Chesapeake Bay Program
Science. Restoration. Partnership.

USGS
science for a changing world

University of Vermont
Spatial Analysis Lab

CONSERVATION
INNOVATION
CENTER
CHESAPEAKE CONSERVANCY

2017/18 1-meter Land Cover & Land Use Data Release

16 Feb 2022 | LUWG Meeting

Data Products

1. 1-meter 2017/18 LC rasters
2. 1-meter 2013/14 - 2017/18 LC change rasters
3. 1-meter 2017/18 LULC rasters
   a. Detailed (54 classes) and General (17 classes) classification attributes
4. 1-meter 2013/14 - 2017/18 LULC change rasters
   a. Detailed (54 classes) and General (17 classes) classification attributes
5. 10-meter raster isolating impervious surfaces
6. 10-meter raster isolating tree canopy
7. Tabular class area summaries (acres)
   a. Both classification schemes
   b. 6 geographic scales (see right)

- All 1-meter rasters downloadable by county
- Six geography scales for tabular data:
  - Region (full 206 county area)
  - Chesapeake Bay watershed
  - County
  - County (inside watershed only)
  - *State (coverage for regional counties)*
  - State (inside watershed only)
- Documentation/Communication
  - White papers describing methods for 2017/18 LULC and 2013/14-2017/18 LULC change
    - appendix for interpretations of these data
  - Press release with high-level interpretations and links to access
  - Recorded webinar

March Release

- **2017/18 LULC Website**
  - Viewer displaying 1-meter general LULC classification for both dates.
  - Downloading options include 1-meter detailed LULC for both dates at the county or state level with layer files to display the general classification, 10-meter rasters representing impervious surfaces and tree canopy for both dates for the region, and tabular class areas (acres) for both the detailed and general LULC classifications for all six geographies (856 tables).

- **2013/14 to 2017/18 LULC Change Website**
  - Viewer with three panels displaying the 2013/14 & 2017/18 NAIP imagery and regional LULC change data colored for the general classes and end-date condition (e.g., 2017/18 land use class).
  - Downloading options include 1-meter detailed LULC change at the county or state level with layer files to display either the early-date (2013/14) or late-date (2017/18) general classification, tabular change matrices (all six geographies) for both the detailed and general LULC classifications for the 2013/14 - 2017/18 period (856 tables).
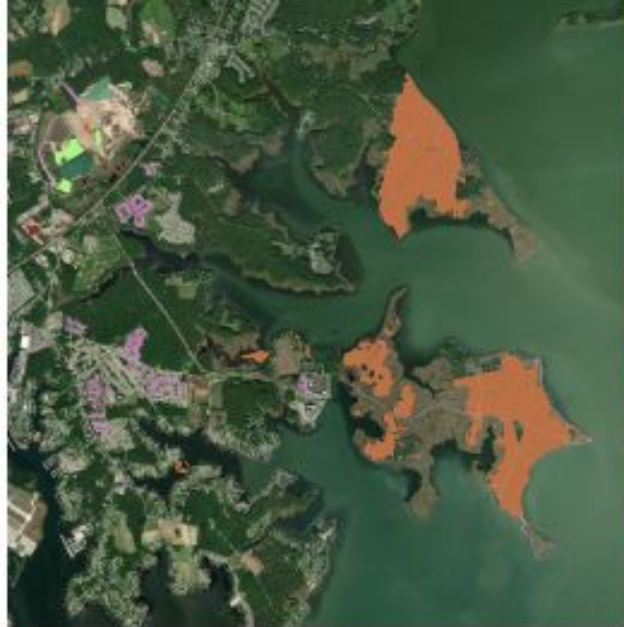
Progress Update, and Why March?

- Delays in land cover delivery due to:
  - Wetlands methodology
  - Pipe burst at UVM SAL office
  - Iterative QC process
- Delayed land use timeline due to:
  - Updating scripts to reduce processing time and support better automation
  - Iterative revisions and debugging due to decision-rule changes that couldn't be tested until LC delivery

- Latest draft of LC data for all counties has been delivered to USGS/CC team and is going through final review
- LULC preparatory scripts have been finalized and run on priority test counties
- LULC conversion model has been debugged and is being updated with rule revisions from recent decision changes
  - Will be tested in six priority counties this week and next for QC before running regionally

Baltimore County

- Low veg conversion to water, imperv scattered throughout water

Baltimore County

- Low veg conversion to water, imperv scattered throughout water FIXED

76.5529298°W
37.3282270°N

- Virginia Wetlands Error

CBP Land Use/Cover Classification (62 planned for 2021/22, 54 classes mapped for 2017/18)

1. Water (11)
1.1 Lentic
- 1.1.1 Estuary (tidal)
- 1.1.2. Waterbodies (fresh)
  - 1.1.2.1 Lakes and reservoirs
  - 1.1.2.2 Riverine ponds
  - 1.1.2.3 Terrene ponds

1.2 Lotic
- 1.2.1 Channels
  - 1.2.1.1 Open Channel
  - 1.2.1.2 Tree Canopy over Channel
  - 1.2.1.3 Culverted
- 1.2.2.Ditches
  - 1.2.2.1 Open Ditch
  - 1.2.2.2 Tree Canopy over Ditch
  - 1.2.2.3 Culverted

2. Developed (12)
2.1 Impervious
- 2.1.1 Roads
- 2.1.2 Structures
- 2.1.3 Other Impervious
- 2.1.4 Tree Canopy (TC) over Impervious
  - 2.1.4.1 TC over Roads
  - 2.1.4.2 TC over Structures
  - 2.1.4.3 TC over Other Impervious

2.2 Pervious
- 2.2.1 Turf Grass
- 2.2.2 Transitional- barren

- 2.2.3 Suspended Succession
  - 2.2.3.1 Barren
  - 2.2.3.2 Herbaceous
  - 2.2.3.3 Scrub-shrub
- 2.2.4 Tree Canopy over Turf Grass

3. Forested (7)
3.1 Forest (>= 1 acre, 240-ft width)
3.2 Other Tree Canopy
3.3 Harvested Forest (<= 3 years)
- 3.3.1 Barren
- 3.3.2 Herbaceous
3.4 Natural Succession (> 3 years)
- 3.4.1 Barren
- 3.4.2 Herbaceous
- 3.4.3 Scrub-shrub

4. Production (17)
4.1 Agriculture
- 4.1.1 Cropland
  - 4.1.1.1 Barren
  - 4.1.1.2 Herbaceous
- 4.1.2 Pasture
  - 4.1.2.1 Barren
  - 4.1.2.2 Herbaceous
  - 4.1.2.3 Scrub-shrub
- 4.1.3 Orchard/vineyard
  - 4.1.3.1 Barren
  - 4.1.3.2 Herbaceous
  - 4.1.3.3 Scrub-shrub

- 4.1.4 Animal Operations
  - 4.1.4.1 Impervious
  - 4.1.4.2 Barren
  - 4.1.4.3 Herbaceous
4.2 Solar fields
- 4.2.1 Impervious
- 4.2.2 Pervious
  - 4.2.2.1 Barren
  - 4.2.2.2 Herbaceous
  - 4.2.2.3 Scrub-shrub
4.3 Extractive (active mines)
- 4.3.1 Barren
- 4.3.2 Impervious

5. Wetlands and Water Margins (16)
5.1 Tidal
- 5.1.1 Barren
- 5.1.2 Herbaceous
- 5.1.3 Scrub-shrub
- 5.1.4 Other Tree Canopy
- 5.1.5 Forest
5.2 Riverine (Non-tidal)
- 5.2.1. Barren
- 5.2.2 Herbaceous
- 5.2.3 Scrub-shrub
- 5.2.4 Other Tree Canopy
- 5.2.5 Forest
5.3 Terrene/Isolated (Non-tidal)
- 5.3.1 Barren
- 5.3.2 Herbaceous
- 5.3.3 Scrub-shrub
- 5.3.4 Other Tree Canopy
- 5.3.5 Forest
5.4 Bare shore

Note: Yellow and blue classes mapped for 2017/18. Grey classes will be added to all years with the production of the 2021/22 LULC.

Proposed Generalized Land Use Classes

1. Impervious Roads
2.1 Impervious
   2.1.1 Roads

2. Impervious Non-Roads
2.1 Impervious
   2.1.2 Structures
   2.1.3 Other Impervious
4.2 Solar fields
   4.2.1 Impervious

3. Tree Canopy Over Impervious
2.1 Impervious
   2.1.4 Tree Canopy over Impervious

4. Turf Grass
2.2 Pervious, Developed
   2.2.1 Turf Grass

5. Tree Canopy over Turf Grass
2.2 Pervious. Developed
   2.2.4 Tree Canopy over Turf Grass

6. Pervious Developed, Other
2.2 Pervious. Developed

   2.2.2 Transitional- barren
   2.2.3 Suspended Succession
4.2 Solar fields
   4.2.2 Pervious

7. Forest
3.1 Forest (>= 1 acre, 240-ft width)
5.1 Tidal
   5.1.5 Forest (>= 1 acre, 240-ft width)
5.2 Riverine (Non-tidal)
   5.2.5 Forest (>= 1 acre, 240-ft width)
5.3 Terrene/Isolated (Non-tidal)
   5.3.5 Forest (>= 1 acre, 240-ft width)

8. Tree Canopy, Other
3.2 Other Tree Canopy
5.1 Tidal
   5.1.4 Other Tree Canopy
5.2 Riverine (Non-tidal)
   5.2.4 Other Tree Canopy
5.3 Terrene/Isolated (Non-tidal)
   5.3.4 Other Tree Canopy

9. Harvested Forest
3.3 Harvested Forest (<= 3 years)

10. Natural Succession
3.4 Natural Succession (> 3 years)
5.4 Bare shore, Water Margins

11. Wetlands, Tidal non-forested
5.1 Tidal Wetlands
   5.1.1 Barren
   5.1.2 Herbaceous
   5.1.3 Scrub-shrub

12. Wetlands, Riverine Non-forested
5.2 Riverine Wetlands
   5.1.1 Barren
   5.1.2 Herbaceous
   5.1.3 Scrub-shrub

13. Wetlands, Terrene Non-forested
5.3 Terrene/Isolated Wetlands
   5.1.1 Barren
   5.1.2 Herbaceous
   5.1.3 Scrub-shrub

14. Extractive
4.3 Extractive (active mines)
   4.3.1 Barren
   4.3.2 Impervious

15. Cropland
4.1 Agriculture
   4.1.1 Cropland
   4.1.3 Orchard/vineyard

16. Pasture
4.1 Agriculture
   4.1.2 Pasture

17. Water
1.1 Lentic
1.2 Lotic