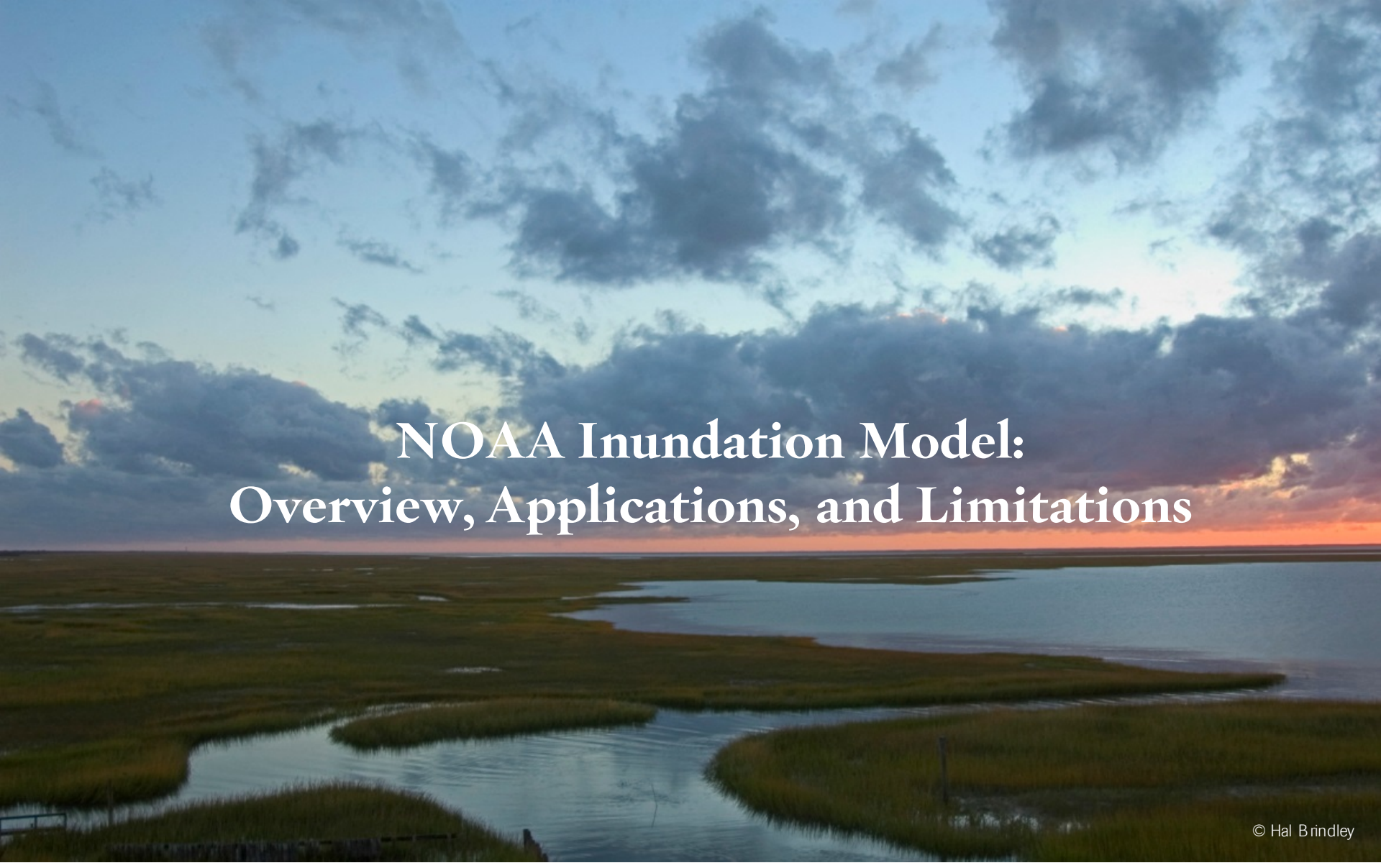


NOAA Inundation Model: Overview, Applications, and Limitations

© Hal Brindley

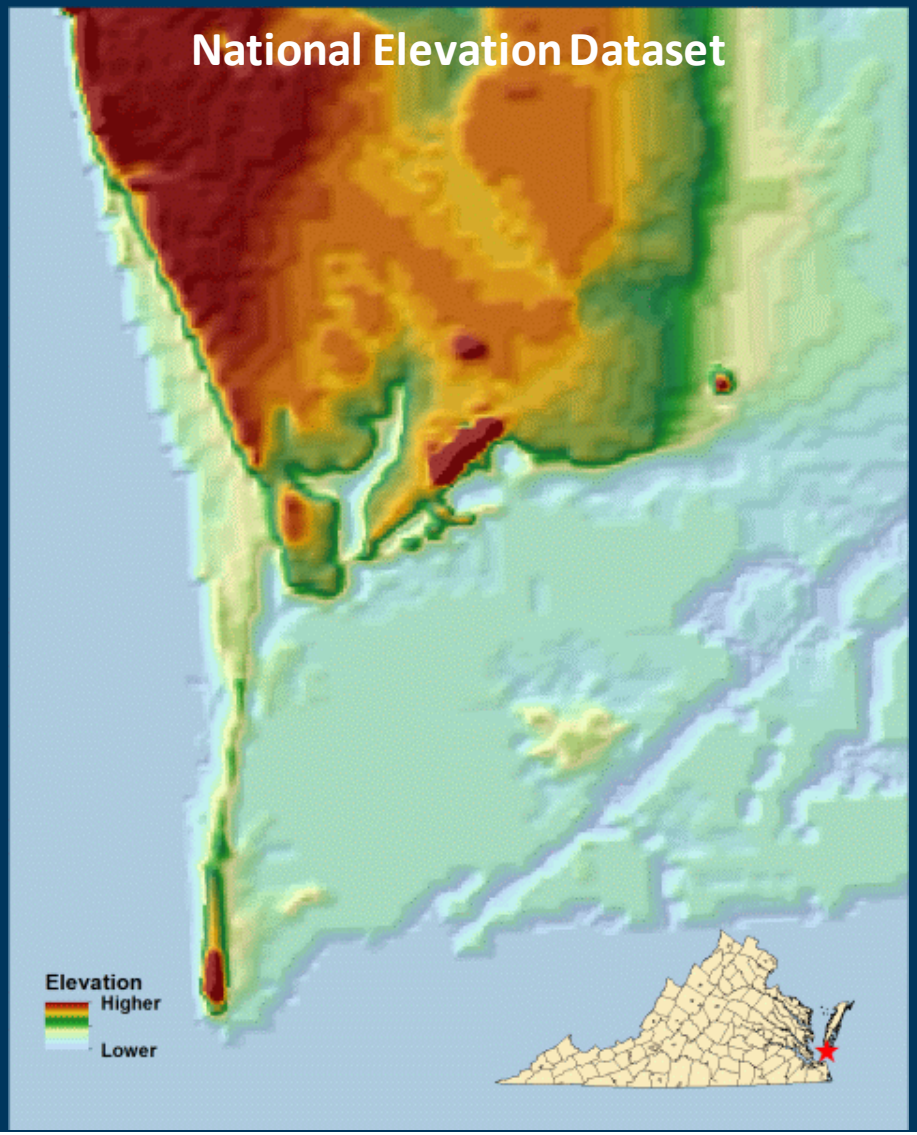
The Nature Conservancy
Protecting nature. Preserving life.™

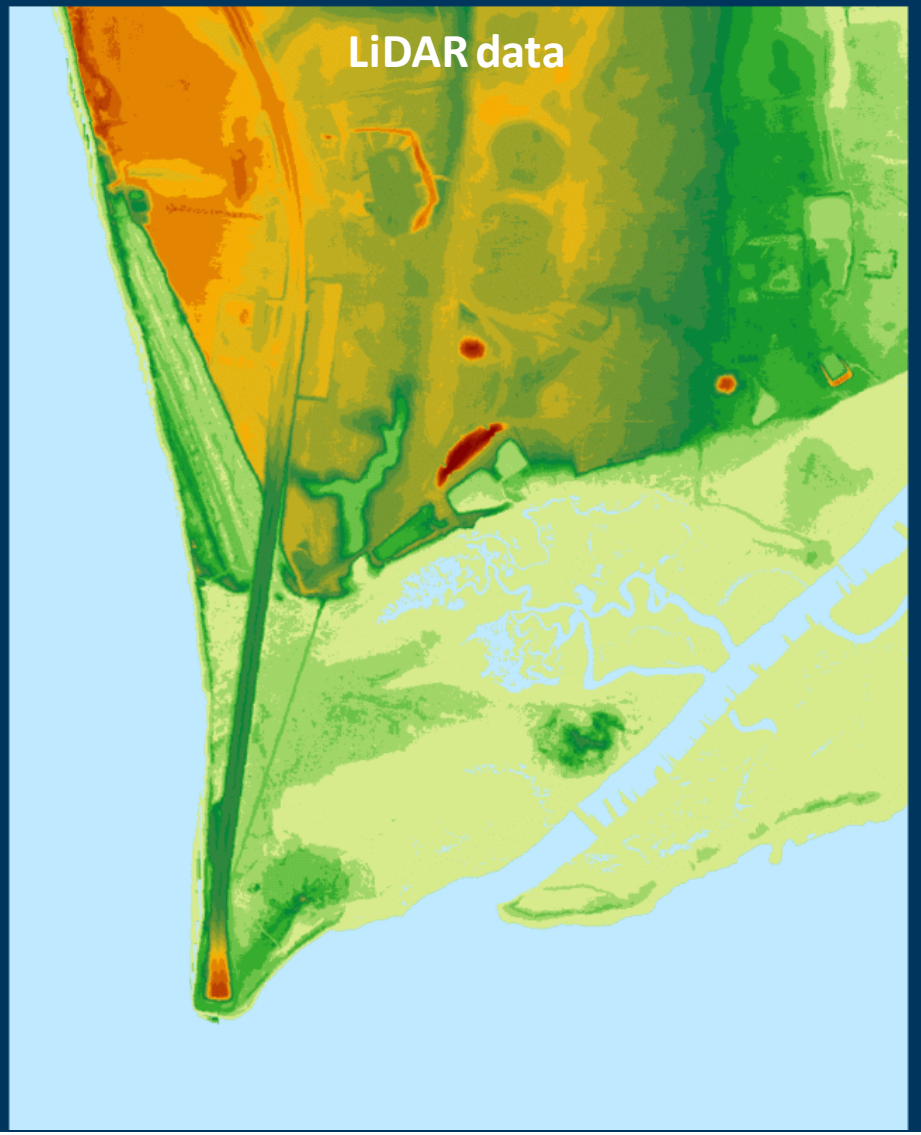
Chris Bruce, 11/13/2014

Hat Tip: Doug Marcy, NOAA Office for Coastal Management

The Nature Conservancy
Protecting nature. Preserving life.™

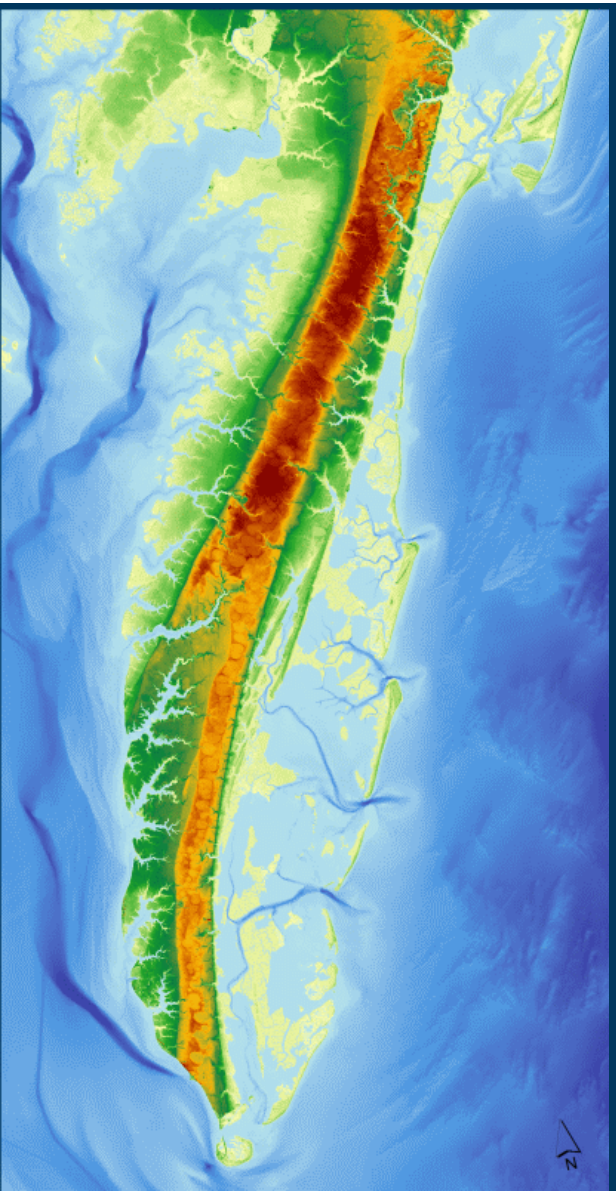
Importance of Elevation Data

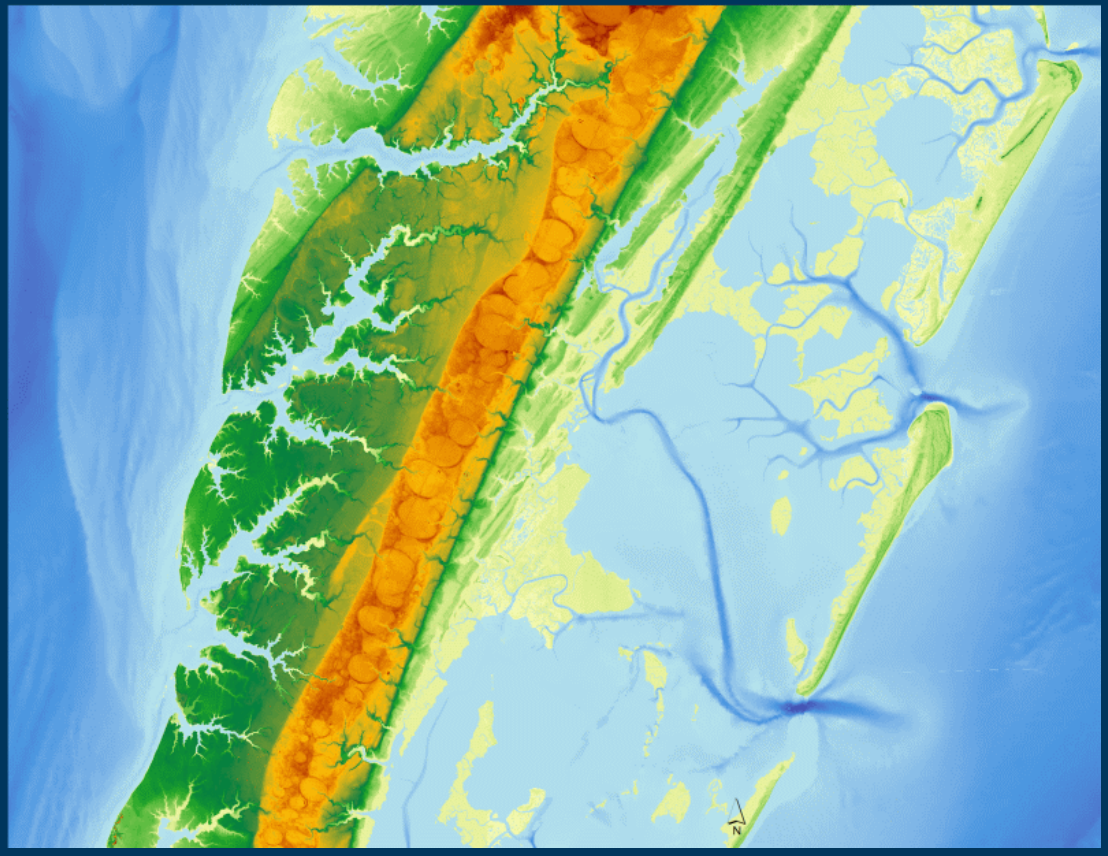




The Nature Conservancy
Protecting nature. Preserving life.™

Combined Topographic/Bathymetric Data



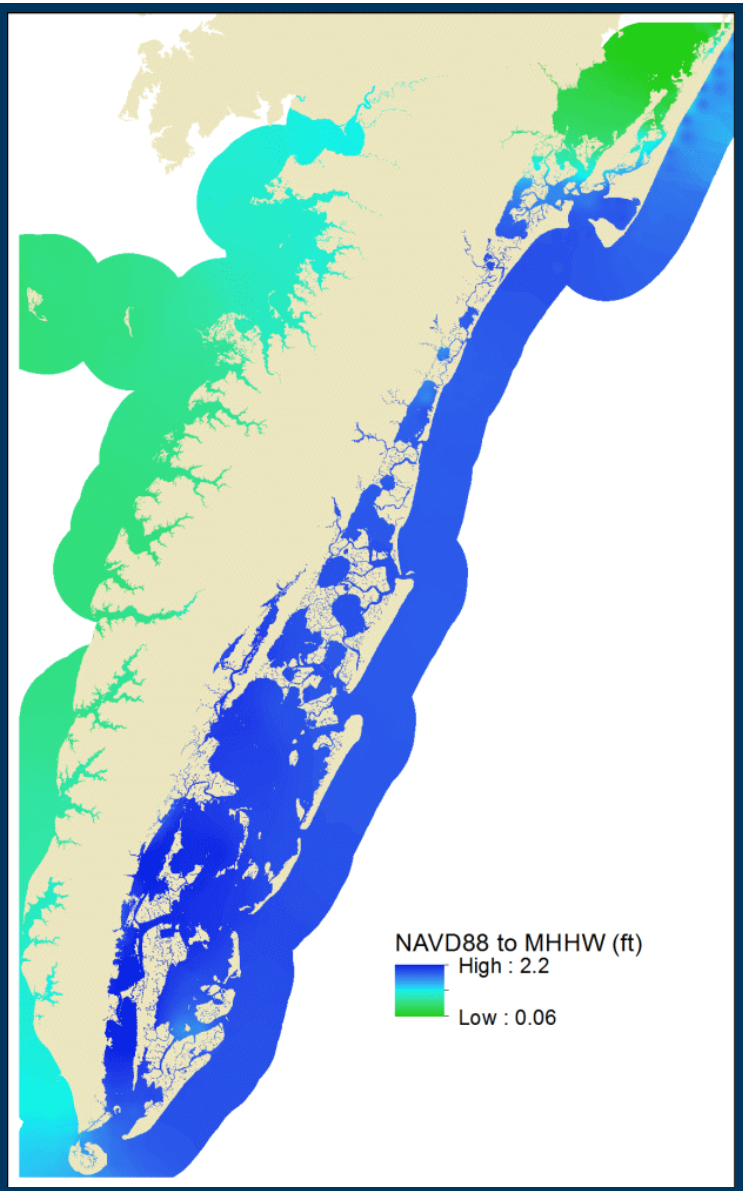


Developed by UVA LTER

The Nature Conservancy
Protecting nature. Preserving life.™

The Ocean Is Not a Flat Surface (especially in bays and estuaries)

- Elevation data is tied to a fixed datum (NAVD88)
- For inundation modeling elevations are transformed to mean higher high water (MHHW), which is essentially an average of the daily high tide

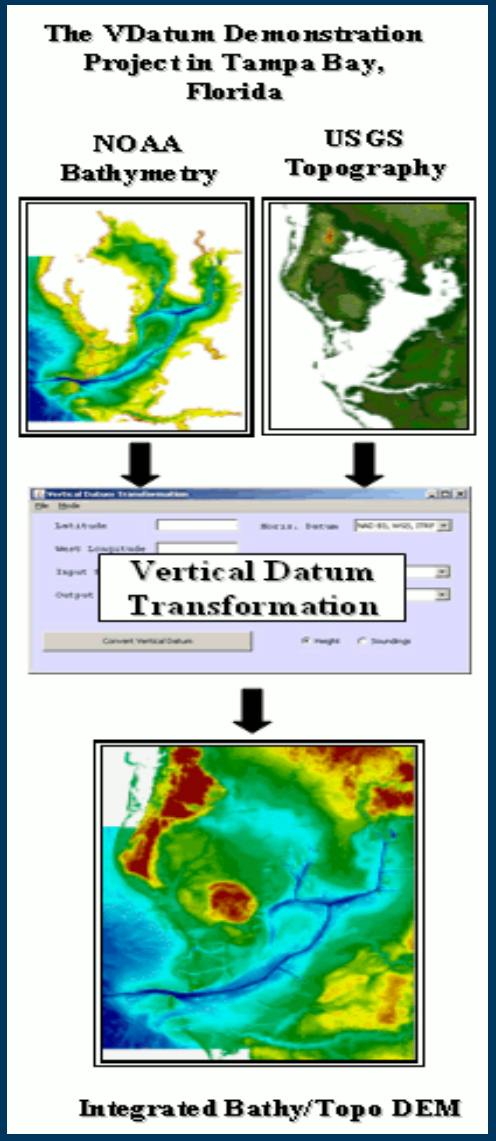


The Nature Conservancy
Protecting nature. Preserving life.™

Vertical Transformation

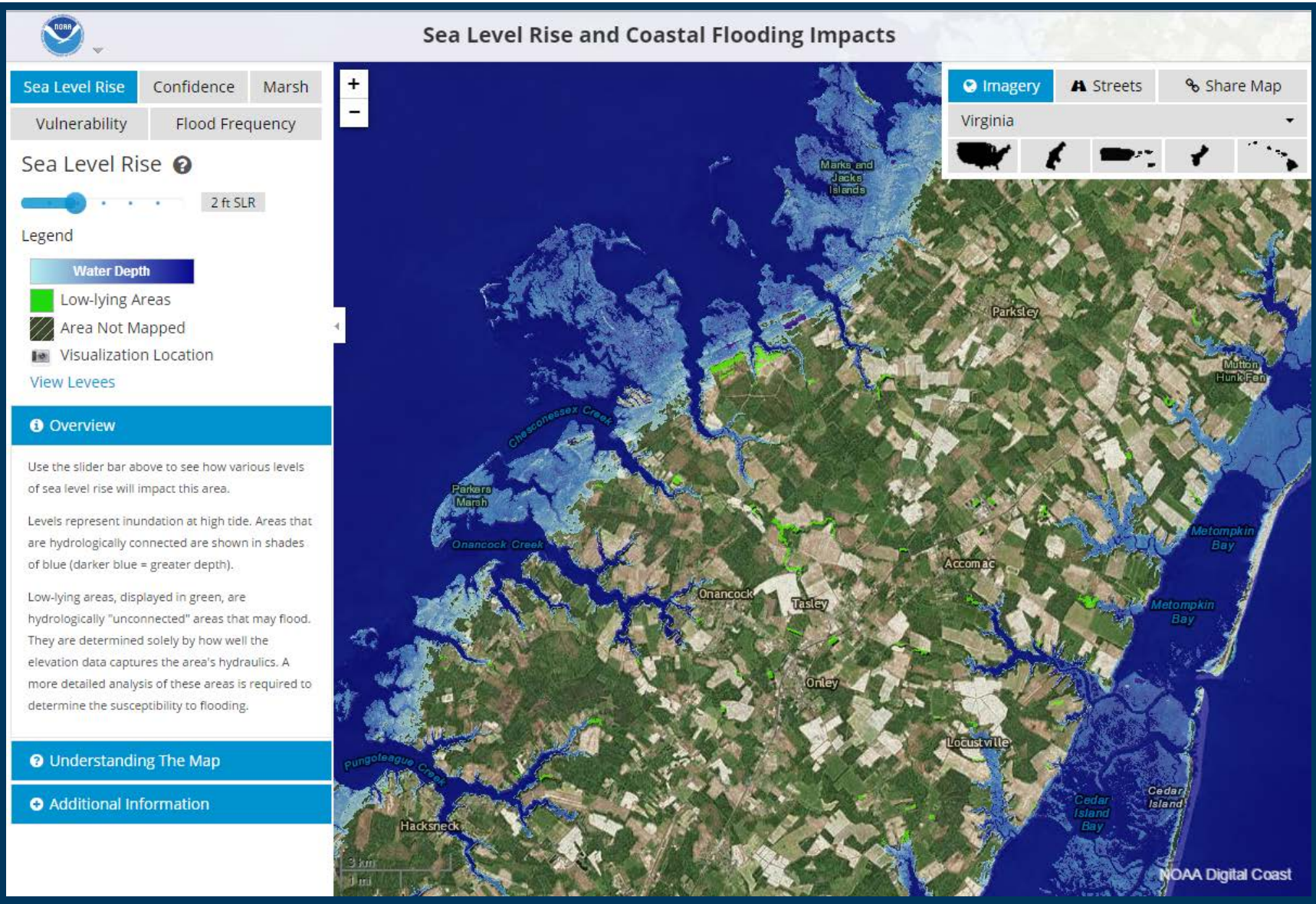
VDatum is used to convert between tidal, orthometric, and ellipsoidal datums (vdatum.noaa.gov)

- Vertical Datum Transformation Tool
- Developed jointly by NOAA's Office of Coast Survey and the National Geodetic Survey
- Provides a method to accurately combine topographic (orthometric) and bathymetric (tidal) elevation data
- Application is limited to the region it was developed for



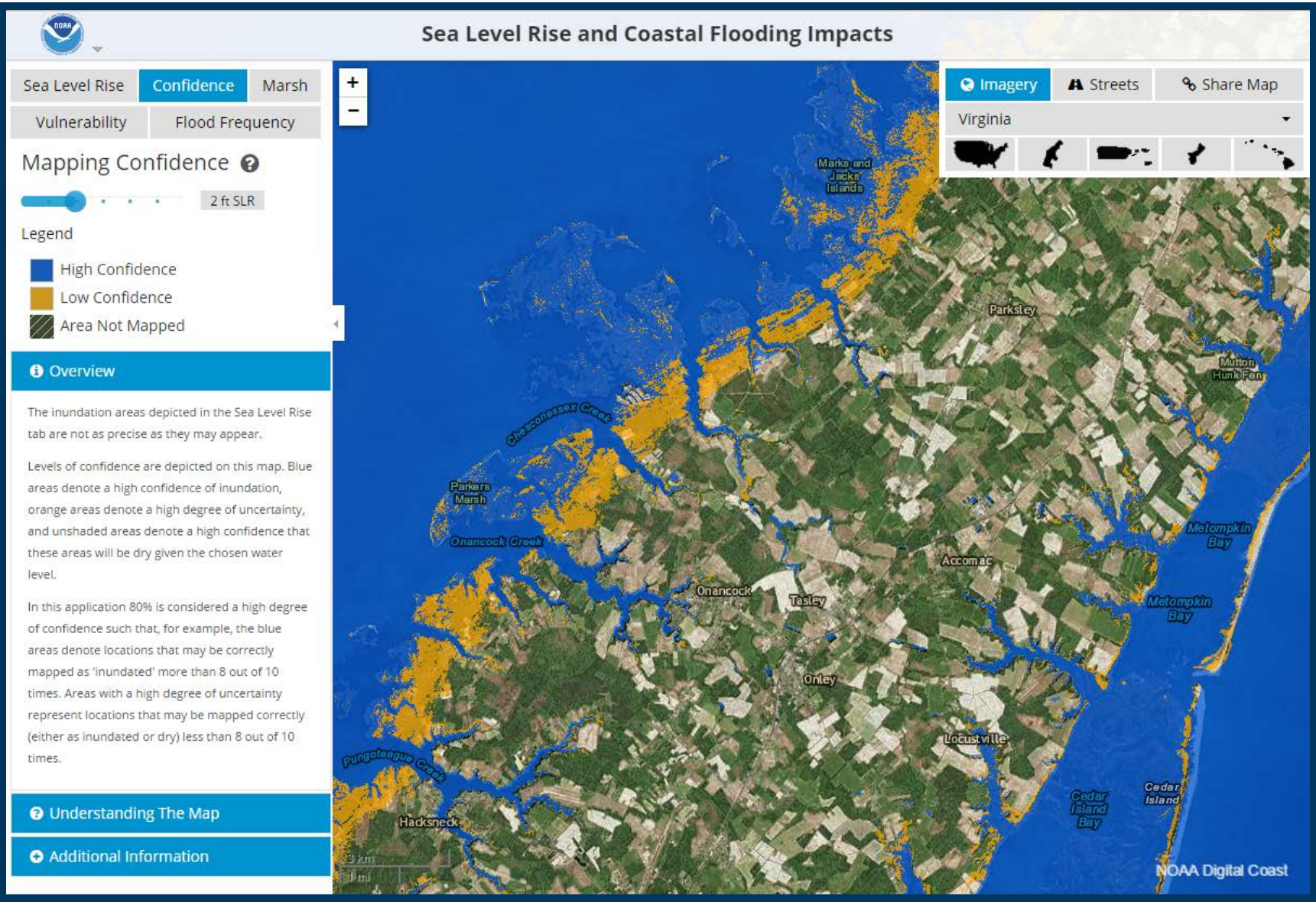
The Nature Conservancy
Protecting nature. Preserving life.™

coast.noaa.gov/slr



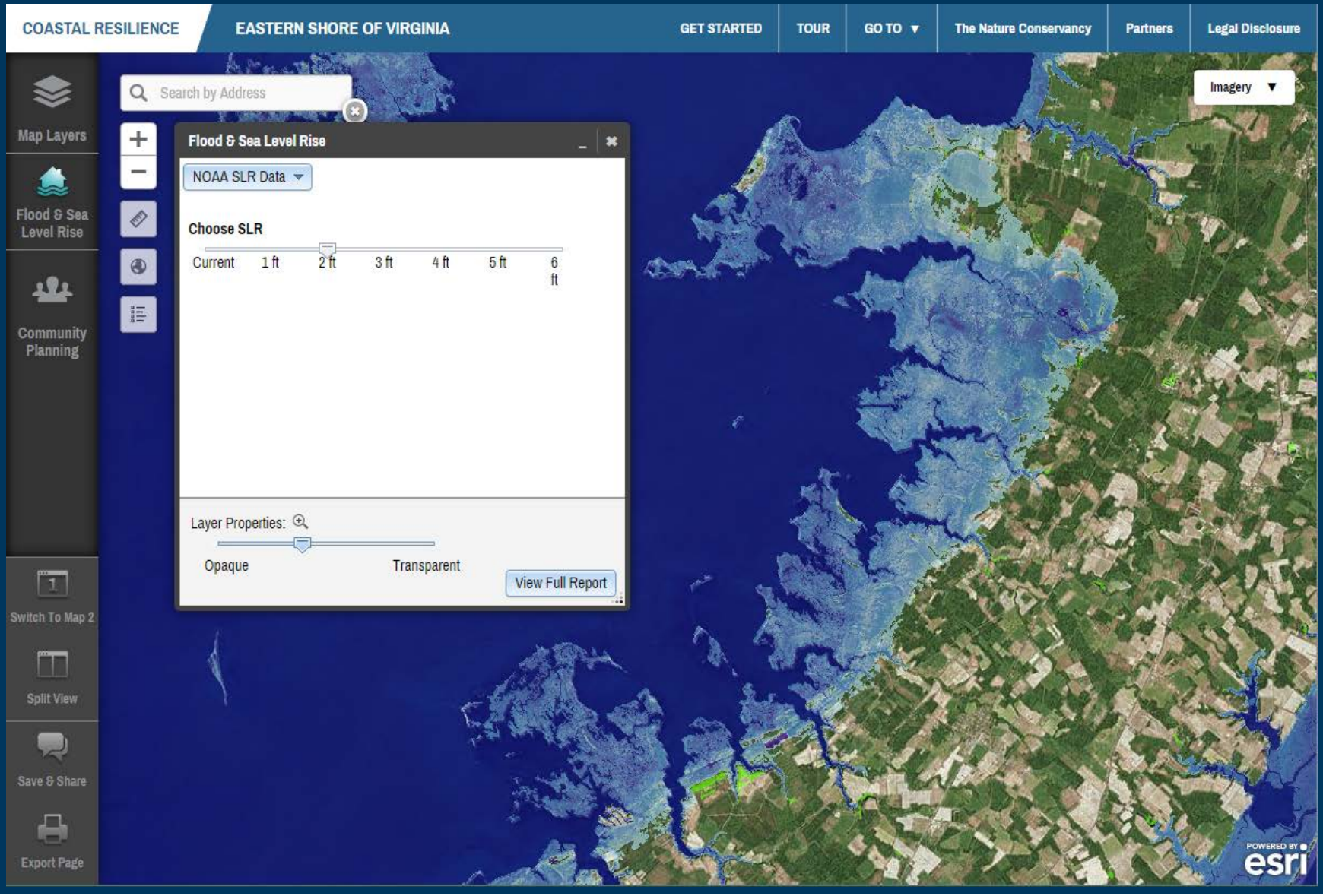
The Nature Conservancy
Protecting nature. Preserving life.™

coast.noaa.gov/slr



The Nature Conservancy
Protecting nature. Preserving life.™

Coastal Resilience Tool for the Eastern Shore



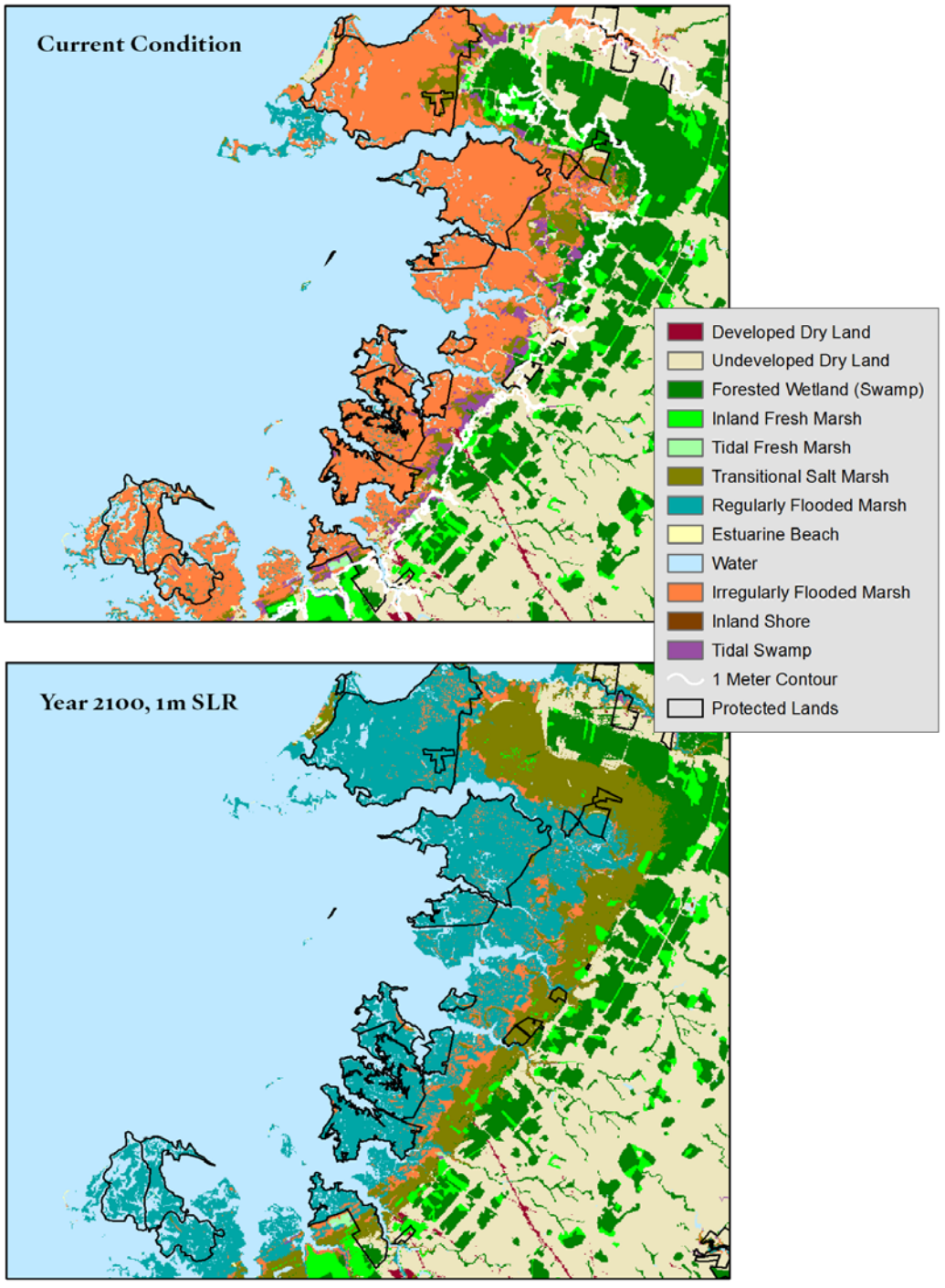
The Nature Conservancy
Protecting nature. Preserving life.™

Limitations: "The data, maps, and information provided should be used only as a screening-level tool."

- Accuracy of elevation data (vertical accuracy = 0.53 ft)
- May not completely capture the area's hydrology, such as canals, ditches, and stormwater infrastructure.
- Potential management actions are not considered.
- Natural processes such as erosion and marsh migration are not considered

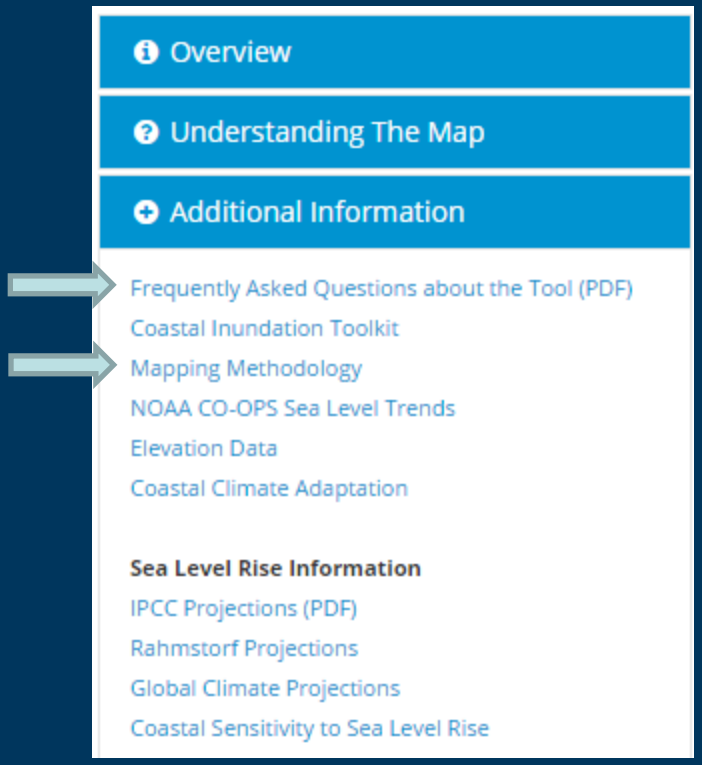
The Nature Conservancy
Protecting nature. Preserving life.™

SLAMM Results Preview



The Nature Conservancy
Protecting nature. Preserving life.™

Questions?

cbruce@tnc.org

http://coast.noaa.gov/slr/