

Resources & Environment

Rural Residential Land Use: Tracking Its Growth



Photo courtesy of the New Jersey Office of State Planning

Residential area is broadly defined as the land or lots upon which housing units are situated. Of the estimated 109 million acres of residential land in 1997—the most recent estimate comparable to other published sources—36 million acres were located in urban areas and 73 million in rural areas. The combined increase in urban area and rural residential use resulted in a 2.1-million-acre annual decrease in other rural uses, from 1980 to 1997.

Lot Sizes of Rural Residences Tend to Be Very Large

One factor in the relatively greater increase in rural residential land use is that it is generally land-extensive compared with the land-intensive residential use in urban areas. Rural residential lots, while fewer in number than urban lots, tend to be larger, averaging nearly 3 acres per household, compared with less than a half acre per household in urban residential areas.

Forty-four million acres, 60 percent of all rural residential lands, are in the largest lot-size category, over 10 acres. Rural land in this category is 3 1/2 times as large as the area of urban land in this category. The wide acreage disparity between rural and urban large-lot categories is likely attributable to relative land values—lower land prices in rural areas make large lots more affordable.

While the amount of residential land in the largest lot-size category, both urban and rural, is far greater than the amount in other categories, the corresponding number of household units in that category is relatively small. In urban areas in 1997, just 1 million households occupied 12 million acres of urban residential land in the largest lot size. In contrast, in the smallest lot size, less than 1/8 acre, 38 million households accounted for only 3 million acres.

In rural areas this pattern also holds. Less than 3 million households accounted for 44 million acres in the largest lot-size category, while 5 million households resided on only 300,000 acres in the smallest lot-size category.

Among the most rapidly growing land uses in the U.S. is land for rural residences. Between 1980 and 1997, residential land use in rural areas increased more rapidly than in urban areas, not only in percentage terms but also in absolute numbers: 1 million acres per year compared with 420,000 acres. While land in residential use in rural areas is a small proportion of total U.S. land use, this phenomenon has implications for farmland prices and the availability of land for agriculture and forestry, and can affect rural amenities and the rural environment in positive and/or negative ways.

Residential Land in Rural Areas Is Almost Double the Urban Residential Acreage

All land is categorized as either urban or rural. Within the urban and rural categories are residential and nonresidential land. The rural nonresidential category is by far the largest, accounting for over 2.1 billion acres of land in 1997, and includes cropland, forestland, pasture and range, and other miscellaneous uses.

Residential Land Use Is Growing Faster in Rural Than in Urban Areas

Area	1980		1997		Annual change			
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
	----- Million acres -----				Million acres		Percent	
Residential	29	56	36	73	0.42	1.03	1.44	1.84
Non-residential	18	2,160	30	2,124	0.66	-2.10	3.57	-0.10

ERS estimates based on American Housing Survey (AHS), U.S. Department of Commerce and the U.S. Department of Housing and Urban Development.

Defining the Terms

Urban area consists of cities, towns, and Census-designated places of 2,500 or more persons and areas with populations of 50,000 or more—central cities and their adjacent densely settled surrounding “urban fringe.” Within urban areas are residential uses and concentrations of nonresidential uses such as commercial, industrial, and institutional land; office complexes; urban streets and roads; major airports; urban parks and recreational areas; and other land within urban-defined areas. The definition has changed little from decade to decade during the last 40 years. Portions of extended cities that are essentially rural in character are excluded.

Rural area covers all land that is not urban.

Residential area is estimated from American Housing Survey (AHS) lot-size data for housing units. Sample-based responses, expanded to area totals, are published in the AHS every 2 years. These data are collected for both urban and

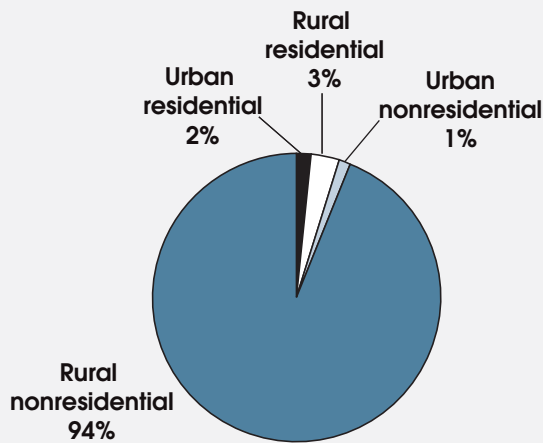
rural areas. The data set includes housing lots on farms (removed for this study). The AHS includes housing units by lot size from 1980.

Urban residential is an estimate of the residential component of urban land that shows how much land is used for housing in urban areas versus land for all other urban purposes, such as commercial and industrial sites, institutional uses, urban parks, and other non-housing urban uses.

Rural residential is an estimate of land used for residences in rural areas. Rural residential land includes hobby farms, ranchettes, and housing units on rural lots. In many cases, rural residential development involves the subdivision of larger parcels, including farms.

Developed land generally includes both urban and rural residential uses, as well as other urban uses and rural transportation uses.

Rural Residential Land Use Exceeds Urban Residential



ERS estimates based on 1997 American Housing Survey and ERS Major Land Use data.

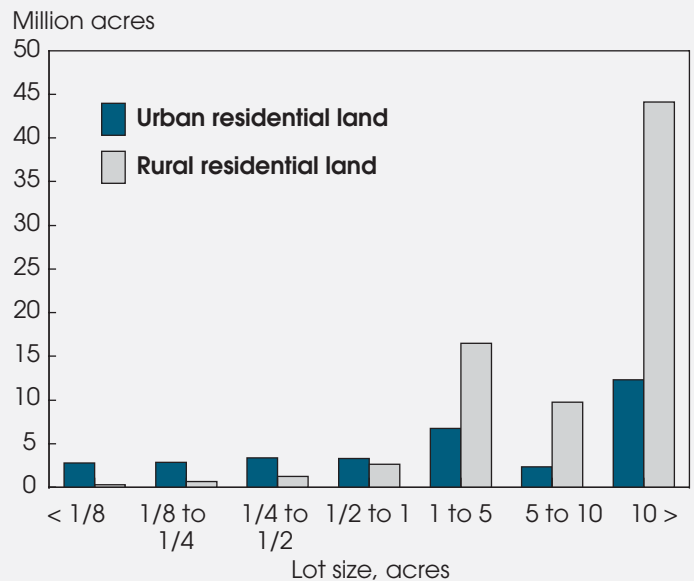
Economic Research Service, USDA

Rural Residential Area Is a Small but Growing Proportion of U.S. Land Use

Estimates of major land uses by USDA’s Economic Research Service (ERS) suggest that rural residential land has increased substantially, by 31 percent, from 1980 to 1997. In contrast, all the major rural nonresidential uses decreased slightly—none by more than 3 percent. (Parks and wildlife uses in rural areas increased by 6 percent.)

Concerns about the effects of land conversion to all developed uses, including loss of rural land and open space, traffic conges-

Large Size Lots Account for the Bulk of Residential Land*



*ERS estimates based on 1997 American Housing Survey data. Farm housing area excluded.

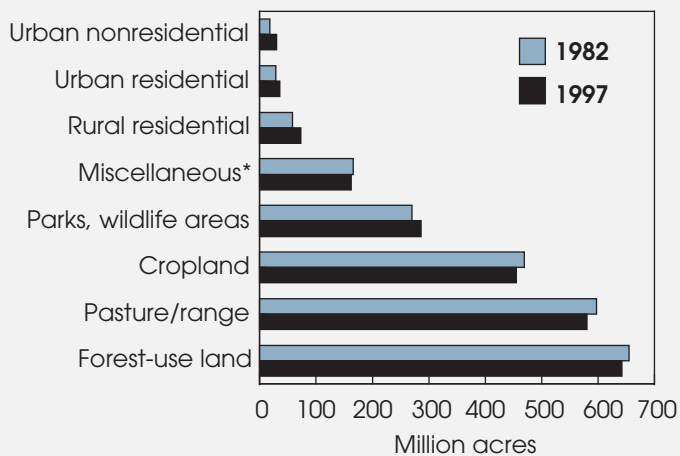
Economic Research Service, USDA

tion, sprawl, and loss of rural amenities, arise even though conversions are a relatively small part of the area of cropland, pasture, range, and forest uses from which they are converted.

Urban area, the traditional measurement used to describe the urbanization process, is a relatively small part of total land use in the U.S. (less than 3 percent in 1997), but is growing rapidly. A significant portion of the Census Bureau-defined urban area is used for residential purposes. However, there is also an increas-

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Residential Land Use Is Growing in Both Rural And Urban Areas



*Marshes, swamps, bare rock areas, deserts, and unclassified uses.
ERS estimates based on American Housing Survey and ERS Major Land Use historic data series.

Economic Research Service, USDA

ing awareness of the magnitude of rural non-farm residential development. Rural residential land accounts for slightly over 3 percent of U.S. land use.

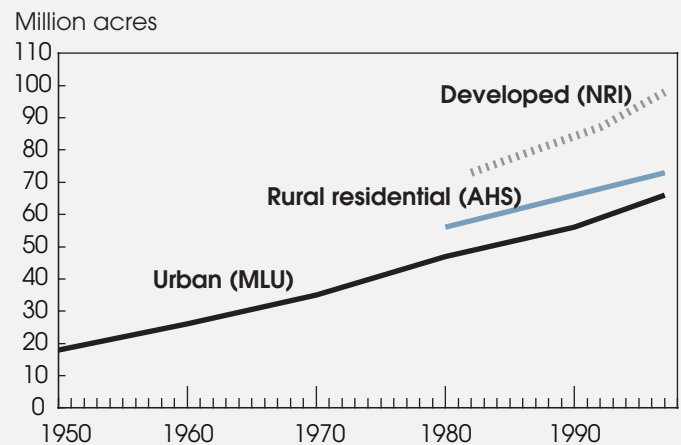
Alternative Data Sources Confirm Increased Rate of Developed Uses

Different data sources use different concepts, methods, and terms in measuring land conversion from cropland, forest, and other open, rural uses to urban and rural developed uses. Estimated annual rates of increase in developed uses differ by time period and data source. The magnitudes of the estimated changes among three primary data sources vary because of differences in definitions, sampling techniques, and sampling errors.

The rates of annual increase vary from 0.8 million acres per year from 1950 to 1980, to an estimated 1.4 million acres per year during 1990-97 for urban area as measured by the Census and the ERS Major Land Use series. The National Resources Inventory (NRI) indicates that the rise in developed land was 1.3 million acres per year for the 1982-87 period and 2.2 million per year in 1992-97. Total 1997 NRI developed acreage was 98 million, up from 73 million acres in 1982. The American Housing Survey (AHS) estimate of 109 million acres of total residential land is larger than NRI developed land, probably due to differences in definitions and survey sampling procedures.

All three data sources show increases in developed uses in the 1990s, although the magnitude varies. Growth can be attributed partly to long periods of peace and economic prosperity in the U.S. since 1990. Higher incomes, low interest rates, and minimal inflation made bigger homes and larger lots more affordable.

Multiple Data Sources Show a Rise in Developed Uses of Land



ERS estimates based on National Resources Inventory, American Housing Survey, and Major Land Use series.

Economic Research Service, USDA

Three Data Sources on Urban, Developed, & Residential Land

- Bureau of the Census, U.S. Department of Commerce, measures “**urban area**” every 10 years, coincident with the U.S. Census of Population. USDA’s Economic Research Service uses the Census measure in its Major Land Use (MLU) series.
- Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture, measures “**developed area**,” including urban, rural transportation, and other components, at 5-year intervals as part of the National Resources Inventory (NRI). (The NRI is being converted to an annual cycle.)
- U.S. Department of Housing and Urban Development (HUD) and the U.S. Bureau of the Census include lot sizes in the American Housing Survey (AHS), which is the basis of “**residential area**” estimates. American Housing Surveys are conducted every 2 years.

Why is Rural Residential Area Important? What Are the impacts?

Competition for rural land drives up prices. Decreasing costs of transportation and communication, along with higher incomes, encourage development of rural residential lots. Advanced telecommunications capabilities, such as the Internet and cable, are becoming available in many areas of the country, making it easier to work in usually urban-oriented jobs far from urban centers.

As this expansion occurs, competition for rural land increases. ERS research has shown that development, including rural residential development, has a significant influence on rural land

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prices. When development spreads to rural areas, the price of farmland is often driven above its economic value for farm use. In states where farmland is in great demand for conversion to developed and rural residential uses, a relatively large proportion of the market value of farmland is attributable to nonfarm demand.

Land converted to rural residences slightly reduces availability for agriculture and forestry uses. Several studies have shown that once land is converted to developed uses it tends to remain in those uses. An ERS study found this applies to both the residential and nonresidential components of developed area. That is, the shift in use is generally irreversible and may reduce future land availability for food and fiber production. At present, however, the effects of land conversion on aggregate food and fiber production are minimal, as the area converted is a small fraction of total rural area. Since rural residential land includes large isolated tracts, it may not be as irreversible as urban land, but there are no comparable studies.

National averages may mask significant effects at state and local levels. New Jersey, Maryland, and Massachusetts, for example, have experienced heavy development pressures, which have led to the establishment of various land protection programs. Land conversion, in general, may affect the supply of rural amenities such as open space, clean air, and rural lifestyles, and may produce fragmented development patterns. Other environmental challenges, including decreased soil quality, wildlife habitat, and water and air quality, may follow rural residential growth.

In summary, urban and rural residential areas have increased significantly in the last several decades. These increases meant some reductions in cropland, pasture, range, miscellaneous, and forest uses. Rural residential lots tend to be much larger than housing lots in urban areas. Conversion of land to developed uses in urban areas tends to be irreversible. The extent to which rural residential land is irreversible is also likely high, but has not been studied. Further research is needed to address the potential effects of increasing rural residential land use on future

For further information:

Development at the Urban Fringe and Beyond: Impacts on Agriculture and Rural Land, Economic Research Service, USDA, June 2001, AER-803
www.ers.usda.gov/publications/aer803/


Major Uses of Land in the United States, 1997, Economic Research Service, USDA, August 2001, SB-973
www.ers.usda.gov/publications/sb973/sb973.pdf
Associated data files at:
www.ers.usda.gov/data/majorlanduses/

1997 National Resources Inventory Summary Report, Natural Resources Conservation Service, USDA, April 2002
www.nrcs.usda.gov/technical/NRI/1997/summary_report/index.html and associated data files.

American Housing Survey for the United States, 1997, U.S. Department of Housing and Urban Development and U.S. Department of Commerce, September 1999
www.census.gov/prod/99pubs/h150-97.pdf
Associated data files, *The American Housing Survey, 1997*, National Microdata, CD-AHS97-NMICRO

“Urbanization Affects a Large Share of Farmland,” *Rural Conditions and Trends*, Economic Research Service, USDA, July 2000
www.ers.usda.gov/publications/rcat/rcat102/rcat102k.pdf

See also on the ERS web site: “Urban Development, Land Use, and Agriculture”
www.ers.usda.gov/features/sprawl/

food and fiber production, the environment, wildlife habitat, and water and air quality. 

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