

National Neighborhood Data Archive (NaNDA): Land Cover by Census Tract, United States, 2001-2016



openICPSR-110663

nanda_landcover_tract_2001-2016_02P.dta

nanda_landcover_tract_2001-2016_02P.csv

nanda_landcov0116T_02P.sas7bdat

Overview and Data Dictionary

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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 US census tract. Land cover is measured both in total square meters and as a proportion of all land within the tract.

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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). Census tract boundaries were obtained from the 2010 TIGER/Line shapefiles (U. S. Census Bureau, 2010).

Coverage

The dataset contains one observation per census tract in the lower 48 United States. Alaska, Hawaii, and US island territories are excluded.

Methodology

This dataset compiles NLCD spatial data into annual tract 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 census tract (in square meters) and the proportion of area covered by that type of land cover in each census tract. 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. $2002_value = (2001_value * 0.67) + (2004_value * 0.33)$). A flag in the dataset identifies those years that are interpolated.

These data are in long format with a row for each Census 2010 tract FIPS code for each year (2001-2016). Census tract boundaries were normalized to the 2010 tract boundaries using the Longitudinal Tract Data Base (Logan, Xu, and Stults, 2014).

Variables

Variable	Type	Obs	Unique	Mean	Min	Max	Variable Label
tract_fips	str11	1158208	72388	.	.	.	Census Tract 2010 FIPS Code
year_intp	float	1158208	16	2008.5	2001	2016	NLCD year, interpolated
intp_flag	float	1158208	2	0.5625	0	1	Flag for interpolated value. 0=Original data, 1=Interpolated data
value_0	float	1158208	202	3082.029	0	2.88E+07	Interpolated: Unclassified (sqm)
prop_value_0	float	1158208	450	3.53E-05	0	0.302576	Interpolated: Unclassified (sqm): Prop. of measured Census tract area
value_11	float	1158208	70009	2119044	0	2.33E+09	Interpolated: Open Water (sqm)
prop_value_11	float	1158208	512087	0.028817	0	1	Interpolated: Open Water (sqm): Prop. of measured Census tract area
value_12	float	1158208	245	7105.54	0	8.40E+07	Interpolated: Perennial Snow/Ice (sqm)
prop_value_12	float	1158208	569	3.39E-06	0	0.031019	Interpolated: Perennial Snow/Ice (sqm): Prop. of measured Census tract area
value_21	float	1158208	69317	3166317	0	1.63E+08	Interpolated: Developed, Open Space (urban imperviousness < 20%) (sqm)
prop_value_21	float	1158208	551627	0.127469	0	0.825961	Interpolated: Developed, Open Space (sqm): Prop. of measured Census tract area
value_22	float	1158208	35070	1598440	0	4.71E+07	Interpolated: Developed, Low Intensity (urban imperviousness 20-49%) (sqm)
prop_value_22	float	1158208	538131	0.191904	0	0.90404	Interpolated: Developed, Low Intensity (sqm): Prop. of measured Census tract area
value_23	float	1158208	16866	705347.1	0	1.72E+07	Interpolated: Developed, Medium Intensity (urban imperviousness 50-79%) (sqm)
prop_value_23	float	1158208	574270	0.183509	0	0.977679	Interpolated: Developed, Medium Intensity (sqm): Prop. of measured Census tract area
value_24	float	1158208	11778	251846.2	0	1.53E+07	Interpolated: Developed, High Intensity (urban imperviousness > 79%) (sqm)
prop_value_24	float	1158208	477219	0.08699	0	1	Interpolated: Developed, High Intensity (sqm): Prop. of measured Census tract area
value_31	float	1158208	25969	1124159	0	6.68E+09	Interpolated: Barren Land (sqm)
prop_value_31	float	1158208	360123	0.004376	0	0.983607	Interpolated: Barren Land (sqm): Prop. of measured Census tract area
value_41	float	1158208	161185	1.06E+07	0	1.85E+09	Interpolated: Deciduous Forest (sqm)
prop_value_41	float	1158208	503072	0.083677	0	0.906397	Interpolated: Deciduous Forest (sqm): Prop. of measured Census tract area

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Variable	Type	Obs	Unique	Mean	Min	Max	Variable Label
value_42	float	1158208	113145	1.29E+07	0	1.22E+10	Interpolated: Evergreen Forest (sqm)
prop_value_42	float	1158208	401752	0.034742	0	0.922422	Interpolated: Evergreen Forest (sqm): Prop. of measured Census tract area
value_43	float	1158208	104105	4035539	0	2.82E+09	Interpolated: Mixed Forest (sqm)
prop_value_43	float	1158208	400192	0.030732	0	0.685609	Interpolated: Mixed Forest (sqm): Prop. of measured Census tract area
value_52	float	1158208	90573	2.43E+07	0	1.92E+10	Interpolated: Shrub/Scrub (sqm)
prop_value_52	float	1158208	501674	0.031861	0	0.990327	Interpolated: Shrub/Scrub (sqm): Prop. of measured Census tract area
value_71	float	1158208	97753	1.55E+07	0	1.13E+10	Interpolated: Herbaceous (sqm)
prop_value_71	float	1158208	549160	0.028872	0	0.977437	Interpolated: Herbaceous (sqm): Prop. of measured Census tract area
value_81	float	1158208	140348	7270989	0	1.08E+09	Interpolated: Hay/Pasture (sqm)
prop_value_81	float	1158208	478102	0.051032	0	0.874634	Interpolated: Hay/Pasture (sqm): Prop. of measured Census tract area
value_82	float	1158208	153250	1.77E+07	0	3.15E+09	Interpolated: Cultivated Crops (sqm)
prop_value_82	float	1158208	378692	0.07253	0	0.955326	Interpolated: Cultivated Crops (sqm): Prop. of measured Census tract area
value_90	float	1158208	102679	4826590	0	4.46E+09	Interpolated: Woody Wetlands (sqm)
prop_value_90	float	1158208	453993	0.034041	0	0.993833	Interpolated: Woody Wetlands (sqm): Prop. of measured Census tract area
value_95	float	1158208	53395	1659205	0	2.18E+09	Interpolated: Emergent Herbaceous Wetlands (sqm)
prop_value_95	float	1158208	464827	0.009411	0	0.914987	Interpolated: Emergent Herbaceous Wetlands (sqm): Prop. of measured Census tract area

References

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