

Phase 7 Watershed and Tidal Water Model Boundaries

Modeling Workgroup Quarterly Review

January 11, 2023

Andy Fitch - USGS Virginia-West Virginia Water Science Center / Chesapeake Bay Program

Karinna Nunez – VIMS Center for Coastal Resources Management

Previous Actions and Decisions

- The decision was made to investigate possibilities for a new tidal shoreline layer for Phase 7.
- The current layer is out of date with coarse resolution, and is poorly documented.



Patuxent River at Lower Marlboro, MD

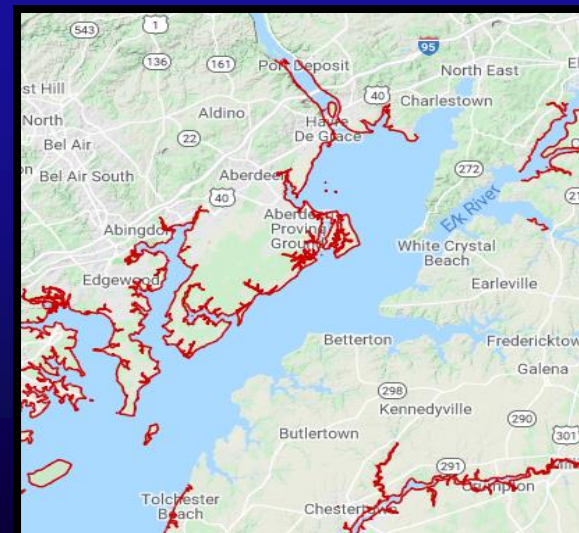
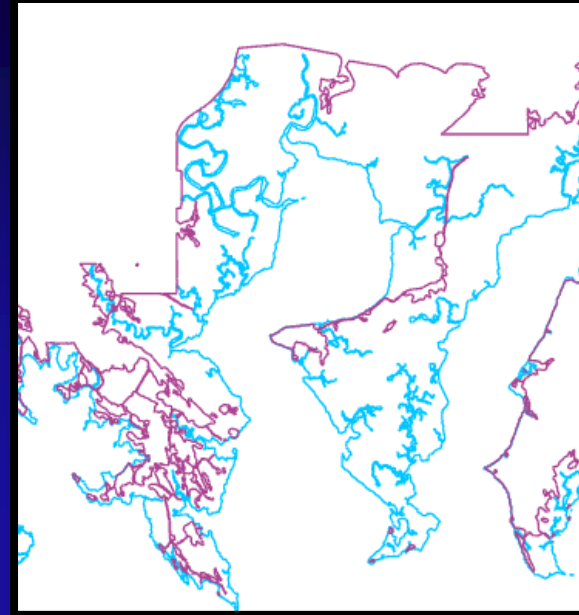
Poplar Island



Previous Actions and Decisions

- Several candidate layers from other sources, including NOAA and VIMS, were identified and evaluated.
- None appeared to have full coverage of the estuary's tidal shoreline while improving resolution and accuracy.

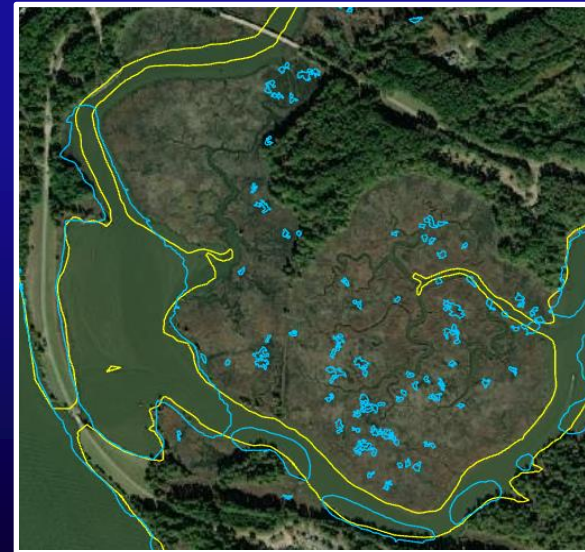
Issues in various candidate layers



Previous Actions and Decisions

- Pilot projects were undertaken to gauge the feasibility of developing an improved layer in-house, using a few different approaches.
- Bathymetry, land cover, and NOAA sea level rise datasets were used in these pilots, but none of the final products would have been easily usable due to issues with accuracy, excessively high resolution, and manmade structures such as docks and bridges.

Pilot project issues



Previous Actions and Decisions

- VIMS made CBP aware of a layer they maintain.
- This layer met most of CBP's needs, and the decision was made to use it, slightly modified in a few locations with the NOAA 0' (Mean Higher High Water) Sea Level Rise dataset.
- This dataset has been updated with new MD shoreline data provided by VIMS this past fall.

Mouth of Chester River near Kent Island



Next Steps

- The shoreline layer may be slightly modified due to a potential minor change to the watershed boundary in southern Virginia.
- Complete metadata and process documentation
- The completed layer will be incorporated into the Phase 7 watershed model segmentation.

Completed estuary shoreline based on VIMS data



Contact

Andy Fitch (afitch@chesapeakebay.net)

Karinna Nunez (karinna@vims.edu)