Morphology of Hydric Soils in Mid-Atlantic Barrier Island Landscapes

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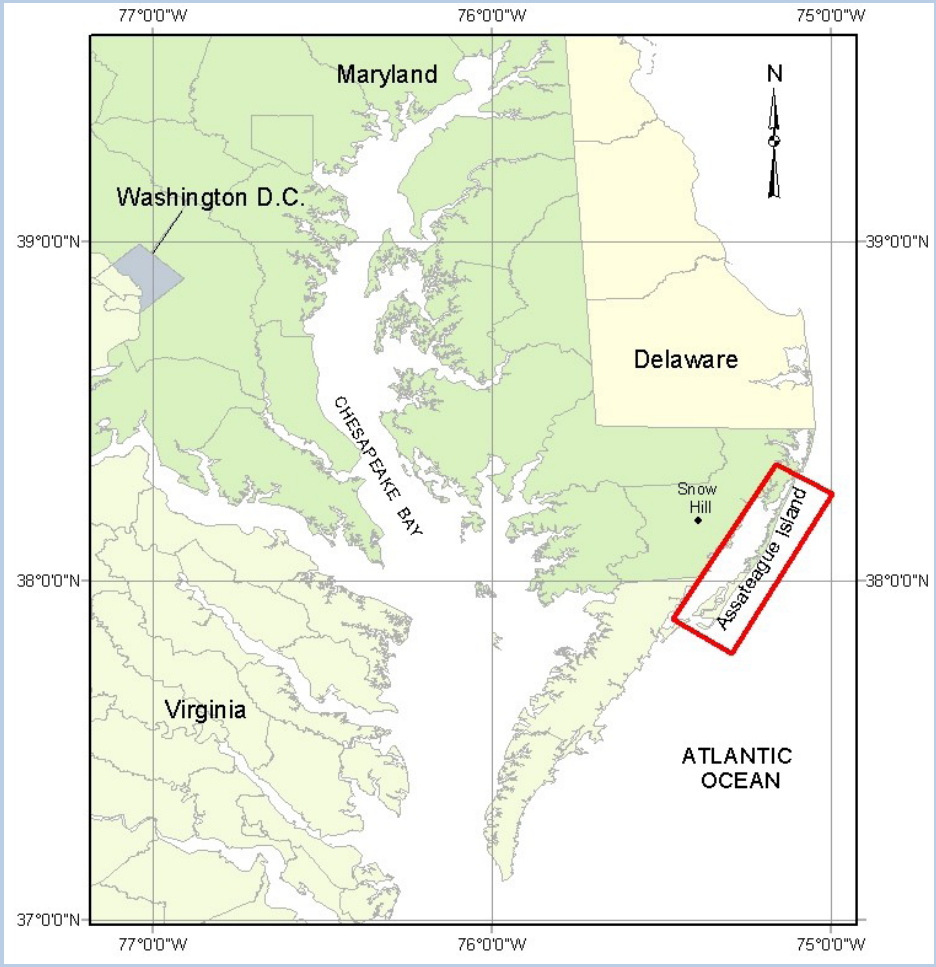
Barrier Islands

- Ecosystem Services
  - Physical protection of the mainland
  - Unique habitat
  - Freshwater wetlands
- Development pressures

Research Needs and Objectives

- Improved mapping, characterization, classification, and understanding of pedogenic processes of soils on barrier islands
  - Primarily processes associated with early soil development (accumulation of organic matter, O and A horizons)
  - Role of hydrology, landscape stability, and ???
- Improved recognition and identification of hydric soils and freshwater wetlands on barrier islands
- Role of barrier island soils in carbon cycling?
  - Organic carbon stocks, accumulation rates
  - Influence of landform and landscape position, hydrology, vegetation, and ???

Assateague Island National Seashore



BC2

BC3

BC6

OW1

OW3

Soil Morphology Observations

- Soils show minimal development
  - primarily O and A horizons
- Low chroma colors
  - Both in poorly and excessively drained positions
  - Estimate values and chromas between Munsell chips
- Hydric soils have not developed redoximorphic features and do not meet recognized Hydric Soil Field Indicators
  - Propose revision to HSFI A9 (1 cm muck) and a new indicator (low chroma) to identify hydric soils in these landscapes
- In general, organic C stocks are greater in wetter topographic positions
  - Site variability indicates influences in addition to hydrology
    - Vegetation (species diversity and density)
    - Landform stability and soil age