



Using Local Land Use/Cover Data to inform the Chesapeake Bay TMDL

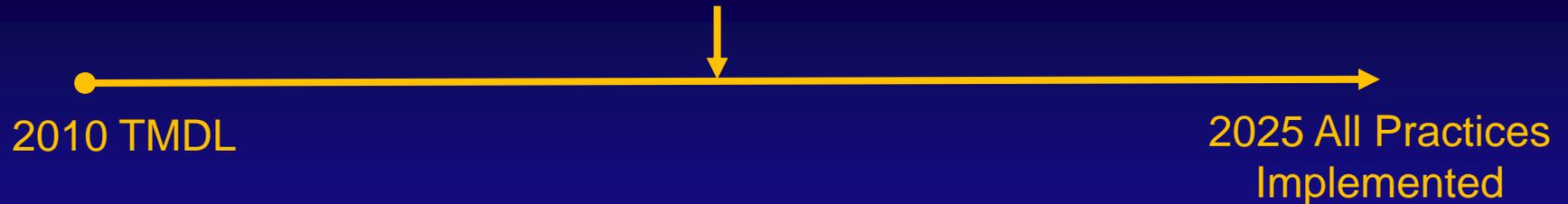
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Land Data Team

USGS Chesapeake Bay Program Office

Chesapeake Bay 2017 Mid-Point Assessment



Goal: Determine whether the implementation the CBP Partnership's restoration strategies by 2025 will achieve water quality standards in the Bay.

Objective: Make this determination based on the best available science data, tools, BMPs, and lessons-learned.

#1 Priority: improve accuracy of land use/cover data.

Best available data = county & municipal level land use, land cover, parcels, sewer service areas, zoning, and other relevant information.

Land Use vs. Land Cover

- Low-density Residential
- Transportation
- Agriculture
- Rural conservation

- Impervious surfaces
- Tree canopy
- Herbaceous
- Barren

Phase 6 Land Uses

- Impervious-Roads
- Forests
- Turf Grass
- Open Space

P6 Developed Land Uses

Impervious Roads (IR): paved and unpaved roads and bridges.

Impervious Non-Roads (INR): buildings, driveways, sidewalks, parking lots, runways and some private roads.

Construction (CON): reported acreage of land with Erosion & Sediment Control permits.

Extractive (XTR): estimated acreage of disturbed/active, abandoned and reclaimed mines.

Turf Grass (TG): all herbaceous lands within 200m of roads in developed areas that have an average lot size ≤ 5 acres.

P6 Natural Land Uses

Forest (FOR): contiguous patches of trees and shrubs, ≥ 1 acre, assumed to have an unmanaged understory

Harvested Forest (HAR): state reported annual acres harvested at the county level.

Disturbed Forest (DIS): monitored average annual extent of disturbed forest (via insect, fire damage).

Tree Canopy (TCH, TCIR, TCINR): small fragments of trees or shrubs overhanging herbaceous and impervious surfaces.

P6 Natural Land Uses (continued)

Wetlands (TWET, FWET, HWET): National Wetlands Inventory (NWI) non-pond, non-lake wetlands divided into tidal, floodplain, and headwater subclasses based on NWI attributes and landscape position

Water (WAT): All waterbodies mapped by the National Hydrography Dataset, NWI ponds & lakes, and the National Land Cover Dataset (Open Water). Assumes all single-line streams are 15' wide.

Open Space (OS): non-fertilized herbaceous and non-forest scrub/shrub that is justifiably not turf or extractive (e.g., beaches, vacant lots, transmission line right-of-ways, junkyards, fairgrounds, gravel roads, railroads).

P6 Agricultural Land Uses

Cropland (CRP): leftover areas of rural herbaceous lands with majority crops according to the Cropland Data Layer 2008 – 2013.

Pasture/Hay (PAS): leftover areas of rural herbaceous lands with majority pasture/hay according to the Cropland Data Layer 2008 – 2013.

Specialty Crops (SPC): leftover areas of rural herbaceous lands with majority specialty crops according to the Cropland Data Layer 2008 – 2013.

Note: that there are a total of 18 different agricultural land use classes but only three types are mapped. The others are derived from information reported in the USDA Census of Agriculture.

Coming Soon: 2013 High-res Land Cover Data

Derived from existing 1m leaf-on aerial imagery, leaf-off aerial imagery (where available), and LiDAR-derived digital surface models.

Produced by the Chesapeake Conservancy and University of Vermont

Paid for by the Chesapeake Bay Program Partners

Classification:

- Water
- Tree canopy
- Scrub/shrub
- Herbaceous/grass
- Barren
- Impervious Roads
- Impervious Structures etc.
- Impervious Obscured by Tree Canopy

P6 Land Use Development Schedule

- | | |
|-----------------|---|
| Apr 2015 | Complete regional land use dataset using nationally available data: Phase 6 Land Use Database v1 (P6LU_v1). |
| Sep 1, 2015 | Incorporate local land use/cover data. Submit P6LU_v2 to CBP Modeling Team. |
| Sep'15 - May'16 | Incorporate additional local data and high-res land cover into P6 Land Use Database (P6LU_v3). |
| Jan – Jul 2016 | Rolling jurisdictional review of P6LU_v3 and CBPO response to comments. |
| Aug 2016 | Finalization of P6LU_v3 database (1985 – 2014) |
| Sep 1, 2016 | Submit P6LU_v3 database to CBP Modeling Team |

Phase 6 Land Use WebViewer (for jurisdictional review)



Features:

- Turn layers on/off
- Adjust transparency of layers
- Re-order layers
- Zoom and navigate
- View underlying aerial imagery
- View metadata
- Download data in by county or viewer extent.
- Comment (email sent to CBPO)



CBPO Contacts for Maryland

Incorporation of data into Phase 6 watershed model:

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