

ICPSR 38598

**National Neighborhood Data
Archive (NaNDA): Land Cover by
Census Tract and ZIP Code
Tabulation Area, United States,
2001-2016**

P.I. Documentation for Land Cover by ZIP Code
Tabulation Area Data

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National Neighborhood Data Archive (NaNDA): Land Cover by Census Tract and ZIP Code Tabulation Area, United States, 2001-2016

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National Neighborhood Data Archive (NaNDA): Land Cover by ZIP Code Tabulation Area, United States, 2001-2016



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nanda_landcover_zcta_2001-2016_01P.dta

nanda_landcover_zcta_2001-2016_01P.csv

nanda_landcov0116Z_01P.sas7bdat

Overview and Data Dictionary

Documentation Version: 1.0

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Dataset Overview

Description

This dataset contains measures of land cover (e.g., low-, medium-, or high-density development, forest, wetland, open water) derived from the National Land Cover Database (NLCD) and aggregated by United States ZIP code tabulation area (ZCTA). Land cover is measured both in total square meters and as a proportion of all land within the ZCTA.

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Data Sources

Measures are derived from the National Land Cover Database (NLCD) described in Yang et. al. (2018). Specifically, measures are based on the NLCD 2016 product released by the US Geological Survey (USGS) in 2016. NLCD is coordinated and produced by the Multi-Resolution Land Characteristics Consortium (MRLC) (Wickham et al., 2014). ZIP code tabulation area boundaries were obtained from the 2019 TIGER/Line shapefiles (U. S. Census Bureau, 2019).

Coverage

The dataset contains one observation per ZCTA in the continental United States. Alaska, Hawaii, and U. S. island territories are excluded.

Methodology

This dataset compiles NLCD spatial data into annual ZCTA-level measures. Variables include measures of green and blue space (e.g., open water, deciduous forest, evergreen forest), and categories of developed space (e.g., low intensity, medium intensity, high intensity development).

For each category of land cover, measures include both the total land cover area in each ZCTA (in square meters) and the proportion of area covered by that type of land cover in each ZCTA. The data span the years 2001-2016, based on the NLCD data releases (2001, 2003, 2006, 2008, 2011, 2013, 2016) and interpolated between adjacent years using a linear interpolation (e.g. $2004_value = (2003_value * 0.67) + (2006_value * 0.33)$). A flag in the dataset identifies those years that are interpolated.

These data are in long format with a row for each ZCTA for each year (2001-2016).

Usage Note

Users should be aware that ZCTAs are not equivalent to ZIP codes. ZIP codes are linear mail delivery routes created by the US Postal Service. ZIP code tabulation areas are spatial features consisting of census blocks grouped by the predominant ZIP code found on the block (United States Census Bureau, 2020).

In some cases, a location's address is not the same as its ZCTA. For example, some ZIP codes represent single-point addresses such as large post offices or office buildings. Also, the ZIP code for an address may not match its ZCTA if the ZIP code is not the most common ZIP code on the block. See the Census Bureau's ZCTA overview at <https://www.census.gov/programs-surveys/geography/guidance/geo-areas/zctas.html> (United States Census Bureau, 2020) for more information on how ZCTA boundaries are calculated.

Users wanting to combine this dataset with ZIP code geocoded data must use a ZIP code to ZCTA crosswalk. Such a crosswalk is available on the UDS Mapper website at <https://www.udsmapper.org/zcta-crosswalk.cfm> (John Snow Inc., 2018). Sample code for merging the UDS Mapper crosswalk with NaNDA datasets is available on the NaNDA repository at <https://www.openicpsr.org/openicpsr/project/120088/> (Chenoweth & Khan, 2020)

Variables

Variable	Type	Obs	Unique	Mean	Min	Max	Variable Label
zcta19	string	522512	32657	.	.	.	ZIP code tabulation area (2019 TIGER/Line shapefiles)
year_intp	int	522512	16	2008.5	2001	2016	NLCD year, interpolated
intp_flag	byte	522512	2	0.5625	0	1	Flag for interpolated value. 0=Original data, 1=Interpolated data
value_0	long	522512	127	1804.878	0	2.88E+07	Unclassified (sqm)
prop_value_0	float	522512	226	0.0000102	0	0.0903438	Unclassified (sqm): Prop. of measured ZCTA area
value_11	long	522512	72596	4336580	0	1.20E+09	Open Water (sqm)
prop_value_11	float	522512	407467	0.0314542	0	0.9518119	Open Water (sqm): Prop. of measured ZCTA area
value_12	long	522512	278	11442.83	0	5.93E+07	Perennial Snow/Ice (sqm)
prop_value_12	float	522512	324	0.0000125	0	0.0657902	Perennial Snow/Ice (sqm): Prop. of measured ZCTA area
value_21	long	522512	73963	6841096	0	1.16E+08	Developed, Open Space (urban imperviousness < 20%) (sqm)
prop_value_21	float	522512	236719	0.0764343	0	0.8635545	Developed, Open Space (sqm): Prop. of measured ZCTA area
value_22	long	522512	52395	3509216	0	5.38E+07	Developed, Low Intensity (urban imperviousness 20-49%) (sqm)
prop_value_22	float	522512	227352	0.0742382	0	0.9470096	Developed, Low Intensity (sqm): Prop. of measured ZCTA area
value_23	long	522512	34525	1556592	0	3.40E+07	Developed, Medium Intensity (urban imperviousness 50-79%) (sqm)
prop_value_23	float	522512	241237	0.0548808	0	1	Developed, Medium Intensity (sqm): Prop. of measured ZCTA area
value_24	long	522512	18880	556007.9	0	1.79E+07	Developed, High Intensity (urban imperviousness > 79%) (sqm)
prop_value_24	float	522512	197796	0.0283433	0	1	Developed, High Intensity (sqm): Prop. of measured ZCTA area
value_31	double	522512	25871	1460081	0	2.72E+09	Barren Land (sqm)
prop_value_31	float	522512	294028	0.0051336	0	0.7753233	Barren Land (sqm): Prop. of measured ZCTA area
value_41	long	522512	168871	2.30E+07	0	1.39E+09	Deciduous Forest (sqm)
prop_value_41	float	522512	376031	0.1568149	0	0.9510721	Deciduous Forest (sqm): Prop. of measured ZCTA area
value_42	double	522512	122962	2.37E+07	0	6.04E+09	Evergreen Forest (sqm)
prop_value_42	float	522512	312122	0.0686032	0	0.9596229	Evergreen Forest (sqm): Prop. of measured ZCTA area
value_43	long	522512	107721	8602726	0	1.14E+09	Mixed Forest (sqm)
prop_value_43	float	522512	313003	0.0540188	0	0.6947857	Mixed Forest (sqm): Prop. of measured ZCTA area

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Variable	Type	Obs	Unique	Mean	Min	Max	Variable Label
value_52	double	522512	106524	3.92E+07	0	9.62E+09	Shrub/Scrub (sqm)
prop_value_52	float	522512	394250	0.0603431	0	0.9939423	Shrub/Scrub (sqm): Prop. of measured ZCTA area
value_71	double	522512	119944	3.14E+07	0	5.80E+09	Herbaceous (sqm)
prop_value_71	float	522512	425050	0.0610964	0	0.9913934	Herbaceous (sqm): Prop. of measured ZCTA area
value_81	long	522512	143662	1.61E+07	0	1.21E+09	Hay/Pasture (sqm)
prop_value_81	float	522512	371007	0.0890555	0	0.9048474	Hay/Pasture (sqm): Prop. of measured ZCTA area
value_82	long	522512	179455	3.90E+07	0	1.75E+09	Cultivated Crops (sqm)
prop_value_82	float	522512	317011	0.1771786	0	0.9811988	Cultivated Crops (sqm): Prop. of measured ZCTA area
value_90	long	522512	103786	9988935	0	1.82E+09	Woody Wetlands (sqm)
prop_value_90	float	522512	344747	0.0486612	0	0.923927	Woody Wetlands (sqm): Prop. of measured ZCTA area
value_95	long	522512	58071	3139899	0	1.57E+09	Emergent Herbaceous Wetlands (sqm)
prop_value_95	float	522512	374031	0.013694	0	0.9365425	Emergent Herbaceous Wetlands (sqm): Prop. of measured ZCTA area
zcta_area	double	522512	32654	2.12E+08	5094	1.35E+10	ZCTA area (sqm)

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