



Data Dictionary for the Chesapeake Bay Land Use/Land Cover Database, 2022 Edition

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Introduction

The Chesapeake Bay Land Use and Land Cover Database (LULC) facilitates characterization of the landscape and land change for and between discrete time periods. The database was developed by the University of Vermont’s Spatial Analysis Laboratory in cooperation with Chesapeake Conservancy (CC) and U.S. Geological Survey (USGS) as part of a 6-year Cooperative Agreement between Chesapeake Conservancy and the U.S. Environmental Protection Agency (EPA) and a separate Interagency Agreement between the USGS and EPA to provide geospatial support to the Chesapeake Bay Program Office.

The database contains one-meter 13-class Land Cover (LC) and 54-class Land Use/Land Cover (LULC) for all counties within or adjacent to the Chesapeake Bay watershed for 2013/14 and 2017/18, depending on availability of National Agricultural Imagery Program (NAIP) imagery for each state (see [Table 5](#)). Additionally, 54 LULC classes are generalized into 18 LULC classes for ease of visualization and communication of LULC trends. LC change between discrete time periods, detected by spectral changes in NAIP imagery and LiDAR, represents changes between the 12 land cover classes. LULC change uses LC change to identify where changes are happening and then LC is translated to LULC to represent transitions between the 54 LULC classes. The LULCC data is represented as a LULC class change transition matrix which provides users acres of change between multiple classes. It is organized by 18x18 and 54x54 LULC classes. The Chesapeake Bay Water (CBW) indicates raster tabulations were performed for only areas that fall inside the CBW boundary e.g., if user is interested in CBW portion of a county then they will use LULC Matrix CBW. Conversely, if they are interested change transitions across the entire county, they will use LULC Matrix.

Chesapeake Bay Land Use/Land Cover Database Products (2022 Edition)				
Database	Abbreviations	Time Periods	Classes	Format
Land Cover	LC	2013/2014	13	GeoTiff
Land Cover	LC	2017/2018	13	GeoTiff
Land Cover Change	LCC	2013/2014 to 2017/2018	Variable*	GeoTiff
Land Use/Land Cover	LULC	2013/2014	54 & 18	GeoTiff
Land Use/Land Cover	LULC	2017/2018	54 & 18	GeoTiff
Land Use/Land Cover Change	LULCC	2013/2014 to 2017/2018	Variable*	GeoTiff
Land Use/Land Cover Change Matrix 18x18 (CBW)	-	2013/2014 to 2017/2018	18x18	CSV
Land Use/Land Cover Change Matrix 54x54 (CBW)	-	2013/2014 to 2017/2018	54x54	CSV
Land Use/Land Cover Change Matrix 18x18	-	2013/2014 to 2017/2018	18x18	CSV
Land Use/Land Cover Change Matrix 54x54	-	2013/2014 to 2017/2018	54x54	CSV

Table 1 ; *Variable number of classes

Purpose of this document is to provide general guidance on navigating the LULC database. The document covers citation, database structure and organization of data, data descriptions and their attributes. Detailed methodology on development of land cover and land use/land cover and its respective change products will be published in a separate article. If you have any questions regarding the methodology, please contact: Peter Claggett (PClagget@chesapeakebay.net); Sarah McDonald (smcdonald@chesapeakebay.net) or Labeeb Ahmed (lahmed@chesapeakebay.net).

All the products in the database are natively produced at a county-scale, but for the purposes of simplifying the data release and ease of navigation mosaics were created at state/jurisdiction scale for the following: Delaware, Maryland, New York, Pennsylvania, Virginia, District of Columbia, and West Virginia. The county-scale products are available from the Chesapeake Conservancy's Conservation Innovation Center's [web application](#). The county-scale products differ from state mosaics in terms of their file naming schemes e.g., Baltimore County, MD will be named "balt_24005" where the first four characters of county names are followed by five-digit Federal Information Processing System (FIPS) codes. The file attributes and descriptions are consistent for both county and state-scales.

Citation

When using the Chesapeake Bay Land Use/Land Cover Database or producing derivatives, the data must be properly cited based on the following criteria.

Citing Entire Data Release

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>.

Citing Land Cover (LC) and/or Land Cover Change (LCC) Products

Chesapeake Bay Program, 2023, Chesapeake Bay Land Use and Land Cover Database 2022 Edition: Land Cover: U.S. Geological Survey data release. Developed by the University of Vermont Spatial Analysis Lab, Chesapeake Conservancy, and U.S. Geological Survey, <https://doi.org/10.5066/P981GV1L>.

Citing Land Use/Land Cover (LULC) Products

Chesapeake Bay Program, 2023, Chesapeake Bay Land Use and Land Cover Database 2022 Edition: Land Use/Land Cover: U.S. Geological Survey data release. Developed by the Chesapeake Conservancy, U.S. Geological Survey and University of Vermont Spatial Analysis Lab, <https://doi.org/10.5066/P981GV1L>.

Citing Land Use/Land Cover Change (LULCC) Products

Chesapeake Bay Program, 2023, Chesapeake Bay Land Use and Land Cover Database 2022 Edition: Land Use/Land Cover Change: U.S. Geological Survey data release. Developed by the U.S. Geological Survey, Chesapeake Conservancy, and University of Vermont Spatial Analysis Lab, <https://doi.org/10.5066/P981GV1L>.

Citing Data Dictionary

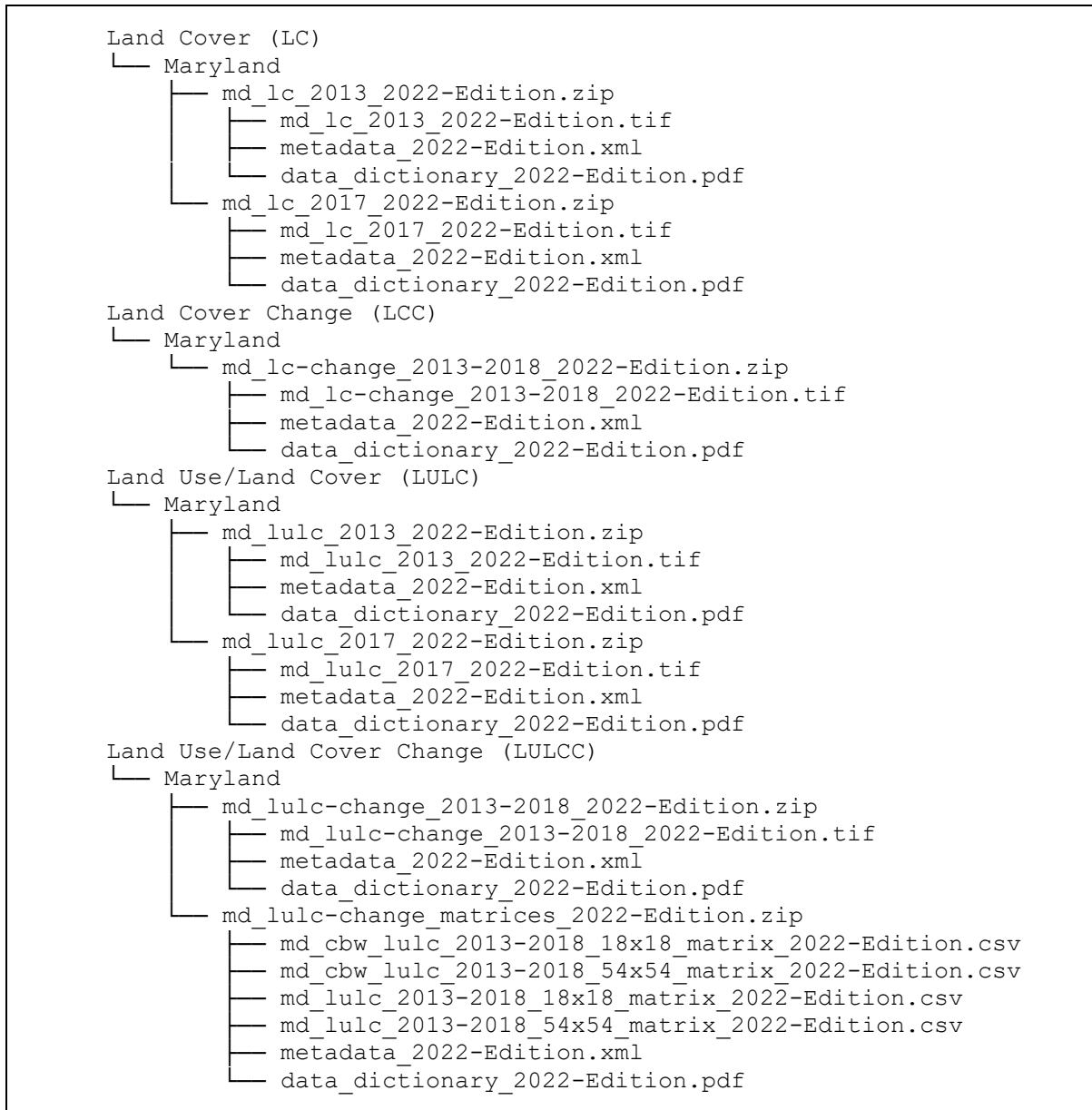
Chesapeake Bay Program, 2023, Chesapeake Bay Land Use and Land Cover Database 2022 Edition – Data Dictionary for the Chesapeake Bay Land Use/Land Cover Database, 2022 Edition: U.S. Geological Survey data release, <https://doi.org/10.5066/P981GV1L>.

Data Release Structure

The data release is organized by four main datasets LC, LCC, LULC and LULCC, and each dataset is further split by state/jurisdiction. The file naming scheme generally has the following elements (included below is an example of Maryland’s data structure and organization):

<state_abbreviation>_<data_category>_<time_period>-<edition>.<file_extension>

- State abbreviation: two-character postal abbreviation of the states in lower case
- Dataset: Types of datasets e.g., land cover, land use/land cover, etc.
- Time period: Four-digit year that corresponds to NAIP imagery used to produce the data product. For change products there will be two time periods (e.g., start and end) to indicate duration
- Edition: Publication year of the database



Files and Attributes

The table lists all file names, types, and their attributes for each dataset except for the LULC change matrices. Please see [LULC Change Matrices](#) section for details on interpretation of the change matrices. Detailed descriptions of the LC and LULC classes along with all possible LCC and LULCC transition tables are located under the [Class Tables](#) section. The RGB values are for aesthetic purposes only and should not be confused with remote sensed color value(s).

*ST: State Abbreviation e.g., md short for Maryland

†Year

File Name	Attribute Name	Description	Minimum Value	Maximum Value
[st*]_lc_[yyyy†]_2022-Edition.tif				
	Value	Raster values	1	254
	Count	Pixel Count	variable	variable
	Acres	Conversion from square meters to acres	variable	variable
	LandCover	13 LC class names	NA	NA
	Red	Red RGB value for visualization	0	255
	Green	Green RGB value for visualization	0	255
	Blue	Blue RGB value for visualization	0	255
	NoData Value: 255			
[st*]_lulc_[yyyy†]_2022-Edition.tif				
	Value	Raster values	11	95
	Count	Pixel Count	variable	variable
	Acres	Conversion from square meters to acres	variable	variable
	Code	Four-digit unique numerical codes for LULC classes (54-classes)	1100	5400
	LandUse	54 LULC class names	NA	NA
	GenLandUse	54 LULC classes translated to generalized 18 LULC) classes	NA	NA
	GenAbbrev	Four-character abbreviations for generalized land use classes	NA	NA
	Red	Red RGB value for visualization	0	255
	Green	Green RGB value for visualization	0	255
	Blue	Blue RGB value for visualization	0	255
	NoData Value: -128			
[st*]_lc-change_[yyyy†]-[yyyy†]_2022-Edition.tif				
	Value	Raster values	1	254
	Count	Pixel Count	variable	variable

Data Dictionary for the Chesapeake Bay Land Use/Land Cover Database, 2022 Edition

File Name	Attribute Name	Description	Minimum Value	Maximum Value
	Acres	Conversion from square meters to acres	variable	variable
	ChangeType	Qualitative descriptions of LC change type as either gain, loss, or no change from 2013/14 to 2017/18. Uses 13 LC classes and the column is only used for simplifying visualization when the rasters are loaded in GIS desktop clients.	NA	NA
	LCChange	Explicit LC class change type from 2013/14 to 2017/18. Uses 13 LC classes	NA	NA
	Red	Red RGB value for visualization	0	255
	Green	Green RGB value for visualization	0	255
	Blue	Blue RGB value for visualization	0	255
	Alpha	Value to set opacity for visualization	0	255
	NoData Value: 255			
[st*]_lulc-change_[yyyy [†]]-[yyyy [†]]-2022-Edition.tif				
	Value	Raster values	1	9594
	Count	Pixel Count	variable	variable
	Acres	Conversion from square meters to acres	variable	variable
	ChangeType	Qualitative explanation of LULC change type as either gain, loss, or no change from 2013/14 to 2017/18. Uses 18 generalized LULC classes and the column is only used for simplifying visualization when the rasters are loaded in GIS desktop clients	NA	NA
	GenLULCChg	Explicit LULC class change type from 2013/14 to 2017/18. Uses generalized 18 LULC classes	NA	NA
	LULCChg	Explicit LULC class change type from 2013/14 to 2017/18. Uses 54 LULC classes		
	Red	Red RGB value for visualization	0	255
	Green	Green RGB value for visualization	0	255

Data Dictionary for the Chesapeake Bay Land Use/Land Cover Database, 2022 Edition

File Name	Attribute Name	Description	Minimum Value	Maximum Value
	Blue	Blue RGB value for visualization	0	255
	Alpha	Value to set opacity for visualization	0	255
NoData Value: 65535				

Table 2 – Files and Attributes

File Name	Description	Units
[st*]_cbw_lulc_18x18-matrix_{yyyy†}-{yyyy†}_2022-Edition.csv	Generalized 18 LULC class transition matrix that lists changes from one class to another in acres. Clipped by Chesapeake Bay watershed.	Acres
[st*]_cbw_lulc_54x54-matrix_{yyyy†}-{yyyy†}_2022-Edition.csv	54 LULC class transition matrix that lists changes from one class to another in acres. Clipped by Chesapeake Bay watershed.	Acres
[st*]_lulc_18x18-matrix_{yyyy†}-{yyyy†}_2022-Edition.csv	Generalized 18 LULC class transition matrix that lists changes from one class to another in acres. Full county extent.	Acres
[st*]_lulc_54x54-matrix_{yyyy†}-{yyyy†}_2022-Edition.csv	54 LULC class transition matrix that lists changes from one class to another in acres. Full county extent.	Acres

Table 2.1 – Files and Attributes

Land Cover & Land Use/Land Cover Class Descriptions

All the counties and states have at least 12 LC classes with thirteenth class only present in Harford County, Maryland. The class represents Aberdeen Proving Ground, a U.S. Army facility so no LC or LULC have been mapped. There are 54 LULC classes which were categorically grouped based on related or similar land use purposes into 18 LULC classes. Both 54 and 18 LULC classes are appended to the LULC raster attribute table for easy crosswalk or reclassification.

Targeted Minimum Mapping Units (MMU)

Minimum mapping unit (MMU) is the smallest patch size required to delineate the LC classes. The MMUs only apply to LC classes and are applied during production of LC. LULC classes do not have MMUs because there are derivatives of LC classes. Rationale for MMU sizes will not be included in the data release, they will be reserved for the journal article but briefly they are a combination of resolution and scale of input data such as satellite imagery, lidar elevation data, ancillary data sources used by eCognition that provide the best results for supervised image classification. We use targeted MMUs phrasing instead of MMUs because the size of the MMUs changes between different counties driven by availability of data, quality of data and complexity of certain classes. The listed MMUs are ideal targets but the numbers will differ between different counties.

Land Cover (13) Classes (2013/14 and 2017/18)

Water

All areas of open water. This includes ponds, rivers, lakes, and boats not attached to docks. It also includes small, anthropogenic features such as farm ponds and storm-water retention structures. (Minimum Mapping Units (MMU) = 25 square meters)

Emergent Wetlands

Low vegetation areas located along marine or estuarine regions that are visually confirmed to have the look of saturated ground surrounding the vegetation and that are located along major waterways (i.e., rivers, ocean). For Virginia tidal zones, this class includes low vegetation, woody vegetation, and barren features that overlap substantially with wetland features delineated by the NOAA C-CAP program and within 1-ft of tidal waters (MMU = 225 square meters).

Tree Canopy

Deciduous and evergreen woody vegetation of either natural succession or human planting that is over approximately >3-meters in height. Stand-alone individuals, discrete clumps, and interlocking individuals are included (MMU = 9 square meters).

Scrub/Shrub

Heterogeneous area of both/either deciduous and/or evergreen woody vegetation. Characterized by variation in height of vegetation through patchy coverage of shrubs and young trees interspersed with grasses and other lower vegetation. Discrete clumps and small patches of interlocking individuals are included, as are true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions, when intermingled in a heterogeneous landscape with low vegetation (MMU = 225 square meters).

Low Vegetation

Plant material less than approximately 3-meters in height. Includes lawns, tilled fields, nursery plantings with or without tarp cover, recently cut forest management areas, and natural ground cover (MMU = 9 square meters).

Barren

Area void of vegetation consisting of natural earthen material regardless of how it has been cleared. This includes beaches, mud flats, and bare ground in construction sites (MMU = 25 square meters).

Impervious Structures

Human-constructed structures made of impervious materials that are greater than approximately 2-meters in height. Houses, malls, and electrical towers are examples of structures (MMU = 9 square meters).

Other Impervious

Human-constructed nonpermeable surfaces, and that are below approximately 2-meters in height (MMU = 9 square meters).

Impervious Roads

Impervious surfaces that are used and maintained for transportation. Relies on local planimetric data and road network (MMU = 9 square meters).

Tree Canopy over Structures

Forest or Tree Cover that overlaps with impervious surfaces rendering the structures partially or completely not visible to plain sight. Note impervious surfaces and tree canopy were mapped independently, overhanging tree canopy was identified by superimposing these classes to isolate areas of overlap (MMU = 9 square meters).

Tree Canopy over Other Impervious

Forest or Tree Cover that overlaps with impervious surfaces rendering the impervious surface partially or completely not visible to plain sight. Note: impervious surfaces and tree canopy were mapped independently, overhanging tree canopy was identified by superimposing these classes to isolate areas of overlap (MMU = 9 square meters).

Tree Canopy over Impervious Roads

Forest or Tree Cover that overlaps with impervious surfaces rendering the roads partially or completely not visible to plain sight. Note: impervious surfaces and tree canopy were mapped independently, overhanging tree canopy was identified by superimposing these classes to isolate areas of overlap (MMU = 9 square meters).

Aberdeen Proving Ground

No source imagery or ancillary data were available for this area. This class only exists in Harford County, Maryland

Land Use/Land Cover (54) Classes (2013/14 and 2017/18)

Listed below are 54 LULC classes organized under 18 LULC generalized classes e.g., water is 18 LULC generalized class and classes grouped under it are 54 classes that belong within the category. See [Table 3](#) to see how the 54 and 18 classes are grouped.

Note: *Solar Field Impervious* and *Extractive Impervious* classes are both absent in the LULC due to several reasons please see [Limitations of the Data](#) for further details.

Water

Estuarine/Marine

Any tidal or brackish water bodies near or adjacent to the Chesapeake Bay, Delaware Bay, and the Atlantic Ocean.

Lakes and Reservoirs

Water bodies designated as lakes and reservoirs in National Hydrography Dataset (NHD), National Wetlands Inventory (NWI), or Geographic Names Information System (GNIS).

Riverine Ponds

Water bodies near or adjacent to streams.

Terrene Ponds

Water bodies that are not adjacent to streams.

Lotic Water (fresh)

Water representing flowing freshwater streams, rivers, and other channels.

Developed

Roads

Paved, and some unpaved, roads and bridges. Dirt and gravel roads may be mistakenly mapped as impervious depending on the spectral characteristics of the substrate.

Structures

Human-constructed objects made of impervious materials that are greater than approximately 2-meters in height. Houses, shopping malls, and warehouses are examples of structures.

Other Impervious

Human-constructed surfaces through which water cannot penetrate, and that are below approximately 2-meters in height, e.g., sidewalks, parking lots, runways, field-mounted solar panels, rail lines, and some private roads. Barren, low vegetation, scrub-shrub, and emergent wetland cover types within 3-meters of rail lines were reclassified to impervious surfaces and included in this class.

Tree Canopy Over Roads

Tree cover overlapping roads, rendering them partially or completely invisible from above.

Tree Canopy Over Structures

Tree cover overlapping structures, rendering them partially or completely invisible from above.

Tree Canopy Over Other Impervious

Tree cover overlapping other impervious surfaces, rendering them partially or completely invisible from above.

Tree Canopy Over Turf Grass

Tree canopy overlapping managed low vegetation in developed areas that is assumed to be turf grass or otherwise altered through compaction, removal of surface organic material, and/or fertilization.

Turf Grass

Low vegetation associated with residential, commercial, industrial, and recreational areas that is assumed to be altered through compaction, removal of organic material, and/or fertilization.

Transitional Barren

Barren lands in developed parcels and barren lands that may represent the early stages of development.

Suspended Succession Barren

Barren lands where the regrowth of trees is actively suppressed. This includes road and utility rights-of-way and landfills. These lands are assumed to be unfertilized.

Suspended Succession Herbaceous

Herbaceous (low vegetation) lands where the regrowth of trees is managed such as road and utility rights-of-way and landfills. These lands are assumed to be unfertilized.

Suspended Succession Scrub/Shrub

Scrub/shrub lands where the regrowth of trees is actively suppressed such as road and utility rights-of-way and landfills. These lands are assumed to be unfertilized.

Natural

Forest

Areas of contiguous, non-wetland tree canopy greater than or equal to one acre with a diameter of at least 72-meters within the area.

Other Tree Canopy

Areas of contiguous, non-wetland tree canopy that do not meet forest area and width requirements such as agricultural windbreaks and small woodlots.

Harvested Forest Barren

Barren lands resulting from recently cleared forests and other tree canopy in association with a timber harvest permit (DE, MD, PA, VA, WV) or having a land use history of tree canopy rotation since the mid-1980's. Timber harvest permit data were not reported to the Chesapeake Bay Program by either New York or the District of Columbia.

Harvested Forest Herbaceous

Herbaceous (low vegetation) lands resulting from recently cleared forests and other tree canopy in association with a timber harvest permit (DE, MD, PA, VA, WV) or having a land use history of tree

canopy rotation since the mid-1980's. Timber harvest permit data were not reported to the Chesapeake Bay Program by either New York or the District of Columbia.

Natural Succession Barren

Barren lands that are presumed to be undergoing either natural or managed succession and may eventually transition to tree canopy.

Natural Succession Herbaceous

Herbaceous (low vegetation) lands that are presumed to be undergoing either natural or managed succession and may eventually transition to tree canopy.

Natural Succession Scrub/Shrub

Scrub/shrub lands that are presumed to be undergoing either natural or managed succession and may eventually transition to tree canopy.

Production

Cropland Barren

Barren cropland fields, detected as cropland by the Cropland Data Layer (CDL).

Cropland Herbaceous

Herbaceous (low vegetation) cropland, detected by the Cropland Data Layer (CDL).

Pasture/Hay Barren

Barren pasture or hay, detected by the National Land Cover Database (NLCD) or the Cropland Data Layer (CDL).

Pasture/Hay Herbaceous

Herbaceous (low vegetation) pasture or hay, detected by the National Land Cover Database (NLCD) or the Cropland Data Layer (CDL).

Pasture/Hay Scrub/Shrub

Scrub/shrub pasture or hay, detected by the National Land Cover Database (NLCD) or the Cropland Data Layer (CDL).

Orchard/Vineyard Barren

Barren orchards and vineyards, detected by the Cropland Data Layer (CDL).

Orchard/Vineyard Herbaceous

Herbaceous (low vegetation) orchards and vineyards, detected by the Cropland Data Layer (CDL).

Orchard/Vineyard Scrub/Shrub

Scrub/shrub orchards and vineyards, detected by the Cropland Data Layer (CDL).

Extractive Barren

Barren lands due to surface mining operations.

Extractive Impervious

Impervious lands due to surface mining operations.

Solar Field Impervious

Solar panel arrays in fields detected by an artificial intelligence (AI) algorithm developed by the Chesapeake Conservancy. These features are presumed to function as impervious surfaces.

Solar Field Barren

Barren lands adjacent to solar panel arrays.

Solar Field Herbaceous

Herbaceous (low vegetation) lands adjacent to solar panel arrays.

Solar Field Scrub/Shrub

Scrub/shrub adjacent to solar panel arrays.

Wetlands and Water Margins

Riverine Wetlands Barren

Barren lands within riverine wetland footprints defined with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO).

Riverine Wetlands Herbaceous

Herbaceous (low vegetation) lands within riverine wetland footprints defined with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO).

Riverine Wetlands Scrub/Shrub

Scrub/Shrub lands within riverine wetland footprints defined with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO).

Riverine Wetlands Tree Canopy

Non-forested tree canopy (see Other Tree Canopy definition) within riverine wetland footprints defined with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO).

Riverine Wetlands Forest

Forest (see Forest definition) within riverine wetland footprints defined with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO).

Terrene Wetlands Barren

Barren lands defined as wetlands with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO) datasets that are **not** riverine or tidal wetlands.

Terrene Wetlands Herbaceous

Herbaceous (low vegetation) lands defined as wetlands with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI),

FEMA 100-year floodplain, Soil Survey database (SSURGO) datasets that are **not** riverine or tidal wetlands.

Terrene Wetlands Scrub/Shrub

Scrub/shrub lands defined as wetlands with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO) datasets that are **not** riverine or tidal wetlands.

Terrene Wetlands Tree Canopy

Non-forested tree canopy (see Other Tree Canopy definition) defined as wetlands with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO) datasets that are **not** riverine or tidal wetlands.

Terrene Wetlands Forest

Forest (see forest definition) defined as wetlands with FACET stream network (1:24k), National Hydrography Dataset (NHD), local/state wetlands (if available), National Wetlands Inventory (NWI), FEMA 100-year floodplain, Soil Survey database (SSURGO) datasets that are **not** riverine or tidal wetlands.

Tidal Wetlands Barren

Barren lands within the tidal wetland footprint defined with National Wetlands Inventory (NWI) and NOAA Sea Level Rise (SLR) data.

Tidal Wetlands Herbaceous

Herbaceous (low vegetation) lands within the tidal wetland footprint defined with National Wetlands Inventory (NWI) and NOAA Sea Level Rise (SLR) data.

Tidal Wetlands Scrub/Shrub

Scrub/shrub lands within the tidal wetland footprint defined with National Wetlands Inventory (NWI) and NOAA Sea Level Rise (SLR) data.

Tidal Wetlands Tree Canopy

Non-forested tree canopy (see other tree canopy definition) within the tidal wetland footprint defined with National Wetlands Inventory (NWI) and NOAA Sea Level Rise (SLR) data.

Tidal Wetlands Forest

Forest (see forest definition) within the tidal wetland footprint defined with National Wetlands Inventory (NWI) and NOAA Sea Level Rise (SLR) data.

Bare Shore

Barren/sandy shorelines adjacent to a water body.

Land Use/Land Cover (18) Classes (2013/14 and 2017/18)

Listed below are descriptions of 18 generalized LULC classes. The descriptions are meant to provide a general reasoning behind grouping them in a specific category. The four-character abbreviations are a shorthand for visualization purposes.

Water (WATR)

The Chesapeake Bay, lakes and reservoirs, riverine and terrene ponds, large rivers, and water within smaller channels visible through the tree canopy. Included with this class are NWI or state wetlands that are mapped as water in the land cover.

Impervious Roads (ROAD)

Paved, and some unpaved, roads and bridges. Dirt and gravel roads may be mistakenly mapped as impervious depending on the spectral characteristics of the substrate.

Impervious Structures (IMPS)

Human-constructed objects made of impervious materials that are greater than approximately 2-meters in height. Houses, shopping malls, and warehouses are examples of structures.

Impervious, Other (IMPO)

Human-constructed surfaces through which water cannot penetrate, and that are below approximately 2-meters in height, e.g., sidewalks, parking lots, runways, field-mounted solar panels, rail lines, and some private roads. Barren, low vegetation, scrub-shrub, and emergent wetland cover types within 3-meters of rail lines were reclassified to impervious surfaces and included in this class.

Tree Canopy over Impervious (TCIS)

Tree cover that overlaps with roads, structures, or other impervious surfaces rendering them partially or completely invisible from above.

Tree Canopy over Turf Grass (TCTG)

Tree cover within 10-meters of structures or adjacent turf grass and other impervious in rural wooded areas and within 20-meters of structures or adjacent turf grass and other impervious in developed areas. Developed areas include U.S. Census Bureau defined urban areas and clusters. Rural areas include all lands outside Census urban areas and clusters. The understory in all TCTG areas is assumed to be turf grass or otherwise altered through compaction, removal of surface organic material, and/or fertilization.

Turf Grass (TURF)

Low vegetation associated with residential, commercial, industrial, and recreational areas that is assumed to be altered through compaction, removal of organic material, and/or fertilization. These include low vegetation lands within small, developed parcels (≤ 5 acres with ≥ 55 m² of impervious cover), recreational fields, and other turf-dominated land uses (e.g., cemeteries, shopping centers, golf courses, airports, hospitals, amusement parks, etc.).

Pervious Developed, Other (PDEV)

Barren lands in developed parcels and barren or low vegetation lands that may represent the early stages of development, utility rights-of-way, portions of road rights-of-way, landfills, and the pervious portions of solar fields adjacent to panel arrays.

Harvested Forest (HARF)

Barren and low vegetation resulting from recently cleared forests and other tree canopy in association with a timber harvest permit (DE, MD, PA, VA, WV) or having a land use history of forest rotation since the mid-1980's. Timber harvest permit data were not reported to the Chesapeake Bay Program by either New York or the District of Columbia.

Extractive (EXTR)

Barren lands and impervious surfaces within quarries, surface mines, and other surficial excavation sites.

Forest (FORE)

All contiguous patches of trees ≥ 1 acre in area with a patch width (diameter) of ≥ 72 -meters somewhere in the patch. The 72-meter girth references potential altered microclimate conditions extending inwards up to 36-meters from the patch edge. The forest understory is assumed to be undisturbed/unmanaged. Forests that are also wetlands are included in this class.

Tree Canopy, Other (TCOT)

All trees that do not qualify as "Forest" but are presumed to have an undisturbed/unmanaged understory. Such areas include narrow windbreaks adjacent to cropland and roads and tree canopy patches not qualified as "forest" that are fully surrounded by agriculture. The three wetlands tree canopy classes are included in this class as well.

Natural Succession (NATS)

Barren, herbaceous, or scrub-shrub lands that are not classed as cropland, pasture, turf grass, or pervious developed. These are areas that are presumed to be undergoing either natural or managed succession and will eventually become forested although this process may take years to decades to complete.

Wetlands, Riverine Non-forested (RIVW)

National Wetlands Inventory (NWI) non-pond, non-lake wetlands, emergent wetlands along streams mapped from high-resolution imagery outside Virginia, state designated wetlands, and potential non-tidal wetlands (for Pennsylvania only) located within the FEMA designated 100-year floodplain, DEM-aligned 1:24,000 scale buffered stream network, SSURGO hydric or frequently flooded soils.

Wetlands, Terrene Non-forested (TERW)

National Wetlands Inventory (NWI) non-pond, non-lake wetlands, emergent wetlands mapped from high-resolution imagery outside Virginia, state designated wetlands, and state potential non-tidal, non-floodplain wetlands (for Pennsylvania only). These are spatially isolated wetlands on ridges and slopes that are most prevalent in the coastal plain where streams may originate from wetland complexes.

Cropland (CROP)

Barren and low vegetation lands on large parcels (> 5 acres) that are mapped as cropland in the 2018 Cropland Data Layer.

Pasture/Hay (PAST)

Barren, low vegetation, and scrub shrub lands on large parcels (> 5 acres) that are mapped as pasture in the 2016 National Land Cover Database (2019 Edition) or the 2018 Cropland Data Layer.

Wetlands, Tidal Non-forested (TDLW)

All wetlands mapped as estuarine or marine according to National Wetlands Inventory (NWI) plus any adjacent freshwater emergent wetlands, and emergent wetlands mapped from high-resolution imagery outside Virginia must be within 1-ft of adjacent tidal water elevations derived from NOAA's Sea Level Rise dataset.

Limitations of the Data

This section will highlight some observed limitations of the database. This is not an exhaustive list, and it will not provide detailed explanation which will be reserved for the journal article. The purpose is to make users aware of potential issues. Here are some of the noted examples:

- Solar Field Impervious (SFI) and Extractive Impervious (EI) are listed as classes but we were unable to map them successfully.
 - Rules to classify or map SFI proved challenging and due to fuzzy nature low vegetation and impervious near solar field arrays, the SFI was classified as Solar Field Herbaceous.
 - EI suffered from similar complexity and fuzzy nature of interpretation and were classified as Other Impervious.
 - Though the classes are absent in the data, they were included as placeholders for future iterations.
- There are important caveats to the LULC change matrices that are listed in detailed in the next section. One such example is ancillary data used to inform mapping or classification has too short or too long of a timespan. Often imagery is snapshot of current condition and provides limited information. Local knowledge, context and further ancillary data might be necessary to explain certain LULC trends. See discussion under [Land Use/Land Cover \(LULC\) Change Matrices](#) for detailed discussion.

Land Use/Land Cover (LULC) Change Matrices

Data on LULC change represent transitions of LULC between two time periods: an early date (e.g., Time 1, 2013 or 2014) and a late date (e.g., Time 2, 2017 or 2018). A concise way of illustrating such changes is to construct a cross-tabulation, aka “pivot table”, between the two datasets. The result is a LULC change matrix that shows all observed changes in LULC in a single table with the early date values (acres of land use X) represented in rows and the late date values represented in columns. Values along the diagonal are absent because they would represent no change and are not included in the LULC change raster data. LULC change matrices have been produced for each of the 206 counties and incorporated cities (those with unique 5-digit FIPS codes) within and adjacent to the Chesapeake Bay watershed and separately for the portions of each county in the watershed. An aggregated pivot table for each of the 7 jurisdictions have been created, including the full mapped extent of each jurisdiction and the portion of the jurisdiction within the Chesapeake Bay Watershed. For these different geographies, LULC change matrices have been produced for the 18-class general classification and the 54-class detailed classification. A crosswalk relating these two classifications is provided shown in (Table 3) and can be referenced to understand the composition of the general classes. Note that the LULC change matrices for the detailed classification include greater amounts of overall change than the matrices for the general classification. This is because detailed class changes that occur within the same general class are not recognized as change at the general aggregation level. For example, changes from herbaceous to barren cover within the general cropland class do not represent a change to or from cropland at the general level. The extent of LULCC is greater than the extent of LCC because LULCC includes transitions between land uses that are not changes in land cover. For example, cropland herbaceous transitioning to turf grass in a newly developed agricultural field is a change in land use but is the same land cover in both dates. County level LULC change matrices are available for download via the dynamic LULC change website, <http://lulc-1718.cicapps.org/> (see link in upper right-hand corner of viewer).

The general LULC change matrix for the Chesapeake Bay Watershed is shown (Table 4). The values in the table are in units of acres and restricted to areas of change. The “Decrease” column represents the total acreages of 2013/14 LULCs (row labels) that transitioned to a different 2017/18 LULC (column labels). The “Increase” row represents the total acreages of 2017 LULCs that transitioned from a different 2013 LULC. The “Net” row represents overall net change in a particular LULC from 2013 to 2018. To facilitate interpretation, changes among the seven developed LULC classes are colored beige, changes among the four-forest related LULC classes are colored green, changes among agricultural and extractive LULC classes are colored orange, and changes among the wetlands and water classes are colored shades of blue. From 2013/14 to 2017/18, 724,192 acres of land in the watershed changed from one to another of the 18 general LULC classes.

Forest Change

The largest LULC change in the watershed is from forest (FORE) to harvested forest (HARF), with 175,564 acres of forest being cleared for timber harvest activities. There are an additional 81,474 acres of forest transitioning to natural succession (NATS) that may also be related to rotational timber harvesting and not reflective of a permanent loss of trees. Forests transitioning to the five non-tree developed classes (e.g., Roads (ROAD), Impervious Structures (IMPS), Impervious Other (IMPO), Turf Grass (TURF), and Pervious Developed, Other (PDEV)) represent a change in use coupled with a change in cover. Forests transitioning to the two developed classes with trees, Tree Canopy over Impervious (TCIS) and Tree Canopy over Turf Grass (TCTG), represent only a change in use meaning no trees were cut down but the understory has likely been compacted or otherwise modified as part of the development process such

that these trees no longer fully function as forests. Forests (FORE) transitioning to Tree Canopy, Other (TCOT) are an indicator of fragmentation due to a reduction in forest patch size or division of forest patches. This transition is a change in use and does not represent a loss of tree canopy.

Development Change

There are seven general developed classes: Roads (ROAD), Impervious Structures (IMPS), Impervious, Other (IMPO), Tree Canopy over Impervious (TCIS), Turf Grass (TURF), Tree Canopy over Turf Grass (TCTG) and Pervious, Developed (PDEV). Changes between these classes represent change within the existing developed footprint. For example, 23,855 acres of pervious developed (TURF, TCTG, PDEV) transitioned to imperviousness (ROAD, IMPS, IMPO, TCIS) within the watershed. This is an indicator of the intensification of development. There are 11,811 acres of additional tree canopy in the developed footprint, which can be seen in the transitions from non-tree developed classes (ROAD, IMPS, IMPO, TURF, and PDEV) to tree canopy over impervious (TCIS) or tree canopy over turf grass (TCTG).

Change to developed classes from Forest (FORE), Tree Canopy, Other (TCOT), and Natural Succession (NATS) indicate natural lands that have been cleared and likely compacted for development. The watershed experienced 98,219 acres of new development from natural classes, with 17,677 acres of this becoming new imperviousness. Change to developed classes from Cropland (CROP) and Pasture/Hay (PAST), indicates that farm fields have been converted to development. The watershed experienced 41,368 acres of agricultural fields transitioning to developed classes, with 24,055 acres of that becoming new imperviousness. It is extremely important to note that this data cannot be used to calculate forest and farmland conversion rates to development in its current state. The monitoring period is too short to accurately depict these rates of change. Additionally, the early date of 2013/14 is a static period based on the year the imagery was flown. This means that if lands were forested and then cleared the year prior to the imagery being captured, transitions to development on such lands would not be classed as forest conversion.

Agricultural Change

These data show both increases and decreases in cropland and pasture. The decreases are associated with development or afforestation, both of which represent obvious and actual declines. The increases, however, are suspect as they are either associated with lands becoming undeveloped or the clearing of forests and other tree canopy. With just two dates of imagery covering a 4–5-year timespan, it is not always possible to know the ultimate use of forest lands that were recently cleared. Context and ancillary data are needed to infer potential use of the land. Cleared forests adjacent to agricultural fields or in parcels dominated by agriculture are assumed to be cropland or pasture. This may or not be the case and cannot be verified until the 2021/22 mapping is complete.

Extractive Change

The development or expansion of quarries, sand and gravel mines, and other surficial mining operations are evident as gains in extractive lands, particularly from forests (FORE) and pervious developed, other (PDEV).

Wetland Change

Changes between forests and wetlands are misleading because all types of forested and other tree canopy wetlands were included in the Forest (FORE) and Tree Canopy, Other (TCOT) general classes.

Therefore, changes from FORE or TCOT to Wetlands (TDLW, RIVW, TERW) and vice versa represent tree removal or tree growth within a wetland, not a decrease or increase in wetland area.

Besides tree removal and tree growth, the only substantial change in wetlands evident in these data are changes from wetlands to water which either represent actual changes associated with sea level rise and/or marsh subsidence or ephemeral change due to differences in tidal stages when the imagery was acquired. Timber harvesting within the wetland footprint was classified as a wetland in both dates, not as harvested forest (HARF). All other wetland changes are minor because wetlands were defined and mapped using static ancillary data (e.g., National Wetlands Inventory) and changes in hydrology and hydrophytic vegetation are not readily detectable in aerial imagery. Changes mapped within wetland footprints are best represented in the 54-class change matrices.

Artifactual Change

While great effort was invested to minimize potential errors, a few transitions in the change matrices may be artifacts associated with the mapping protocols rather than actual change on the ground. Potential artifactual changes include:

- Pervious Developed, Other (PDEV) to/from Natural Succession (NATS)
- Natural Succession (NATS) to Harvested Forest (HARF)
- Cropland (CROP) to/from Pasture (PAST)

LULC Change Transition Matrix for the Chesapeake Bay Watershed

		2017 / 18																		
		ROAD	IMPS	IMPO	TCIS	TURF	TCTG	PDEV	FORE	TCOT	HARF	NATS	CROP	PAST	EXTR	TDLW	RIVW	TERW	WATR	Dec.
2013 / 14	ROAD	-	14	338	696	74	66	206	138	75	1	17	11	14	4	0	2	0	2	1,657
	IMPS	1	-	937	508	277	88	143	7	2	1	37	75	84	2	0	0	0	1	2,165
	IMPO	516	3,173	-	1,587	4,334	305	1,288	166	60	102	785	652	1,331	1	21	25	5	35	14,386
	TCIS	42	485	690	-	2,446	-	1,599	-	-	181	408	98	184	6	3	7	1	1	6,149
	TURF	0	828	5,558	0	-	8,514	1,089	107	106	21	127	3	8	725	-	-	-	-	17,085
	TCTG	13	930	4,143	11	11,096	-	783	-	-	93	422	246	539	9	-	-	-	2	18,286
	PDEV	1,130	4,377	6,865	0	15,251	49	-	304	33	221	417	142	79	1,270	-	-	-	101	30,241
	FORE	1,161	2,764	8,918	732	13,096	28,221	28,107	-	22,046	175,564	81,474	19,557	23,186	4,066	1,381	5,568	193	297	416,330
	TCOT	123	952	2,339	0	2,068	2,032	2,341	-	-	788	2,278	3,075	4,566	386	108	250	27	42	21,375
	HARF	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	NATS	63	149	477	0	3,481	371	826	76,425	4,389	4,295	-	546	356	501	-	-	-	1,090	92,968
	CROP	500	3,018	8,369	0	4,031	165	2,514	11,299	3,088	1,367	2,069	-	126	1,182	-	-	-	780	38,509
	PAST	307	2,253	9,607	0	6,562	185	3,857	13,163	8,984	1,631	4,035	123	-	1,232	-	-	-	402	52,340
	EXTR	-	-	-	-	-	-	0	-	-	-	0	0	0	-	-	-	-	-	0
	TDLW	2	4	91	0	1	-	-	1,746	162	8	0	-	-	0	-	-	-	73	2,087
	RIVW	9	31	104	0	167	-	-	7,499	512	208	0	-	-	20	-	-	-	156	8,707
TERW	2	9	43	-	41	2	28	629	86	11	11	16	5	15	-	-	-	36	933	
WATR	2	5	130	0	51	15	65	75	153	0	66	71	73	213	28	22	7	-	975	
Inc.	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	724,192	
Totals	Total Inc.	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	
	Total Dec.	1,657	2,165	14,386	6,149	17,085	18,286	30,241	416,330	21,375	0	92,968	38,509	52,340	0	2,087	8,707	933	975	
	Net	2,215	16,827	34,224	(2,615)	45,890	21,723	12,605	(304,772)	18,319	184,491	(821)	(13,893)	(21,790)	9,634	(546)	(2,833)	(701)	2,042	

Table 4 - LULC Change Transition Matrix for the Chesapeake Bay Watershed. Inc. (increase); Dec. (decrease) and units in acres

Ancillary Data Sources

Land Cover Sources

National Agriculture Imagery Program (2013/14 – 2017/18)

USDA Farm Service Agency Farm Production and Conservation - Business Center, Geospatial Enterprise Operations, n. d. NAIP Imagery, URL: <https://www.fpacbc.usda.gov/geo/index.html>

Light detection and ranging (LiDAR) elevation data (multi-year)

The lidar elevation data were obtained through USGS National Map and through various federal, state, and contracting agencies.

Microsoft Building Footprint (2018)

Microsoft. 2018. U.S. building footprints. Microsoft Maps. Accessed at <https://github.com/Microsoft/USBuildingFootprints>.

NOAA C-CAP

National Oceanic and Atmospheric Administration, Office of Coastal Management (NOAA). 2016. C-CAP regional land cover and change. Coastal Change Analysis Program (C-CAP) Regional Land Cover. Charleston, SC. Accessed 11/2021 at www.coast.noaa.gov/htdata/raster1/landcover/bulkdownload/30m_lc

Please refer to the Table 5: Land Cover Data Sources and Year(s) for NAIP and LiDAR below for detailed explanation of NAIP imagery and lidar used as inputs for each county/municipality in the Chesapeake Bay watershed.

Table 5: Land Cover Data Sources and Year(s) for NAIP and LiDAR

^aNo plainimetrics were used, the structures were based on the original 2013\2014 land cover, LiDAR (if available) and manual QA\QC.

^bLeaf-off NAIP imagery, all or in part.

^cPartial coverage.

		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
District of Columbia	DC	2013	2017	2013	2017	2015	2015	building footprints, roads, impervious surfaces
Kent	DE	2013	2018	2013	2018	2013/2014	none	building footprints
New Castle	DE	2013	2018	2013	2018	2013/2014	none	building footprints (Microsoft Buildings 2018)
Sussex	DE	2013	2018	2013	2018	2013/2014	none	building footprints (Microsoft Buildings 2018)
Allegany	MD	2013	2018	2013	2017	2012	none	building footprints
Anne Arundel	MD	2013	2018	2013	2017/2018	2011	2017	building footprints, road polygons
Baltimore	MD	2013	2018	2013	2017/2018	2014	none	building footprints, road polygons, parking lots, driveway lines, bridges
Baltimore City	MD	2013	2018	2013	2017/2018	2014	none	building footprints, road polygons, other paved, railroads
Calvert	MD	2013	2018	2013	2018	2011	2017	building footprints, road polygons, other paved, bridges
Caroline	MD	2013	2018	2013	2018	2013	none	none ^a
Carroll	MD	2013	2018	2013	2017/2018	2014	none	building footprints
Cecil	MD	2013	2018	2013	2018	2014	none	building footprints
Charles	MD	2013	2018	2013	2017/2018	2014	none	building footprints
Dorchester	MD	2013	2018	2013	2018	2013	none	none
Frederick	MD	2013	2018	2013	2017/2018	2012	none	building footprints, road polygons, other paved

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
								polygons, railroad polygons
Garrett	MD	2013	2018	2013	2017/2018	2014	none	building footprints
Harford	MD	2013	2018	2013	2018	2013	none	road polygons, parking lots
Howard	MD	2013	2018	2013	2017/2018	2011	none	building footprints, road polygons, driveways, sidewalks, pools, tennis courts, basketball courts, sand traps
Kent	MD	2013	2018	2013	2018	2014	none	building footprints, driveway lines
Montgomery	MD	2013	2018	2013	2017/2018	2014	2018	building footprints, roads, railroads, cultural features (pads, pools), hydrology
Prince George's	MD	2013	2018	2013	2018	2014	2018	building footprints, bridges, impervious surfaces, hydrology
Queen Anne's	MD	2013	2018	2013	2018	2013	none	building footprints
Somerset	MD	2013	2018	2013	2017/2018	None	none	building footprints (Microsoft Buildings 2018)
St. Mary's	MD	2013	2018	2013	2017/2018	2014	2018	building footprints, transportation (roads), transportation (driveways, sidewalks, parking lots, air strips)
Talbot	MD	2013	2018	2013	2018	2014	none	building footprints
Washington	MD	2013	2018	2013	2017/2018	2012	none	building footprints, hydrology
Wicomico	MD	2013	2018	2013	2018	2011	none	building footprints, road polygons, driveways, sidewalks, decks and patios, concrete pads
Worcester	MD	2013	2018	2013	2018	2011	none	building footprints

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Allegany	NY	2013	2017	2013	2017	None	2016/2017	building footprints (Microsoft Buildings 2018)
Broome	NY	2013	2017	2013	2017	2015 ^c	none	building footprints (Microsoft Buildings 2018)
Cayuga	NY	2013	2017	2013	2017	None	2018	building footprints (Microsoft Buildings 2018)
Chemung	NY	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Chenango	NY	2013	2017	2013	2017	2015	none	building footprints (Microsoft Buildings 2018)
Cortland	NY	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Delaware	NY	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Herkimer	NY	2013	2017	2013	2017	2015 ^c	none	building footprints (Microsoft Buildings 2018)
Livingston	NY	2013	2017	2013	2017	2011	none	building footprints (Microsoft Buildings 2018)
Madison	NY	2013	2017	2013	2017	2015 ^c	none	building footprints (Microsoft Buildings 2018)
Oneida	NY	2013	2017	2013	2017	2015 ^c	none	building footprints (Microsoft Buildings 2018)
Onondaga	NY	2013	2017	2013	2017	None	none	building footprints
Ontario	NY	2013	2017	2013	2017	None	none	building footprints
Otsego	NY	2013	2017	2013	2017	2015	none	building footprints (Microsoft Buildings 2018)
Schoharie	NY	2013	2017	2013	2017	2014	none	building footprints (Microsoft Buildings 2018)

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Schuyler	NY	2013	2017	2013	2017	2014 ^c	none	building footprints (Microsoft Buildings 2018)
Steuben	NY	2013	2017	2013	2017	none	2016 ^c	building footprints
Tioga	NY	2013	2017	2013	2017	none	none	building footprints (Microsoft Buildings 2018)
Tompkins	NY	2013	2017	2013	2017	none	none	building footprints
Yates	NY	2013	2017	2013	2017	2014	none	building footprints (Microsoft Buildings 2018)
Adams	PA	2013	2017	2013	2017	none	2017	building footprints
Bedford	PA	2013	2017	2013	2017	none	none	none ^a
Berks	PA	2013	2017	2013	2017	none	none	building footprints, hydrology (lakes, ponds, basins, rivers)
Blair	PA	2013	2017	2013	2017	none	none	building footprints
Bradford	PA	2013	2017	2013	2017	none	none	building footprints
Cambria	PA	2013	2017	2013	2017	none	none	building footprints
Cameron	PA	2013	2017	2013	2017	none	none	building footprints (Microsoft Buildings 2018)
Carbon	PA	2013	2017	2013	2017	none	none	building footprints (Microsoft Buildings 2018)
Centre	PA	2013	2017	2013	2017	none	none	building footprints, road polygons, parking lots, driveway lines
Chester	PA	2013	2017	2013	2017	2014	none	building footprints
Clearfield	PA	2013	2017	2013	2017	none	none	building footprints
Clinton	PA	2013	2017	2013	2017	none	none	building footprints
Columbia	PA	2013	2017	2013	2017	none	2017	building footprints (Microsoft Buildings 2018)
Cumberland	PA	2013	2017	2013	2017	none	2017	none
Dauphin	PA	2013	2017	2013	2017	none	2016	building footprints, sidewalk lines
Elk	PA	2013	2017	2013	2017	none	none	building footprints (Microsoft Buildings 2018)

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Franklin	PA	2013	2017	2013	2017	none	2017	building footprints
Fulton	PA	2013	2017	2013	2017	none	none	building footprints (Microsoft Buildings 2018)
Huntingdon	PA	2013	2017	2013	2017	none	none	building footprints (Microsoft Buildings 2018)
Indiana	PA	2013	2017	2013	2017	none	none	building footprints (Microsoft Buildings 2018)
Jefferson	PA	2013	2017	2013	2017	none	none	building footprints (Microsoft Buildings 2018)
Juniata	PA	2013	2017	2013	2017	None	2017	building footprints
Lackawanna	PA	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Lancaster	PA	2013	2017	2013	2017	2014	none	building footprints
Lebanon	PA	2013	2017	2013	2017	None	2017	building footprints
Luzerne	PA	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Lycoming	PA	2013	2017	2013	2017	None	2017	building footprints (Microsoft Buildings 2018)
McKean	PA	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Mifflin	PA	2013	2017	2013	2017	None	none	building footprints, sidewalks, driveways, roads, parking lots, miscellaneous impervious
Montour	PA	2013	2017	2013	2017	None	2017	building footprints (Microsoft Buildings 2018)
Northumberland	PA	2013	2017	2013	2017	None	2017	building footprints
Perry	PA	2013	2017	2013	2017	None	2017	building footprints (Microsoft Buildings 2018)

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		Analysis Period		NAIP Imagery		LiDAR		
County	State	T1	T2	T1	T2	T1	T2	Thematic Vector Data sources
Potter	PA	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Schuylkill	PA	2013	2017	2013	2017	None	none	building footprints
Snyder	PA	2013	2017	2013	2017	None	2017	building footprints, airports, hydrology polygons
Somerset	PA	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Sullivan	PA	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Susquehanna	PA	2013	2017	2013	2017	None	none	building footprints (Microsoft Buildings 2018)
Tioga	PA	2013	2017	2013	2017	None	none	building footprints
Union	PA	2013	2017	2013	2017	None	2017	building footprints, hydrology polygons
Wayne	PA	2013	2017	2013	2017	None	none	building footprints
Wyoming	PA	2013	2017	2013	2017	None	none	building footprints
York	PA	2013	2017	2013	2017	2014	none	none
Accomack	VA	2014	2018	2014	2018	2015	none	building footprints, road centerlines
Albemarle	VA	2014	2018	2014	2018	None	2016	building footprints, road centerlines, driveway polygons
Alexandria	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines, driveway polygons, parking lots
Alleghany	VA	2014	2018	2014	2018 ^b	none	2017	building footprints (Microsoft Buildings 2018), road centerlines, driveways, hydrology
Amelia	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines

Data Dictionary for the Chesapeake Bay Land Use/Land Cover Database, 2022 Edition

		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Amherst	VA	2014	2018	2014	2018	none	2017	building footprints (Microsoft Buildings 2018), road centerlines
Appomattox	VA	2014	2018	2014	2018	none	2016	building footprints (Microsoft Buildings 2018), road centerlines
Arlington	VA	2014	2018	2014	2018	2014	none	building footprints, roads (polygons), impervious surface polygons (driveways, airports, parking lots, sidewalks)
Augusta	VA	2014	2018	2014	2018 ^b	2011 ^c	none	building footprints, road centerlines
Bath	VA	2014	2018	2014	2018 ^b	none	2017	building footprints (Microsoft Buildings 2018), road centerlines
Bedford City	VA	2014	2018	2014	2018	none	2017	building footprints, road centerlines, driveway lines, sidewalk lines, hydrology (small ponds, lakes only)
Bedford County	VA	2014	2018	2014	2018	none	2017	building footprints, road centerlines, driveways, hydrology (small lakes and ponds)
Botetourt	VA	2014	2018	2014	2018 ^b	none	2017	building footprints, road centerlines
Buckingham	VA	2014	2018	2014	2018	none	2016	building footprints (Microsoft Buildings 2018), road centerlines
Buena Vista	VA	2014	2018	2014	2018	none	2017	building footprints, road centerlines
Campbell	VA	2014	2018	2014	2018	none	2017	building footprints (Microsoft

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
								Buildings 2018), road centerlines
Caroline	VA	2014	2018	2014	2018 ^b	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Charles City	VA	2014	2018	2014	2018	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Charlotte	VA	2014	2018	2014	2018	none	2017	building footprints (Microsoft Buildings 2018)
Charlottesville	VA	2014	2018	2014	2018	none	2016	building footprints, road centerlines
Chesapeake	VA	2014	2018	2014	2018	2013	none	building footprints (Microsoft Buildings 2018), road centerlines
Chesterfield	VA	2014	2018	2014	2018	2014	none	building footprints, impervious surfaces (roads, other impervious surfaces)
Clarke	VA	2014	2018	2014	2018 ^b	2011	none	building footprints, road centerlines, sidewalk lines
Colonial Heights	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Covington	VA	2014	2018	2014	2018 ^b	none	2017	building footprints (Microsoft Buildings 2018), road centerlines, driveway lines, hydrology (small ponds and lakes only)
Craig	VA	2014	2018	2014	2018 ^b	none	2016/2017	building footprints, road centerlines
Culpeper	VA	2014	2018	2014	2018 ^b	2014	none	building footprints (Microsoft

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
								Buildings 2018), road centerlines
Cumberland	VA	2014	2018	2014	2018	none	2016	building footprints (Microsoft Buildings 2018), road centerlines
Dinwiddie	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Essex	VA	2014	2018	2014	2018	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Fairfax City	VA	2014	2018	2014	2018	2014	none	building footprints, road centerlines
Fairfax County	VA	2014	2018	2014	2018 ^b	2014 ^c	none	building footprints, road centerlines, sidewalk lines
Falls Church	VA	2014	2018	2014	2018	2014	none	building footprints, road centerlines
Fauquier	VA	2014	2018	2014	2018 ^b	2012	none	building footprints, road centerlines
Fluvanna	VA	2014	2018	2014	2018	2014 ^c	2016 ^c	building footprints (Microsoft Buildings 2018), road centerlines
Frederick	VA	2014	2018	2014	2018 ^b	2012 ^c	none	building footprints, road centerlines
Fredericksburg	VA	2014	2018	2014	2018 ^b	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Giles	VA	2014	2018	2014	2018 ^b	none	2016	building footprints, road centerlines
Gloucester	VA	2014	2018	2014	2018	2010	none	building footprints, road centerlines
Goochland	VA	2014	2018	2014	2018	none	2016 ^c	building footprints (Microsoft Buildings 2018), road centerlines
Greene	VA	2014	2018	2014	2018	2014/2016	none	building footprints, road centerlines

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Hampton	VA	2014	2018	2014	2018	2013	none	building footprints (Microsoft Buildings 2018), road centerlines
Hanover	VA	2014	2018	2014	2018	2014	none	building footprints, road centerlines, hydrology (lakes, ponds, rivers)
Harrisonburg	VA	2014	2018	2014	2018	2011 ^c	none	building footprints, road centerlines
Henrico	VA	2014	2018	2014	2018	2014	none	building footprints, road centerlines
Highland	VA	2014	2018	2014	2018 ^b	none	2017	building footprints (Microsoft Buildings 2018), road centerlines
Hopewell	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Isle of Wight	VA	2014	2018	2014	2018	none	none	building footprints (Microsoft Buildings 2018), road centerlines
James City	VA	2014	2018	2014	2018	2010	none	building footprints, road centerlines, water polygons
King and Queen	VA	2014	2018	2014	2018	2010	none	building footprints (Microsoft Buildings 2018), road centerlines
King George	VA	2014	2018	2014	2018 ^b	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
King William	VA	2014	2018	2014	2018	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Lancaster	VA	2014	2018	2014	2018	none	none	building footprints (Microsoft Buildings 2018), road centerlines

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Lexington	VA	2014	2018	2014	2018	none	2017	building footprints, road centerlines
Loudon	VA	2014	2018	2014	2018 ^b	2012	none	building footprints, road centerlines
Louisa	VA	2014	2018	2014	2018	2012/2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Lunenburg	VA	2014	2018	2014	2018	none	2018	building footprints (Microsoft Buildings 2018), road centerlines
Lynchburg	VA	2014	2018	2014	2018	none	2018	building footprints (Microsoft Buildings 2018), roads, impervious surfaces (driveways, parking lots), hydrology (lakes, rivers, streams)
Madison	VA	2014	2018	2014	2018 ^b	2014	none	building footprints, road centerlines
Manassas	VA	2014	2018	2014	2018 ^b	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Manassas Park	VA	2014	2018	2014	2018 ^b	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Mathews	VA	2014	2018	2014	2018	2010	none	building footprints (Microsoft Buildings 2018), road centerlines
Middlesex	VA	2014	2018	2014	2018	2010	none	building footprints (Microsoft Buildings 2018), road centerlines
Montgomery	VA	2014	2018	2014	2018	none	2018	building footprints, road centerlines, hydrology

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Nelson	VA	2014	2018	2014	2018	none	2016	building footprints, road centerlines, driveway lines
New Kent	VA	2014	2018	2014	2018	2011	none	building footprints, road centerlines, driveway lines
Newport News	VA	2014	2018	2014	2018	2013	none	building footprints, road centerlines
Norfolk	VA	2014	2018	2014	2018	2013	none	building footprints, road centerlines, water polygons
Northampton	VA	2014	2018	2014	2018	2015	none	building footprints, road centerlines
Northumberland	VA	2014	2018	2014	2018	none	none	building footprints (Microsoft Buildings 2018), road centerlines
Nottoway	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Orange	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Page	VA	2014	2018	2014	2018 ^b	2014	none	building footprints, road centerlines
Petersburg	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Poquoson	VA	2014	2018	2014	2018	2013	none	building footprints (Microsoft Buildings 2018), road centerlines
Portsmouth	VA	2014	2018	2014	2018	2013	none	building footprints (Microsoft Buildings 2018), road centerlines
Powhatan	VA	2014	2018	2014	2018	none	2016	building footprints, road centerlines
Prince Edward	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft

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		Analysis Period		NAIP Imagery		LiDAR		
County	State	T1	T2	T1	T2	T1	T2	Thematic Vector Data sources
								Buildings 2018), road centerlines
Prince George	VA	2014	2018	2014	2018	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Prince William	VA	2014	2018	2014	2018 ^b	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Rappahannock	VA	2014	2018	2014	2018 ^b	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Richmond City	VA	2014	2018	2014	2018	2014	none	building footprints (Microsoft Buildings 2018), road centerlines
Richmond County	VA	2014	2018	2014	2018	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Roanoke City	VA	2014	2018	2014	2018	none	2018	building footprints
Roanoke County	VA	2014	2018	2014	2018 ^b	none	2018	building footprints
Rockbridge	VA	2014	2018	2014	2018 ^b	none	2017	building footprints, road centerlines
Rockingham	VA	2014	2018	2014	2018 ^b	2011 ^c	2017 ^c	building footprints, road centerlines
Salem	VA	2014	2018	2014	2018	none	2018	building footprints
Shenandoah	VA	2014	2018	2014	2018 ^b	none	2017 ^c	building footprints, road centerlines
Spotsylvania	VA	2014	2018	2014	2018 ^b	2014	none	building footprints, road centerlines, other impervious (parking lots, driveways lines), water polygons
Stafford	VA	2014	2018	2014	2018 ^b	2011	none	building footprints, road centerlines, road centerlines
Staunton	VA	2014	2018	2014	2018	2011	none	building footprints, road centerlines

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Suffolk	VA	2014	2018	2014	2018	none	none	building footprints (Microsoft Buildings 2018), road centerlines
Surry	VA	2014	2018	2014	2018	none	none	building footprints (Microsoft Buildings 2018), road centerlines
Virginia Beach	VA	2014	2018	2014	2018	2012	2018	building footprints, roads, parking lots, driveways, sidewalks, bike paths
Warren	VA	2014	2018	2014	2018 ^b	2011/2014	none	building footprints
Waynesboro	VA	2014	2018	2014	2018	2011	none	building footprints, road centerlines
Westmoreland	VA	2014	2018	2014	2018 ^b	2011	none	building footprints (Microsoft Buildings 2018), road centerlines
Williamsburg	VA	2014	2018	2014	2018	2010	none	building footprints, road centerlines
Winchester	VA	2014	2018	2014	2018 ^b	2012	none	building footprints, road centerlines
York	VA	2014	2018	2014	2018	2013	none	building footprints, road centerlines
Berkeley	WV	2014	2018	2014 ^b	2018 ^b	2012	none	building footprints (Microsoft Buildings 2018)
Grant	WV	2014	2018	2014	2018 ^b	none	2016 ^c	building footprints (Microsoft Buildings 2018)
Greenbrier	WV	2014	2018	2014 ^b	2018 ^b	none	2016	building footprints (Microsoft Buildings 2018)
Hampshire	WV	2014	2018	2014 ^b	2018 ^b	none	2016	building footprints (Microsoft Buildings 2018)
Hardy	WV	2014	2018	2014 ^b	2018 ^b	none	2016	building footprints (Microsoft Buildings 2018)
Jefferson	WV	2014	2018	2014 ^b	2018 ^b	2012	none	building footprints

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		Analysis Period		NAIP Imagery		LiDAR		Thematic Vector Data sources
County	State	T1	T2	T1	T2	T1	T2	
Mineral	WV	2014	2018	2014 ^b	2018 ^b	none	2016 ^c	building footprints (Microsoft Buildings 2018)
Monroe	WV	2014	2018	2014 ^b	2018 ^b	none	2016	building footprints (Microsoft Buildings 2018)
Morgan	WV	2014	2018	2014 ^b	2018 ^b	2012	none	building footprints (Microsoft Buildings 2018)
Pendleton	WV	2014	2018	2014 ^b	2018 ^b	none	2016	building footprints (Microsoft Buildings 2018)
Pocahontas	WV	2014	2018	2014 ^b	2018 ^b	none	2016 ^c	building footprints (Microsoft Buildings 2018)
Preston	WV	2014	2018	2014 ^b	2018 ^b	none	none	building footprints (Microsoft Buildings 2018)
Randolph	WV	2014	2018	2014 ^b	2018 ^b	none	none	building footprints (Microsoft Buildings 2018)
Tucker	WV	2014	2018	2014 ^b	2018 ^b	none	none	building footprints (Microsoft Buildings 2018)

Table 3 - Land Cover Data Sources and Year(s) for NAIP and LiDAR

LULC Sources

Channel and Floodplain Geomorphometry, U.S. Geological Survey (2020)

Hopkins, K.G., Ahmed, L., Metes, M.J., Claggett, P.R., Lamont, S., and Noe, G.B., 2020, Geomorphometry for Streams and Floodplains in the Chesapeake and Delaware Watersheds: U.S. Geological Survey data release, <https://doi.org/10.5066/P9RQJPT1>.

Chesapeake Bay Watershed Solar Dataset, Chesapeake Conservation Center (2018)

Evans, M.; Minich, T. Effective, Low-cost Methods of Applying Computer Vision to Public Earth Observation Data. Preprints 2020, 2020050345, <https://doi.org/10.20944/preprints202005.0345.v1>.

Coal Mining Operations, Pennsylvania Department of Environmental Protection (2021)

Pennsylvania Department of Environmental Protection. "2021 Coal Mining Operations". <https://www.pasda.psu.edu/uci/FullMetadataDisplay.aspx?file=CoalMiningOperations2022_04.xml>. Accessed in 2021.

Cropland Data Layer (CDL), United States Department of Agriculture (2013 & 2018)

U.S. Department of Agriculture, National Agricultural Statistics Service (NASS), Research and Development Division (RDD), Geospatial Information Branch (GIB), Spatial Analysis Research Section (SARS). (2019). "Cropland Data Layer". USDA, NASS Marketing and Information Services Office, Washington, D.C. <https://www.nass.usda.gov/Research_and_Science/Cropland/Release/index.php>. Accessed in 2019.

Delaware Timber Harvest, Delaware Department of Natural Resources and Environmental Control (2021)

Delaware Department of Natural Resources and Environmental Control. Lori M. Brown, <LoriM.Brown@delaware.gov>. Exchanged on 7/22/2021.

Energy Transmission Lines, Chesapeake Conservation Partnership Energy Transmission Dataset (2018)

Chesapeake Conservation Partnership & Piedmont Environmental Council. (2018). "Chesapeake Conservation Partnership Energy Transmission Dataset - Transmission Lines". Accessed on 08/21/2019.

Geographic Boundaries, Census Bureau (2017)

U.S. Department of Commerce, U.S. Census Bureau, Geography Division. (2017). "Bay County Boundaries" dataset. TIGER/Line Shapefile. <http://www2.census.gov/geo/tiger/TIGER2017/COUNTY/tl_2017_us_county.zip>. Accessed in 2019.

Geographic Names Information System (GNIS), U.S. Geological Survey (2021)

U.S. Geological Survey. (2021). "U.S. Geographic Names Information System (GNIS)" dataset. Live map layers in ESRI SDE. <http://geonames.usgs.gov/>

Land Change Monitoring, Assessment, and Projection (LCMAP), U.S. Geological Survey

Pengra, B.W., Stehman, S.V., Horton, J.A., Dockter, D.J., Schroeder, T.A., Yang, Z., Hernandez, A.J., Healey, S.P., Cohen, W.B., Finco, M.V., Gay, C., and Houseman, I.W., 2020, LCMAP Reference Data Product 1984-2018 land cover, land use and change process attributes (ver. 1.2, November 2021): U.S. Geological Survey data release, <https://doi.org/10.5066/P9ZW0XJ7>.

Manually Digitized Extractive Land Use Data, Chesapeake Innovation Center, and Washington College (2021)

Conservation Innovation Center (CIC), Washington College. "2021 Digitized Extractive Landuse Dataset". Accessed in 2021.

Manually Digitized Landfills, 2013/14, Conservation Innovation Center, Washington College (2021)

Conservation Innovation Center (CIC), Washington College. "2013/14 Digitized Landfills". Accessed in 2021.

Manually Digitized Landfills, 2017/18, Conservation Innovation Center, Washington College (2021)

Conservation Innovation Center (CIC), Washington College. "2017/18 Digitized Landfills". Accessed in 2021.

Maryland Timber Harvest, Maryland Department of Natural Resources (2013)

Maryland Department of Natural Resources. Iris Allen, <iris.allen@maryland.gov>. Exchanged on 7/06/2020.

National Hydrography Plus High-Resolution Dataset (NHDPlus HR), U.S. Geological Survey

Moore, R.B., McKay, L.D., Rea, A.H., Bondelid, T.R., Price, C.V., Dewald, T.G., and Johnston, C.M., 2019, User's guide for the national hydrography dataset plus (NHDPlus) high resolution: U.S. Geological Survey Open-File Report 2019–1096, 66 p., <https://doi.org/10.3133/ofr20191096>.

National Land Cover Database: Land Cover (2011)

U.S. Geological Survey 2014 U.S. Geological Survey, 2014, National Land Cover Database (NLCD) 2011 Land Cover Conterminous United States: U.S. Geological Survey data release, <https://doi.org/10.5066/P97S2IID>.

National Land Cover Database: Land Cover (2016)

U.S. Geological Survey 2019 Dewitz, J., 2019, National Land Cover Database (NLCD) 2016 Products (ver. 2.0, July 2020): U.S. Geological Survey data release, <https://doi.org/10.5066/P96HHBIE>.

National Oceanic and Atmospheric Administration's (NOAA) Sea Level Rise, National Oceanic and Atmospheric Administration

National Oceanic and Atmospheric Administration. "National Oceanic and Atmospheric Administration's (NOAA) Sea Level Rise". Accessed in 2019.

National Wetlands Inventory (NWI), U.S. Fish & Wildlife Service

U.S. Fish & Wildlife Service. "National Wetlands Inventory (NWI)". Accessed in 2019.

Navteq's Land Use, NAVTEQ (2017)

NAVTEQ. (2017). "Landuse A & B". Accessed on 08/21/2019.

Parcel Boundaries

Parcel boundaries were collected from various sources such as state, county and/or federal departments and agencies. Citable sources are listed below, if your jurisdiction is not listed under citable data then they were obtained internally from federal agency:

Virginia Geographic Information Network (VGIN), Virginia local government GIS. (2016). "Virginia Parcels" dataset. File Geodatabase.

<https://hub.arcgis.com/datasets/29627d7c051a47dc8ce71b4484531ab3/about>

The Pennsylvania State University. (2021). "Pennsylvania Parcels 202106" dataset. Vector digital data.

<http://www.pasda.psu.edu/>

Contributing counties, NYS Office of Information Technology Services GIS Program Office (GPO) and NYS Department of Taxation and Finance's Office of Real Property Tax Services (ORPTS). (2022), "NYS_Tax_Parcels_Public" dataset. Vector digital data. <http://gis.ny.gov/parcels/>

State Department of Assessments and Taxation and Maryland Department of Planning. (2021). "Maryland Parcel Boundaries" dataset. Vector digital data.
<https://planning.maryland.gov/Pages/OurProducts/DownloadFiles.asp>

Pennsylvania Timber Harvest, Pennsylvania DCNR Bureau of Forestry (2019)

Pennsylvania DCNR Bureau of Forestry. Joseph R. Petroski, <jpetroski@pa.gov>. Exchanged on 1/28/2019

Public Schools, National Center for Education Statistics (NCES) (2020)

Education Demographic and Geographic Estimates (EDGE) program, National Center for Education Statistics (NCES). (2020). "EDGE_GEOCODE_PUBLICSCH_CURRENT".
<https://www.arcgis.com/home/user.html?user=OpenDataMgr_NCES>. Accessed in March 2022.

Railways, Open Street Map (2020)

OpenStreetMap contributors. (2020) Planet dump. Retrieved from <https://planet.openstreetmap.org>

Soil Survey Geographic Database (SSURGO)

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <https://websoilsurvey.nrcs.usda.gov/>. Accessed 2019

Urbanized Areas and Urban Clusters, Census Bureau (2018)

U.S. Department of Commerce, U.S. Census Bureau, Geography Division. (2015). "Urban Areas & Clusters" dataset. TIGER/Line Shapefile.
<http://www2.census.gov/geo/tiger/TIGER2015/UAC10/tl_2015_us_uac10.zip>. Accessed in 2019.

FEMA: National Flood Hazard Layer (Circa. 2019)

United States. Federal Emergency Management Agency. (2019). National Flood Hazard Layer.
<https://hazards.fema.gov/femaportal/wps/portal/NFHLWMS>

Virginia Timber Harvest, Virginia Department of Forestry (2018)

Virginia Department of Forestry. Lara Johnson, <lara.johnson@dof.virginia.gov>. Exchanged on 7/21/2021.

West Virginia Timber Harvest, West Virginia Division of Forestry (2018)

West Virginia Division of Forestry. Jeremy McGill, <jeremy.r.mcgill@wv.gov>. Exchanged on 10/29/2021.

Classification Tables

Land Cover Class Table

Raster Value	LC Classes
1	Water
2	Emergent Wetlands
3	Tree Canopy
4	Scrub\Shrub
5	Low Vegetation
6	Barren
7	Impervious Structures
8	Other Impervious
9	Impervious Roads
10	Tree Canopy Over Structures
11	Tree Canopy Over Other Impervious
12	Tree Canopy Over Impervious Roads
254	Aberdeen Proving Ground
255	NoData Value

Table 6 - Land Cover Classes

Land Use/Land Cover Class Table

54 LULC classes were generalized (see overview and methods document for more details) to 18 LULC classes to simplify visualization and categorically group them for analysis and interpretation. *LandUse* (54-classes), *GenLandUse* (18-classes), *GenAbbrev* (18 LULC class abbreviations).

Value	LandUse	GenLandUse	GenAbbrev
11	Estuarine/Marine	Water	WATR
12	Lakes and Reservoirs	Water	WATR
13	Riverine Ponds	Water	WATR
14	Terrene Ponds	Water	WATR
15	Lotic Water (fresh)	Water	WATR
16	Bare Shore	Natural Succession	NATS
21	Roads	Impervious Roads	ROAD
22	Structures	Impervious Structures	IMPS
23	Other Impervious	Impervious, Other	IMPO
24	Tree Canopy Over Roads	Tree Canopy over Impervious	TCIS
25	Tree Canopy Over Structures	Tree Canopy over Impervious	TCIS
26	Tree Canopy Over Other Impervious	Tree Canopy over Impervious	TCIS
27	Tree Canopy Over Turf Grass	Tree Canopy over Turf Grass	TCTG
28	Turf Grass	Turf Grass	TURF
29	Transitional Barren	Pervious Developed, Other	PDEV

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Value	LandUse	GenLandUse	GenAbbrev
31	Harvested Forest Barren	Harvested Forest	HARF
32	Harvested Forest Herbaceous	Harvested Forest	HARF
33	Solar Field Impervious	Impervious, Other	IMPO
34	Solar Field Barren	Pervious Developed, Other	PDEV
35	Solar Field Herbaceous	Pervious Developed, Other	PDEV
36	Solar Field Scrub/Shrub	Pervious Developed, Other	PDEV
37	Extractive Barren	Extractive	EXTR
38	Extractive Impervious	Extractive	EXTR
41	Forest	Forest	FORE
42	Other Tree Canopy	Tree Canopy, Other	TCOT
51	Suspended Succession Barren	Pervious Developed, Other	PDEV
52	Suspended Succession Herbaceous	Pervious Developed, Other	PDEV
53	Suspended Succession Scrub/Shrub	Pervious Developed, Other	PDEV
54	Natural Succession Barren	Natural Succession	NATS
55	Natural Succession Herbaceous	Natural Succession	NATS
56	Natural Succession Scrub/Shrub	Natural Succession	NATS
61	Riverine Wetlands Barren	Wetlands, Riverine Non-forested	RIVW
62	Riverine Wetlands Herbaceous	Wetlands, Riverine Non-forested	RIVW
63	Riverine Wetlands Scrub/Shrub	Wetlands, Riverine Non-forested	RIVW
64	Riverine Wetlands Tree Canopy	Tree Canopy, Other	TCOT
65	Riverine Wetlands Forest	Forest	FORE
71	Terrene Wetlands Barren	Wetlands, Terrene Non-forested	TERW
72	Terrene Wetlands Herbaceous	Wetlands, Terrene Non-forested	TERW
73	Terrene Wetlands Scrub/Shrub	Wetlands, Terrene Non-forested	TERW
74	Terrene Wetlands Tree Canopy	Tree Canopy, Other	TCOT
75	Terrene Wetlands Forest	Forest	FORE
81	Cropland Barren	Cropland	CROP
82	Cropland Herbaceous	Cropland	CROP
83	Pasture/Hay Barren	Pasture/Hay	PAST
84	Pasture/Hay Herbaceous	Pasture/Hay	PAST
85	Pasture/Hay Scrub/Shrub	Pasture/Hay	PAST
86	Orchard/Vineyard Barren	Cropland	CROP
87	Orchard/Vineyard Herbaceous	Cropland	CROP
88	Orchard/Vineyard Scrub/Shrub	Cropland	CROP
91	Tidal Wetlands Barren	Wetlands, Tidal Non-forested	TDLW
92	Tidal Wetlands Herbaceous	Wetlands, Tidal Non-forested	TDLW
93	Tidal Wetlands Scrub/Shrub	Wetlands, Tidal Non-forested	TDLW
94	Tidal Wetlands Tree Canopy	Tree Canopy, Other	TCOT
95	Tidal Wetlands Forest	Forest	FORE
-128		NoData Value	

Table 7 - LULC Classes

Land Cover Change Classes

All observed and/or mapped land cover change transitions from 2013/2014 to 2017/2018 are recorded below in the table. Note: there are additional LC transitions but if they do not exist in the data then they were not assigned a unique value and will not be available in the table.

Value	LCChange
1	Water
2	Emergent Wetlands
3	Tree Canopy
4	Scrub\Shrub
5	Low Vegetation
6	Barren
7	Impervious Structures
8	Other Impervious
9	Impervious Roads
10	Tree Canopy Over Structures
11	Tree Canopy Over Other Impervious
12	Tree Canopy Over Impervious Roads
13	Water to Tree Canopy
14	Water to Scrub\Shrub
15	Water to Low Vegetation
16	Water to Barren
17	Water to Impervious Structures
18	Water to Other Impervious
19	Water to Impervious Roads
21	Emergent Wetlands to Water
23	Emergent Wetlands to Tree Canopy
25	Emergent Wetlands to Low Vegetation
26	Emergent Wetlands to Barren
27	Emergent Wetlands to Impervious Structures
28	Emergent Wetlands to Other Impervious
29	Emergent Wetlands to Impervious Roads
31	Tree Canopy to Water
35	Tree Canopy to Low Vegetation
36	Tree Canopy to Barren
37	Tree Canopy to Impervious Structures
38	Tree Canopy to Other Impervious
39	Tree Canopy to Impervious Roads
41	Scrub\Shrub to Water
43	Scrub\Shrub to Tree Canopy
45	Scrub\Shrub to Low Vegetation
46	Scrub\Shrub to Barren

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Value	LCChange
47	Scrub\Shrub to Impervious Structures
48	Scrub\Shrub to Other Impervious
49	Scrub\Shrub to Impervious Roads
51	Low Vegetation to Water
53	Low Vegetation to Tree Canopy
54	Low Vegetation to Scrub\Shrub
56	Low Vegetation to Barren
57	Low Vegetation to Impervious Structures
58	Low Vegetation to Other Impervious
59	Low Vegetation to Impervious Roads
61	Barren to Water
63	Barren to Tree Canopy
65	Barren to Low Vegetation
67	Barren to Impervious Structures
68	Barren to Other Impervious
69	Barren to Impervious Roads
71	Impervious Structures to Water
73	Impervious Structures to Tree Canopy
75	Impervious Structures to Low Vegetation
76	Impervious Structures to Barren
78	Impervious Structures to Other Impervious
79	Impervious Structures to Impervious Roads
81	Other Impervious to Water
83	Other Impervious to Tree Canopy
85	Other Impervious to Low Vegetation
86	Other Impervious to Barren
87	Other Impervious to Impervious Structures
89	Other Impervious to Impervious Roads
91	Impervious Roads to Water
93	Impervious Roads to Tree Canopy
95	Impervious Roads to Low Vegetation
96	Impervious Roads to Barren
97	Impervious Roads to Impervious Structures
98	Impervious Roads to Other Impervious
101	Tree Canopy Over Structures to Water
105	Tree Canopy Over Structures to Low Vegetation
106	Tree Canopy Over Structures to Barren
107	Tree Canopy Over Structures to Impervious Structures
108	Tree Canopy Over Structures to Other Impervious
109	Tree Canopy Over Structures to Impervious Roads
111	Tree Canopy Over Other Impervious to Water
115	Tree Canopy Over Other Impervious to Low Vegetation

Value	LCChange
116	Tree Canopy Over Other Impervious to Barren
117	Tree Canopy Over Other Impervious to Impervious Structures
118	Tree Canopy Over Other Impervious to Other Impervious
119	Tree Canopy Over Other Impervious to Impervious Roads
121	Tree Canopy Over Impervious Roads to Water
125	Tree Canopy Over Impervious Roads to Low Vegetation
126	Tree Canopy Over Impervious Roads to Barren
127	Tree Canopy Over Impervious Roads to Impervious Structures
128	Tree Canopy Over Impervious Roads to Other Impervious
129	Tree Canopy Over Impervious Roads to Impervious Roads
210	Impervious Structures to Tree Canopy Over Structures
211	Other Impervious to Tree Canopy Over Other Impervious
212	Impervious Roads to Tree Canopy Over Impervious Roads
254	Aberdeen Proving Ground
255	NoData Value

Table 8 - LCC Classes

Land Use/Land Cover Change Classes

All observed and/or mapped LULC change transitions from 2013/14 to 2017/2018 are recorded below in the table. Note: there are additional LULC transitions but if they do not exist in the data then they were not assigned a unique value and will not be available in the table.

GenLULCChg (generalized LULC change) lists generalized 18 LULC class transitions, and LULCChng (LULC change) lists 54-class transitions.

Value	GenLULCChg	LULCChg
1316	Water to Natural Succession	Riverine Ponds to Bare Shore
1321	Water to Impervious Roads	Riverine Ponds to Roads
1322	Water to Impervious Structures	Riverine Ponds to Structures
1323	Water to Impervious, Other	Riverine Ponds to Other Impervious
1327	Water to Tree Canopy over Turf Grass	Riverine Ponds to Tree Canopy Over Turf Grass
1328	Water to Turf Grass	Riverine Ponds to Turf Grass
1329	Water to Pervious Developed, Other	Riverine Ponds to Transitional Barren
1341	Water to Forest	Riverine Ponds to Forest
1342	Water to Tree Canopy, Other	Riverine Ponds to Other Tree Canopy
1351	Water to Pervious Developed, Other	Riverine Ponds to Suspended Succession Barren
1352	Water to Pervious Developed, Other	Riverine Ponds to Suspended Succession Herbaceous
1355	Water to Natural Succession	Riverine Ponds to Natural Succession Herbaceous
1356	Water to Natural Succession	Riverine Ponds to Natural Succession Scrub/Shrub
1361	Water to Wetlands, Riverine Non-forested	Riverine Ponds to Riverine Wetlands Barren
1362	Water to Wetlands, Riverine Non-forested	Riverine Ponds to Riverine Wetlands Herbaceous

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Value	GenLULCChg	LULCChg
1363	Water to Wetlands, Riverine Non-forested	Riverine Ponds to Riverine Wetlands Scrub/Shrub
1364	Water to Tree Canopy, Other	Riverine Ponds to Riverine Wetlands Tree Canopy
1365	Water to Forest	Riverine Ponds to Riverine Wetlands Forest
1381	Water to Cropland	Riverine Ponds to Cropland Barren
1382	Water to Cropland	Riverine Ponds to Cropland Herbaceous
1383	Water to Pasture/Hay	Riverine Ponds to Pasture/Hay Barren
1384	Water to Pasture/Hay	Riverine Ponds to Pasture/Hay Herbaceous
1416	Water to Natural Succession	Terrene Ponds to Bare Shore
1421	Water to Impervious Roads	Terrene Ponds to Roads
1422	Water to Impervious Structures	Terrene Ponds to Structures
1423	Water to Impervious, Other	Terrene Ponds to Other Impervious
1426	Water to Tree Canopy over Impervious	Terrene Ponds to Tree Canopy Over Other Impervious
1427	Water to Tree Canopy over Turf Grass	Terrene Ponds to Tree Canopy Over Turf Grass
1428	Water to Turf Grass	Terrene Ponds to Turf Grass
1429	Water to Pervious Developed, Other	Terrene Ponds to Transitional Barren
1432	Water to Harvested Forest	Terrene Ponds to Harvested Forest Herbaceous
1437	Water to Extractive	Terrene Ponds to Extractive Barren
1441	Water to Forest	Terrene Ponds to Forest
1442	Water to Tree Canopy, Other	Terrene Ponds to Other Tree Canopy
1451	Water to Pervious Developed, Other	Terrene Ponds to Suspended Succession Barren
1452	Water to Pervious Developed, Other	Terrene Ponds to Suspended Succession Herbaceous
1453	Water to Pervious Developed, Other	Terrene Ponds to Suspended Succession Scrub/Shrub
1454	Water to Natural Succession	Terrene Ponds to Natural Succession Barren
1455	Water to Natural Succession	Terrene Ponds to Natural Succession Herbaceous
1456	Water to Natural Succession	Terrene Ponds to Natural Succession Scrub/Shrub
1471	Water to Wetlands, Terrene Non-forested	Terrene Ponds to Terrene Wetlands Barren
1472	Water to Wetlands, Terrene Non-forested	Terrene Ponds to Terrene Wetlands Herbaceous
1474	Water to Tree Canopy, Other	Terrene Ponds to Terrene Wetlands Tree Canopy
1475	Water to Forest	Terrene Ponds to Terrene Wetlands Forest
1481	Water to Cropland	Terrene Ponds to Cropland Barren
1482	Water to Cropland	Terrene Ponds to Cropland Herbaceous
1483	Water to Pasture/Hay	Terrene Ponds to Pasture/Hay Barren
1484	Water to Pasture/Hay	Terrene Ponds to Pasture/Hay Herbaceous
1491	Water to Wetlands, Tidal Non-forested	Terrene Ponds to Tidal Wetlands Barren
1492	Water to Wetlands, Tidal Non-forested	Terrene Ponds to Tidal Wetlands Herbaceous
1494	Water to Tree Canopy, Other	Terrene Ponds to Tidal Wetlands Tree Canopy
1495	Water to Forest	Terrene Ponds to Tidal Wetlands Forest
1516	Water to Natural Succession	Lotic Water (fresh) to Bare Shore
1521	Water to Impervious Roads	Lotic Water (fresh) to Roads
1522	Water to Impervious Structures	Lotic Water (fresh) to Structures
1523	Water to Impervious, Other	Lotic Water (fresh) to Other Impervious

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Value	GenLULCChg	LULCChg
1526	Water to Tree Canopy over Impervious	Lotic Water (fresh) to Tree Canopy Over Other Impervious
1527	Water to Tree Canopy over Turf Grass	Lotic Water (fresh) to Tree Canopy Over Turf Grass
1528	Water to Turf Grass	Lotic Water (fresh) to Turf Grass
1529	Water to Pervious Developed, Other	Lotic Water (fresh) to Transitional Barren
1532	Water to Harvested Forest	Lotic Water (fresh) to Harvested Forest Herbaceous
1537	Water to Extractive	Lotic Water (fresh) to Extractive Barren
1541	Water to Forest	Lotic Water (fresh) to Forest
1542	Water to Tree Canopy, Other	Lotic Water (fresh) to Other Tree Canopy
1551	Water to Pervious Developed, Other	Lotic Water (fresh) to Suspended Succession Barren
1552	Water to Pervious Developed, Other	Lotic Water (fresh) to Suspended Succession Herbaceous
1554	Water to Natural Succession	Lotic Water (fresh) to Natural Succession Barren
1555	Water to Natural Succession	Lotic Water (fresh) to Natural Succession Herbaceous
1556	Water to Natural Succession	Lotic Water (fresh) to Natural Succession Scrub/Shrub
1561	Water to Wetlands, Riverine Non-forested	Lotic Water (fresh) to Riverine Wetlands Barren
1562	Water to Wetlands, Riverine Non-forested	Lotic Water (fresh) to Riverine Wetlands Herbaceous
1564	Water to Tree Canopy, Other	Lotic Water (fresh) to Riverine Wetlands Tree Canopy
1565	Water to Forest	Lotic Water (fresh) to Riverine Wetlands Forest
1582	Water to Cropland	Lotic Water (fresh) to Cropland Herbaceous
1583	Water to Pasture/Hay	Lotic Water (fresh) to Pasture/Hay Barren
1584	Water to Pasture/Hay	Lotic Water (fresh) to Pasture/Hay Herbaceous
1591	Water to Wetlands, Tidal Non-forested	Lotic Water (fresh) to Tidal Wetlands Barren
1592	Water to Wetlands, Tidal Non-forested	Lotic Water (fresh) to Tidal Wetlands Herbaceous
1594	Water to Tree Canopy, Other	Lotic Water (fresh) to Tidal Wetlands Tree Canopy
1595	Water to Forest	Lotic Water (fresh) to Tidal Wetlands Forest
1611	Natural Succession to Water	Bare Shore to Estuarine/Marine
1612	Natural Succession to Water	Bare Shore to Lakes and Reservoirs
1613	Natural Succession to Water	Bare Shore to Riverine Ponds
1614	Natural Succession to Water	Bare Shore to Terrene Ponds
1615	Natural Succession to Water	Bare Shore to Lotic Water (fresh)
2112	Impervious Roads to Water	Roads to Lakes and Reservoirs
2113	Impervious Roads to Water	Roads to Riverine Ponds
2114	Impervious Roads to Water	Roads to Terrene Ponds
2115	Impervious Roads to Water	Roads to Lotic Water (fresh)
2116	Impervious Roads to Natural Succession	Roads to Bare Shore
2122	Impervious Roads to Impervious Structures	Roads to Structures
2123	Impervious Roads to Impervious, Other	Roads to Other Impervious
2124	Impervious Roads to Tree Canopy over Impervious	Roads to Tree Canopy Over Roads
2126	Impervious Roads to Tree Canopy over Impervious	Roads to Tree Canopy Over Other Impervious
2127	Impervious Roads to Tree Canopy over Turf Grass	Roads to Tree Canopy Over Turf Grass
2128	Impervious Roads to Turf Grass	Roads to Turf Grass

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Value	GenLULCChg	LULCChg
2129	Impervious Roads to Pervious Developed, Other	Roads to Transitional Barren
2131	Impervious Roads to Harvested Forest	Roads to Harvested Forest Barren
2132	Impervious Roads to Harvested Forest	Roads to Harvested Forest Herbaceous
2135	Impervious Roads to Pervious Developed, Other	Roads to Solar Field Herbaceous
2137	Impervious Roads to Extractive	Roads to Extractive Barren
2141	Impervious Roads to Forest	Roads to Forest
2142	Impervious Roads to Tree Canopy, Other	Roads to Other Tree Canopy
2151	Impervious Roads to Pervious Developed, Other	Roads to Suspended Succession Barren
2152	Impervious Roads to Pervious Developed, Other	Roads to Suspended Succession Herbaceous
2154	Impervious Roads to Natural Succession	Roads to Natural Succession Barren
2155	Impervious Roads to Natural Succession	Roads to Natural Succession Herbaceous
2156	Impervious Roads to Natural Succession	Roads to Natural Succession Scrub/Shrub
2161	Impervious Roads to Wetlands, Riverine Non-forested	Roads to Riverine Wetlands Barren
2162	Impervious Roads to Wetlands, Riverine Non-forested	Roads to Riverine Wetlands Herbaceous
2164	Impervious Roads to Tree Canopy, Other	Roads to Riverine Wetlands Tree Canopy
2165	Impervious Roads to Forest	Roads to Riverine Wetlands Forest
2171	Impervious Roads to Wetlands, Terrene Non-forested	Roads to Terrene Wetlands Barren
2172	Impervious Roads to Wetlands, Terrene Non-forested	Roads to Terrene Wetlands Herbaceous
2174	Impervious Roads to Tree Canopy, Other	Roads to Terrene Wetlands Tree Canopy
2175	Impervious Roads to Forest	Roads to Terrene Wetlands Forest
2181	Impervious Roads to Cropland	Roads to Cropland Barren
2182	Impervious Roads to Cropland	Roads to Cropland Herbaceous
2183	Impervious Roads to Pasture/Hay	Roads to Pasture/Hay Barren
2184	Impervious Roads to Pasture/Hay	Roads to Pasture/Hay Herbaceous
2187	Impervious Roads to Cropland	Roads to Orchard/Vineyard Herbaceous
2191	Impervious Roads to Wetlands, Tidal Non-forested	Roads to Tidal Wetlands Barren
2192	Impervious Roads to Wetlands, Tidal Non-forested	Roads to Tidal Wetlands Herbaceous
2194	Impervious Roads to Tree Canopy, Other	Roads to Tidal Wetlands Tree Canopy
2195	Impervious Roads to Forest	Roads to Tidal Wetlands Forest
2212	Impervious Structures to Water	Structures to Lakes and Reservoirs
2213	Impervious Structures to Water	Structures to Riverine Ponds
2214	Impervious Structures to Water	Structures to Terrene Ponds
2215	Impervious Structures to Water	Structures to Lotic Water (fresh)
2216	Impervious Structures to Natural Succession	Structures to Bare Shore
2221	Impervious Structures to Impervious Roads	Structures to Roads
2223	Impervious Structures to Impervious, Other	Structures to Other Impervious
2225	Impervious Structures to Tree Canopy over Impervious	Structures to Tree Canopy Over Structures
2227	Impervious Structures to Tree Canopy over Turf Grass	Structures to Tree Canopy Over Turf Grass
2228	Impervious Structures to Turf Grass	Structures to Turf Grass
2229	Impervious Structures to Pervious Developed, Other	Structures to Transitional Barren
2231	Impervious Structures to Harvested Forest	Structures to Harvested Forest Barren
2232	Impervious Structures to Harvested Forest	Structures to Harvested Forest Herbaceous

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Value	GenLULCChg	LULCChg
2235	Impervious Structures to Pervious Developed, Other	Structures to Solar Field Herbaceous
2237	Impervious Structures to Extractive	Structures to Extractive Barren
2241	Impervious Structures to Forest	Structures to Forest
2242	Impervious Structures to Tree Canopy, Other	Structures to Other Tree Canopy
2251	Impervious Structures to Pervious Developed, Other	Structures to Suspended Succession Barren
2252	Impervious Structures to Pervious Developed, Other	Structures to Suspended Succession Herbaceous
2253	Impervious Structures to Pervious Developed, Other	Structures to Suspended Succession Scrub/Shrub
2254	Impervious Structures to Natural Succession	Structures to Natural Succession Barren
2255	Impervious Structures to Natural Succession	Structures to Natural Succession Herbaceous
2256	Impervious Structures to Natural Succession	Structures to Natural Succession Scrub/Shrub
2261	Impervious Structures to Wetlands, Riverine Non-forested	Structures to Riverine Wetlands Barren
2262	Impervious Structures to Wetlands, Riverine Non-forested	Structures to Riverine Wetlands Herbaceous
2264	Impervious Structures to Tree Canopy, Other	Structures to Riverine Wetlands Tree Canopy
2265	Impervious Structures to Forest	Structures to Riverine Wetlands Forest
2272	Impervious Structures to Wetlands, Terrene Non-forested	Structures to Terrene Wetlands Herbaceous
2274	Impervious Structures to Tree Canopy, Other	Structures to Terrene Wetlands Tree Canopy
2275	Impervious Structures to Forest	Structures to Terrene Wetlands Forest
2281	Impervious Structures to Cropland	Structures to Cropland Barren
2282	Impervious Structures to Cropland	Structures to Cropland Herbaceous
2283	Impervious Structures to Pasture/Hay	Structures to Pasture/Hay Barren
2284	Impervious Structures to Pasture/Hay	Structures to Pasture/Hay Herbaceous
2287	Impervious Structures to Cropland	Structures to Orchard/Vineyard Herbaceous
2292	Impervious Structures to Wetlands, Tidal Non-forested	Structures to Tidal Wetlands Herbaceous
2294	Impervious Structures to Tree Canopy, Other	Structures to Tidal Wetlands Tree Canopy
2295	Impervious Structures to Forest	Structures to Tidal Wetlands Forest
2311	Impervious, Other to Water	Other Impervious to Estuarine/Marine
2312	Impervious, Other to Water	Other Impervious to Lakes and Reservoirs
2313	Impervious, Other to Water	Other Impervious to Riverine Ponds
2314	Impervious, Other to Water	Other Impervious to Terrene Ponds
2315	Impervious, Other to Water	Other Impervious to Lotic Water (fresh)
2316	Impervious, Other to Natural Succession	Other Impervious to Bare Shore
2321	Impervious, Other to Impervious Roads	Other Impervious to Roads
2322	Impervious, Other to Impervious Structures	Other Impervious to Structures
2324	Impervious, Other to Tree Canopy over Impervious	Other Impervious to Tree Canopy Over Roads
2325	Impervious, Other to Tree Canopy over Impervious	Other Impervious to Tree Canopy Over Structures
2326	Impervious, Other to Tree Canopy over Impervious	Other Impervious to Tree Canopy Over Other Impervious
2327	Impervious, Other to Tree Canopy over Turf Grass	Other Impervious to Tree Canopy Over Turf Grass
2328	Impervious, Other to Turf Grass	Other Impervious to Turf Grass
2329	Impervious, Other to Pervious Developed, Other	Other Impervious to Transitional Barren
2331	Impervious, Other to Harvested Forest	Other Impervious to Harvested Forest Barren

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Value	GenLULCChg	LULCChg
2332	Impervious, Other to Harvested Forest	Other Impervious to Harvested Forest Herbaceous
2334	Impervious, Other to Pervious Developed, Other	Other Impervious to Solar Field Barren
2335	Impervious, Other to Pervious Developed, Other	Other Impervious to Solar Field Herbaceous
2337	Impervious, Other to Extractive	Other Impervious to Extractive Barren
2341	Impervious, Other to Forest	Other Impervious to Forest
2342	Impervious, Other to Tree Canopy, Other	Other Impervious to Other Tree Canopy
2351	Impervious, Other to Pervious Developed, Other	Other Impervious to Suspended Succession Barren
2352	Impervious, Other to Pervious Developed, Other	Other Impervious to Suspended Succession Herbaceous
2353	Impervious, Other to Pervious Developed, Other	Other Impervious to Suspended Succession Scrub/Shrub
2354	Impervious, Other to Natural Succession	Other Impervious to Natural Succession Barren
2355	Impervious, Other to Natural Succession	Other Impervious to Natural Succession Herbaceous
2356	Impervious, Other to Natural Succession	Other Impervious to Natural Succession Scrub/Shrub
2361	Impervious, Other to Wetlands, Riverine Non-forested	Other Impervious to Riverine Wetlands Barren
2362	Impervious, Other to Wetlands, Riverine Non-forested	Other Impervious to Riverine Wetlands Herbaceous
2363	Impervious, Other to Wetlands, Riverine Non-forested	Other Impervious to Riverine Wetlands Scrub/Shrub
2364	Impervious, Other to Tree Canopy, Other	Other Impervious to Riverine Wetlands Tree Canopy
2365	Impervious, Other to Forest	Other Impervious to Riverine Wetlands Forest
2371	Impervious, Other to Wetlands, Terrene Non-forested	Other Impervious to Terrene Wetlands Barren
2372	Impervious, Other to Wetlands, Terrene Non-forested	Other Impervious to Terrene Wetlands Herbaceous
2374	Impervious, Other to Tree Canopy, Other	Other Impervious to Terrene Wetlands Tree Canopy
2375	Impervious, Other to Forest	Other Impervious to Terrene Wetlands Forest
2381	Impervious, Other to Cropland	Other Impervious to Cropland Barren
2382	Impervious, Other to Cropland	Other Impervious to Cropland Herbaceous
2383	Impervious, Other to Pasture/Hay	Other Impervious to Pasture/Hay Barren
2384	Impervious, Other to Pasture/Hay	Other Impervious to Pasture/Hay Herbaceous
2386	Impervious, Other to Cropland	Other Impervious to Orchard/Vineyard Barren
2387	Impervious, Other to Cropland	Other Impervious to Orchard/Vineyard Herbaceous
2391	Impervious, Other to Wetlands, Tidal Non-forested	Other Impervious to Tidal Wetlands Barren
2392	Impervious, Other to Wetlands, Tidal Non-forested	Other Impervious to Tidal Wetlands Herbaceous
2393	Impervious, Other to Wetlands, Tidal Non-forested	Other Impervious to Tidal Wetlands Scrub/Shrub
2394	Impervious, Other to Tree Canopy, Other	Other Impervious to Tidal Wetlands Tree Canopy
2395	Impervious, Other to Forest	Other Impervious to Tidal Wetlands Forest
2412	Tree Canopy over Impervious to Water	Tree Canopy Over Roads to Lakes and Reservoirs
2413	Tree Canopy over Impervious to Water	Tree Canopy Over Roads to Riverine Ponds
2414	Tree Canopy over Impervious to Water	Tree Canopy Over Roads to Terrene Ponds
2415	Tree Canopy over Impervious to Water	Tree Canopy Over Roads to Lotic Water (fresh)
2416	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Roads to Bare Shore
2421	Tree Canopy over Impervious to Impervious Roads	Tree Canopy Over Roads to Roads
2422	Tree Canopy over Impervious to Impervious Structures	Tree Canopy Over Roads to Structures
2423	Tree Canopy over Impervious to Impervious, Other	Tree Canopy Over Roads to Other Impervious
2426	Tree Canopy over Impervious to Tree Canopy over Impervious	Tree Canopy Over Roads to Tree Canopy Over Other Impervious

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Value	GenLULCChg	LULCChg
2428	Tree Canopy over Impervious to Turf Grass	Tree Canopy Over Roads to Turf Grass
2429	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Roads to Transitional Barren
2431	Tree Canopy over Impervious to Harvested Forest	Tree Canopy Over Roads to Harvested Forest Barren
2432	Tree Canopy over Impervious to Harvested Forest	Tree Canopy Over Roads to Harvested Forest Herbaceous
2435	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Roads to Solar Field Herbaceous
2437	Tree Canopy over Impervious to Extractive	Tree Canopy Over Roads to Extractive Barren
2451	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Roads to Suspended Succession Barren
2452	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Roads to Suspended Succession Herbaceous
2453	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Roads to Suspended Succession Scrub/Shrub
2454	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Roads to Natural Succession Barren
2455	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Roads to Natural Succession Herbaceous
2456	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Roads to Natural Succession Scrub/Shrub
2461	Tree Canopy over Impervious to Wetlands, Riverine Non-forested	Tree Canopy Over Roads to Riverine Wetlands Barren
2462	Tree Canopy over Impervious to Wetlands, Riverine Non-forested	Tree Canopy Over Roads to Riverine Wetlands Herbaceous
2463	Tree Canopy over Impervious to Wetlands, Riverine Non-forested	Tree Canopy Over Roads to Riverine Wetlands Scrub/Shrub
2471	Tree Canopy over Impervious to Wetlands, Terrene Non-forested	Tree Canopy Over Roads to Terrene Wetlands Barren
2472	Tree Canopy over Impervious to Wetlands, Terrene Non-forested	Tree Canopy Over Roads to Terrene Wetlands Herbaceous
2481	Tree Canopy over Impervious to Cropland	Tree Canopy Over Roads to Cropland Barren
2482	Tree Canopy over Impervious to Cropland	Tree Canopy Over Roads to Cropland Herbaceous
2483	Tree Canopy over Impervious to Pasture/Hay	Tree Canopy Over Roads to Pasture/Hay Barren
2484	Tree Canopy over Impervious to Pasture/Hay	Tree Canopy Over Roads to Pasture/Hay Herbaceous
2487	Tree Canopy over Impervious to Cropland	Tree Canopy Over Roads to Orchard/Vineyard Herbaceous
2488	Tree Canopy over Impervious to Cropland	Tree Canopy Over Roads to Orchard/Vineyard Scrub/Shrub
2491	Tree Canopy over Impervious to Wetlands, Tidal Non-forested	Tree Canopy Over Roads to Tidal Wetlands Barren
2492	Tree Canopy over Impervious to Wetlands, Tidal Non-forested	Tree Canopy Over Roads to Tidal Wetlands Herbaceous
2513	Tree Canopy over Impervious to Water	Tree Canopy Over Structures to Riverine Ponds
2514	Tree Canopy over Impervious to Water	Tree Canopy Over Structures to Terrene Ponds
2521	Tree Canopy over Impervious to Impervious Roads	Tree Canopy Over Structures to Roads
2522	Tree Canopy over Impervious to Impervious Structures	Tree Canopy Over Structures to Structures
2523	Tree Canopy over Impervious to Impervious, Other	Tree Canopy Over Structures to Other Impervious

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Value	GenLULCChg	LULCChg
2526	Tree Canopy over Impervious to Tree Canopy over Impervious	Tree Canopy Over Structures to Tree Canopy Over Other Impervious
2528	Tree Canopy over Impervious to Turf Grass	Tree Canopy Over Structures to Turf Grass
2529	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Structures to Transitional Barren
2531	Tree Canopy over Impervious to Harvested Forest	Tree Canopy Over Structures to Harvested Forest Barren
2532	Tree Canopy over Impervious to Harvested Forest	Tree Canopy Over Structures to Harvested Forest Herbaceous
2537	Tree Canopy over Impervious to Extractive	Tree Canopy Over Structures to Extractive Barren
2551	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Structures to Suspended Succession Barren
2552	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Structures to Suspended Succession Herbaceous
2554	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Structures to Natural Succession Barren
2555	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Structures to Natural Succession Herbaceous
2556	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Structures to Natural Succession Scrub/Shrub
2561	Tree Canopy over Impervious to Wetlands, Riverine Non-forested	Tree Canopy Over Structures to Riverine Wetlands Barren
2562	Tree Canopy over Impervious to Wetlands, Riverine Non-forested	Tree Canopy Over Structures to Riverine Wetlands Herbaceous
2571	Tree Canopy over Impervious to Wetlands, Terrene Non-forested	Tree Canopy Over Structures to Terrene Wetlands Barren
2581	Tree Canopy over Impervious to Cropland	Tree Canopy Over Structures to Cropland Barren
2582	Tree Canopy over Impervious to Cropland	Tree Canopy Over Structures to Cropland Herbaceous
2583	Tree Canopy over Impervious to Pasture/Hay	Tree Canopy Over Structures to Pasture/Hay Barren
2584	Tree Canopy over Impervious to Pasture/Hay	Tree Canopy Over Structures to Pasture/Hay Herbaceous
2587	Tree Canopy over Impervious to Cropland	Tree Canopy Over Structures to Orchard/Vineyard Herbaceous
2591	Tree Canopy over Impervious to Wetlands, Tidal Non-forested	Tree Canopy Over Structures to Tidal Wetlands Barren
2592	Tree Canopy over Impervious to Wetlands, Tidal Non-forested	Tree Canopy Over Structures to Tidal Wetlands Herbaceous
2611	Tree Canopy over Impervious to Water	Tree Canopy Over Other Impervious to Estuarine/Marine
2612	Tree Canopy over Impervious to Water	Tree Canopy Over Other Impervious to Lakes and Reservoirs
2613	Tree Canopy over Impervious to Water	Tree Canopy Over Other Impervious to Riverine Ponds
2614	Tree Canopy over Impervious to Water	Tree Canopy Over Other Impervious to Terrene Ponds
2615	Tree Canopy over Impervious to Water	Tree Canopy Over Other Impervious to Lotic Water (fresh)
2616	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Other Impervious to Bare Shore
2621	Tree Canopy over Impervious to Impervious Roads	Tree Canopy Over Other Impervious to Roads
2622	Tree Canopy over Impervious to Impervious Structures	Tree Canopy Over Other Impervious to Structures
2623	Tree Canopy over Impervious to Impervious, Other	Tree Canopy Over Other Impervious to Other Impervious

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Value	GenLULCChg	LULCChg
2624	Tree Canopy over Impervious to Tree Canopy over Impervious	Tree Canopy Over Other Impervious to Tree Canopy Over Roads
2628	Tree Canopy over Impervious to Turf Grass	Tree Canopy Over Other Impervious to Turf Grass
2629	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Other Impervious to Transitional Barren
2631	Tree Canopy over Impervious to Harvested Forest	Tree Canopy Over Other Impervious to Harvested Forest Barren
2632	Tree Canopy over Impervious to Harvested Forest	Tree Canopy Over Other Impervious to Harvested Forest Herbaceous
2634	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Other Impervious to Solar Field Barren
2635	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Other Impervious to Solar Field Herbaceous
2637	Tree Canopy over Impervious to Extractive	Tree Canopy Over Other Impervious to Extractive Barren
2651	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Other Impervious to Suspended Succession Barren
2652	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Other Impervious to Suspended Succession Herbaceous
2653	Tree Canopy over Impervious to Pervious Developed, Other	Tree Canopy Over Other Impervious to Suspended Succession Scrub/Shrub
2654	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Other Impervious to Natural Succession Barren
2655	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Other Impervious to Natural Succession Herbaceous
2656	Tree Canopy over Impervious to Natural Succession	Tree Canopy Over Other Impervious to Natural Succession Scrub/Shrub
2661	Tree Canopy over Impervious to Wetlands, Riverine Non-forested	Tree Canopy Over Other Impervious to Riverine Wetlands Barren
2662	Tree Canopy over Impervious to Wetlands, Riverine Non-forested	Tree Canopy Over Other Impervious to Riverine Wetlands Herbaceous
2663	Tree Canopy over Impervious to Wetlands, Riverine Non-forested	Tree Canopy Over Other Impervious to Riverine Wetlands Scrub/Shrub
2671	Tree Canopy over Impervious to Wetlands, Terrene Non-forested	Tree Canopy Over Other Impervious to Terrene Wetlands Barren
2672	Tree Canopy over Impervious to Wetlands, Terrene Non-forested	Tree Canopy Over Other Impervious to Terrene Wetlands Herbaceous
2681	Tree Canopy over Impervious to Cropland	Tree Canopy Over Other Impervious to Cropland Barren
2682	Tree Canopy over Impervious to Cropland	Tree Canopy Over Other Impervious to Cropland Herbaceous
2683	Tree Canopy over Impervious to Pasture/Hay	Tree Canopy Over Other Impervious to Pasture/Hay Barren
2684	Tree Canopy over Impervious to Pasture/Hay	Tree Canopy Over Other Impervious to Pasture/Hay Herbaceous
2687	Tree Canopy over Impervious to Cropland	Tree Canopy Over Other Impervious to Orchard/Vineyard Herbaceous
2691	Tree Canopy over Impervious to Wetlands, Tidal Non-forested	Tree Canopy Over Other Impervious to Tidal Wetlands Barren
2692	Tree Canopy over Impervious to Wetlands, Tidal Non-forested	Tree Canopy Over Other Impervious to Tidal Wetlands Herbaceous

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Value	GenLULCChg	LULCChg
2693	Tree Canopy over Impervious to Wetlands, Tidal Non-forested	Tree Canopy Over Other Impervious to Tidal Wetlands Scrub/Shrub
2711	Tree Canopy over Turf Grass to Water	Tree Canopy Over Turf Grass to Estuarine/Marine
2712	Tree Canopy over Turf Grass to Water	Tree Canopy Over Turf Grass to Lakes and Reservoirs
2713	Tree Canopy over Turf Grass to Water	Tree Canopy Over Turf Grass to Riverine Ponds
2714	Tree Canopy over Turf Grass to Water	Tree Canopy Over Turf Grass to Terrene Ponds
2715	Tree Canopy over Turf Grass to Water	Tree Canopy Over Turf Grass to Lotic Water (fresh)
2716	Tree Canopy over Turf Grass to Natural Succession	Tree Canopy Over Turf Grass to Bare Shore
2721	Tree Canopy over Turf Grass to Impervious Roads	Tree Canopy Over Turf Grass to Roads
2722	Tree Canopy over Turf Grass to Impervious Structures	Tree Canopy Over Turf Grass to Structures
2723	Tree Canopy over Turf Grass to Impervious, Other	Tree Canopy Over Turf Grass to Other Impervious
2724	Tree Canopy over Turf Grass to Tree Canopy over Impervious	Tree Canopy Over Turf Grass to Tree Canopy Over Roads
2725	Tree Canopy over Turf Grass to Tree Canopy over Impervious	Tree Canopy Over Turf Grass to Tree Canopy Over Structures
2726	Tree Canopy over Turf Grass to Tree Canopy over Impervious	Tree Canopy Over Turf Grass to Tree Canopy Over Other Impervious
2728	Tree Canopy over Turf Grass to Turf Grass	Tree Canopy Over Turf Grass to Turf Grass
2729	Tree Canopy over Turf Grass to Pervious Developed, Other	Tree Canopy Over Turf Grass to Transitional Barren
2731	Tree Canopy over Turf Grass to Harvested Forest	Tree Canopy Over Turf Grass to Harvested Forest Barren
2732	Tree Canopy over Turf Grass to Harvested Forest	Tree Canopy Over Turf Grass to Harvested Forest Herbaceous
2734	Tree Canopy over Turf Grass to Pervious Developed, Other	Tree Canopy Over Turf Grass to Solar Field Barren
2735	Tree Canopy over Turf Grass to Pervious Developed, Other	Tree Canopy Over Turf Grass to Solar Field Herbaceous
2737	Tree Canopy over Turf Grass to Extractive	Tree Canopy Over Turf Grass to Extractive Barren
2751	Tree Canopy over Turf Grass to Pervious Developed, Other	Tree Canopy Over Turf Grass to Suspended Succession Barren
2752	Tree Canopy over Turf Grass to Pervious Developed, Other	Tree Canopy Over Turf Grass to Suspended Succession Herbaceous
2753	Tree Canopy over Turf Grass to Pervious Developed, Other	Tree Canopy Over Turf Grass to Suspended Succession Scrub/Shrub
2754	Tree Canopy over Turf Grass to Natural Succession	Tree Canopy Over Turf Grass to Natural Succession Barren
2755	Tree Canopy over Turf Grass to Natural Succession	Tree Canopy Over Turf Grass to Natural Succession Herbaceous
2756	Tree Canopy over Turf Grass to Natural Succession	Tree Canopy Over Turf Grass to Natural Succession Scrub/Shrub
2781	Tree Canopy over Turf Grass to Cropland	Tree Canopy Over Turf Grass to Cropland Barren
2782	Tree Canopy over Turf Grass to Cropland	Tree Canopy Over Turf Grass to Cropland Herbaceous
2783	Tree Canopy over Turf Grass to Pasture/Hay	Tree Canopy Over Turf Grass to Pasture/Hay Barren
2784	Tree Canopy over Turf Grass to Pasture/Hay	Tree Canopy Over Turf Grass to Pasture/Hay Herbaceous
2785	Tree Canopy over Turf Grass to Pasture/Hay	Tree Canopy Over Turf Grass to Pasture/Hay Scrub/Shrub

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Value	GenLULCChg	LULCChg
2787	Tree Canopy over Turf Grass to Cropland	Tree Canopy Over Turf Grass to Orchard/Vineyard Herbaceous
2816	Turf Grass to Natural Succession	Turf Grass to Bare Shore
2821	Turf Grass to Impervious Roads	Turf Grass to Roads
2822	Turf Grass to Impervious Structures	Turf Grass to Structures
2823	Turf Grass to Impervious, Other	Turf Grass to Other Impervious
2825	Turf Grass to Tree Canopy over Impervious	Turf Grass to Tree Canopy Over Structures
2826	Turf Grass to Tree Canopy over Impervious	Turf Grass to Tree Canopy Over Other Impervious
2827	Turf Grass to Tree Canopy over Turf Grass	Turf Grass to Tree Canopy Over Turf Grass
2829	Turf Grass to Pervious Developed, Other	Turf Grass to Transitional Barren
2831	Turf Grass to Harvested Forest	Turf Grass to Harvested Forest Barren
2832	Turf Grass to Harvested Forest	Turf Grass to Harvested Forest Herbaceous
2837	Turf Grass to Extractive	Turf Grass to Extractive Barren
2841	Turf Grass to Forest	Turf Grass to Forest
2842	Turf Grass to Tree Canopy, Other	Turf Grass to Other Tree Canopy
2851	Turf Grass to Pervious Developed, Other	Turf Grass to Suspended Succession Barren
2852	Turf Grass to Pervious Developed, Other	Turf Grass to Suspended Succession Herbaceous
2853	Turf Grass to Pervious Developed, Other	Turf Grass to Suspended Succession Scrub/Shrub
2854	Turf Grass to Natural Succession	Turf Grass to Natural Succession Barren
2855	Turf Grass to Natural Succession	Turf Grass to Natural Succession Herbaceous
2856	Turf Grass to Natural Succession	Turf Grass to Natural Succession Scrub/Shrub
2881	Turf Grass to Cropland	Turf Grass to Cropland Barren
2882	Turf Grass to Cropland	Turf Grass to Cropland Herbaceous
2883	Turf Grass to Pasture/Hay	Turf Grass to Pasture/Hay Barren
2884	Turf Grass to Pasture/Hay	Turf Grass to Pasture/Hay Herbaceous
2921	Pervious Developed, Other to Impervious Roads	Transitional Barren to Roads
2922	Pervious Developed, Other to Impervious Structures	Transitional Barren to Structures
2923	Pervious Developed, Other to Impervious, Other	Transitional Barren to Other Impervious
2927	Pervious Developed, Other to Tree Canopy over Turf Grass	Transitional Barren to Tree Canopy Over Turf Grass
2928	Pervious Developed, Other to Turf Grass	Transitional Barren to Turf Grass
2941	Pervious Developed, Other to Forest	Transitional Barren to Forest
2942	Pervious Developed, Other to Tree Canopy, Other	Transitional Barren to Other Tree Canopy
2951	Pervious Developed, Other to Pervious Developed, Other	Transitional Barren to Suspended Succession Barren
2952	Pervious Developed, Other to Pervious Developed, Other	Transitional Barren to Suspended Succession Herbaceous
2981	Pervious Developed, Other to Cropland	Transitional Barren to Cropland Barren
2982	Pervious Developed, Other to Cropland	Transitional Barren to Cropland Herbaceous
3231	Harvested Forest to Harvested Forest	Harvested Forest Herbaceous to Harvested Forest Barren
3255	Harvested Forest to Natural Succession	Harvested Forest Herbaceous to Natural Succession Herbaceous
3829	Extractive to Pervious Developed, Other	Extractive Impervious to Transitional Barren
3837	Extractive to Extractive	Extractive Impervious to Extractive Barren

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Value	GenLULCChg	LULCChg
3851	Extractive to Pervious Developed, Other	Extractive Impervious to Suspended Succession Barren
3854	Extractive to Natural Succession	Extractive Impervious to Natural Succession Barren
3855	Extractive to Natural Succession	Extractive Impervious to Natural Succession Herbaceous
3881	Extractive to Cropland	Extractive Impervious to Cropland Barren
3883	Extractive to Pasture/Hay	Extractive Impervious to Pasture/Hay Barren
4111	Forest to Water	Forest to Estuarine/Marine
4112	Forest to Water	Forest to Lakes and Reservoirs
4113	Forest to Water	Forest to Riverine Ponds
4114	Forest to Water	Forest to Terrene Ponds
4115	Forest to Water	Forest to Lotic Water (fresh)
4116	Forest to Natural Succession	Forest to Bare Shore
4121	Forest to Impervious Roads	Forest to Roads
4122	Forest to Impervious Structures	Forest to Structures
4123	Forest to Impervious, Other	Forest to Other Impervious
4124	Forest to Tree Canopy over Impervious	Forest to Tree Canopy Over Roads
4126	Forest to Tree Canopy over Impervious	Forest to Tree Canopy Over Other Impervious
4127	Forest to Tree Canopy over Turf Grass	Forest to Tree Canopy Over Turf Grass
4128	Forest to Turf Grass	Forest to Turf Grass
4129	Forest to Pervious Developed, Other	Forest to Transitional Barren
4131	Forest to Harvested Forest	Forest to Harvested Forest Barren
4132	Forest to Harvested Forest	Forest to Harvested Forest Herbaceous
4134	Forest to Pervious Developed, Other	Forest to Solar Field Barren
4135	Forest to Pervious Developed, Other	Forest to Solar Field Herbaceous
4137	Forest to Extractive	Forest to Extractive Barren
4142	Forest to Tree Canopy, Other	Forest to Other Tree Canopy
4151	Forest to Pervious Developed, Other	Forest to Suspended Succession Barren
4152	Forest to Pervious Developed, Other	Forest to Suspended Succession Herbaceous
4153	Forest to Pervious Developed, Other	Forest to Suspended Succession Scrub/Shrub
4154	Forest to Natural Succession	Forest to Natural Succession Barren
4155	Forest to Natural Succession	Forest to Natural Succession Herbaceous
4156	Forest to Natural Succession	Forest to Natural Succession Scrub/Shrub
4181	Forest to Cropland	Forest to Cropland Barren
4182	Forest to Cropland	Forest to Cropland Herbaceous
4183	Forest to Pasture/Hay	Forest to Pasture/Hay Barren
4184	Forest to Pasture/Hay	Forest to Pasture/Hay Herbaceous
4187	Forest to Cropland	Forest to Orchard/Vineyard Herbaceous
4211	Tree Canopy, Other to Water	Other Tree Canopy to Estuarine/Marine
4212	Tree Canopy, Other to Water	Other Tree Canopy to Lakes and Reservoirs
4213	Tree Canopy, Other to Water	Other Tree Canopy to Riverine Ponds
4214	Tree Canopy, Other to Water	Other Tree Canopy to Terrene Ponds
4215	Tree Canopy, Other to Water	Other Tree Canopy to Lotic Water (fresh)
4216	Tree Canopy, Other to Natural Succession	Other Tree Canopy to Bare Shore

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Value	GenLULCChg	LULCChg
4221	Tree Canopy, Other to Impervious Roads	Other Tree Canopy to Roads
4222	Tree Canopy, Other to Impervious Structures	Other Tree Canopy to Structures
4223	Tree Canopy, Other to Impervious, Other	Other Tree Canopy to Other Impervious
4224	Tree Canopy, Other to Tree Canopy over Impervious	Other Tree Canopy to Tree Canopy Over Roads
4225	Tree Canopy, Other to Tree Canopy over Impervious	Other Tree Canopy to Tree Canopy Over Structures
4226	Tree Canopy, Other to Tree Canopy over Impervious	Other Tree Canopy to Tree Canopy Over Other Impervious
4227	Tree Canopy, Other to Tree Canopy over Turf Grass	Other Tree Canopy to Tree Canopy Over Turf Grass
4228	Tree Canopy, Other to Turf Grass	Other Tree Canopy to Turf Grass
4229	Tree Canopy, Other to Pervious Developed, Other	Other Tree Canopy to Transitional Barren
4231	Tree Canopy, Other to Harvested Forest	Other Tree Canopy to Harvested Forest Barren
4232	Tree Canopy, Other to Harvested Forest	Other Tree Canopy to Harvested Forest Herbaceous
4234	Tree Canopy, Other to Pervious Developed, Other	Other Tree Canopy to Solar Field Barren
4235	Tree Canopy, Other to Pervious Developed, Other	Other Tree Canopy to Solar Field Herbaceous
4237	Tree Canopy, Other to Extractive	Other Tree Canopy to Extractive Barren
4251	Tree Canopy, Other to Pervious Developed, Other	Other Tree Canopy to Suspended Succession Barren
4252	Tree Canopy, Other to Pervious Developed, Other	Other Tree Canopy to Suspended Succession Herbaceous
4253	Tree Canopy, Other to Pervious Developed, Other	Other Tree Canopy to Suspended Succession Scrub/Shrub
4254	Tree Canopy, Other to Natural Succession	Other Tree Canopy to Natural Succession Barren
4255	Tree Canopy, Other to Natural Succession	Other Tree Canopy to Natural Succession Herbaceous
4256	Tree Canopy, Other to Natural Succession	Other Tree Canopy to Natural Succession Scrub/Shrub
4281	Tree Canopy, Other to Cropland	Other Tree Canopy to Cropland Barren
4282	Tree Canopy, Other to Cropland	Other Tree Canopy to Cropland Herbaceous
4283	Tree Canopy, Other to Pasture/Hay	Other Tree Canopy to Pasture/Hay Barren
4284	Tree Canopy, Other to Pasture/Hay	Other Tree Canopy to Pasture/Hay Herbaceous
4285	Tree Canopy, Other to Pasture/Hay	Other Tree Canopy to Pasture/Hay Scrub/Shrub
4287	Tree Canopy, Other to Cropland	Other Tree Canopy to Orchard/Vineyard Herbaceous
4288	Tree Canopy, Other to Cropland	Other Tree Canopy to Orchard/Vineyard Scrub/Shrub
5111	Pervious Developed, Other to Water	Suspended Succession Barren to Estuarine/Marine
5112	Pervious Developed, Other to Water	Suspended Succession Barren to Lakes and Reservoirs
5113	Pervious Developed, Other to Water	Suspended Succession Barren to Riverine Ponds
5114	Pervious Developed, Other to Water	Suspended Succession Barren to Terrene Ponds
5115	Pervious Developed, Other to Water	Suspended Succession Barren to Lotic Water (fresh)
5116	Pervious Developed, Other to Natural Succession	Suspended Succession Barren to Bare Shore
5121	Pervious Developed, Other to Impervious Roads	Suspended Succession Barren to Roads
5123	Pervious Developed, Other to Impervious, Other	Suspended Succession Barren to Other Impervious
5128	Pervious Developed, Other to Turf Grass	Suspended Succession Barren to Turf Grass
5129	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Barren to Transitional Barren
5132	Pervious Developed, Other to Harvested Forest	Suspended Succession Barren to Harvested Forest Herbaceous

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Value	GenLULCChg	LULCChg
5152	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Barren to Suspended Succession Herbaceous
5153	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Barren to Suspended Succession Scrub/Shrub
5155	Pervious Developed, Other to Natural Succession	Suspended Succession Barren to Natural Succession Herbaceous
5156	Pervious Developed, Other to Natural Succession	Suspended Succession Barren to Natural Succession Scrub/Shrub
5181	Pervious Developed, Other to Cropland	Suspended Succession Barren to Cropland Barren
5182	Pervious Developed, Other to Cropland	Suspended Succession Barren to Cropland Herbaceous
5184	Pervious Developed, Other to Pasture/Hay	Suspended Succession Barren to Pasture/Hay Herbaceous
5187	Pervious Developed, Other to Cropland	Suspended Succession Barren to Orchard/Vineyard Herbaceous
5216	Pervious Developed, Other to Natural Succession	Suspended Succession Herbaceous to Bare Shore
5221	Pervious Developed, Other to Impervious Roads	Suspended Succession Herbaceous to Roads
5222	Pervious Developed, Other to Impervious Structures	Suspended Succession Herbaceous to Structures
5223	Pervious Developed, Other to Impervious, Other	Suspended Succession Herbaceous to Other Impervious
5224	Pervious Developed, Other to Tree Canopy over Impervious	Suspended Succession Herbaceous to Tree Canopy Over Roads
5226	Pervious Developed, Other to Tree Canopy over Impervious	Suspended Succession Herbaceous to Tree Canopy Over Other Impervious
5227	Pervious Developed, Other to Tree Canopy over Turf Grass	Suspended Succession Herbaceous to Tree Canopy Over Turf Grass
5228	Pervious Developed, Other to Turf Grass	Suspended Succession Herbaceous to Turf Grass
5229	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Herbaceous to Transitional Barren
5231	Pervious Developed, Other to Harvested Forest	Suspended Succession Herbaceous to Harvested Forest Barren
5232	Pervious Developed, Other to Harvested Forest	Suspended Succession Herbaceous to Harvested Forest Herbaceous
5237	Pervious Developed, Other to Extractive	Suspended Succession Herbaceous to Extractive Barren
5241	Pervious Developed, Other to Forest	Suspended Succession Herbaceous to Forest
5242	Pervious Developed, Other to Tree Canopy, Other	Suspended Succession Herbaceous to Other Tree Canopy
5251	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Herbaceous to Suspended Succession Barren
5253	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Herbaceous to Suspended Succession Scrub/Shrub
5254	Pervious Developed, Other to Natural Succession	Suspended Succession Herbaceous to Natural Succession Barren
5255	Pervious Developed, Other to Natural Succession	Suspended Succession Herbaceous to Natural Succession Herbaceous
5256	Pervious Developed, Other to Natural Succession	Suspended Succession Herbaceous to Natural Succession Scrub/Shrub
5281	Pervious Developed, Other to Cropland	Suspended Succession Herbaceous to Cropland Barren

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Value	GenLULCChg	LULCChg
5282	Pervious Developed, Other to Cropland	Suspended Succession Herbaceous to Cropland Herbaceous
5283	Pervious Developed, Other to Pasture/Hay	Suspended Succession Herbaceous to Pasture/Hay Barren
5284	Pervious Developed, Other to Pasture/Hay	Suspended Succession Herbaceous to Pasture/Hay Herbaceous
5287	Pervious Developed, Other to Cropland	Suspended Succession Herbaceous to Orchard/Vineyard Herbaceous
5323	Pervious Developed, Other to Impervious, Other	Suspended Succession Scrub/Shrub to Other Impervious
5328	Pervious Developed, Other to Turf Grass	Suspended Succession Scrub/Shrub to Turf Grass
5329	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Scrub/Shrub to Transitional Barren
5331	Pervious Developed, Other to Harvested Forest	Suspended Succession Scrub/Shrub to Harvested Forest Barren
5332	Pervious Developed, Other to Harvested Forest	Suspended Succession Scrub/Shrub to Harvested Forest Herbaceous
5351	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Scrub/Shrub to Suspended Succession Barren
5352	Pervious Developed, Other to Pervious Developed, Other	Suspended Succession Scrub/Shrub to Suspended Succession Herbaceous
5354	Pervious Developed, Other to Natural Succession	Suspended Succession Scrub/Shrub to Natural Succession Barren
5355	Pervious Developed, Other to Natural Succession	Suspended Succession Scrub/Shrub to Natural Succession Herbaceous
5356	Pervious Developed, Other to Natural Succession	Suspended Succession Scrub/Shrub to Natural Succession Scrub/Shrub
5381	Pervious Developed, Other to Cropland	Suspended Succession Scrub/Shrub to Cropland Barren
5382	Pervious Developed, Other to Cropland	Suspended Succession Scrub/Shrub to Cropland Herbaceous
5383	Pervious Developed, Other to Pasture/Hay	Suspended Succession Scrub/Shrub to Pasture/Hay Barren
5384	Pervious Developed, Other to Pasture/Hay	Suspended Succession Scrub/Shrub to Pasture/Hay Herbaceous
5416	Natural Succession to Natural Succession	Natural Succession Barren to Bare Shore
5421	Natural Succession to Impervious Roads	Natural Succession Barren to Roads
5422	Natural Succession to Impervious Structures	Natural Succession Barren to Structures
5423	Natural Succession to Impervious, Other	Natural Succession Barren to Other Impervious
5426	Natural Succession to Tree Canopy over Impervious	Natural Succession Barren to Tree Canopy Over Other Impervious
5427	Natural Succession to Tree Canopy over Turf Grass	Natural Succession Barren to Tree Canopy Over Turf Grass
5428	Natural Succession to Turf Grass	Natural Succession Barren to Turf Grass
5429	Natural Succession to Pervious Developed, Other	Natural Succession Barren to Transitional Barren
5431	Natural Succession to Harvested Forest	Natural Succession Barren to Harvested Forest Barren
5432	Natural Succession to Harvested Forest	Natural Succession Barren to Harvested Forest Herbaceous
5435	Natural Succession to Pervious Developed, Other	Natural Succession Barren to Solar Field Herbaceous

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Value	GenLULCChg	LULCChg
5437	Natural Succession to Extractive	Natural Succession Barren to Extractive Barren
5441	Natural Succession to Forest	Natural Succession Barren to Forest
5442	Natural Succession to Tree Canopy, Other	Natural Succession Barren to Other Tree Canopy
5451	Natural Succession to Pervious Developed, Other	Natural Succession Barren to Suspended Succession Barren
5452	Natural Succession to Pervious Developed, Other	Natural Succession Barren to Suspended Succession Herbaceous
5453	Natural Succession to Pervious Developed, Other	Natural Succession Barren to Suspended Succession Scrub/Shrub
5455	Natural Succession to Natural Succession	Natural Succession Barren to Natural Succession Herbaceous
5456	Natural Succession to Natural Succession	Natural Succession Barren to Natural Succession Scrub/Shrub
5481	Natural Succession to Cropland	Natural Succession Barren to Cropland Barren
5482	Natural Succession to Cropland	Natural Succession Barren to Cropland Herbaceous
5483	Natural Succession to Pasture/Hay	Natural Succession Barren to Pasture/Hay Barren
5484	Natural Succession to Pasture/Hay	Natural Succession Barren to Pasture/Hay Herbaceous
5487	Natural Succession to Cropland	Natural Succession Barren to Orchard/Vineyard Herbaceous
5511	Natural Succession to Water	Natural Succession Herbaceous to Estuarine/Marine
5512	Natural Succession to Water	Natural Succession Herbaceous to Lakes and Reservoirs
5513	Natural Succession to Water	Natural Succession Herbaceous to Riverine Ponds
5514	Natural Succession to Water	Natural Succession Herbaceous to Terrene Ponds
5515	Natural Succession to Water	Natural Succession Herbaceous to Lotic Water (fresh)
5516	Natural Succession to Natural Succession	Natural Succession Herbaceous to Bare Shore
5523	Natural Succession to Impervious, Other	Natural Succession Herbaceous to Other Impervious
5526	Natural Succession to Tree Canopy over Impervious	Natural Succession Herbaceous to Tree Canopy Over Other Impervious
5527	Natural Succession to Tree Canopy over Turf Grass	Natural Succession Herbaceous to Tree Canopy Over Turf Grass
5528	Natural Succession to Turf Grass	Natural Succession Herbaceous to Turf Grass
5529	Natural Succession to Pervious Developed, Other	Natural Succession Herbaceous to Transitional Barren
5531	Natural Succession to Harvested Forest	Natural Succession Herbaceous to Harvested Forest Barren
5532	Natural Succession to Harvested Forest	Natural Succession Herbaceous to Harvested Forest Herbaceous
5541	Natural Succession to Forest	Natural Succession Herbaceous to Forest
5542	Natural Succession to Tree Canopy, Other	Natural Succession Herbaceous to Other Tree Canopy
5551	Natural Succession to Pervious Developed, Other	Natural Succession Herbaceous to Suspended Succession Barren
5552	Natural Succession to Pervious Developed, Other	Natural Succession Herbaceous to Suspended Succession Herbaceous
5553	Natural Succession to Pervious Developed, Other	Natural Succession Herbaceous to Suspended Succession Scrub/Shrub
5554	Natural Succession to Natural Succession	Natural Succession Herbaceous to Natural Succession Barren

Data Dictionary for the Chesapeake Bay Land Use/Land Cover Database, 2022 Edition

Value	GenLULCChg	LULCChg
5556	Natural Succession to Natural Succession	Natural Succession Herbaceous to Natural Succession Scrub/Shrub
5581	Natural Succession to Cropland	Natural Succession Herbaceous to Cropland Barren
5582	Natural Succession to Cropland	Natural Succession Herbaceous to Cropland Herbaceous
5583	Natural Succession to Pasture/Hay	Natural Succession Herbaceous to Pasture/Hay Barren
5584	Natural Succession to Pasture/Hay	Natural Succession Herbaceous to Pasture/Hay Herbaceous
5585	Natural Succession to Pasture/Hay	Natural Succession Herbaceous to Pasture/Hay Scrub/Shrub
5611	Natural Succession to Water	Natural Succession Scrub/Shrub to Estuarine/Marine
5612	Natural Succession to Water	Natural Succession Scrub/Shrub to Lakes and Reservoirs
5613	Natural Succession to Water	Natural Succession Scrub/Shrub to Riverine Ponds
5614	Natural Succession to Water	Natural Succession Scrub/Shrub to Terrene Ponds
5615	Natural Succession to Water	Natural Succession Scrub/Shrub to Lotic Water (fresh)
5616	Natural Succession to Natural Succession	Natural Succession Scrub/Shrub to Bare Shore
5621	Natural Succession to Impervious Roads	Natural Succession Scrub/Shrub to Roads
5622	Natural Succession to Impervious Structures	Natural Succession Scrub/Shrub to Structures
5623	Natural Succession to Impervious, Other	Natural Succession Scrub/Shrub to Other Impervious
5626	Natural Succession to Tree Canopy over Impervious	Natural Succession Scrub/Shrub to Tree Canopy Over Other Impervious
5627	Natural Succession to Tree Canopy over Turf Grass	Natural Succession Scrub/Shrub to Tree Canopy Over Turf Grass
5628	Natural Succession to Turf Grass	Natural Succession Scrub/Shrub to Turf Grass
5629	Natural Succession to Pervious Developed, Other	Natural Succession Scrub/Shrub to Transitional Barren
5631	Natural Succession to Harvested Forest	Natural Succession Scrub/Shrub to Harvested Forest Barren
5632	Natural Succession to Harvested Forest	Natural Succession Scrub/Shrub to Harvested Forest Herbaceous
5634	Natural Succession to Pervious Developed, Other	Natural Succession Scrub/Shrub to Solar Field Barren
5635	Natural Succession to Pervious Developed, Other	Natural Succession Scrub/Shrub to Solar Field Herbaceous
5637	Natural Succession to Extractive	Natural Succession Scrub/Shrub to Extractive Barren
5641	Natural Succession to Forest	Natural Succession Scrub/Shrub to Forest
5642	Natural Succession to Tree Canopy, Other	Natural Succession Scrub/Shrub to Other Tree Canopy
5651	Natural Succession to Pervious Developed, Other	Natural Succession Scrub/Shrub to Suspended Succession Barren
5652	Natural Succession to Pervious Developed, Other	Natural Succession Scrub/Shrub to Suspended Succession Herbaceous
5653	Natural Succession to Pervious Developed, Other	Natural Succession Scrub/Shrub to Suspended Succession Scrub/Shrub
5654	Natural Succession to Natural Succession	Natural Succession Scrub/Shrub to Natural Succession Barren
5655	Natural Succession to Natural Succession	Natural Succession Scrub/Shrub to Natural Succession Herbaceous
5681	Natural Succession to Cropland	Natural Succession Scrub/Shrub to Cropland Barren

Data Dictionary for the Chesapeake Bay Land Use/Land Cover Database, 2022 Edition

Value	GenLULCChg	LULCChg
5682	Natural Succession to Cropland	Natural Succession Scrub/Shrub to Cropland Herbaceous
5683	Natural Succession to Pasture/Hay	Natural Succession Scrub/Shrub to Pasture/Hay Barren
5684	Natural Succession to Pasture/Hay	Natural Succession Scrub/Shrub to Pasture/Hay Herbaceous
5685	Natural Succession to Pasture/Hay	Natural Succession Scrub/Shrub to Pasture/Hay Scrub/Shrub
6112	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Barren to Lakes and Reservoirs
6113	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Barren to Riverine Ponds
6114	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Barren to Terrene Ponds
6115	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Barren to Lotic Water (fresh)
6121	Wetlands, Riverine Non-forested to Impervious Roads	Riverine Wetlands Barren to Roads
6122	Wetlands, Riverine Non-forested to Impervious Structures	Riverine Wetlands Barren to Structures
6123	Wetlands, Riverine Non-forested to Impervious, Other	Riverine Wetlands Barren to Other Impervious
6128	Wetlands, Riverine Non-forested to Turf Grass	Riverine Wetlands Barren to Turf Grass
6132	Wetlands, Riverine Non-forested to Harvested Forest	Riverine Wetlands Barren to Harvested Forest Herbaceous
6137	Wetlands, Riverine Non-forested to Extractive	Riverine Wetlands Barren to Extractive Barren
6155	Wetlands, Riverine Non-forested to Natural Succession	Riverine Wetlands Barren to Natural Succession Herbaceous
6162	Wetlands, Riverine Non-forested to Wetlands, Riverine Non-forested	Riverine Wetlands Barren to Riverine Wetlands Herbaceous
6163	Wetlands, Riverine Non-forested to Wetlands, Riverine Non-forested	Riverine Wetlands Barren to Riverine Wetlands Scrub/Shrub
6164	Wetlands, Riverine Non-forested to Tree Canopy, Other	Riverine Wetlands Barren to Riverine Wetlands Tree Canopy
6165	Wetlands, Riverine Non-forested to Forest	Riverine Wetlands Barren to Riverine Wetlands Forest
6212	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Herbaceous to Lakes and Reservoirs
6213	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Herbaceous to Riverine Ponds
6214	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Herbaceous to Terrene Ponds
6215	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Herbaceous to Lotic Water (fresh)
6221	Wetlands, Riverine Non-forested to Impervious Roads	Riverine Wetlands Herbaceous to Roads
6222	Wetlands, Riverine Non-forested to Impervious Structures	Riverine Wetlands Herbaceous to Structures
6223	Wetlands, Riverine Non-forested to Impervious, Other	Riverine Wetlands Herbaceous to Other Impervious
6226	Wetlands, Riverine Non-forested to Tree Canopy over Impervious	Riverine Wetlands Herbaceous to Tree Canopy Over Other Impervious
6228	Wetlands, Riverine Non-forested to Turf Grass	Riverine Wetlands Herbaceous to Turf Grass
6231	Wetlands, Riverine Non-forested to Harvested Forest	Riverine Wetlands Herbaceous to Harvested Forest Barren
6232	Wetlands, Riverine Non-forested to Harvested Forest	Riverine Wetlands Herbaceous to Harvested Forest Herbaceous
6237	Wetlands, Riverine Non-forested to Extractive	Riverine Wetlands Herbaceous to Extractive Barren
6254	Wetlands, Riverine Non-forested to Natural Succession	Riverine Wetlands Herbaceous to Natural Succession Barren

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Value	GenLULCChg	LULCChg
6255	Wetlands, Riverine Non-forested to Natural Succession	Riverine Wetlands Herbaceous to Natural Succession Herbaceous
6261	Wetlands, Riverine Non-forested to Wetlands, Riverine Non-forested	Riverine Wetlands Herbaceous to Riverine Wetlands Barren
6263	Wetlands, Riverine Non-forested to Wetlands, Riverine Non-forested	Riverine Wetlands Herbaceous to Riverine Wetlands Scrub/Shrub
6264	Wetlands, Riverine Non-forested to Tree Canopy, Other	Riverine Wetlands Herbaceous to Riverine Wetlands Tree Canopy
6265	Wetlands, Riverine Non-forested to Forest	Riverine Wetlands Herbaceous to Riverine Wetlands Forest
6312	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Scrub/Shrub to Lakes and Reservoirs
6313	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Scrub/Shrub to Riverine Ponds
6315	Wetlands, Riverine Non-forested to Water	Riverine Wetlands Scrub/Shrub to Lotic Water (fresh)
6321	Wetlands, Riverine Non-forested to Impervious Roads	Riverine Wetlands Scrub/Shrub to Roads
6322	Wetlands, Riverine Non-forested to Impervious Structures	Riverine Wetlands Scrub/Shrub to Structures
6323	Wetlands, Riverine Non-forested to Impervious, Other	Riverine Wetlands Scrub/Shrub to Other Impervious
6328	Wetlands, Riverine Non-forested to Turf Grass	Riverine Wetlands Scrub/Shrub to Turf Grass
6331	Wetlands, Riverine Non-forested to Harvested Forest	Riverine Wetlands Scrub/Shrub to Harvested Forest Barren
6332	Wetlands, Riverine Non-forested to Harvested Forest	Riverine Wetlands Scrub/Shrub to Harvested Forest Herbaceous
6337	Wetlands, Riverine Non-forested to Extractive	Riverine Wetlands Scrub/Shrub to Extractive Barren
6354	Wetlands, Riverine Non-forested to Natural Succession	Riverine Wetlands Scrub/Shrub to Natural Succession Barren
6361	Wetlands, Riverine Non-forested to Wetlands, Riverine Non-forested	Riverine Wetlands Scrub/Shrub to Riverine Wetlands Barren
6362	Wetlands, Riverine Non-forested to Wetlands, Riverine Non-forested	Riverine Wetlands Scrub/Shrub to Riverine Wetlands Herbaceous
6364	Wetlands, Riverine Non-forested to Tree Canopy, Other	Riverine Wetlands Scrub/Shrub to Riverine Wetlands Tree Canopy
6365	Wetlands, Riverine Non-forested to Forest	Riverine Wetlands Scrub/Shrub to Riverine Wetlands Forest
6412	Tree Canopy, Other to Water	Riverine Wetlands Tree Canopy to Lakes and Reservoirs
6413	Tree Canopy, Other to Water	Riverine Wetlands Tree Canopy to Riverine Ponds
6414	Tree Canopy, Other to Water	Riverine Wetlands Tree Canopy to Terrene Ponds
6415	Tree Canopy, Other to Water	Riverine Wetlands Tree Canopy to Lotic Water (fresh)
6421	Tree Canopy, Other to Impervious Roads	Riverine Wetlands Tree Canopy to Roads
6422	Tree Canopy, Other to Impervious Structures	Riverine Wetlands Tree Canopy to Structures
6423	Tree Canopy, Other to Impervious, Other	Riverine Wetlands Tree Canopy to Other Impervious
6428	Tree Canopy, Other to Turf Grass	Riverine Wetlands Tree Canopy to Turf Grass
6431	Tree Canopy, Other to Harvested Forest	Riverine Wetlands Tree Canopy to Harvested Forest Barren
6432	Tree Canopy, Other to Harvested Forest	Riverine Wetlands Tree Canopy to Harvested Forest Herbaceous
6435	Tree Canopy, Other to Pervious Developed, Other	Riverine Wetlands Tree Canopy to Solar Field Herbaceous

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Value	GenLULCChg	LULCChg
6437	Tree Canopy, Other to Extractive	Riverine Wetlands Tree Canopy to Extractive Barren
6454	Tree Canopy, Other to Natural Succession	Riverine Wetlands Tree Canopy to Natural Succession Barren
6455	Tree Canopy, Other to Natural Succession	Riverine Wetlands Tree Canopy to Natural Succession Herbaceous
6461	Tree Canopy, Other to Wetlands, Riverine Non-forested	Riverine Wetlands Tree Canopy to Riverine Wetlands Barren
6462	Tree Canopy, Other to Wetlands, Riverine Non-forested	Riverine Wetlands Tree Canopy to Riverine Wetlands Herbaceous
6463	Tree Canopy, Other to Wetlands, Riverine Non-forested	Riverine Wetlands Tree Canopy to Riverine Wetlands Scrub/Shrub
6512	Forest to Water	Riverine Wetlands Forest to Lakes and Reservoirs
6513	Forest to Water	Riverine Wetlands Forest to Riverine Ponds
6514	Forest to Water	Riverine Wetlands Forest to Terrene Ponds
6515	Forest to Water	Riverine Wetlands Forest to Lotic Water (fresh)
6521	Forest to Impervious Roads	Riverine Wetlands Forest to Roads
6522	Forest to Impervious Structures	Riverine Wetlands Forest to Structures
6523	Forest to Impervious, Other	Riverine Wetlands Forest to Other Impervious
6526	Forest to Tree Canopy over Impervious	Riverine Wetlands Forest to Tree Canopy Over Other Impervious
6528	Forest to Turf Grass	Riverine Wetlands Forest to Turf Grass
6531	Forest to Harvested Forest	Riverine Wetlands Forest to Harvested Forest Barren
6532	Forest to Harvested Forest	Riverine Wetlands Forest to Harvested Forest Herbaceous
6535	Forest to Pervious Developed, Other	Riverine Wetlands Forest to Solar Field Herbaceous
6537	Forest to Extractive	Riverine Wetlands Forest to Extractive Barren
6554	Forest to Natural Succession	Riverine Wetlands Forest to Natural Succession Barren
6555	Forest to Natural Succession	Riverine Wetlands Forest to Natural Succession Herbaceous
6561	Forest to Wetlands, Riverine Non-forested	Riverine Wetlands Forest to Riverine Wetlands Barren
6562	Forest to Wetlands, Riverine Non-forested	Riverine Wetlands Forest to Riverine Wetlands Herbaceous
6563	Forest to Wetlands, Riverine Non-forested	Riverine Wetlands Forest to Riverine Wetlands Scrub/Shrub
6564	Forest to Tree Canopy, Other	Riverine Wetlands Forest to Riverine Wetlands Tree Canopy
7113	Wetlands, Terrene Non-forested to Water	Terrene Wetlands Barren to Riverine Ponds
7114	Wetlands, Terrene Non-forested to Water	Terrene Wetlands Barren to Terrene Ponds
7121	Wetlands, Terrene Non-forested to Impervious Roads	Terrene Wetlands Barren to Roads
7122	Wetlands, Terrene Non-forested to Impervious Structures	Terrene Wetlands Barren to Structures
7123	Wetlands, Terrene Non-forested to Impervious, Other	Terrene Wetlands Barren to Other Impervious
7128	Wetlands, Terrene Non-forested to Turf Grass	Terrene Wetlands Barren to Turf Grass
7132	Wetlands, Terrene Non-forested to Harvested Forest	Terrene Wetlands Barren to Harvested Forest Herbaceous

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Value	GenLULCChg	LULCChg
7172	Wetlands, Terrene Non-forested to Wetlands, Terrene Non-forested	Terrene Wetlands Barren to Terrene Wetlands Herbaceous
7173	Wetlands, Terrene Non-forested to Wetlands, Terrene Non-forested	Terrene Wetlands Barren to Terrene Wetlands Scrub/Shrub
7174	Wetlands, Terrene Non-forested to Tree Canopy, Other	Terrene Wetlands Barren to Terrene Wetlands Tree Canopy
7175	Wetlands, Terrene Non-forested to Forest	Terrene Wetlands Barren to Terrene Wetlands Forest
7211	Wetlands, Terrene Non-forested to Water	Terrene Wetlands Herbaceous to Estuarine/Marine
7212	Wetlands, Terrene Non-forested to Water	Terrene Wetlands Herbaceous to Lakes and Reservoirs
7213	Wetlands, Terrene Non-forested to Water	Terrene Wetlands Herbaceous to Riverine Ponds
7214	Wetlands, Terrene Non-forested to Water	Terrene Wetlands Herbaceous to Terrene Ponds
7215	Wetlands, Terrene Non-forested to Water	Terrene Wetlands Herbaceous to Lotic Water (fresh)
7216	Wetlands, Terrene Non-forested to Natural Succession	Terrene Wetlands Herbaceous to Bare Shore
7221	Wetlands, Terrene Non-forested to Impervious Roads	Terrene Wetlands Herbaceous to Roads
7222	Wetlands, Terrene Non-forested to Impervious Structures	Terrene Wetlands Herbaceous to Structures
7223	Wetlands, Terrene Non-forested to Impervious, Other	Terrene Wetlands Herbaceous to Other Impervious
7227	Wetlands, Terrene Non-forested to Tree Canopy over Turf Grass	Terrene Wetlands Herbaceous to Tree Canopy Over Turf Grass
7228	Wetlands, Terrene Non-forested to Turf Grass	Terrene Wetlands Herbaceous to Turf Grass
7229	Wetlands, Terrene Non-forested to Pervious Developed, Other	Terrene Wetlands Herbaceous to Transitional Barren
7231	Wetlands, Terrene Non-forested to Harvested Forest	Terrene Wetlands Herbaceous to Harvested Forest Barren
7232	Wetlands, Terrene Non-forested to Harvested Forest	Terrene Wetlands Herbaceous to Harvested Forest Herbaceous
7237	Wetlands, Terrene Non-forested to Extractive	Terrene Wetlands Herbaceous to Extractive Barren
7241	Wetlands, Terrene Non-forested to Forest	Terrene Wetlands Herbaceous to Forest
7242	Wetlands, Terrene Non-forested to Tree Canopy, Other	Terrene Wetlands Herbaceous to Other Tree Canopy
7251	Wetlands, Terrene Non-forested to Pervious Developed, Other	Terrene Wetlands Herbaceous to Suspended Succession Barren
7252	Wetlands, Terrene Non-forested to Pervious Developed, Other	Terrene Wetlands Herbaceous to Suspended Succession Herbaceous
7254	Wetlands, Terrene Non-forested to Natural Succession	Terrene Wetlands Herbaceous to Natural Succession Barren
7255	Wetlands, Terrene Non-forested to Natural Succession	Terrene Wetlands Herbaceous to Natural Succession Herbaceous
7256	Wetlands, Terrene Non-forested to Natural Succession	Terrene Wetlands Herbaceous to Natural Succession Scrub/Shrub
7271	Wetlands, Terrene Non-forested to Wetlands, Terrene Non-forested	Terrene Wetlands Herbaceous to Terrene Wetlands Barren
7273	Wetlands, Terrene Non-forested to Wetlands, Terrene Non-forested	Terrene Wetlands Herbaceous to Terrene Wetlands Scrub/Shrub
7274	Wetlands, Terrene Non-forested to Tree Canopy, Other	Terrene Wetlands Herbaceous to Terrene Wetlands Tree Canopy
7275	Wetlands, Terrene Non-forested to Forest	Terrene Wetlands Herbaceous to Terrene Wetlands Forest

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Value	GenLULCChg	LULCChg
7281	Wetlands, Terrene Non-forested to Cropland	Terrene Wetlands Herbaceous to Cropland Barren
7282	Wetlands, Terrene Non-forested to Cropland	Terrene Wetlands Herbaceous to Cropland Herbaceous
7283	Wetlands, Terrene Non-forested to Pasture/Hay	Terrene Wetlands Herbaceous to Pasture/Hay Barren
7284	Wetlands, Terrene Non-forested to Pasture/Hay	Terrene Wetlands Herbaceous to Pasture/Hay Herbaceous
7321	Wetlands, Terrene Non-forested to Impervious Roads	Terrene Wetlands Scrub/Shrub to Roads
7323	Wetlands, Terrene Non-forested to Impervious, Other	Terrene Wetlands Scrub/Shrub to Other Impervious
7328	Wetlands, Terrene Non-forested to Turf Grass	Terrene Wetlands Scrub/Shrub to Turf Grass
7335	Wetlands, Terrene Non-forested to Pervious Developed, Other	Terrene Wetlands Scrub/Shrub to Solar Field Herbaceous
7337	Wetlands, Terrene Non-forested to Extractive	Terrene Wetlands Scrub/Shrub to Extractive Barren
7371	Wetlands, Terrene Non-forested to Wetlands, Terrene Non-forested	Terrene Wetlands Scrub/Shrub to Terrene Wetlands Barren
7372	Wetlands, Terrene Non-forested to Wetlands, Terrene Non-forested	Terrene Wetlands Scrub/Shrub to Terrene Wetlands Herbaceous
7374	Wetlands, Terrene Non-forested to Tree Canopy, Other	Terrene Wetlands Scrub/Shrub to Terrene Wetlands Tree Canopy
7375	Wetlands, Terrene Non-forested to Forest	Terrene Wetlands Scrub/Shrub to Terrene Wetlands Forest
7413	Tree Canopy, Other to Water	Terrene Wetlands Tree Canopy to Riverine Ponds
7414	Tree Canopy, Other to Water	Terrene Wetlands Tree Canopy to Terrene Ponds
7421	Tree Canopy, Other to Impervious Roads	Terrene Wetlands Tree Canopy to Roads
7422	Tree Canopy, Other to Impervious Structures	Terrene Wetlands Tree Canopy to Structures
7423	Tree Canopy, Other to Impervious, Other	Terrene Wetlands Tree Canopy to Other Impervious
7428	Tree Canopy, Other to Turf Grass	Terrene Wetlands Tree Canopy to Turf Grass
7431	Tree Canopy, Other to Harvested Forest	Terrene Wetlands Tree Canopy to Harvested Forest Barren
7432	Tree Canopy, Other to Harvested Forest	Terrene Wetlands Tree Canopy to Harvested Forest Herbaceous
7437	Tree Canopy, Other to Extractive	Terrene Wetlands Tree Canopy to Extractive Barren
7454	Tree Canopy, Other to Natural Succession	Terrene Wetlands Tree Canopy to Natural Succession Barren
7455	Tree Canopy, Other to Natural Succession	Terrene Wetlands Tree Canopy to Natural Succession Herbaceous
7471	Tree Canopy, Other to Wetlands, Terrene Non-forested	Terrene Wetlands Tree Canopy to Terrene Wetlands Barren
7472	Tree Canopy, Other to Wetlands, Terrene Non-forested	Terrene Wetlands Tree Canopy to Terrene Wetlands Herbaceous
7473	Tree Canopy, Other to Wetlands, Terrene Non-forested	Terrene Wetlands Tree Canopy to Terrene Wetlands Scrub/Shrub
7514	Forest to Water	Terrene Wetlands Forest to Terrene Ponds
7521	Forest to Impervious Roads	Terrene Wetlands Forest to Roads
7522	Forest to Impervious Structures	Terrene Wetlands Forest to Structures
7523	Forest to Impervious, Other	Terrene Wetlands Forest to Other Impervious
7526	Forest to Tree Canopy over Impervious	Terrene Wetlands Forest to Tree Canopy Over Other Impervious

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Value	GenLULCChg	LULCChg
7528	Forest to Turf Grass	Terrene Wetlands Forest to Turf Grass
7531	Forest to Harvested Forest	Terrene Wetlands Forest to Harvested Forest Barren
7532	Forest to Harvested Forest	Terrene Wetlands Forest to Harvested Forest Herbaceous
7534	Forest to Pervious Developed, Other	Terrene Wetlands Forest to Solar Field Barren
7535	Forest to Pervious Developed, Other	Terrene Wetlands Forest to Solar Field Herbaceous
7537	Forest to Extractive	Terrene Wetlands Forest to Extractive Barren
7555	Forest to Natural Succession	Terrene Wetlands Forest to Natural Succession Herbaceous
7571	Forest to Wetlands, Terrene Non-forested	Terrene Wetlands Forest to Terrene Wetlands Barren
7572	Forest to Wetlands, Terrene Non-forested	Terrene Wetlands Forest to Terrene Wetlands Herbaceous
7573	Forest to Wetlands, Terrene Non-forested	Terrene Wetlands Forest to Terrene Wetlands Scrub/Shrub
7574	Forest to Tree Canopy, Other	Terrene Wetlands Forest to Terrene Wetlands Tree Canopy
8111	Cropland to Water	Cropland Barren to Estuarine/Marine
8112	Cropland to Water	Cropland Barren to Lakes and Reservoirs
8113	Cropland to Water	Cropland Barren to Riverine Ponds
8114	Cropland to Water	Cropland Barren to Terrene Ponds
8115	Cropland to Water	Cropland Barren to Lotic Water (fresh)
8116	Cropland to Natural Succession	Cropland Barren to Bare Shore
8121	Cropland to Impervious Roads	Cropland Barren to Roads
8122	Cropland to Impervious Structures	Cropland Barren to Structures
8123	Cropland to Impervious, Other	Cropland Barren to Other Impervious
8127	Cropland to Tree Canopy over Turf Grass	Cropland Barren to Tree Canopy Over Turf Grass
8128	Cropland to Turf Grass	Cropland Barren to Turf Grass
8129	Cropland to Pervious Developed, Other	Cropland Barren to Transitional Barren
8131	Cropland to Harvested Forest	Cropland Barren to Harvested Forest Barren
8132	Cropland to Harvested Forest	Cropland Barren to Harvested Forest Herbaceous
8134	Cropland to Pervious Developed, Other	Cropland Barren to Solar Field Barren
8135	Cropland to Pervious Developed, Other	Cropland Barren to Solar Field Herbaceous
8137	Cropland to Extractive	Cropland Barren to Extractive Barren
8141	Cropland to Forest	Cropland Barren to Forest
8142	Cropland to Tree Canopy, Other	Cropland Barren to Other Tree Canopy
8151	Cropland to Pervious Developed, Other	Cropland Barren to Suspended Succession Barren
8152	Cropland to Pervious Developed, Other	Cropland Barren to Suspended Succession Herbaceous
8153	Cropland to Pervious Developed, Other	Cropland Barren to Suspended Succession Scrub/Shrub
8155	Cropland to Natural Succession	Cropland Barren to Natural Succession Herbaceous
8156	Cropland to Natural Succession	Cropland Barren to Natural Succession Scrub/Shrub
8182	Cropland to Cropland	Cropland Barren to Cropland Herbaceous
8184	Cropland to Pasture/Hay	Cropland Barren to Pasture/Hay Herbaceous
8187	Cropland to Cropland	Cropland Barren to Orchard/Vineyard Herbaceous

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Value	GenLULCChg	LULCChg
8211	Cropland to Water	Cropland Herbaceous to Estuarine/Marine
8212	Cropland to Water	Cropland Herbaceous to Lakes and Reservoirs
8213	Cropland to Water	Cropland Herbaceous to Riverine Ponds
8214	Cropland to Water	Cropland Herbaceous to Terrene Ponds
8215	Cropland to Water	Cropland Herbaceous to Lotic Water (fresh)
8216	Cropland to Natural Succession	Cropland Herbaceous to Bare Shore
8221	Cropland to Impervious Roads	Cropland Herbaceous to Roads
8222	Cropland to Impervious Structures	Cropland Herbaceous to Structures
8223	Cropland to Impervious, Other	Cropland Herbaceous to Other Impervious
8225	Cropland to Tree Canopy over Impervious	Cropland Herbaceous to Tree Canopy Over Structures
8226	Cropland to Tree Canopy over Impervious	Cropland Herbaceous to Tree Canopy Over Other Impervious
8227	Cropland to Tree Canopy over Turf Grass	Cropland Herbaceous to Tree Canopy Over Turf Grass
8228	Cropland to Turf Grass	Cropland Herbaceous to Turf Grass
8229	Cropland to Pervious Developed, Other	Cropland Herbaceous to Transitional Barren
8231	Cropland to Harvested Forest	Cropland Herbaceous to Harvested Forest Barren
8232	Cropland to Harvested Forest	Cropland Herbaceous to Harvested Forest Herbaceous
8234	Cropland to Pervious Developed, Other	Cropland Herbaceous to Solar Field Barren
8235	Cropland to Pervious Developed, Other	Cropland Herbaceous to Solar Field Herbaceous
8237	Cropland to Extractive	Cropland Herbaceous to Extractive Barren
8241	Cropland to Forest	Cropland Herbaceous to Forest
8242	Cropland to Tree Canopy, Other	Cropland Herbaceous to Other Tree Canopy
8251	Cropland to Pervious Developed, Other	Cropland Herbaceous to Suspended Succession Barren
8252	Cropland to Pervious Developed, Other	Cropland Herbaceous to Suspended Succession Herbaceous
8253	Cropland to Pervious Developed, Other	Cropland Herbaceous to Suspended Succession Scrub/Shrub
8254	Cropland to Natural Succession	Cropland Herbaceous to Natural Succession Barren
8255	Cropland to Natural Succession	Cropland Herbaceous to Natural Succession Herbaceous
8256	Cropland to Natural Succession	Cropland Herbaceous to Natural Succession Scrub/Shrub
8281	Cropland to Cropland	Cropland Herbaceous to Cropland Barren
8283	Cropland to Pasture/Hay	Cropland Herbaceous to Pasture/Hay Barren
8284	Cropland to Pasture/Hay	Cropland Herbaceous to Pasture/Hay Herbaceous
8285	Cropland to Pasture/Hay	Cropland Herbaceous to Pasture/Hay Scrub/Shrub
8287	Cropland to Cropland	Cropland Herbaceous to Orchard/Vineyard Herbaceous
8312	Pasture/Hay to Water	Pasture/Hay Barren to Lakes and Reservoirs
8313	Pasture/Hay to Water	Pasture/Hay Barren to Riverine Ponds
8314	Pasture/Hay to Water	Pasture/Hay Barren to Terrene Ponds
8315	Pasture/Hay to Water	Pasture/Hay Barren to Lotic Water (fresh)
8316	Pasture/Hay to Natural Succession	Pasture/Hay Barren to Bare Shore
8321	Pasture/Hay to Impervious Roads	Pasture/Hay Barren to Roads
8322	Pasture/Hay to Impervious Structures	Pasture/Hay Barren to Structures

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Value	GenLULCChg	LULCChg
8323	Pasture/Hay to Impervious, Other	Pasture/Hay Barren to Other Impervious
8326	Pasture/Hay to Tree Canopy over Impervious	Pasture/Hay Barren to Tree Canopy Over Other Impervious
8327	Pasture/Hay to Tree Canopy over Turf Grass	Pasture/Hay Barren to Tree Canopy Over Turf Grass
8328	Pasture/Hay to Turf Grass	Pasture/Hay Barren to Turf Grass
8329	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Barren to Transitional Barren
8331	Pasture/Hay to Harvested Forest	Pasture/Hay Barren to Harvested Forest Barren
8332	Pasture/Hay to Harvested Forest	Pasture/Hay Barren to Harvested Forest Herbaceous
8335	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Barren to Solar Field Herbaceous
8337	Pasture/Hay to Extractive	Pasture/Hay Barren to Extractive Barren
8341	Pasture/Hay to Forest	Pasture/Hay Barren to Forest
8342	Pasture/Hay to Tree Canopy, Other	Pasture/Hay Barren to Other Tree Canopy
8351	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Barren to Suspended Succession Barren
8352	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Barren to Suspended Succession Herbaceous
8353	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Barren to Suspended Succession Scrub/Shrub
8354	Pasture/Hay to Natural Succession	Pasture/Hay Barren to Natural Succession Barren
8355	Pasture/Hay to Natural Succession	Pasture/Hay Barren to Natural Succession Herbaceous
8356	Pasture/Hay to Natural Succession	Pasture/Hay Barren to Natural Succession Scrub/Shrub
8381	Pasture/Hay to Cropland	Pasture/Hay Barren to Cropland Barren
8382	Pasture/Hay to Cropland	Pasture/Hay Barren to Cropland Herbaceous
8384	Pasture/Hay to Pasture/Hay	Pasture/Hay Barren to Pasture/Hay Herbaceous
8387	Pasture/Hay to Cropland	Pasture/Hay Barren to Orchard/Vineyard Herbaceous
8411	Pasture/Hay to Water	Pasture/Hay Herbaceous to Estuarine/Marine
8412	Pasture/Hay to Water	Pasture/Hay Herbaceous to Lakes and Reservoirs
8413	Pasture/Hay to Water	Pasture/Hay Herbaceous to Riverine Ponds
8414	Pasture/Hay to Water	Pasture/Hay Herbaceous to Terrene Ponds
8415	Pasture/Hay to Water	Pasture/Hay Herbaceous to Lotic Water (fresh)
8416	Pasture/Hay to Natural Succession	Pasture/Hay Herbaceous to Bare Shore
8421	Pasture/Hay to Impervious Roads	Pasture/Hay Herbaceous to Roads
8422	Pasture/Hay to Impervious Structures	Pasture/Hay Herbaceous to Structures
8423	Pasture/Hay to Impervious, Other	Pasture/Hay Herbaceous to Other Impervious
8425	Pasture/Hay to Tree Canopy over Impervious	Pasture/Hay Herbaceous to Tree Canopy Over Structures
8426	Pasture/Hay to Tree Canopy over Impervious	Pasture/Hay Herbaceous to Tree Canopy Over Other Impervious
8427	Pasture/Hay to Tree Canopy over Turf Grass	Pasture/Hay Herbaceous to Tree Canopy Over Turf Grass
8428	Pasture/Hay to Turf Grass	Pasture/Hay Herbaceous to Turf Grass
8429	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Herbaceous to Transitional Barren
8431	Pasture/Hay to Harvested Forest	Pasture/Hay Herbaceous to Harvested Forest Barren
8432	Pasture/Hay to Harvested Forest	Pasture/Hay Herbaceous to Harvested Forest Herbaceous
8434	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Herbaceous to Solar Field Barren

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Value	GenLULCChg	LULCChg
8435	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Herbaceous to Solar Field Herbaceous
8437	Pasture/Hay to Extractive	Pasture/Hay Herbaceous to Extractive Barren
8441	Pasture/Hay to Forest	Pasture/Hay Herbaceous to Forest
8442	Pasture/Hay to Tree Canopy, Other	Pasture/Hay Herbaceous to Other Tree Canopy
8451	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Herbaceous to Suspended Succession Barren
8452	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Herbaceous to Suspended Succession Herbaceous
8453	Pasture/Hay to Pervious Developed, Other	Pasture/Hay Herbaceous to Suspended Succession Scrub/Shrub
8454	Pasture/Hay to Natural Succession	Pasture/Hay Herbaceous to Natural Succession Barren
8455	Pasture/Hay to Natural Succession	Pasture/Hay Herbaceous to Natural Succession Herbaceous
8456	Pasture/Hay to Natural Succession	Pasture/Hay Herbaceous to Natural Succession Scrub/Shrub
8481	Pasture/Hay to Cropland	Pasture/Hay Herbaceous to Cropland Barren
8482	Pasture/Hay to Cropland	Pasture/Hay Herbaceous to Cropland Herbaceous
8483	Pasture/Hay to Pasture/Hay	Pasture/Hay Herbaceous to Pasture/Hay Barren
8485	Pasture/Hay to Pasture/Hay	Pasture/Hay Herbaceous to Pasture/Hay Scrub/Shrub
8486	Pasture/Hay to Cropland	Pasture/Hay Herbaceous to Orchard/Vineyard Barren
8487	Pasture/Hay to Cropland	Pasture/Hay Herbaceous to Orchard/Vineyard Herbaceous
8621	Cropland to Impervious Roads	Orchard/Vineyard Barren to Roads
8622	Cropland to Impervious Structures	Orchard/Vineyard Barren to Structures
8623	Cropland to Impervious, Other	Orchard/Vineyard Barren to Other Impervious
8628	Cropland to Turf Grass	Orchard/Vineyard Barren to Turf Grass
8629	Cropland to Pervious Developed, Other	Orchard/Vineyard Barren to Transitional Barren
8641	Cropland to Forest	Orchard/Vineyard Barren to Forest
8642	Cropland to Tree Canopy, Other	Orchard/Vineyard Barren to Other Tree Canopy
8652	Cropland to Pervious Developed, Other	Orchard/Vineyard Barren to Suspended Succession Herbaceous
8655	Cropland to Natural Succession	Orchard/Vineyard Barren to Natural Succession Herbaceous
8656	Cropland to Natural Succession	Orchard/Vineyard Barren to Natural Succession Scrub/Shrub
8682	Cropland to Cropland	Orchard/Vineyard Barren to Cropland Herbaceous
8684	Cropland to Pasture/Hay	Orchard/Vineyard Barren to Pasture/Hay Herbaceous
8687	Cropland to Cropland	Orchard/Vineyard Barren to Orchard/Vineyard Herbaceous
8688	Cropland to Cropland	Orchard/Vineyard Barren to Orchard/Vineyard Scrub/Shrub
8716	Cropland to Natural Succession	Orchard/Vineyard Herbaceous to Bare Shore
8721	Cropland to Impervious Roads	Orchard/Vineyard Herbaceous to Roads
8722	Cropland to Impervious Structures	Orchard/Vineyard Herbaceous to Structures
8723	Cropland to Impervious, Other	Orchard/Vineyard Herbaceous to Other Impervious

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8726	Cropland to Tree Canopy over Impervious	Orchard/Vineyard Herbaceous to Tree Canopy Over Other Impervious
8727	Cropland to Tree Canopy over Turf Grass	Orchard/Vineyard Herbaceous to Tree Canopy Over Turf Grass
8728	Cropland to Turf Grass	Orchard/Vineyard Herbaceous to Turf Grass
8729	Cropland to Pervious Developed, Other	Orchard/Vineyard Herbaceous to Transitional Barren
8731	Cropland to Harvested Forest	Orchard/Vineyard Herbaceous to Harvested Forest Barren
8737	Cropland to Extractive	Orchard/Vineyard Herbaceous to Extractive Barren
8741	Cropland to Forest	Orchard/Vineyard Herbaceous to Forest
8742	Cropland to Tree Canopy, Other	Orchard/Vineyard Herbaceous to Other Tree Canopy
8751	Cropland to Pervious Developed, Other	Orchard/Vineyard Herbaceous to Suspended Succession Barren
8752	Cropland to Pervious Developed, Other	Orchard/Vineyard Herbaceous to Suspended Succession Herbaceous
8755	Cropland to Natural Succession	Orchard/Vineyard Herbaceous to Natural Succession Herbaceous
8756	Cropland to Natural Succession	Orchard/Vineyard Herbaceous to Natural Succession Scrub/Shrub
8782	Cropland to Cropland	Orchard/Vineyard Herbaceous to Cropland Herbaceous
8783	Cropland to Pasture/Hay	Orchard/Vineyard Herbaceous to Pasture/Hay Barren
8784	Cropland to Pasture/Hay	Orchard/Vineyard Herbaceous to Pasture/Hay Herbaceous
8786	Cropland to Cropland	Orchard/Vineyard Herbaceous to Orchard/Vineyard Barren
8821	Cropland to Impervious Roads	Orchard/Vineyard Scrub/Shrub to Roads
8822	Cropland to Impervious Structures	Orchard/Vineyard Scrub/Shrub to Structures
8823	Cropland to Impervious, Other	Orchard/Vineyard Scrub/Shrub to Other Impervious
8827	Cropland to Tree Canopy over Turf Grass	Orchard/Vineyard Scrub/Shrub to Tree Canopy Over Turf Grass
8829	Cropland to Pervious Developed, Other	Orchard/Vineyard Scrub/Shrub to Transitional Barren
8841	Cropland to Forest	Orchard/Vineyard Scrub/Shrub to Forest
8842	Cropland to Tree Canopy, Other	Orchard/Vineyard Scrub/Shrub to Other Tree Canopy
8856	Cropland to Natural Succession	Orchard/Vineyard Scrub/Shrub to Natural Succession Scrub/Shrub
8886	Cropland to Cropland	Orchard/Vineyard Scrub/Shrub to Orchard/Vineyard Barren
9111	Wetlands, Tidal Non-forested to Water	Tidal Wetlands Barren to Estuarine/Marine
9114	Wetlands, Tidal Non-forested to Water	Tidal Wetlands Barren to Terrene Ponds
9121	Wetlands, Tidal Non-forested to Impervious Roads	Tidal Wetlands Barren to Roads
9122	Wetlands, Tidal Non-forested to Impervious Structures	Tidal Wetlands Barren to Structures
9123	Wetlands, Tidal Non-forested to Impervious, Other	Tidal Wetlands Barren to Other Impervious
9128	Wetlands, Tidal Non-forested to Turf Grass	Tidal Wetlands Barren to Turf Grass
9132	Wetlands, Tidal Non-forested to Harvested Forest	Tidal Wetlands Barren to Harvested Forest Herbaceous
9155	Wetlands, Tidal Non-forested to Natural Succession	Tidal Wetlands Barren to Natural Succession Herbaceous

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Value	GenLULCChg	LULCChg
9192	Wetlands, Tidal Non-forested to Wetlands, Tidal Non-forested	Tidal Wetlands Barren to Tidal Wetlands Herbaceous
9193	Wetlands, Tidal Non-forested to Wetlands, Tidal Non-forested	Tidal Wetlands Barren to Tidal Wetlands Scrub/Shrub
9194	Wetlands, Tidal Non-forested to Tree Canopy, Other	Tidal Wetlands Barren to Tidal Wetlands Tree Canopy
9195	Wetlands, Tidal Non-forested to Forest	Tidal Wetlands Barren to Tidal Wetlands Forest
9211	Wetlands, Tidal Non-forested to Water	Tidal Wetlands Herbaceous to Estuarine/Marine
9213	Wetlands, Tidal Non-forested to Water	Tidal Wetlands Herbaceous to Riverine Ponds
9214	Wetlands, Tidal Non-forested to Water	Tidal Wetlands Herbaceous to Terrene Ponds
9215	Wetlands, Tidal Non-forested to Water	Tidal Wetlands Herbaceous to Lotic Water (fresh)
9221	Wetlands, Tidal Non-forested to Impervious Roads	Tidal Wetlands Herbaceous to Roads
9222	Wetlands, Tidal Non-forested to Impervious Structures	Tidal Wetlands Herbaceous to Structures
9223	Wetlands, Tidal Non-forested to Impervious, Other	Tidal Wetlands Herbaceous to Other Impervious
9226	Wetlands, Tidal Non-forested to Tree Canopy over Impervious	Tidal Wetlands Herbaceous to Tree Canopy Over Other Impervious
9228	Wetlands, Tidal Non-forested to Turf Grass	Tidal Wetlands Herbaceous to Turf Grass
9231	Wetlands, Tidal Non-forested to Harvested Forest	Tidal Wetlands Herbaceous to Harvested Forest Barren
9232	Wetlands, Tidal Non-forested to Harvested Forest	Tidal Wetlands Herbaceous to Harvested Forest Herbaceous
9237	Wetlands, Tidal Non-forested to Extractive	Tidal Wetlands Herbaceous to Extractive Barren
9254	Wetlands, Tidal Non-forested to Natural Succession	Tidal Wetlands Herbaceous to Natural Succession Barren
9291	Wetlands, Tidal Non-forested to Wetlands, Tidal Non-forested	Tidal Wetlands Herbaceous to Tidal Wetlands Barren
9293	Wetlands, Tidal Non-forested to Wetlands, Tidal Non-forested	Tidal Wetlands Herbaceous to Tidal Wetlands Scrub/Shrub
9294	Wetlands, Tidal Non-forested to Tree Canopy, Other	Tidal Wetlands Herbaceous to Tidal Wetlands Tree Canopy
9295	Wetlands, Tidal Non-forested to Forest	Tidal Wetlands Herbaceous to Tidal Wetlands Forest
9311	Wetlands, Tidal Non-forested to Water	Tidal Wetlands Scrub/Shrub to Estuarine/Marine
9321	Wetlands, Tidal Non-forested to Impervious Roads	Tidal Wetlands Scrub/Shrub to Roads
9322	Wetlands, Tidal Non-forested to Impervious Structures	Tidal Wetlands Scrub/Shrub to Structures
9323	Wetlands, Tidal Non-forested to Impervious, Other	Tidal Wetlands Scrub/Shrub to Other Impervious
9391	Wetlands, Tidal Non-forested to Wetlands, Tidal Non-forested	Tidal Wetlands Scrub/Shrub to Tidal Wetlands Barren
9392	Wetlands, Tidal Non-forested to Wetlands, Tidal Non-forested	Tidal Wetlands Scrub/Shrub to Tidal Wetlands Herbaceous
9394	Wetlands, Tidal Non-forested to Tree Canopy, Other	Tidal Wetlands Scrub/Shrub to Tidal Wetlands Tree Canopy
9395	Wetlands, Tidal Non-forested to Forest	Tidal Wetlands Scrub/Shrub to Tidal Wetlands Forest
9411	Tree Canopy, Other to Water	Tidal Wetlands Tree Canopy to Estuarine/Marine
9413	Tree Canopy, Other to Water	Tidal Wetlands Tree Canopy to Riverine Ponds
9415	Tree Canopy, Other to Water	Tidal Wetlands Tree Canopy to Lotic Water (fresh)
9421	Tree Canopy, Other to Impervious Roads	Tidal Wetlands Tree Canopy to Roads
9422	Tree Canopy, Other to Impervious Structures	Tidal Wetlands Tree Canopy to Structures

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Value	GenLULCChg	LULCChg
9423	Tree Canopy, Other to Impervious, Other	Tidal Wetlands Tree Canopy to Other Impervious
9428	Tree Canopy, Other to Turf Grass	Tidal Wetlands Tree Canopy to Turf Grass
9432	Tree Canopy, Other to Harvested Forest	Tidal Wetlands Tree Canopy to Harvested Forest Herbaceous
9455	Tree Canopy, Other to Natural Succession	Tidal Wetlands Tree Canopy to Natural Succession Herbaceous
9491	Tree Canopy, Other to Wetlands, Tidal Non-forested	Tidal Wetlands Tree Canopy to Tidal Wetlands Barren
9492	Tree Canopy, Other to Wetlands, Tidal Non-forested	Tidal Wetlands Tree Canopy to Tidal Wetlands Herbaceous
9493	Tree Canopy, Other to Wetlands, Tidal Non-forested	Tidal Wetlands Tree Canopy to Tidal Wetlands Scrub/Shrub
9511	Forest to Water	Tidal Wetlands Forest to Estuarine/Marine
9513	Forest to Water	Tidal Wetlands Forest to Riverine Ponds
9515	Forest to Water	Tidal Wetlands Forest to Lotic Water (fresh)
9521	Forest to Impervious Roads	Tidal Wetlands Forest to Roads
9522	Forest to Impervious Structures	Tidal Wetlands Forest to Structures
9523	Forest to Impervious, Other	Tidal Wetlands Forest to Other Impervious
9526	Forest to Tree Canopy over Impervious	Tidal Wetlands Forest to Tree Canopy Over Other Impervious
9528	Forest to Turf Grass	Tidal Wetlands Forest to Turf Grass
9531	Forest to Harvested Forest	Tidal Wetlands Forest to Harvested Forest Barren
9532	Forest to Harvested Forest	Tidal Wetlands Forest to Harvested Forest Herbaceous
9535	Forest to Pervious Developed, Other	Tidal Wetlands Forest to Solar Field Herbaceous
9537	Forest to Extractive	Tidal Wetlands Forest to Extractive Barren
9555	Forest to Natural Succession	Tidal Wetlands Forest to Natural Succession Herbaceous
9591	Forest to Wetlands, Tidal Non-forested	Tidal Wetlands Forest to Tidal Wetlands Barren
9592	Forest to Wetlands, Tidal Non-forested	Tidal Wetlands Forest to Tidal Wetlands Herbaceous
9593	Forest to Wetlands, Tidal Non-forested	Tidal Wetlands Forest to Tidal Wetlands Scrub/Shrub
9594	Forest to Tree Canopy, Other	Tidal Wetlands Forest to Tidal Wetlands Tree Canopy
65535	NoData Value	

Table 9 – LULCC Classes