

Name: *Spartina alterniflora* optimal growth elevation

Description: This layer represents the elevations relative to tidal datums at which *Spartina alterniflora* (smooth cordgrass) is most likely to flourish. It was generated based on a LiDAR DEM prepared from data collected in 2018 as well as VDatum tidal datum transformation grids extended to the borders of the Georgia Coastal Zone Management area. For this layer, the range of elevations suitable for *S. alterniflora* is defined as areas between 10cm below Mean Tide Level (MTL) and 30cm above Mean High Water (MHW). The “optimal” elevation for growth at a given point is defined as the arithmetic mean of these two elevations. These elevation definitions are based on work by Jim Morris, field data collection of elevations of existing salt marsh, and the Marsh Equilibrium Model (MEM, <https://www.midatlanticcrisisa.org/data-tools/water-model-tool/items/mem.html>). The VDatum tidal datum transformation grids were extended according to the process described at <https://www.fisheries.noaa.gov/inport/item/48104>. The green area (raster value 2) represents the optimal growth elevation +/- an estimated uncertainty value. Uncertainty is calculated based on the reported accuracy of the LiDAR collected in vegetated areas provided by the contractors responsible for the LiDAR flights in addition to the estimated uncertainty of the tidal datum conversion process as defined by VDatum. The blue region (raster value 1) covers areas between 10cm below MTL and the lower extent of the optimal window (green area). The yellow region (raster value 3) covers areas between the upper extent of the optimal window and 30cm above MHW. Uncolored areas are either under 10cm below MTL or over 30cm above MHW. The original purpose of producing this layer was to guide preliminary investigations of areas where dredged material could be placed to increase marsh resilience to sea level rise. **DISCLAIMERS:** This layer is for preliminary planning, exploration, and educational purposes only. When the layer is used for planning or decision-making, always consider the magnitude of estimated uncertainty relative to the differences between relevant elevations. This layer does not incorporate future changes to coastal geomorphology or sea level, meaning the associated data and outputs will progressively diverge from reality over time. This layer only considers elevation as a factor in determining where *S. alterniflora* will grow. While elevation is an important factor, it is not the only factor.

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