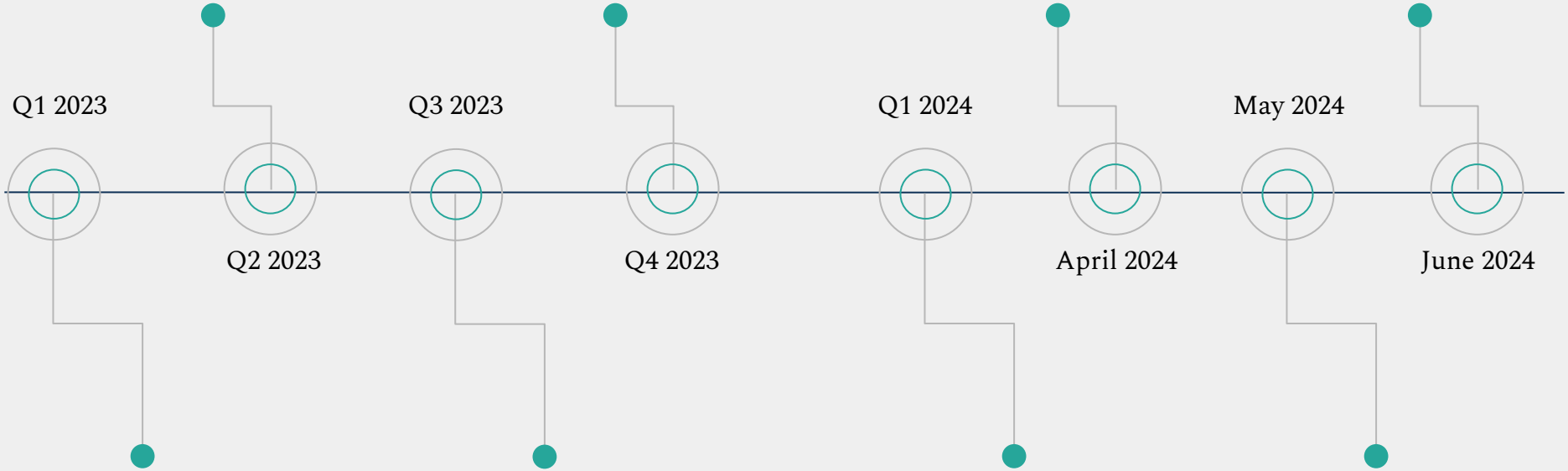
Chesapeake Land Use/Land Cover Data Project Update

Katie Walker | 15 March 2023 | LUWG Meeting


Q1 2023
Q2 2023
Q3 2023
Q4 2023
Q1 2024
April 2024
May 2024
June 2024
❖ 2021/22 Edition Data Review
❖ Local Data Outreach
❖ LC Testing (DE/MD)
❖ Finalize AA process and gather NAIP services
❖ Complete Accuracy Assessment
❖ Begin LC production
❖ LU Rule Discussions
❖ LU Model Architecture Revision
❖ Continue LC Production
❖ Pencils-down on Classification Scheme and Definitions
❖ Continue LU Model Revisions
❖ Continue LC Production
❖ Pencils-down on LU Rule Decisions
❖ Continue LU Model Revisions
❖ Complete LC Production
❖ Complete LU Model Revisions
❖ Test Run for LULC
❖ LUWG + Stakeholder Review of LULC
❖ Final runs for all 2024 Edition data
❖ Final Accuracy Assessment
❖ Package data
❖ Final reports and documentation
❖ Press Release
❖ ScienceBase Release
❖ Complete Publications

Feedback from the 2022 Edition Review

Land Cover Concerns, total occurrences: 770

Proposed LULC	Incorrect 2022 Call	Total Acres of pseg	# of Occurrences
Turf Grass	Transitional Barren	81	77
Other Impervious	Turf Grass	33	63
Other Impervious	Transitional Barren	33	51
Turf Grass	Other Impervious	85	41
Forest	Cropland Herbaceous	11	37

Land Cover Concerns, total pseg area: 2,468 acres

Proposed LULC	Incorrect 2022 Call	Total Acres of pseg	# of Occurrences
Transitional Barren	Turf Grass	391	7
Tree Canopy Over Other Impervious	Forest	234	5
Turf Grass	Roads	231	3
Other Impervious	Cropland Herbaceous	203	21
Turf Grass	Other Impervious	85	41

Feedback from the 2022 Edition Review

Land Use Concerns, total occurrences: 1808

Proposed LULC	Incorrect 2022 Call	Total Acres of pseg	# of Occurrences
Turf Grass	Cropland Herbaceous	587	475
Turf Grass	Pasture/Hay Herbaceous	576	301
Natural Succession Herbaceous	Cropland Herbaceous	1,181	101
Cropland Herbaceous	Pasture/Hay Herbaceous	273	97
Turf Grass	Suspended Succession Herbaceous	47	93

Land Use Concerns, total pseg area: 5,683 acres

Proposed LULC	Incorrect 2022 Call	Total Acres of pseg	# of Occurrences
Cropland Herbaceous	Pasture/Hay Herbaceous	1181	97
Turf Grass	Cropland Herbaceous	587	475
Turf Grass	Pasture/Hay Herbaceous	576	301
Riverine Wetlands Herbaceous	Forest	415	7
Natural Succession Herbaceous	Pasture/Hay Herbaceous	410	78

- Tree Canopy and Forest Code Architecture + Processing
- Tree Canopy and Forest Rule Parameters
- Revisit Agriculture classes, inclusion of animal operations
- Revisit Solar classes, refine definitions
- Refine post-processing (metadata, symbology, mosaicking, etc.)
- Revise Water and Wetlands module

Model Discussions

Currently being implemented or discussed

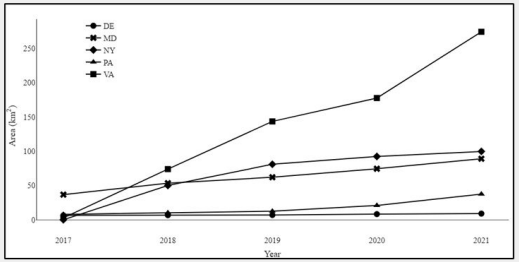
Follow up from FWG/LUWG

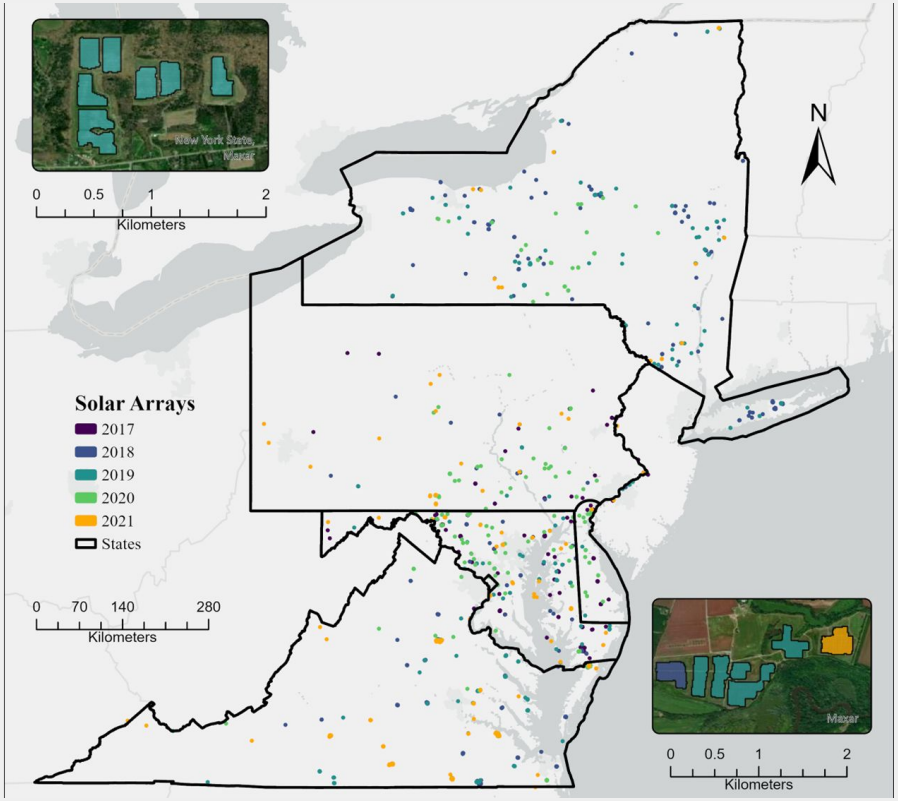
1. We are updating our forest patch definition to align better with FIA data (will be 36-meter diameter, not radius)
2. We are updating our classification to allow timber harvest within wetlands
3. For the buffers surrounding developed classes used to make TCTG calls:
    a. urban areas will be treated the same as non-urbanized areas
    b. will be limited to the originating parcel boundary
4. We confirmed that we're going to process and make FORE calls before any other TC calls to preserve as much tree canopy that serves as forest as possible
5. We are not including Evergreen vs. Deciduous for the 2024 edition of the LULC data

Inclusion of solar array data for LC mapping

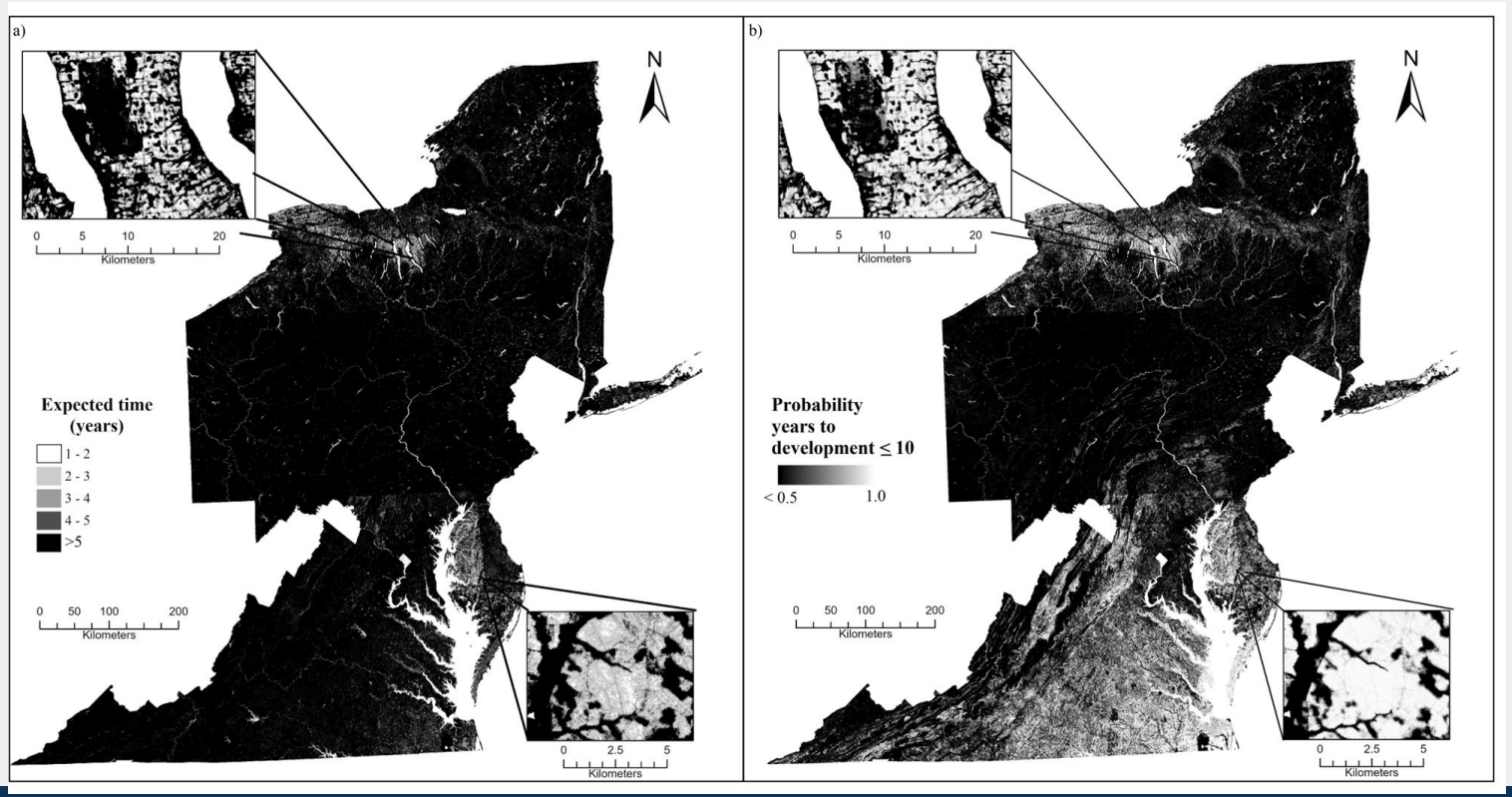
2017 - 2021

State	Area (%)	Rate of increase
DE	9.01 (1.79E-04)	1.40 ± 0.34E-03
MD	89.05 (3.54E-04)	**5.00 ± 0.34E-03**
NY	99.68 (0.82E-04)	1.33 ± 0.48E-03
PA	37.45 (0.32E-04)	0.61 ± 0.34E-03
VA	274.17 (2.69E-04)	**6.27 ± 0.34E-03**

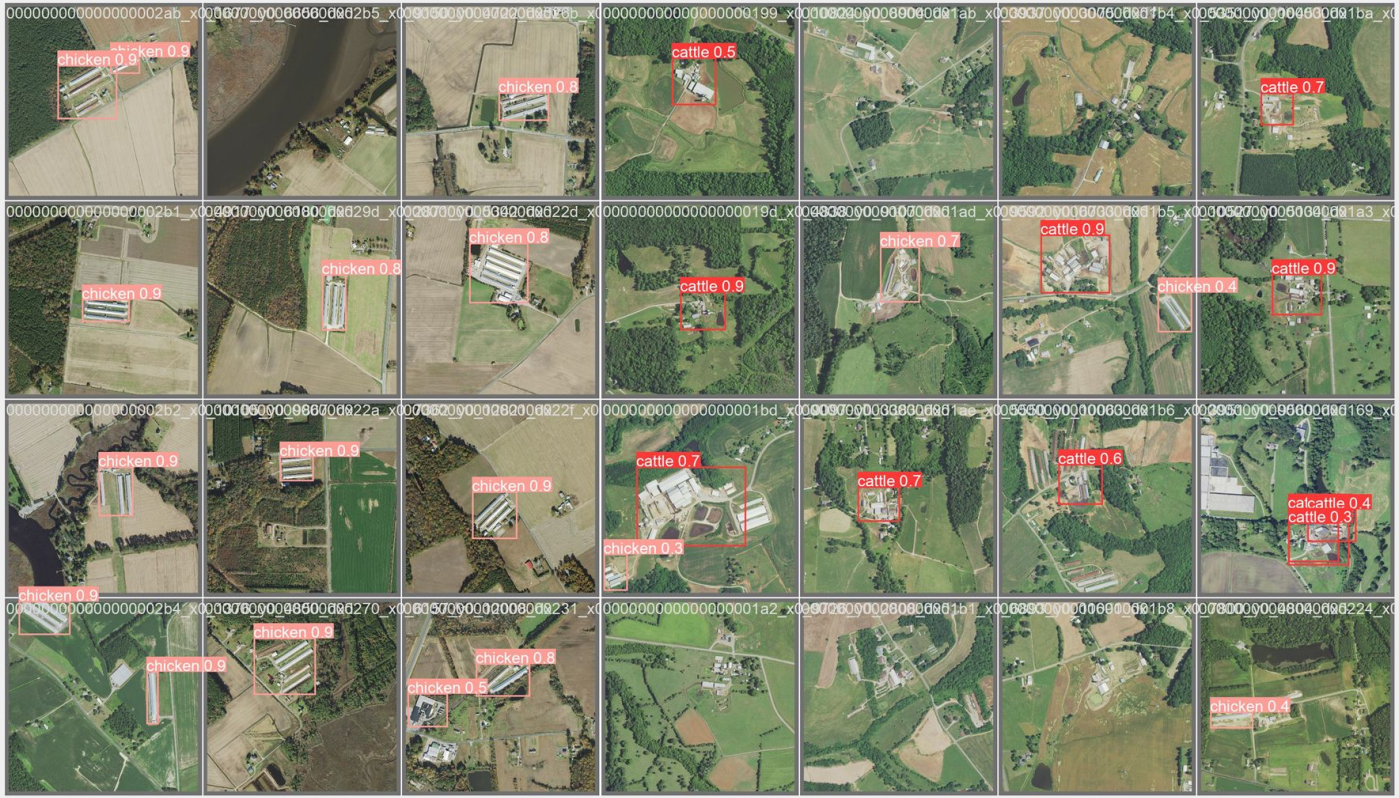




Future ideas for utilizing solar data



Testing model for animal operations



Local Data Ask

Timber Harvest Data Still Needed:
DE, MD

Local Data Still Needed:
VA: 66 counties
MD: 6 counties
WV: 14 counties

Will be asking for soon:
PA counties
NY counties

Official Publication through ScienceBase!

Scale: SB has state mosaics[1] of the data, while the CC Website has county-scale data

Usability: SB data includes a data dictionary that provides a quick reference to the structure and format of the data and includes descriptions of land cover and land use and land cover classes. The data dictionary is also applicable to the county-scale data.

Formal Publication: the data published on SB allows users to easily reference the LULC data in publications and other data products, which is:

> *Chesapeake Bay Program, 2023, Chesapeake Bay Land Use and Land Cover Database 2022 Edition: U.S. Geological Survey data release, https://doi.org/10.5066/P981GV1L*

Science summary:
https://www.usgs.gov/centers/chesapeake-bay-activities/science/chesapeake-bay-land-use-and-land-cover-data-now-published#overview

[1] State mosaics include only the mapped counties within or adjacent to the Chesapeake Bay watershed. Maryland, Delaware, and D.C. are the only jurisdictions whose full state is mapped.