

# Critical Issues: Climate Change and Offshore Energy

Presentation to the Hampton Roads Planning District Commission  
Retreat

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# Climate Change and Sea Level Rise Impacts on Hampton Roads

- ▶ **Governor's Commission on Climate Change:**
  - 3.1° C average warming for Virginia by 2100
  - 11% precipitation increase
  - Sea-level rise between 2.3 and 5.2 ft by 2100
    - Metric Equivalent: 2.3 ft = 70 cm, 5.2 ft = 160 cm
- ▶ **Hampton Roads is second only to New Orleans in terms of population and infrastructure at risk to sea level rise and associated increases in storm surge flooding**

# Virginia Beach, VA

Fort Story →

Atlantic Ocean

Baylake Beach ↓

Lynnhaven Shores ↓

Broad Bay

Lynnhaven Bay

## The Hampton Roads Conservation Corridor Study

### Legend

 Opportunities for Connectivity

### Suitability for Conservation

 High suitability - WATER QUALITY

 High suitability - HABITAT

 High suitability - BOTH

## Chesapeake Inundation Prediction System (CIPS)

 Hurricane Isabel Flooding Risk

Sea Level Rise Height Increases + Hurricane Isabel Flooding Risk

 50 cm

 150 cm

 100 cm

 200 cm

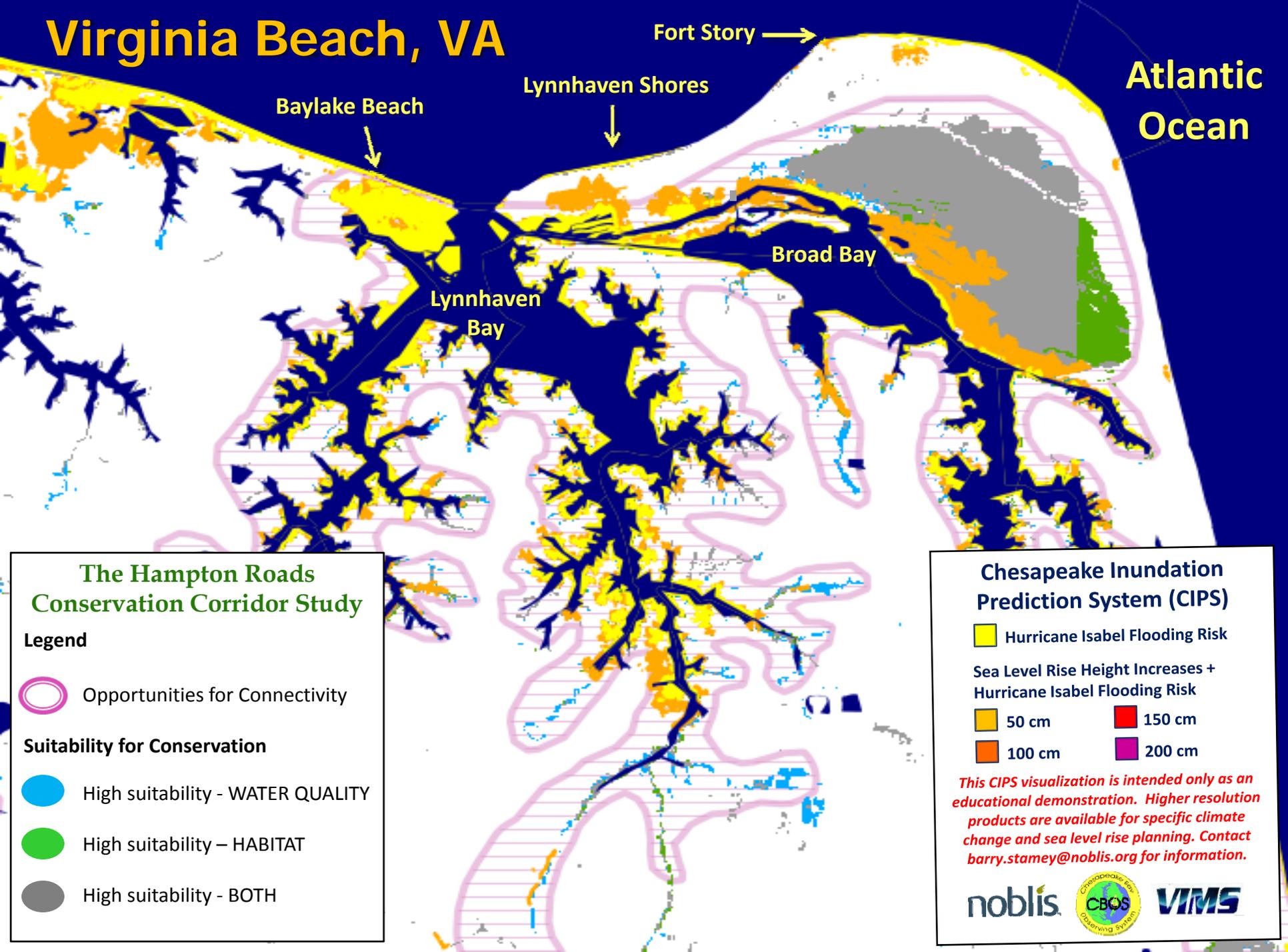
*This CIPS visualization is intended only as an educational demonstration. Higher resolution products are available for specific climate change and sea level rise planning. Contact [barry.stamey@noblis.org](mailto:barry.stamey@noblis.org) for information.*

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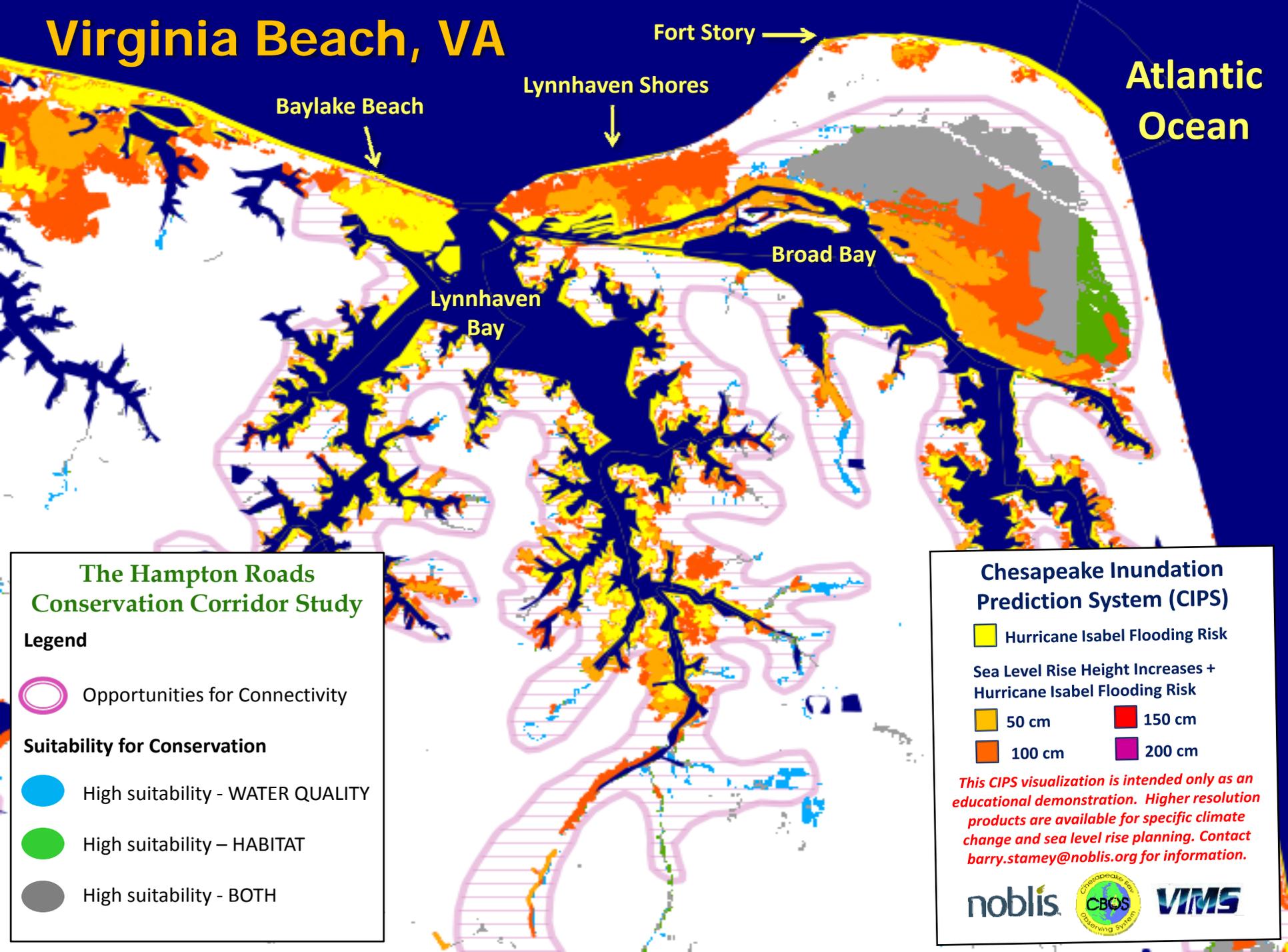
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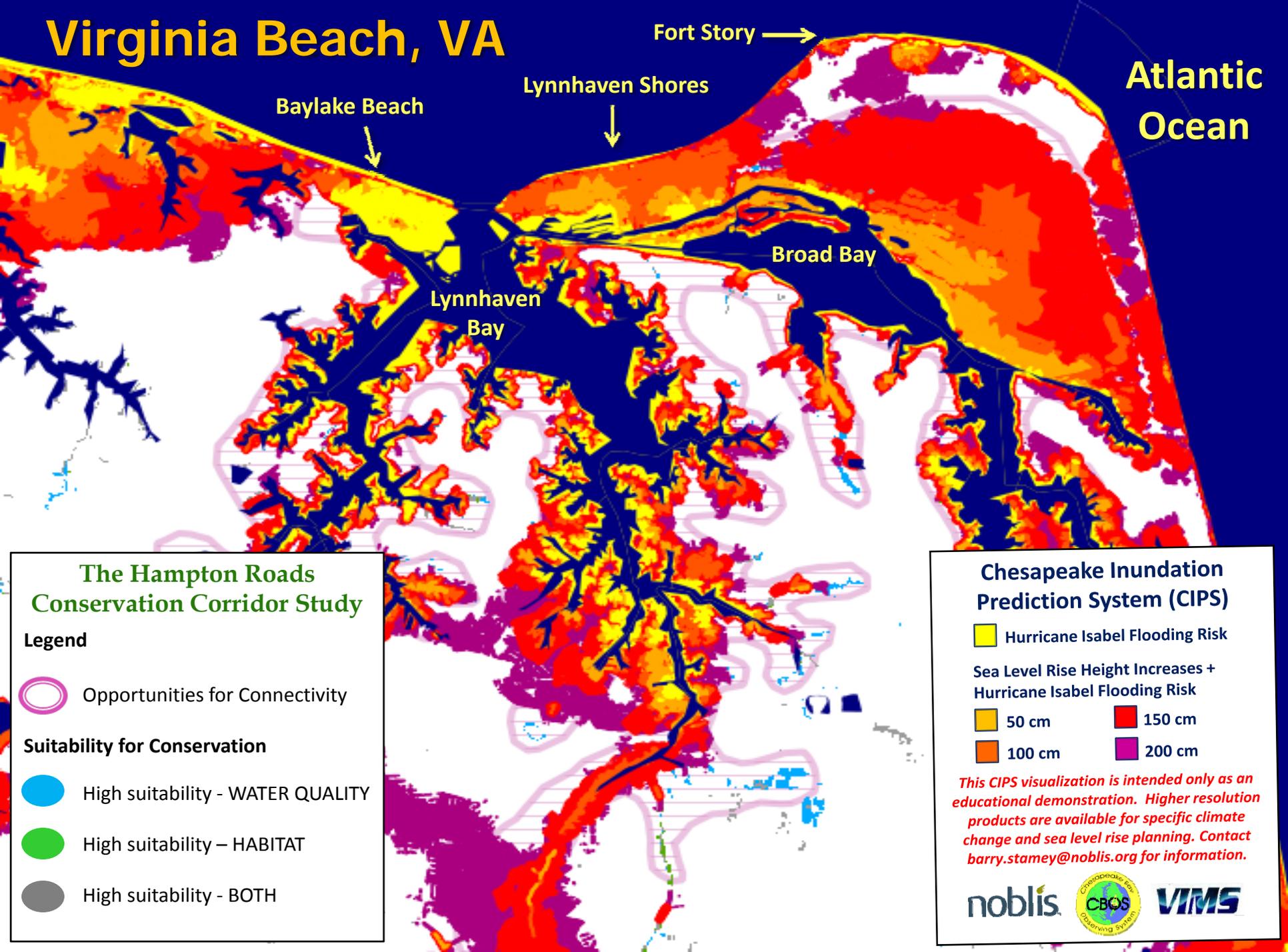
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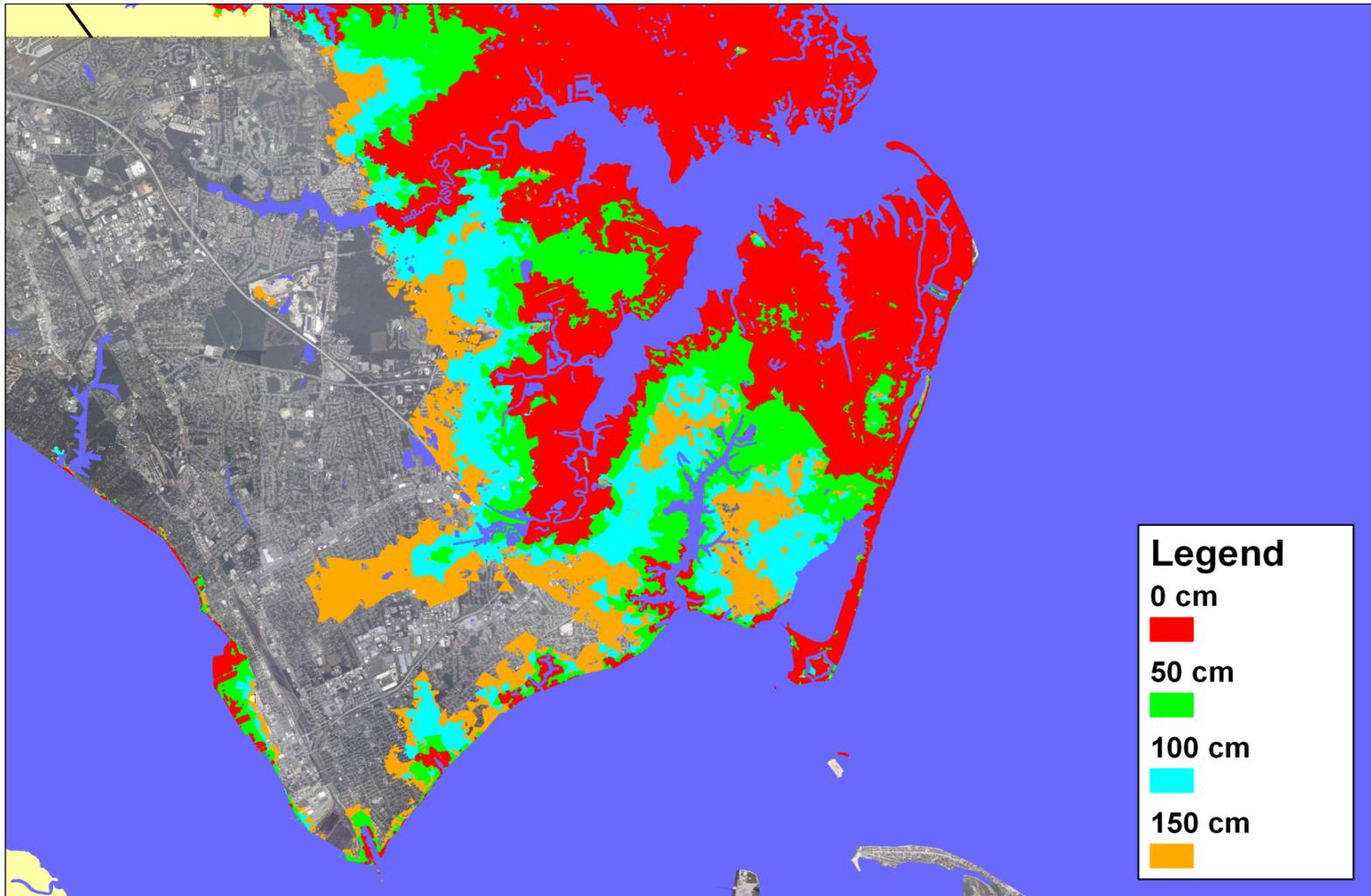
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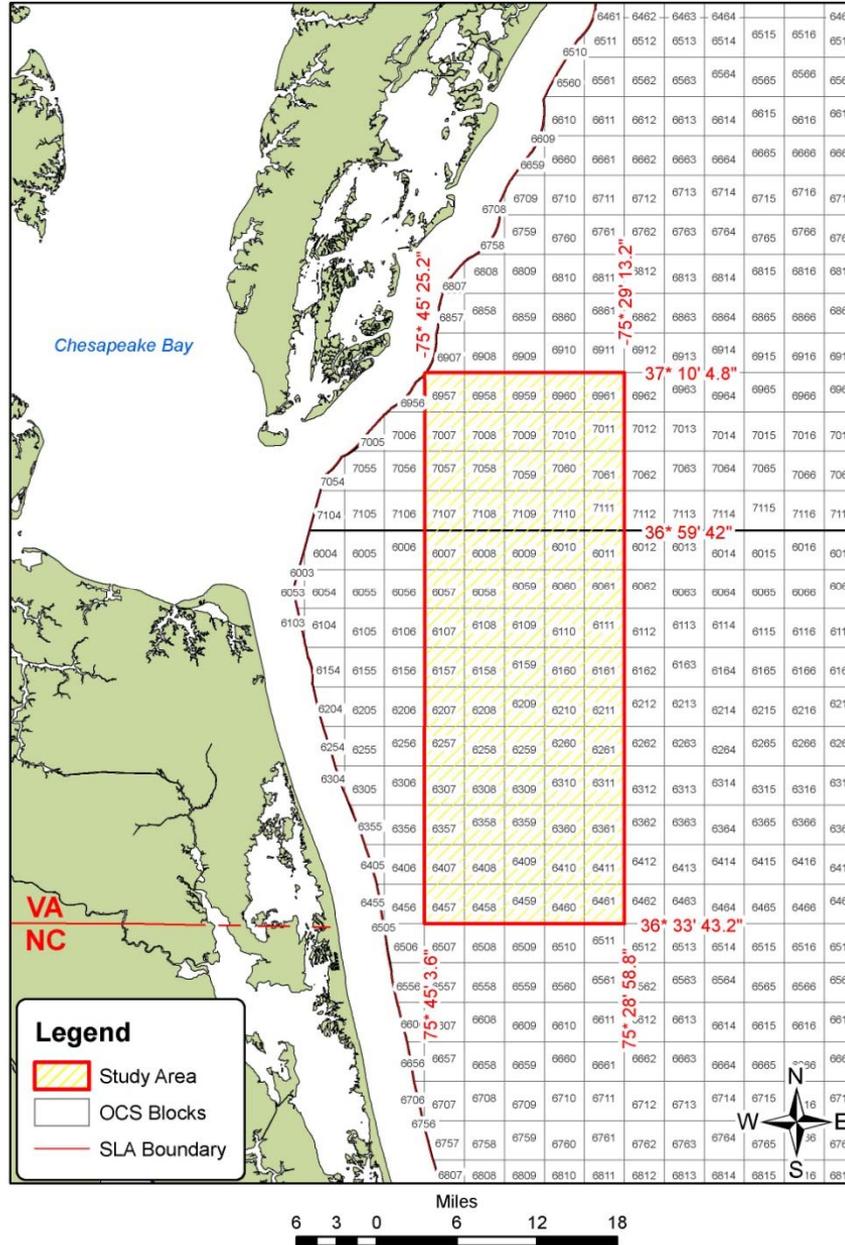
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# Hurricane Isabel – Hampton/Poquoson Inundation plus Sea Level Rise

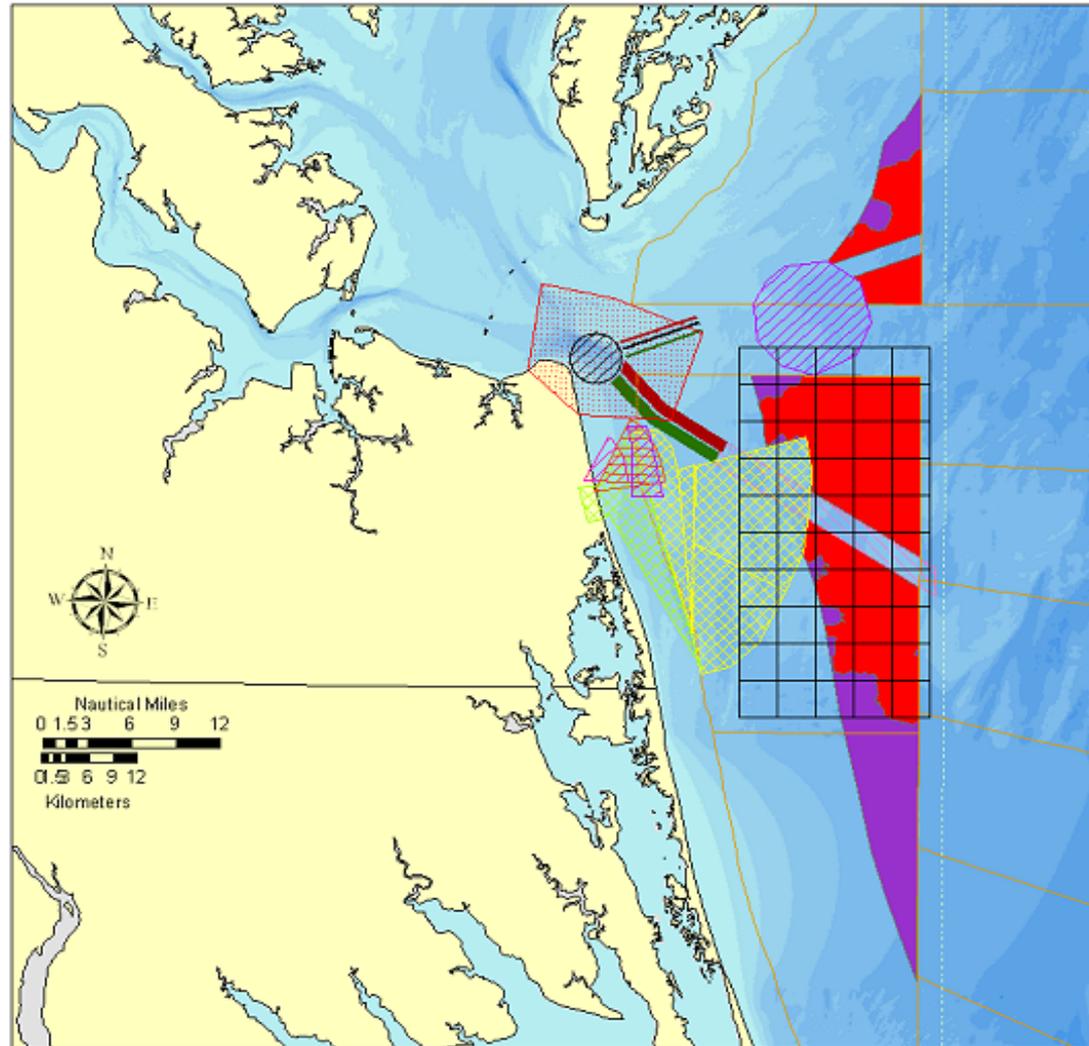


# Potential RFI Area Offshore VA



# Potential Use Conflicts

- ▶ Potential conflicts between existing uses of offshore waters and energy development
- ▶ Military training, NASA Wallops Flight Facility, shipping, commercial fishing



# No Revenue Sharing Agreement in place for Virginia

- ▶ Currently no revenue sharing agreement in place for Virginia at the federal level for oil and gas royalties
- ▶ Virginia General Assembly actions have no impact on this situation
- ▶ Even if Federal revenue sharing agreement is developed funding may be directed for specific programs such as restoration of environmental impacts associated with energy development (Coastal Impact Assessment Program)

# Significant economic development opportunities exist for Hampton Roads

- ▶ Wind Energy: Class 5 and 6 winds in the Virginia offshore waters will support the development of wind farms off of Virginia Beach
- ▶ Oil and Gas Resources: Estimates of 130 million barrels of oil, 1 trillion cubic feet of natural gas
- ▶ The Port of Hampton Roads has much of the industrial infrastructure to support the development and maintenance of offshore energy facilities

# Funding is Needed to Deal with the Threat of Sea Level Rise

- ▶ Obtain consistent, high resolution elevation data for the region
- ▶ Continue development of modeling tools that link storm surge and sea level rise
- ▶ Vulnerability analysis for built and natural environments under various storm surge/sea level rise scenarios
- ▶ Development of improved real-time predictive tool for storm surge
- ▶ Development of long range plans based on vulnerability analysis