



Revising the Land Use History for the Chesapeake Bay Watershed

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

Overview

- Goal:
 - Build a temporally, spatially, and categorically detailed historical land use database from the mid-1980's to present at the parcel scale
- Purpose:
 - Improve the calibration of the next generation watershed model, Phase 7
 - Better understand the impacts of changes in land use and Best Management Practices (BMPs) on water quality from models such as SPARROW and SWAN

What Data Will be in the Database?

- Every parcel and road segment will contain a land use for every 3-5 year period from 1985-2019
- Potential Back-Casted Land Uses will be equivalent with the 13 Phase 6 land uses (or X number of Phase 7 land uses)
 - Impervious Non-Roads (INR), Impervious Roads (IR), Tree Canopy over Impervious (TCI), Turf Grass (TG), Tree Canopy over Turf Grass (TCT), Tidal Wetlands (WLT), Floodplain Wetlands (WLF), Other Wetlands (WLO), Mixed Open (MO), Cropland (CRP), Pasture (PAS), Water (WAT)

What Historical Data is Available?

Historical Land Use Raster Data (1- meter Resolution)

**High-Resolution
Land Use**
2013/2014,
2017/2018,
2021/2022

Historical Land Cover Raster Data (30-meter Resolution)

LCMAP
1985-2019

NLCD
'01, '04, '06, '08,
'11, '13, '16, '19

LANDFIRE
'01, '08, '10, '12,
'14, '16, '19*

* Limited LANDFIRE update

Historical Tabular Data

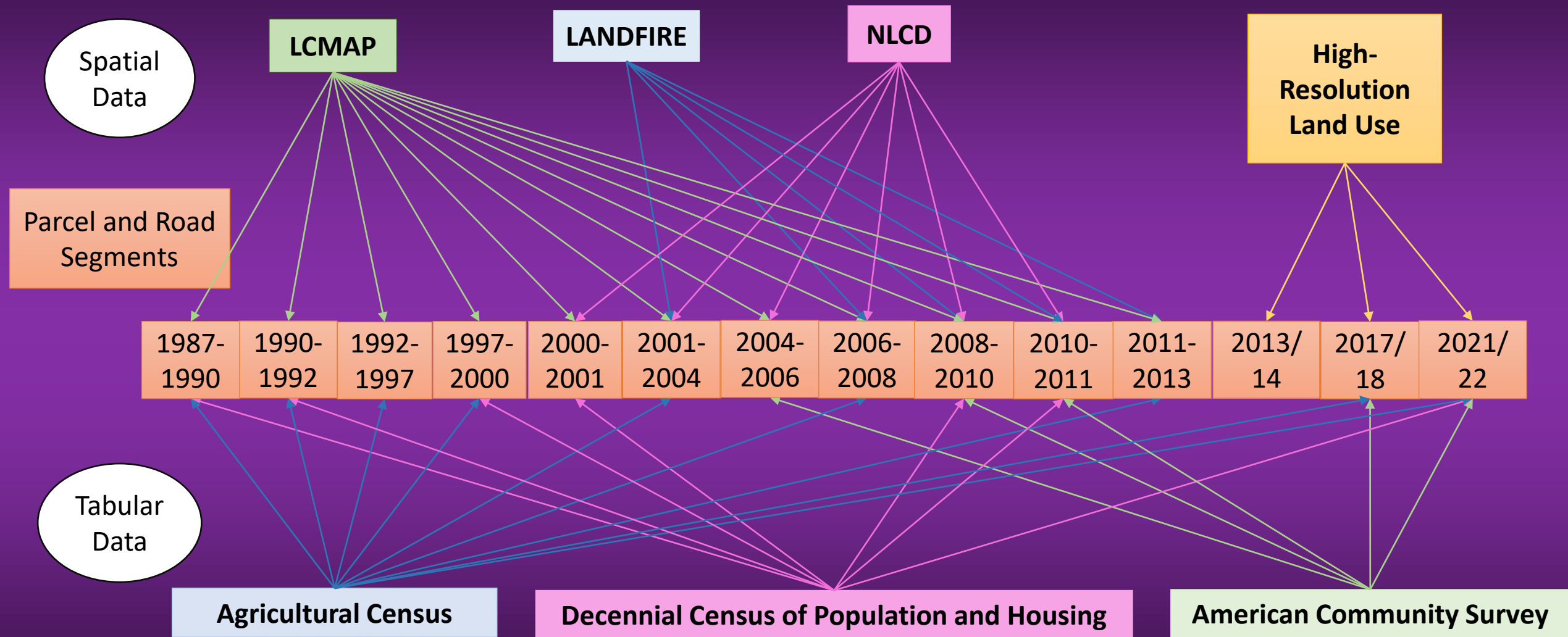
Agricultural Census
Every 5 years

**Decennial Census of
Population and
Housing**
Every 10 years

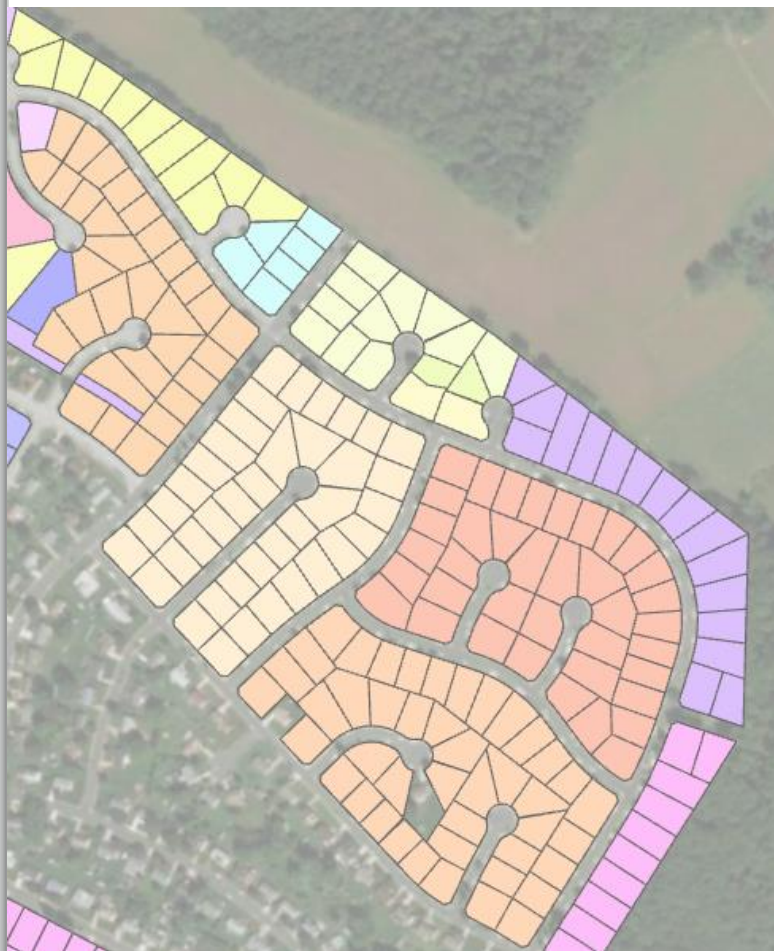
**American
Community Survey**
Annually starting in
2005

LCMAP: Land Cover Monitoring, Assessment and Projection
NLCD: National Land Cover Dataset

How is the Landscape Deconstructed?



Back-Casting Development

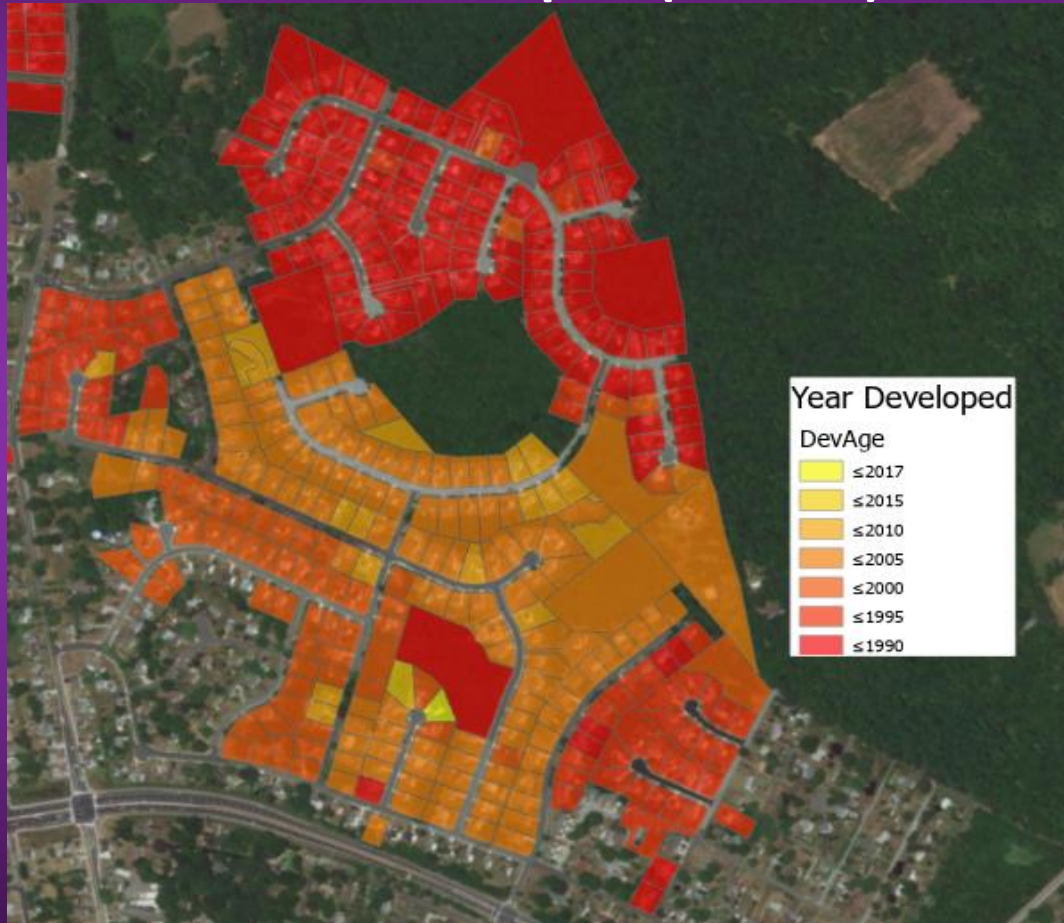


Residential parcel grouping example, before association to roads is applied

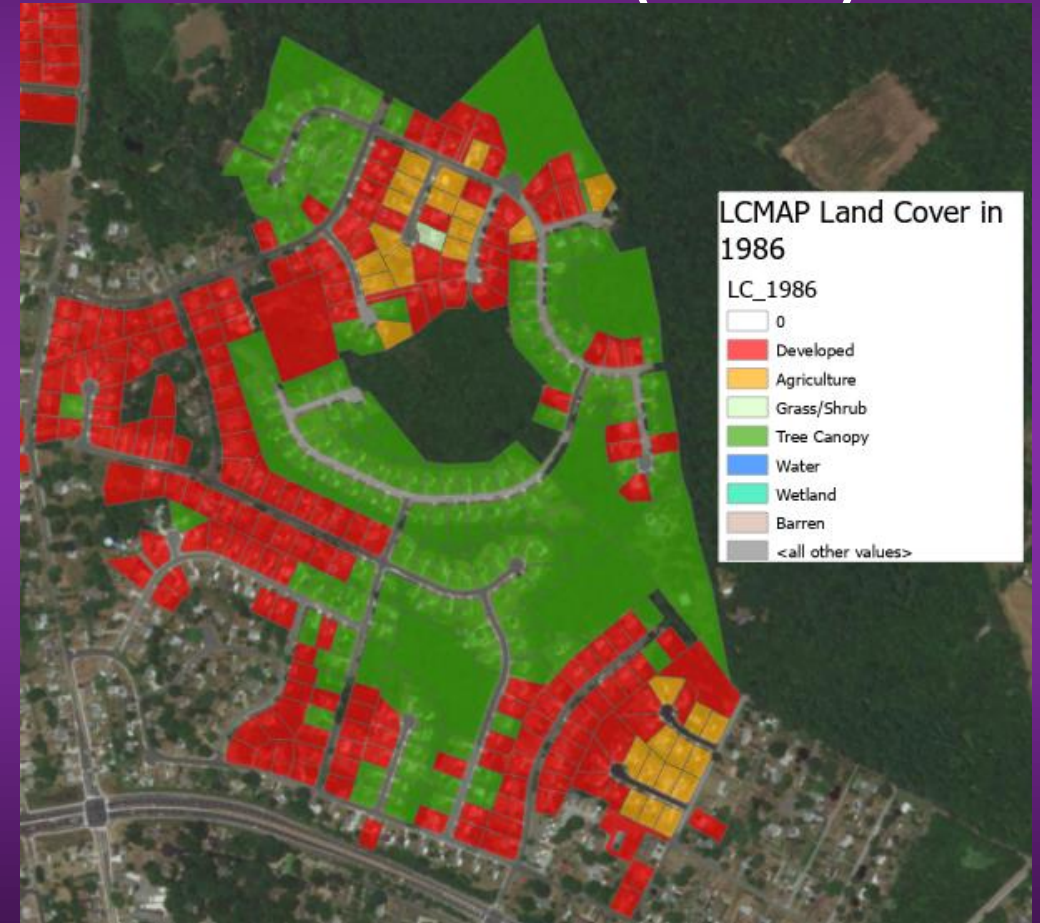
- Residential parcels on the same block/cul-de-sac are grouped together based on their size and association to the same road
- All parcels and residential parcel groups are assigned the available land cover, land use and tabular data
- Use rules (based on available data) to classify land use
 - Parcels whose data is insufficient (due to resolution of spatial data and small parcel size) will be assigned its groups' land use

Back-Casting Development Example

Year Developed (LCMAP)



Land Cover 1986 (LCMAP)



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