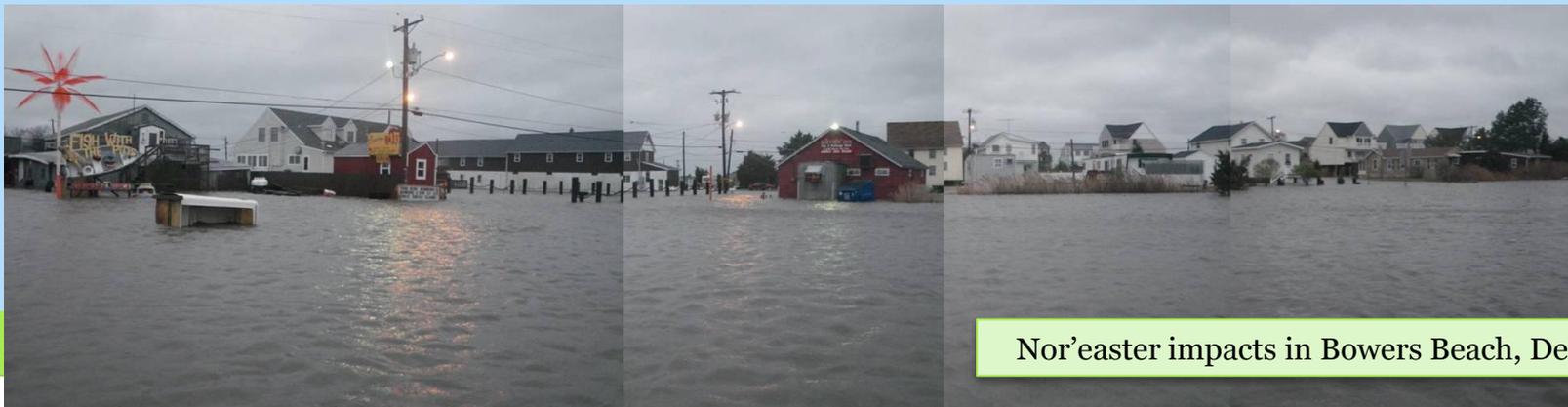
- 3/4 of Delawareans support taking immediate action to reduce climate change and sea level rise
- 3/4 of Delawareans support taking action on sea level rise before impacts occur



# Precautionary Approach to Planning



- Majority support changing building codes to reduce risk in flood-prone areas
- Majority support avoiding building in areas at risk from sea level rise
- Support for more research on sea level rise
  - Less support for elevating buildings, wetland migration, buying out frequently flooded properties

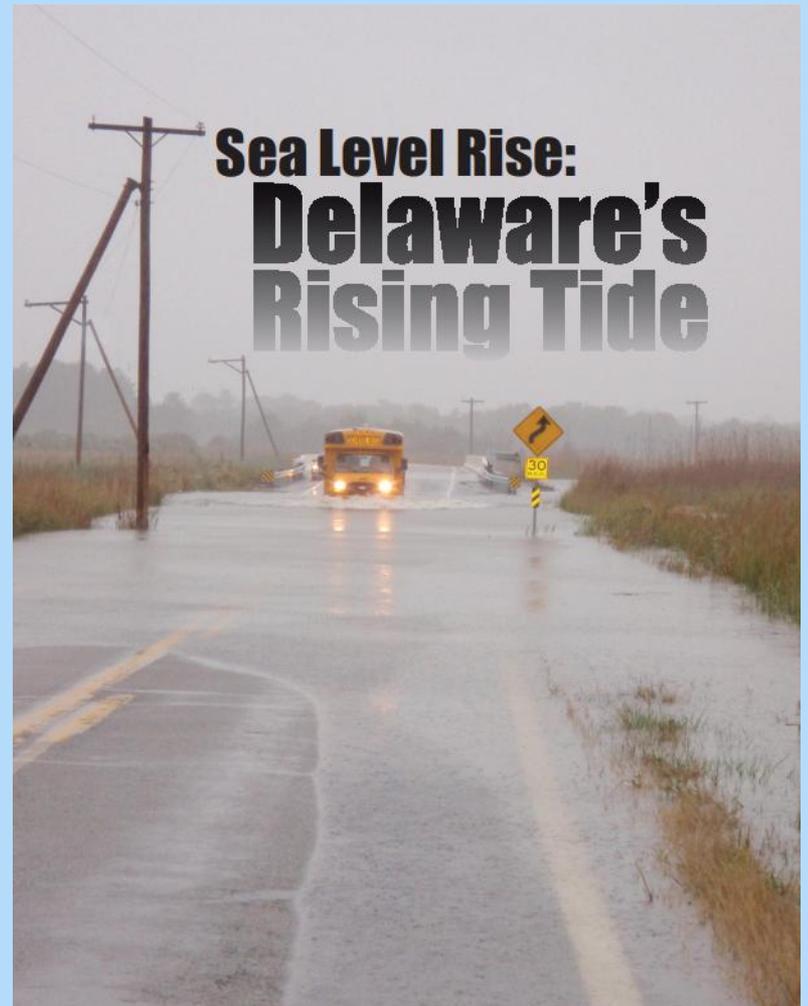


Nor'easter impacts in Bowers Beach, Delaware

# Communication and Outreach Implications



- Focus education/ outreach efforts on the impacts of CC & SLR on resources Delawareans care most about, rather than as a stand alone
  - DE residents are more concerned about many resources that will be affected by SLR & CC, than about SLR & CC itself



# Messaging Implications - Geography



- Coastal Residents more likely to believe in SLR, more likely to have experienced it
- Coastal Residents more likely to think that government should be doing more to prepare



UD Coast Day, Lewes, Del.

# Messaging Implications – Responsible Planning

- Proactive, responsible planning is a theme that resonates with Delawareans
- Emphasizing responsible governance and wise-use of tax dollars has proven particularly useful in presentations to various audiences



Delaware Sea Level Rise Advisory Committee members

# Applying the Data



- Support for working with communities and municipalities in Delaware – there is *Constituent Support* for planning!
- Support for research, funding & adaptation options
- Outreach materials and messaging



**Thank you!**

**Questions?**

More information:

**<http://de.gov/coastal>**

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