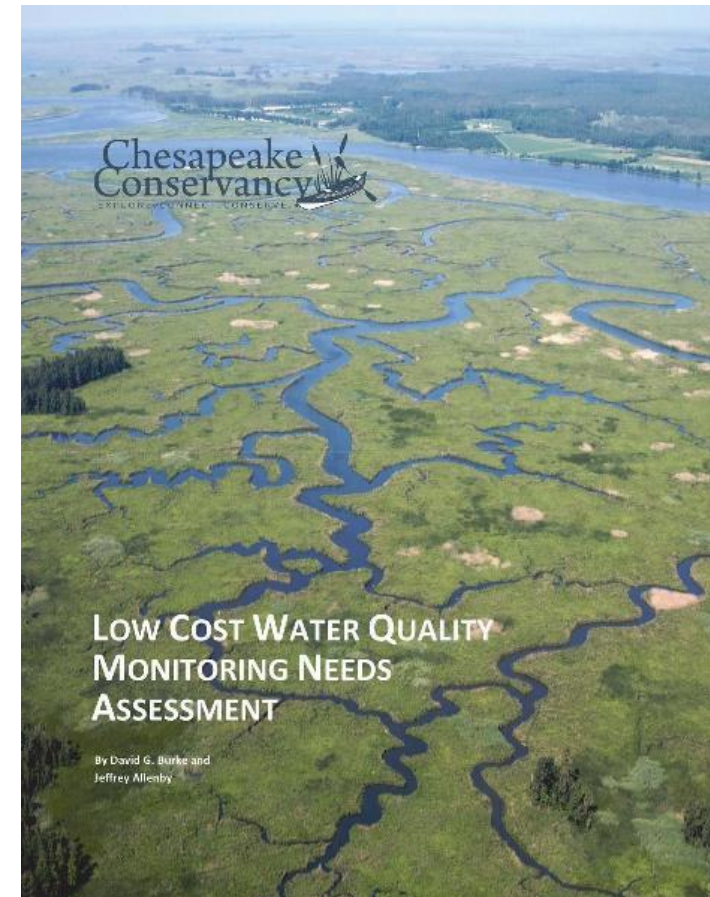
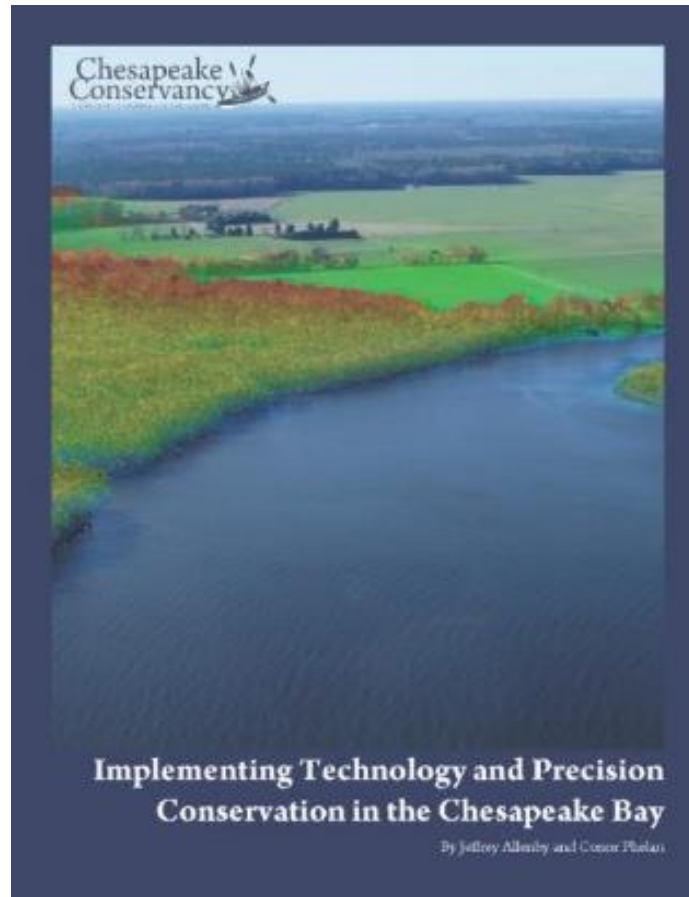


High Resolution Land Cover Data in the Chesapeake Bay

Chesapeake Conservancy

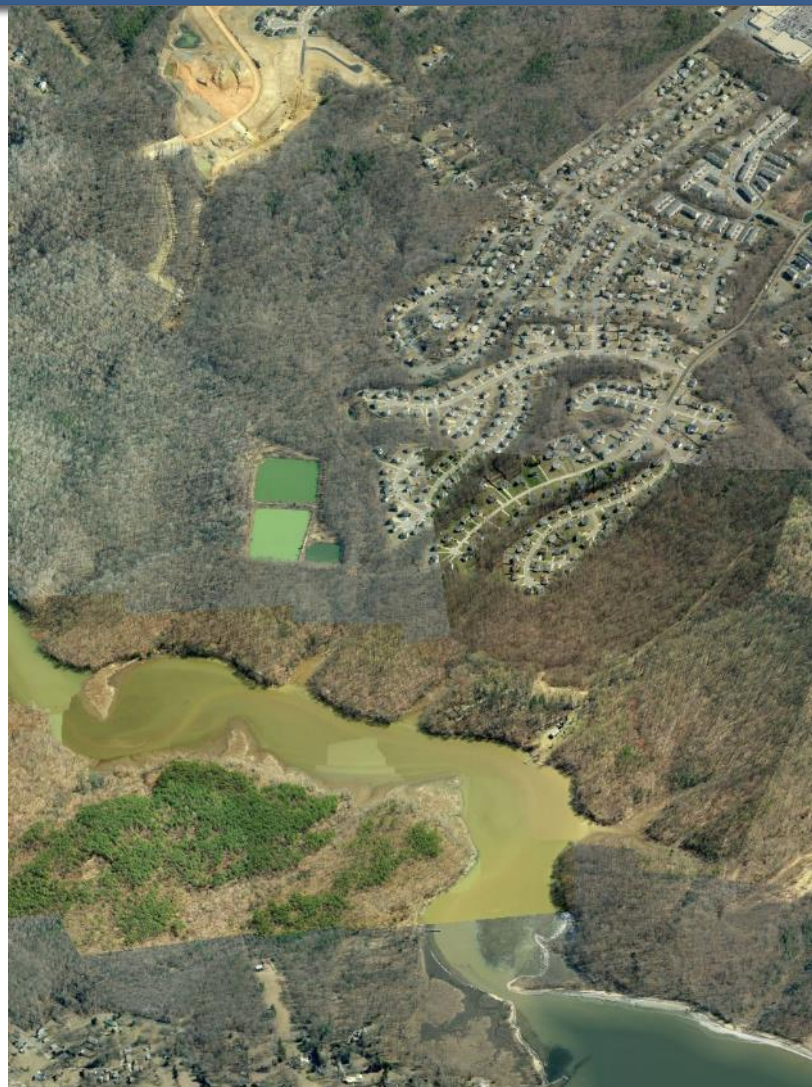
Precision Conservation Landscape Analysis

*“Getting the **right practices**, in the **right places**,
at the **right scale**, at the **right time** and making sure **they are working**”*



High-resolution Land Cover Classification

We are using remote sensing and GIS modeling to generate a 1m resolution land cover dataset for all watershed counties in NY, PA, MD, DE, DC, and WV



nDSM



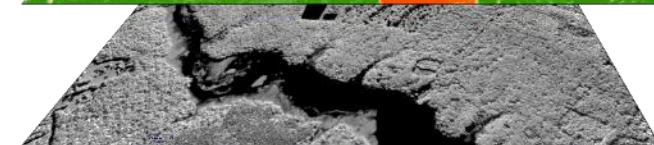
nDTM



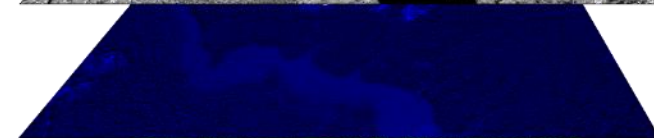
NDVI



NIR



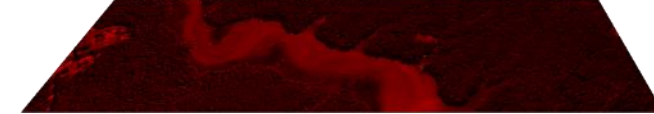
Blue



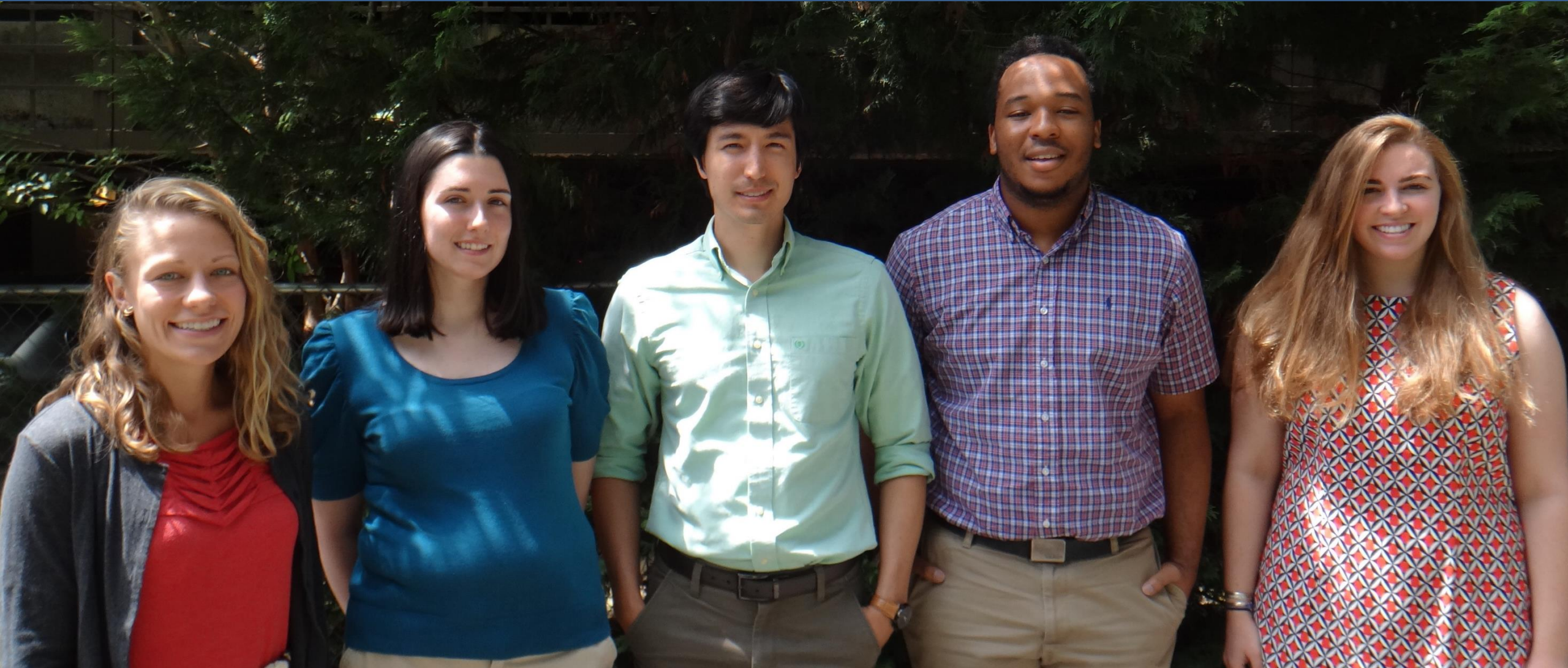
Green



Red

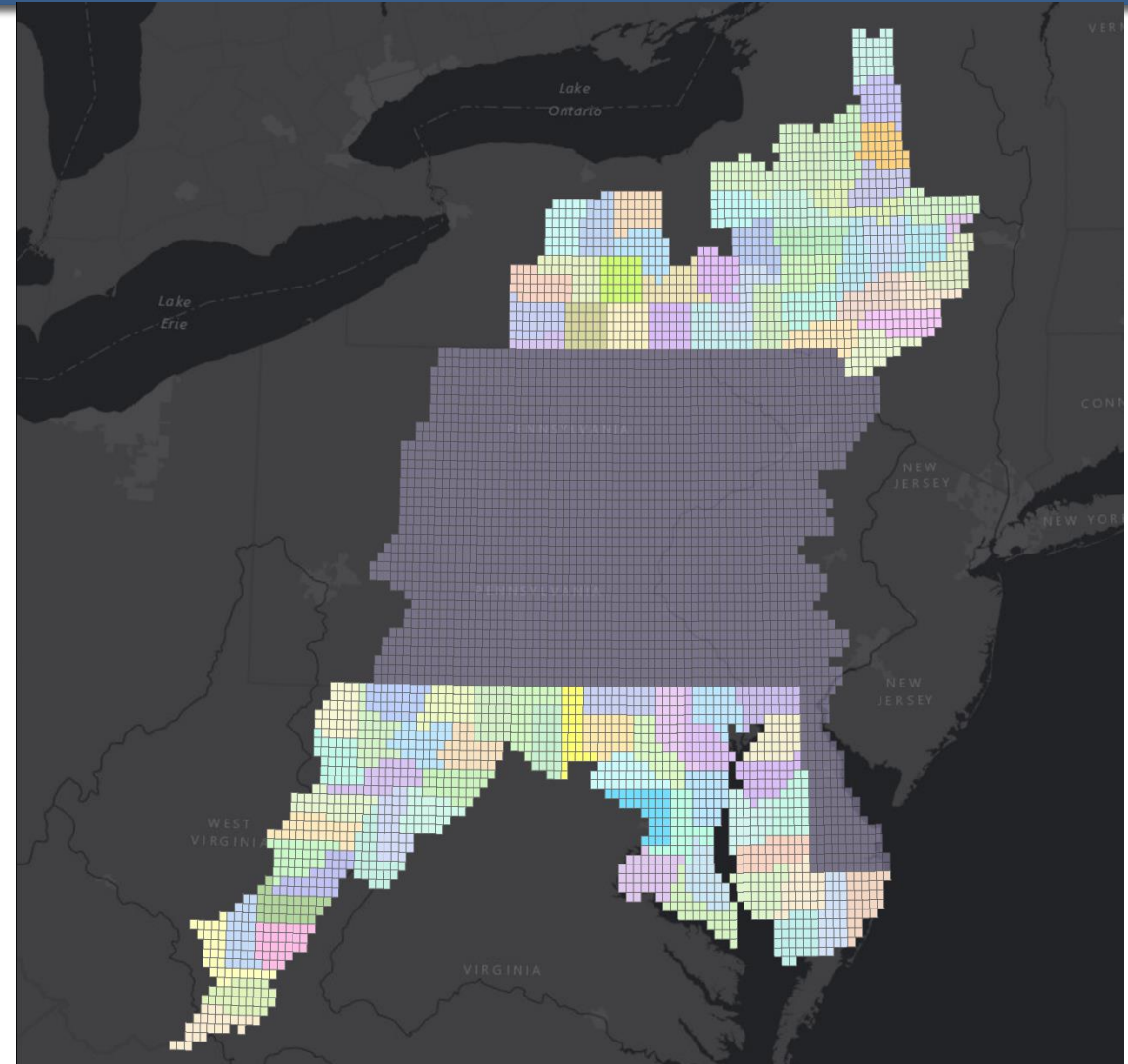
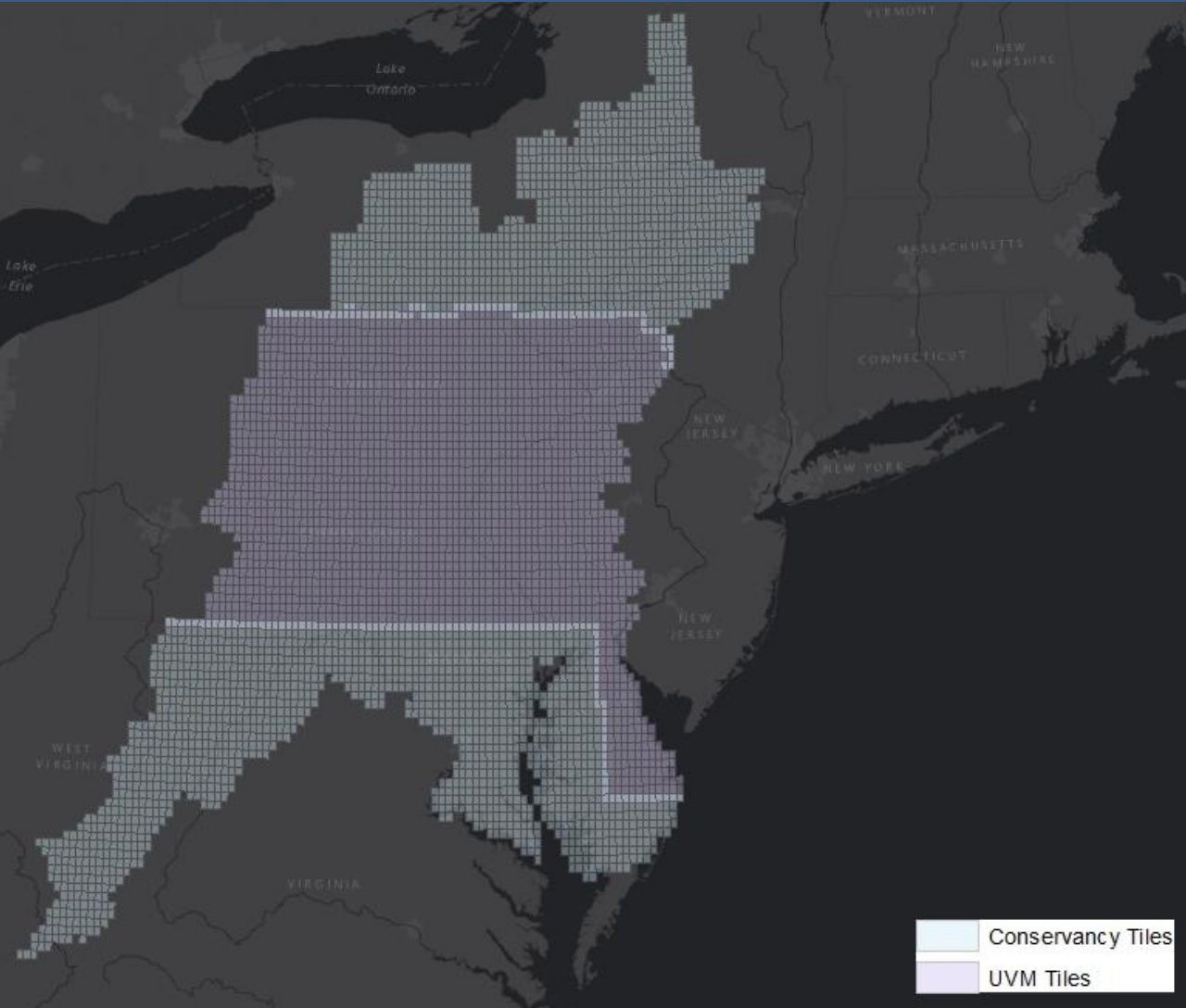


Project Team



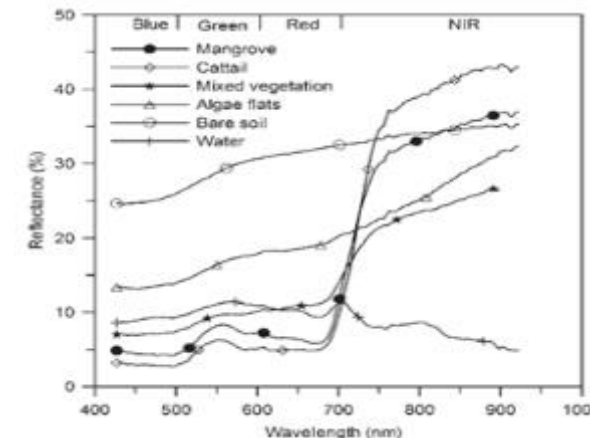
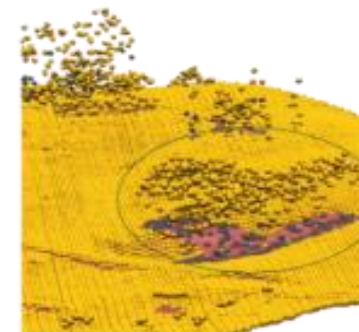
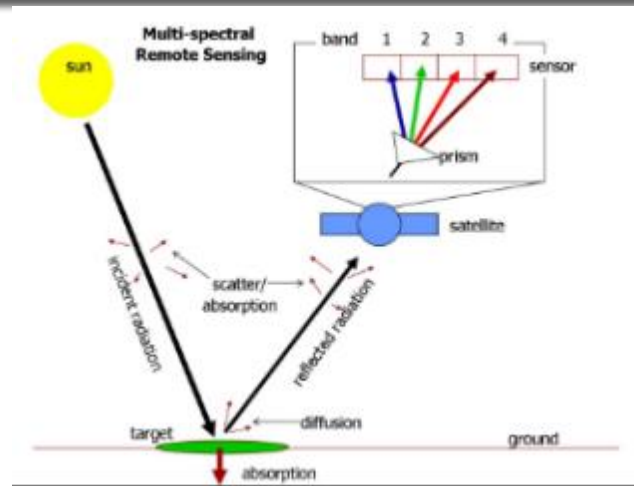
Saving the Chesapeake's Great Rivers and Special Places

Project Area



High-resolution Land Cover Classification

- Our rule-based, object oriented image classification will identify 10 land cover types with 900x the resolution of National Land Cover Dataset (NLCD)
- Uses 1m, 4-band NAIP imagery and LIDAR DEMs, DTMs, and DSMs



High-resolution Land Cover Classification

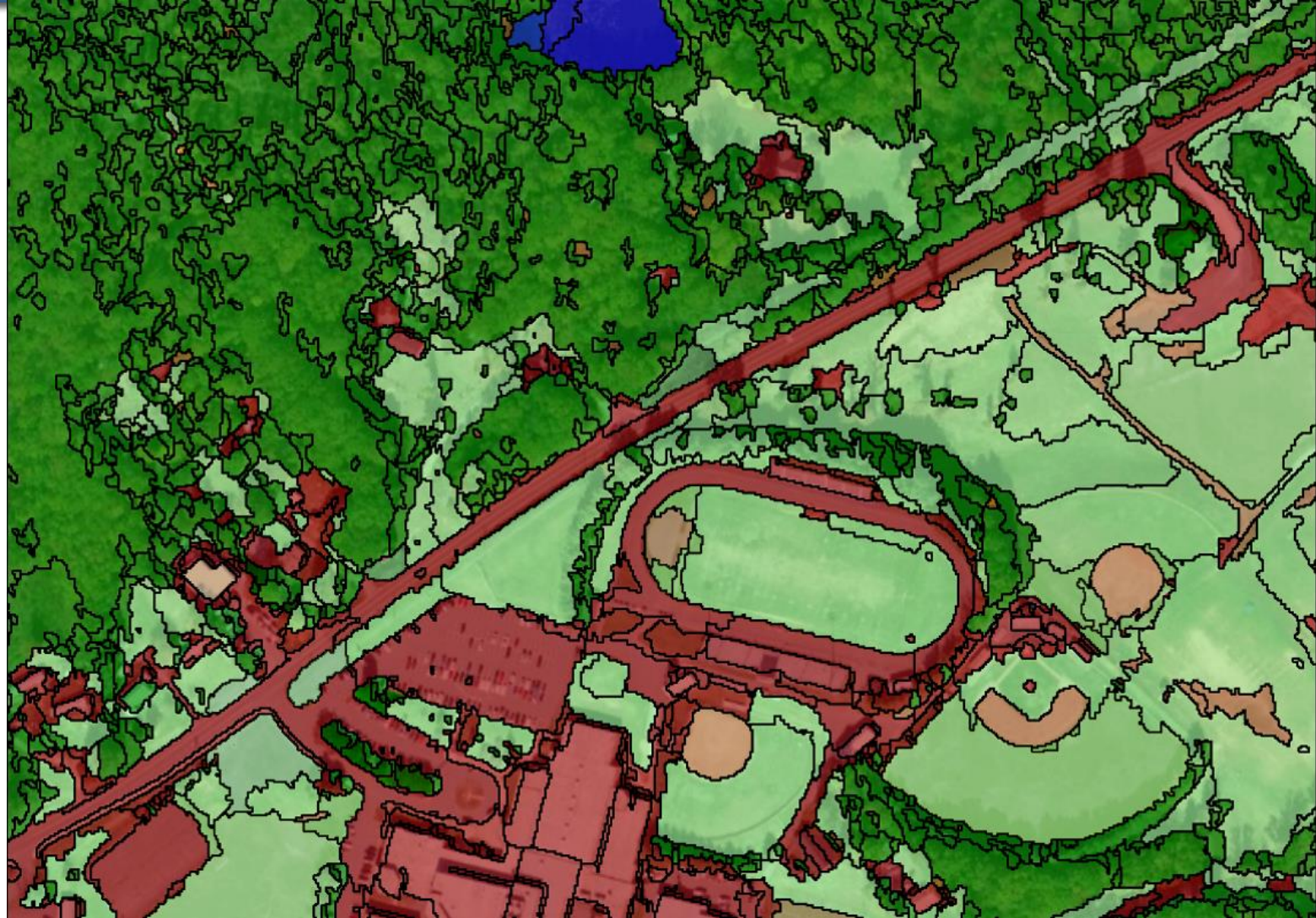
- **Water**
- **Emergent Wetlands***
- **Tree canopy**
- **Scrub-shrub**
- **Herbaceous/Grass**
- **Barren**
- **Impervious surfaces- Roads***
- **Impervious surfaces- Other***
- **Impervious surfaces- structures**
- **Impervious surfaces- obscured by tree canopy***

* *Classes will be extracted by intersecting leaf-off classification and planimetric data with leaf-on classification data*

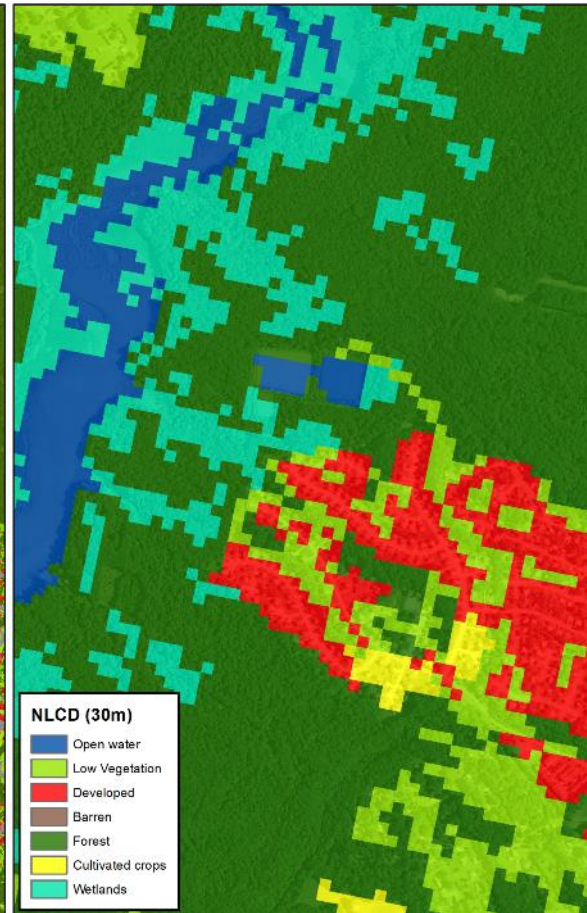
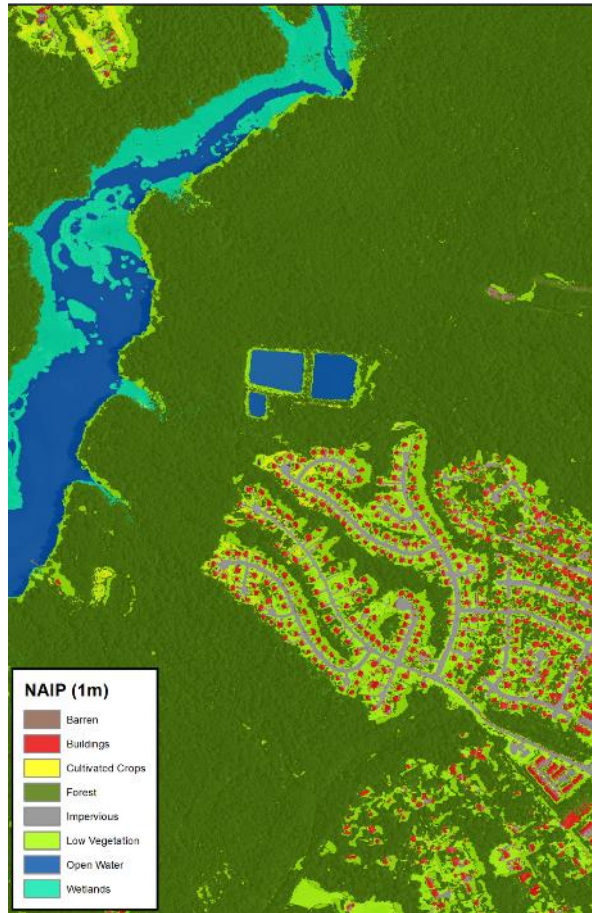


High-resolution Land Use Classification

- **2-stage process:**
 - Initial semi-automated feature extraction in ENVI
 - Manual reclassification to improve overall accuracy (~95% accuracy)
- **Currently incorporates LiDAR data but we have an alternate method that still produces high accuracy data for areas where LiDAR has not been collected (WV)**



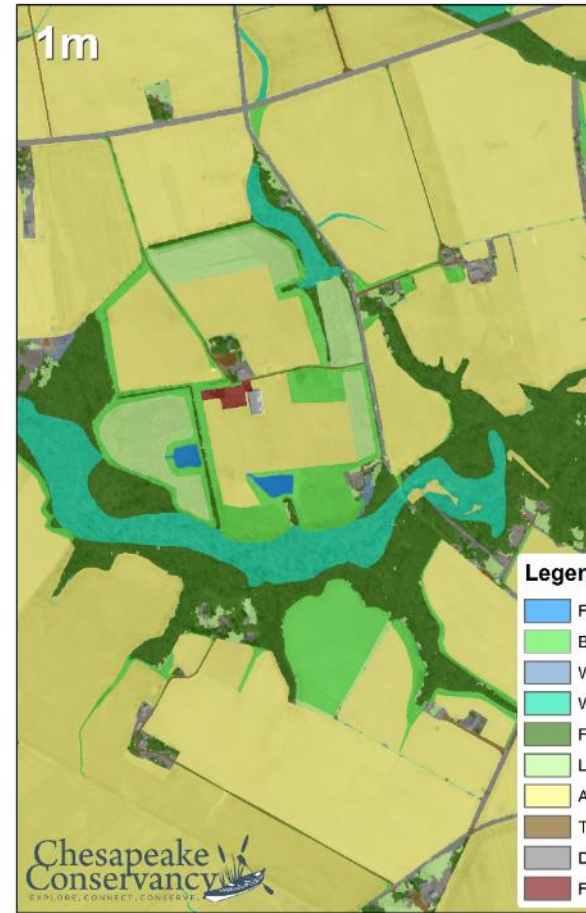
High Resolution Land Cover Data



A

Urban/Suburban Settings

B



Legend

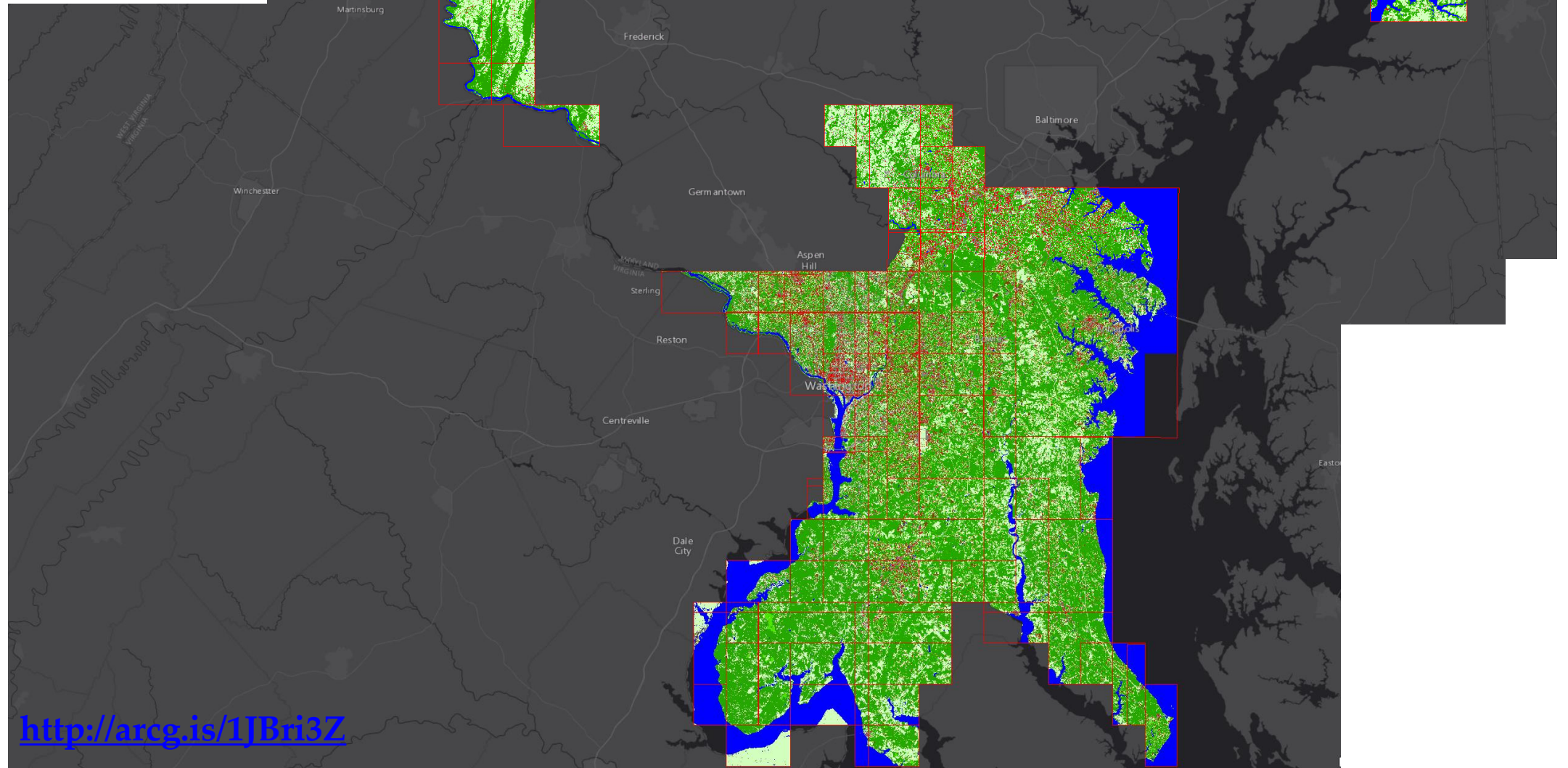
- Farm Ponds
- Buffers
- Water
- Wetlands
- Forest
- Low Vegetation
- Agricultural
- Tilled Field
- Developed
- Feedlots

C

Rural Settings

D

Progress to Date



<http://arcg.is/1JBri3Z>

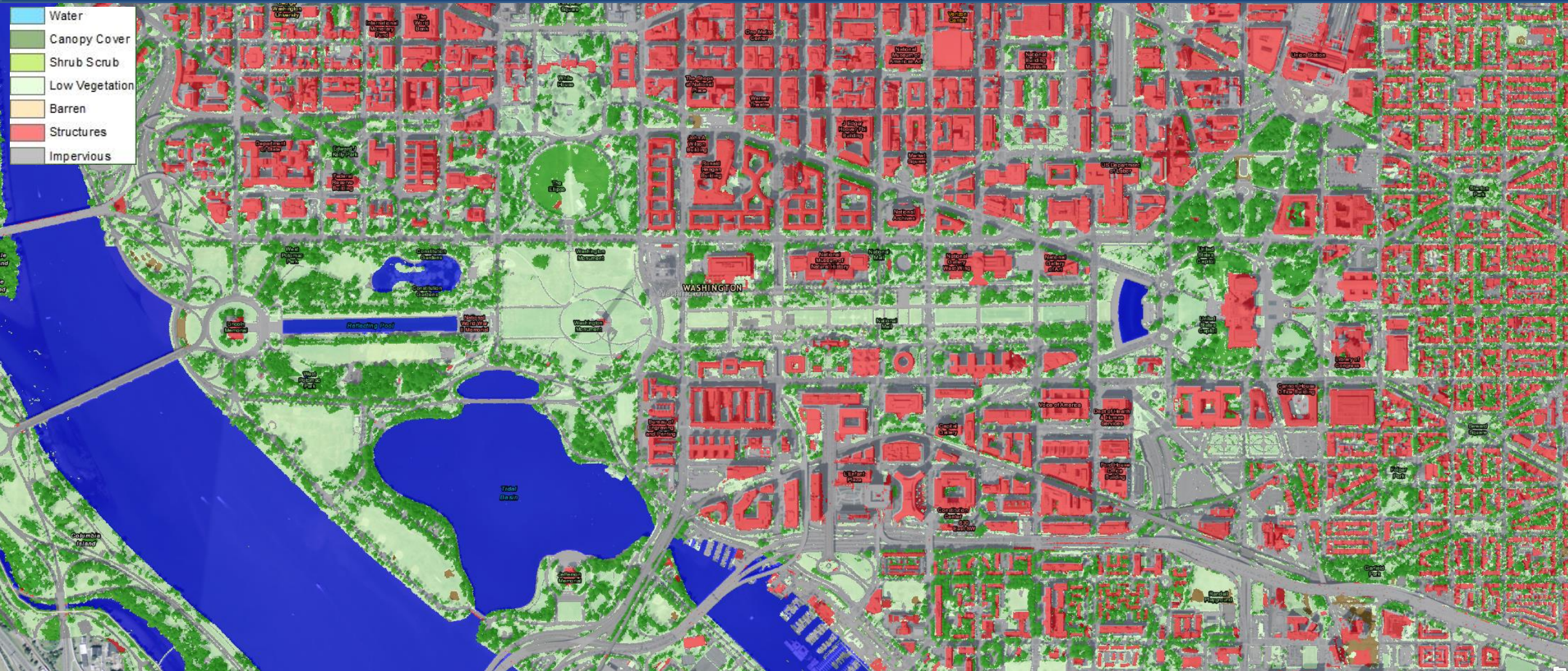
Saving the Chesapeake's Great Rivers and Special Places

Examples of Land Cover Product Outputs



Saving the Chesapeake's Great Rivers and Special Places

Examples of Land Cover Product Outputs



Saving the Chesapeake's Great Rivers and Special Places

Examples of Land Cover Product Outputs



Examples of Land Cover Product Outputs

