SLOWING SALINIZATION: THE EFFECTIVENESS OF FLOOD ADAPTATIONS

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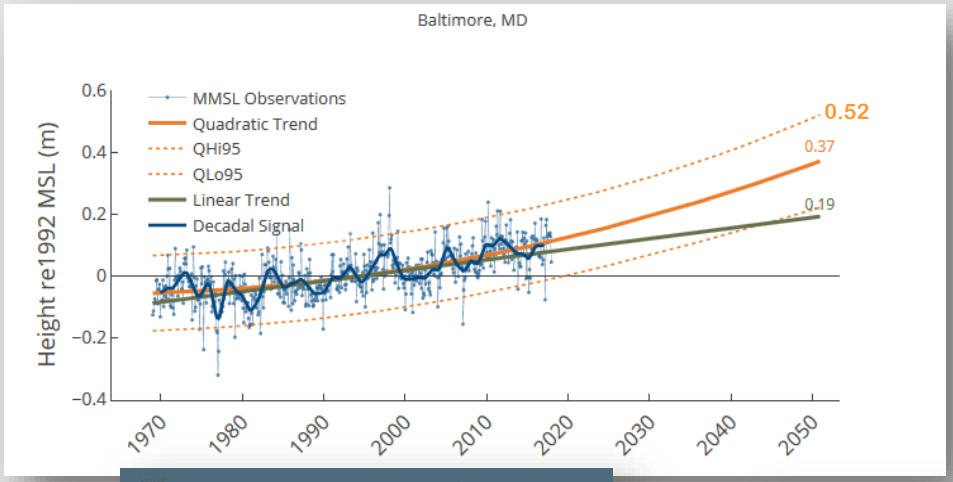
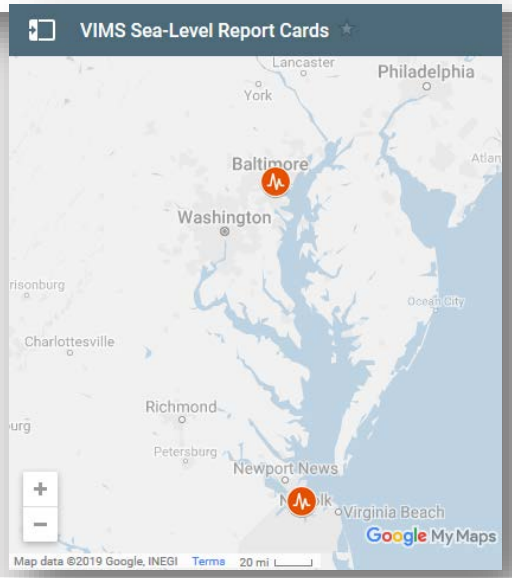
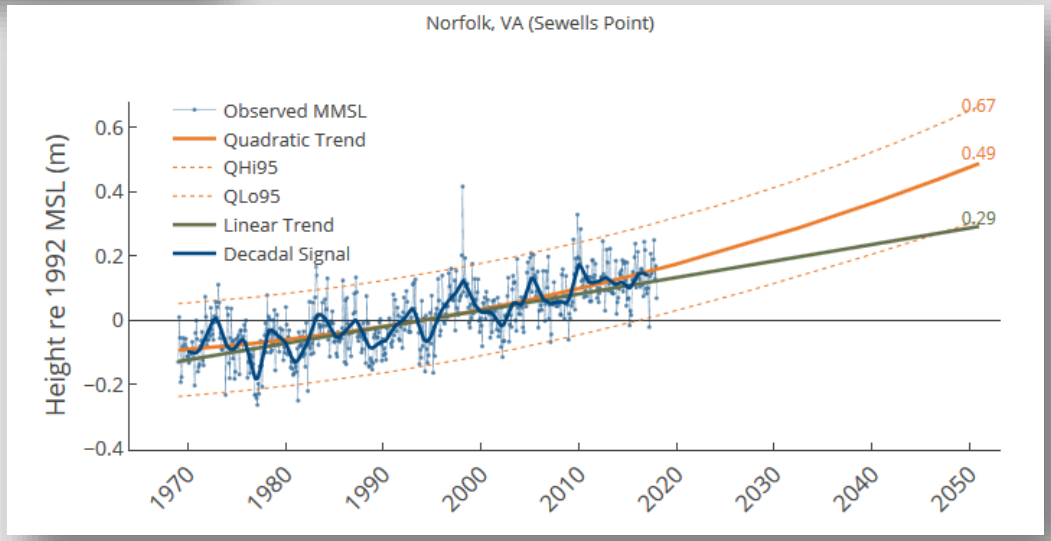
(RELATIVE) SEA LEVEL RISE IN THE BAY

Sea Level Rise Report Cards http://www.vims.edu/research/products/slrc/index.php

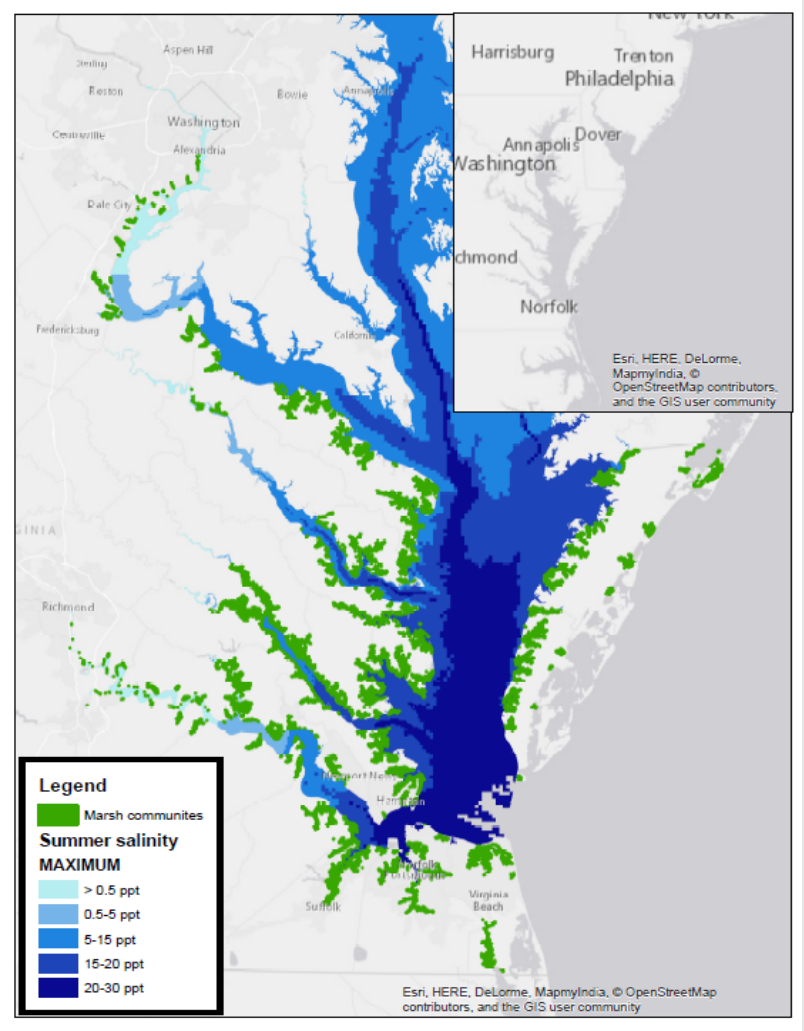


- Chesapeake Bay estimates for 2100 salinity: 4-12 ppt increase over current levels



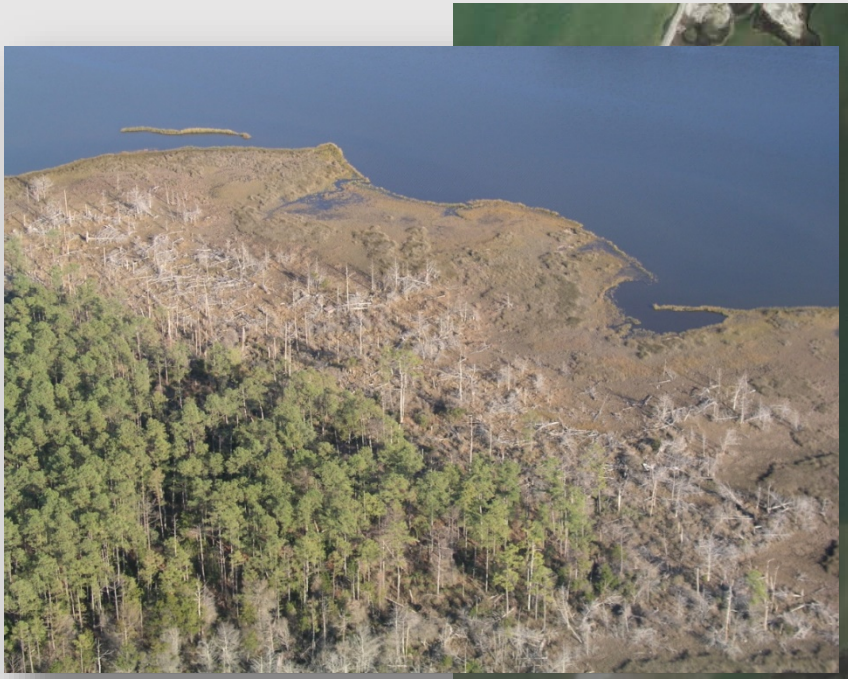


TIDAL MARSH INVENTORIES



- Survey info:
  - Historic TMIs were surveyed and delineated from 1970s-1991
  - current TMIs were surveyed and delineated from 2010-2018
  - average time between surveys was 32 years
- Plant community comparison:
  - York River = **263** marsh plant species matrices
  - Chesapeake Bay = **17,658** marsh plant communities

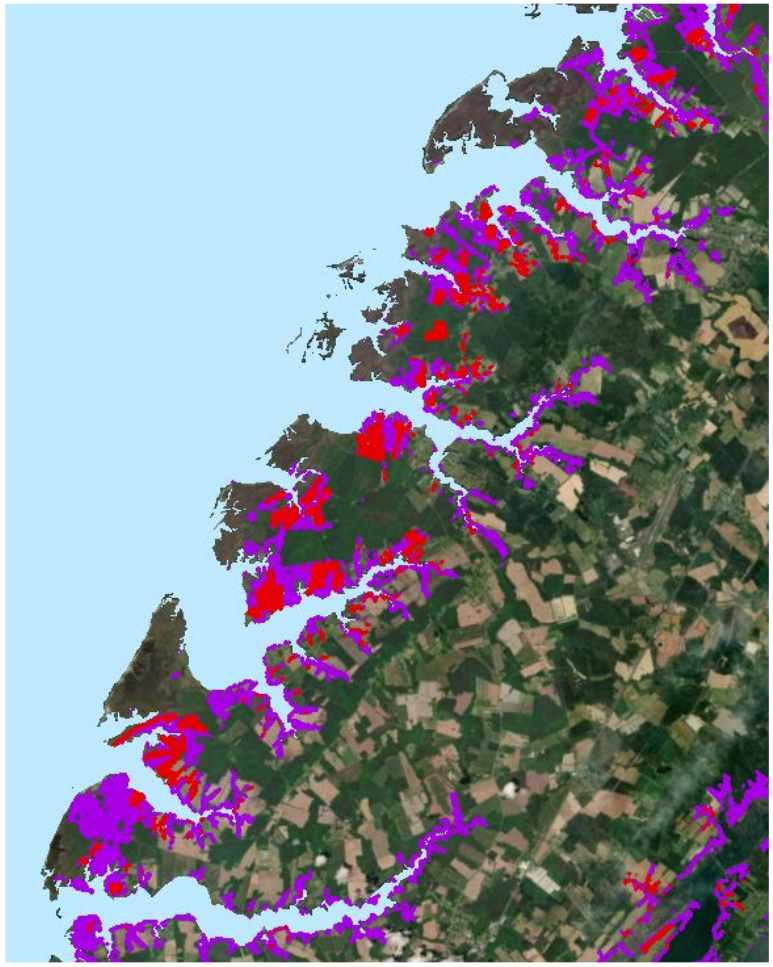
AREAS OF CONVERSION

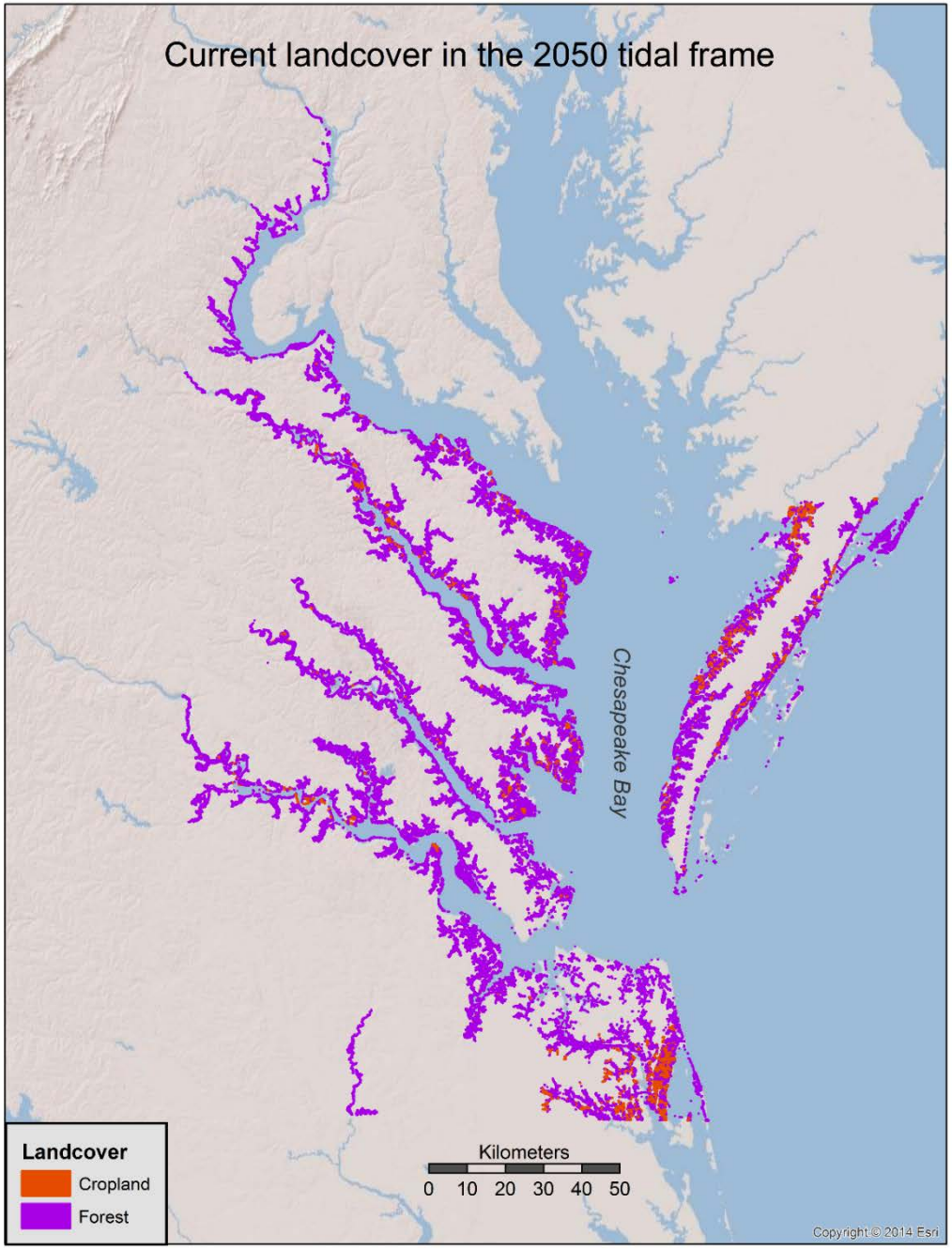


Forest→ marsh

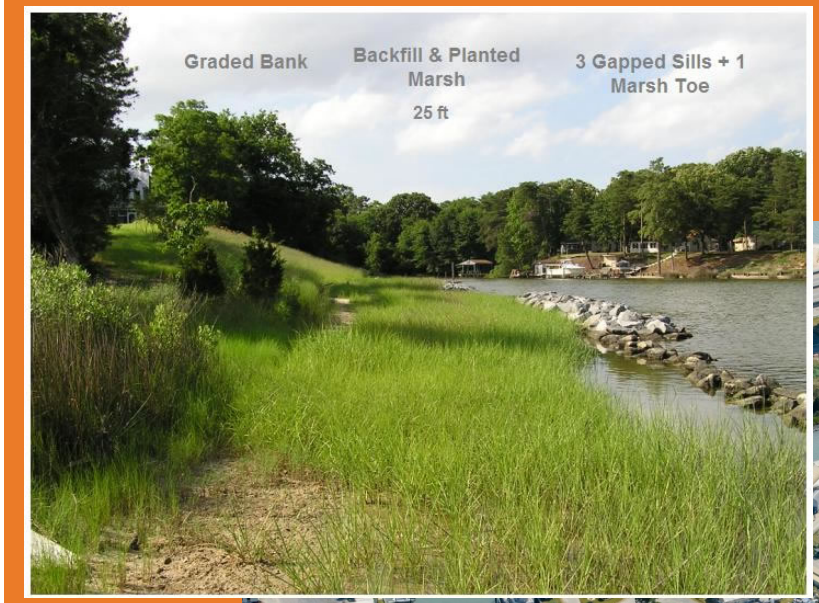
Stressed forest

AREAS AT RISK





VIRGINIA'S ADAPTATIONS



- Elevating structures
- Flood proofing structures
- Natural infrastructure
- Levees
- Storm surge barriers
- Groundwater management

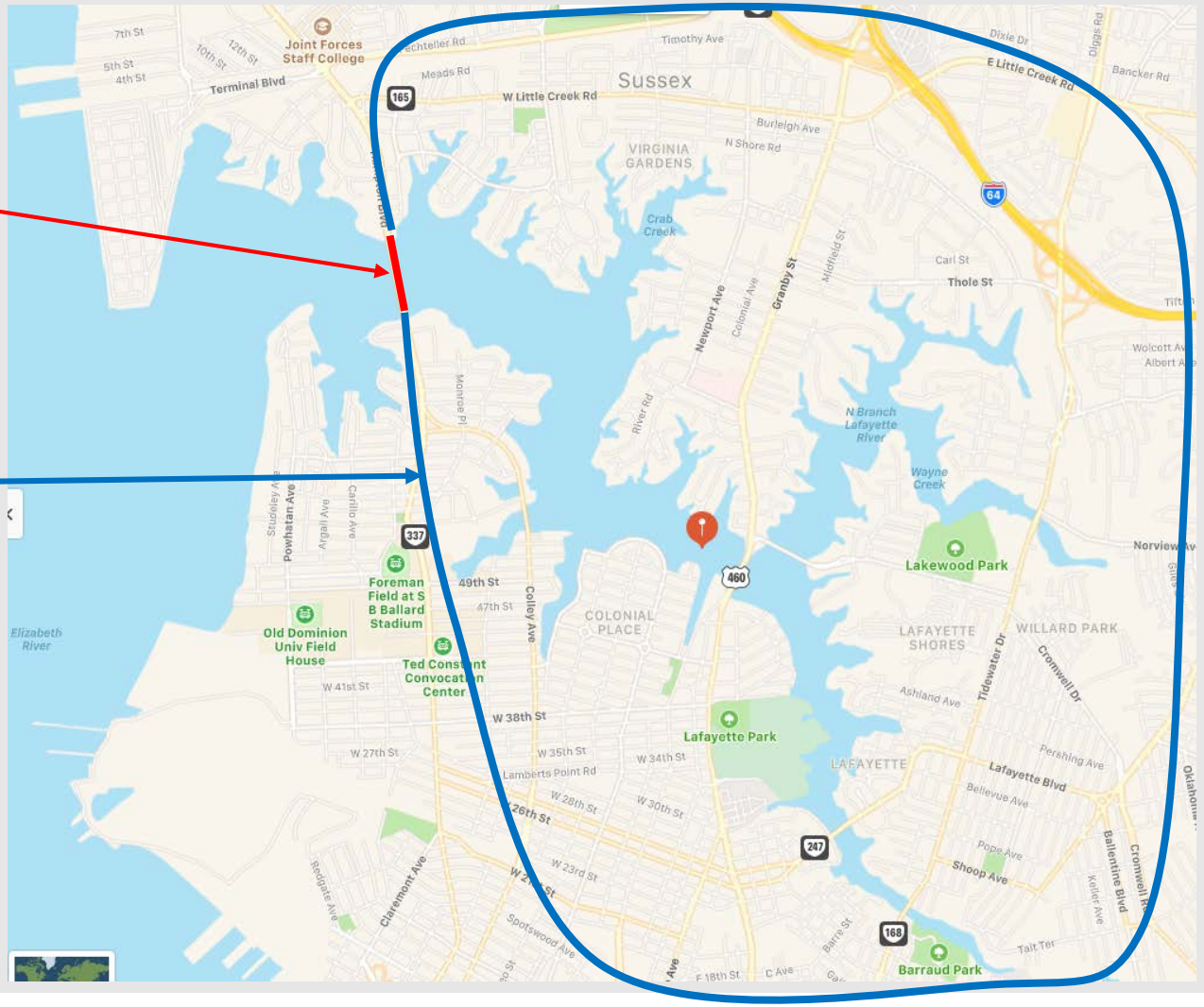
- Desalinization
- New reservoirs
- Deeper wells

STORM SURGE BARRIERS

http://www.environment-agency.gov.uk/homeandleisure/floods

Invest in this

Protect this



SWIFT Water

SWIFT's Advanced Water Treatment Process produces drinking water quality SWIFT Water through a multi-step disinfection process that is used throughout the country and the world.

Replenishing

Groundwater is being used in eastern Virginia at rates faster than it can be naturally replaced. Adding SWIFT Water back into the ground will replenish this natural resource and protect the Potomac Aquifer from further damage caused by overuse.

Sustainable

SWIFT will give our communities a sustainable source of groundwater. This resource will support our economy by providing businesses with the water they need to operate.

Benefits of SWIFT include:

- **Fight sea level rise by reducing the rate at which land is sinking in Hampton Roads;**
- **Protect groundwater from saltwater intrusion due to a shrinking aquifer;**

"HRSD modeled the effect of adding 120 million gallons of purified water daily into the Potomac aquifer at several HRSD plant locations in southeastern Virginia. The results show a positive impact on nearly the entire Potomac aquifer, increasing pressures west to the Fall Zone, as far north as Maryland and south beyond the North Carolina border."

QUESTIONS?

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- Saltwater intrusion is just being recognized as a substantial future threat
- All current adaptation efforts are primarily to address different issues
  - But some have good side effects!
- Main discussion about agriculture: alternative crops