

Using Population Data: Rural Population Forecast 2010 to 2040

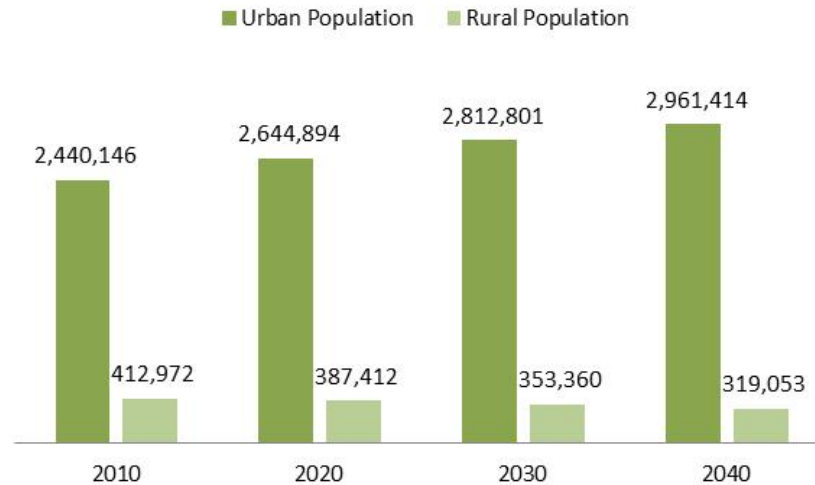
The Center for Economic Development and Business Research, W. Frank Barton School of Business at Wichita State University, recently released online population projections by age cohort from 2010 through 2040 for all Kansas counties. This report is the fourth in a series of reports aimed at identifying ways to use population projection data. This report analyzes the population projections for rural areas.

Two sets of population projections were completed, one with and one without migration. This was done to account for the unreliability of migration patterns. Migration patterns can change rapidly due to economic conditions, government policy or natural disasters. This analysis used population patterns with migration. A list of rural counties can be found below. Counties were defined as rural if they were not part of a metropolitan or micropolitan area as defined by the Office of Management and Budget (OMB).

Rural Counties					
Allen	Comanche	Hamilton	Marshall	Pratt	Stanton
Anderson	Decatur	Harper	Meade	Rawlins	Stevens
Barber	Dickinson	Haskell	Mitchell	Republic	Thomas
Bourbon	Edwards	Hodgeman	Morris	Rice	Trego
Brown	Elk	Jewell	Morton	Rooks	Wallace
Chautauqua	Ellsworth	Kearny	Nemaha	Rush	Washington
Cherokee	Gove	Kingman	Neosho	Russell	Wichita
Cheyenne	Graham	Kiowa	Ness	Scott	Wilson
Clark	Grant	Lane	Norton	Sheridan	Woodson
Clay	Gray	Lincoln	Osborne	Sherman	
Cloud	Greeley	Logan	Pawnee	Smith	
Coffey	Greenwood	Marion	Phillips	Stafford	

Rural vs. Urban Population Projections

Although there are many more rural counties than urban, rural population is only a fraction of the total population in Kansas. The rural population was 412,972 in 2010, or 14.5 percent of the population. By 2040, the rural population in Kansas is expected to comprise 9.7 percent of the total population.



Rural Population Projections

The rural population will continue to decline over the next 30 years at an increasing rate. The five-year percent change in population is projected to be -2.9 percent in 2015. Between 2035 and 2040 population is expected to decline 5.2 percent. From 2010 to 2040 rural population is expected to decline 22.7 percent. Only three rural counties in Kansas are expected to grow over the analysis period. The average annual percent change will be -0.8 percent. Below is a list of counties with the largest and smallest growth rates from 2010-2040.

Counties with the largest percentage growth:

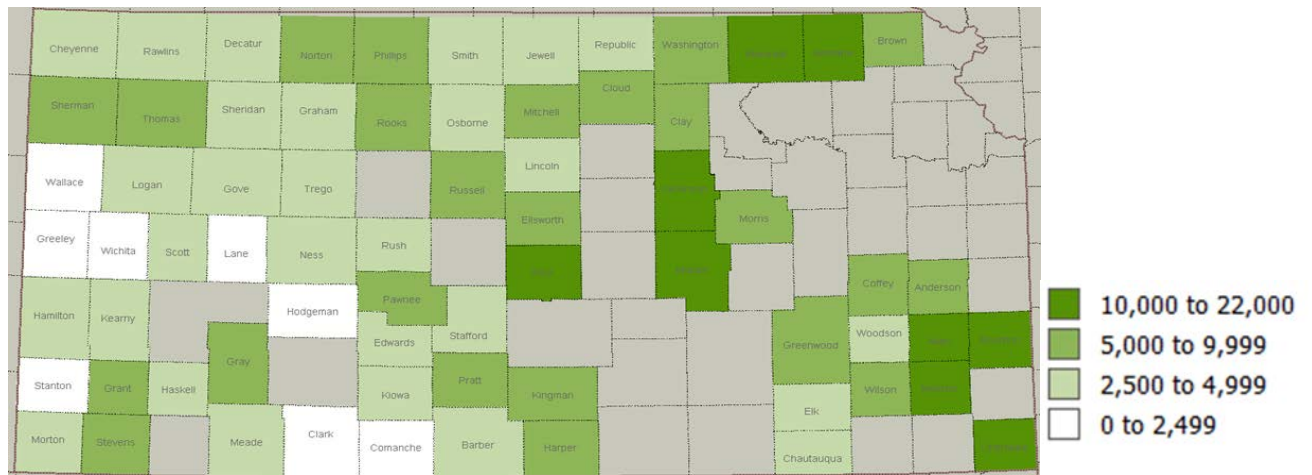
- Hamilton County is expected to grow 9.5 percent between 2010 and 2040, for an average annual growth rate of 0.3 percent.
- Dickinson County is expected to grow 9.2 percent between 2010 and 2040, for an average annual growth rate of 0.3 percent.
- Morris County is expected to grow 1.2 percent between 2010 and 2040, for an average annual growth rate of 0.04 percent.

Counties with the largest decline:

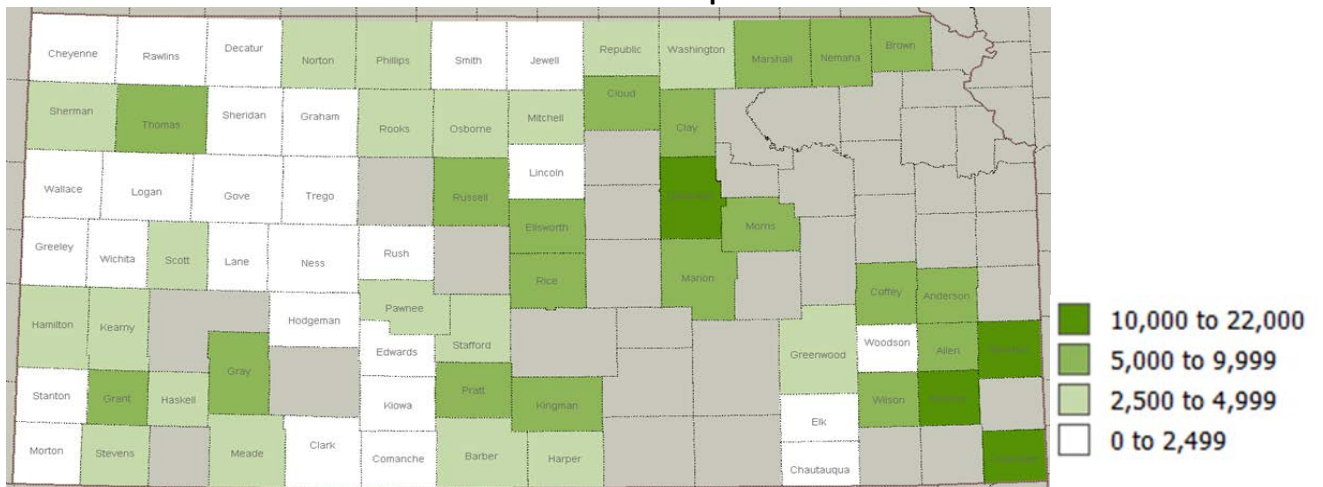
- Kiowa County population is expected to decline 73.8 percent, for an average annual decline of 2.5 percent between 2010 and 2040. Much of the decline could be attributed to migration patterns triggered by the Greensburg tornado.
- Greeley County population is expected to decline 61.1 percent, for an average annual decline of 2 percent between 2010 and 2040.
- Wallace County population is expected to decline 57.5 percent, for an average annual decline of 1.9 percent between 2010 and 2040.

	2010	2015	2020	2025	2030	2035	2040
Total Rural Population	412,972	401,046	387,412	370,272	353,360	336,436	319,053
5-Year							
Level Change		(11,926)	(13,634)	(17,140)	(16,912)	(16,924)	(17,383)
Percent Change		-2.9%	-3.4%	-4.4%	-4.6%	-4.8%	-5.2%
2010-2040							
Level Change							(93,919)
Percent Change							-22.7%
Average Annual Percent Change							-0.8%

Rural Counties 2010 Population



Rural Counties 2040 Population Forecast



Population Projection Methodology

The CEDBR prepared population forecasts for Kansas counties using the conventional cohort survival model. For each of 36 age/sex cohort groups, population was forecasted using individual cohort projections of survival rates, birth rates and migration. The starting point for the projections was the Census Bureau's 2010 Demographic Profile Data. The cohort survival model can be summarized mathematically as:

$$T = \sum_{x=1}^{36} p_{x1}$$

Where T = Population at the end of the period for all age/sex cohort groups

p_{x1} = Population at the end of the period for cohort group x

and

$$p_{x1} = p_{x0} + b_x - d_x + nm_x$$

where p_{x1} = Population at the end of the period for cohort group x

p_{x0} = Population at the beginning of the period for cohort group x

b_x = Births during the period for cohort x

d_x = Deaths during the period for cohort x

nm_x = Net migration during the period for cohort x

x = cohort group