

Summary of Social Science Investigations:

Virginia Shoreline Characteristics, Marsh Vulnerability, and Management Options

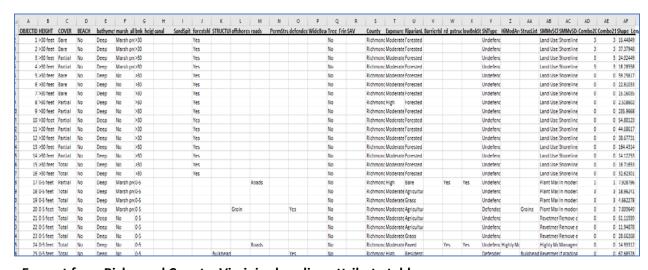
Project Activity: Shoreline Characteristics, Vulnerability, and Management **Options for Tidewater Virginia Localities**

Objective: Create GIS shoreline layers for each locality in Tidewater Virginia (as defined by the Commonwealth of Virginia) with attributes to include CCRM Shoreline Management Model (SMM), CCRM shoreline inventory, and marsh vulnerability score data. In addition, add Parcel ID data to the Gloucester County and City of Norfolk shoreline layers. Generate database with resultant shoreline attribute data of each locality for use in creating two different shoreline management decision-making simulations:

- Prediction of future shoreline modification decisions using the shoreline characteristic attributes and expected neighbor and contractor influence. This simulation is of various scenarios of how to influence decision making on broad scales.
- For Gloucester and Norfolk, simulate future interactions among contractor-property owners and neighbors-property owners based on shoreline characteristics for the parcels using an Agent-Based Model.

Methods: Using ArcGIS Pro 2.6 geographic information system software, we integrated the latest CCRM shoreline management model, shoreline inventory, and marsh vulnerability data to the latest shoreline layer for each Tidewater locality. In addition, Parcel ID data were incorporated into the Gloucester County and City of Norfolk shoreline geospatial layers.

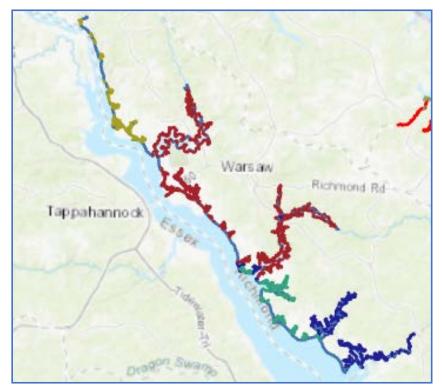
Visuals:



Excerpt from Richmond County, Virginia shoreline attribute table.







Richmond County, Virginia Shoreline Characteristic layer (Symbology: marsh vulnerability score)

Localities Completed:

- Accomack
- Alexandria
- Arlington
- Caroline County
- Chesterfield County
- Charles City County
- Essex County
- Fairfax County
- Gloucester County
- City of Hampton
- Hanover County
- Henrico County
- City of Hopewell
- Isle of Wight County
- James City County
- King George County
- Lancaster County
- Mathews County
- Middlesex County
- New Kent County
- City of Newport News
- City of Norfolk
- Northampton County
- Northumberland County
- City of Petersburg
- City of Poquoson
- City of Portsmouth
- Prince George County
- Prince William County
- Richmond County
- Spotsylvania County
- Stafford County
- City of Suffolk
- Surry County
- City of Virginia Beach
- Westmoreland County
- City of Williamsburg
- York County







