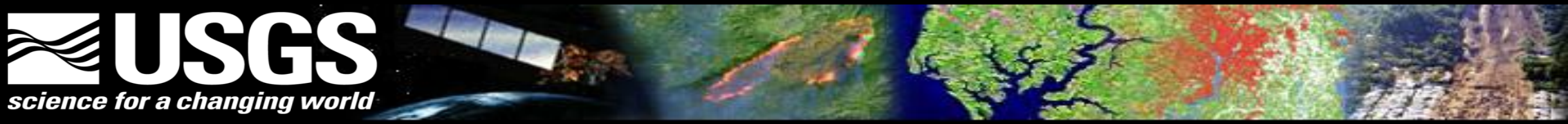

Land Use Workgroup Priorities for 2022

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Land Use Workgroup Meeting
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U.S. Department of the Interior
U.S. Geological Survey

Proposed LUWG Priorities for 2022

1. Finalization of the 2017/18 Version 2 Land Use and Land Use Change Data

2. Development and review of 2021 Land Use Data for Maryland and Delaware

3. Finalization of Land Use Methods and Metrics Indicators

4. Initiate improvements to the Chesapeake Bay Land Change Model

5. Other?
   - Support for floodplain/shoreline management and climate resiliency
   - Support for “America the Beautiful” initiative

CBP Land Use/Cover Classification (61 classes, final version)

1. Water (10)

- 1.1 Lentic
  - 1.1.1.0 Estuary (tidal)
  - 1.1.2.0 Waterbodies (fresh)
    - 1.1.2.1 Lakes and reservoirs
    - 1.1.2.2 Riverine ponds (headwater / floodplain)
    - 1.1.2.3 Terrene ponds (farm and stormwater ponds)
- 1.2 Lotic
  - 1.2.1 Channels (TBD)
    - 1.2.1.1 Open Channel
    - 1.2.1.2 Tree Canopy over Channel
    - 1.2.1.3 Culverted
  - 1.2.2.Ditches (TBD)
    - 1.2.2.1 Open Ditch
    - 1.2.2.2 Tree Canopy over Ditch
    - 1.2.2.3 Culverted
- 1.3 Other Water

2. Developed (12)

- 2.1 Impervious
  - 2.1.1 Roads
  - 2.1.2 Structures
  - 2.1.3 Other Impervious (Parking lots, driveways)
  - 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 Bare Developed
  - 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. Forest (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 (16)

- 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
  - 4.1.3 Orchard/vineyard
    - 4.1.3.1 Barren
    - 4.1.3.2 Herbaceous
    - 4.1.3.3 Scrub-shrub
  - 4.1.4 Animal Operations (TBD)
    - 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 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 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 Tree Canopy
  - 5.3.5 Forest
- 5.4 Bare shore

Proposed LUWG Priorities for 2022

1. Finalization of the 2017/18 Version 2 Land Use and Land Use Change Data
   - Data and white paper (February 2022)
   - Journal article submission (March 2022)
   - Accuracy assessment (March – May 2022)

Proposed LUWG Priorities for 2022

2. Development and review of 2021 Land Use Data for Maryland and Delaware
    - Improved mapping of successional lands (vs cropland, pasture, and turf grass)
    - Integration of 2D hyper-res hydrography (streams and ditches)
    - Correction of issues identified in 2017/18 land use data
    - Addition of tree canopy over channels and animal operations (TBD)

Finalization of Land Use Methods and Metrics Indicators

Impervious Cover (2017)
% impervious cover by catchment
% impervious cover accumulated downstream by catchment
Acres of impervious cover by county

Impervious Cover Change (2013-2017)
% change in impervious cover by catchment (2013-2017)
% change in impervious cover accumulated downstream by catchment (2013-2017)
Acreage change of impervious cover by county

Effective Impervious Cover (2017)
% effective impervious cover by catchment
% effective impervious cover accumulated downstream by catchment

Effective Impervious Cover Change (2013-2017)
% change in effective impervious cover by catchment (2013-2017)
% change in effective impervious cover accumulated downstream by catchment (2013-2017)

Finalization of Land Use Methods and Metrics Indicators

Forest Cover & Use* (2017)
% forest cover and use by catchment
% forest cover and use by watershed (accumulated downstream by catchment)
Acres of forest cover and use by county

Forest Cover & Use Change (2013-2017)
% change in forest cover and use by catchment (2013-2017)
% change in forest cover and use by watershed (accumulated downstream by catchment (2013-2017))
Acreage change of forest cover and use by county

Riparian Forest Cover & Use (2017)
% riparian forest cover and use by catchment
% riparian forest cover and use by watershed (accumulated downstream by catchment)

Riparian Forest Cover & Use Change (2013-2017)
% change in riparian forest cover and use by catchment (2013-2017)
% change in riparian forest cover and use by watershed (accumulated downstream by catchment (2013-2017))

* Forest cover = tree canopy within areas mapped as “forest”; Forest use = tree canopy within areas mapped as “forest” and managed for forest resources (e.g., timber harvests).

Finalization of Land Use Methods and Metrics Indicators

Urban Tree Canopy* (2017)
Acres of urban tree canopy by municipality, place, and county

Urban Tree Canopy Change (2013-2017)
% change in urban tree canopy by municipality, place, and county (2013-2017)

Farmland** Conversion to Development (2013-2017)
Acres of farmland converted to development by municipality, place, and county

Natural Land*** Conversion to Development (2013-2017)
Acres of natural land converted to development by municipality, place, and county

* Urban Tree Canopy = tree canopy over impervious cover and tree canopy over turf grass
** Farmland = cropland and/or pasture
***Natural land = forest, natural succession, and wetlands

Proposed Improvements to the Chesapeake Bay Land Change Model

CBLCM v5 (current version)

- Simulates residential, commercial, and mixed-use development and forest and farmland conservation.
- Simulates change in patches of cells.
- Estimates infill/redevelopment by county.
- Relies on Capiella and Brown (2001) impervious surface coefficients.
- Derives commercial and residential densities from Decennial Census and NLCD.
- Parameterized using 30-meter resolution NLCD: 2001-2011.

CBLCM v6 (CAST-23, Phase 7)

- Same as v5 plus different types of housing and commercial development, timber harvest, agricultural land in production.
- Simulates change in tax parcels or patches of cells.
- Simulates infill/redevelopment by parcel.
- Derives impervious surface coefficients from parcel and high-res land use data.
- Derives commercial and residential densities from parcel data (TBD).
- Parameterized using 1-meter resolution land use: 2013-2021 and the backcast of high-res land use to 1985.
- Tracks development capacity and age of housing stock and trees.
- Implement method for Smart Sewer expansion and validate septic estimates in Virginia.

Proposed LUWG Priorities for 2022

5. Other
   - Support for floodplain/shoreline management and climate resiliency
     - Mapping floodplain vulnerabilities and ecosystem services
     - Identifying opportunities for wetland retreat due to sea-level rise

   - Support for “America the Beautiful” initiative
     - Simulate future conservation investment scenarios to protect 30% of the watershed by 2030


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