

South Carolina Forestland Per Resident: County patterns from 2005 to 2025

Elysium Sigmond and Puneet Dwivedi*

Contact Information

PO Box 668, Eco-Intelligence, LLC, Watkinsville, GA 30677

Email: puneet@ecointelligence.info | Visit <https://ecointelligence.info/> for more information

Publication Date: September 13, 2026

Abstract

This article examines estimated forestland/resident across South Carolina's 46 counties from 2005 to 2025. The measure is calculated by dividing estimated forestland acres by county population. Statewide population increased by 30.4%, while estimated forestland changed by -1.4%. As a result, forestland/resident declined from 3.05 to 2.30 acres. County values varied widely in 2025, from 0.35 acres/resident in Greenville to 25.42 acres in Allendale. Population change and per capita forestland change were strongly and inversely related, with a correlation of -0.94. The ratio is best interpreted as a pressure indicator rather than a measure of public access, ownership, or ecological quality.

Introduction

Forestland and population are often discussed separately. Forestland measures describe the land base, while population measures describe the number of people who live within it. A per-resident measure brings those two dimensions together by providing a simple way to compare counties with very different populations and to examine how demographic change affects the estimated amount of forestland associated with each resident. This study uses county-level forestland estimates from the Forest Inventory and Analysis program and population data from the United States Census compiled for the same years. The analysis addresses three questions. First, how did the statewide relationship between forestland and population change from 2005 to 2025? Second, which counties had the highest and lowest forestland/resident in 2025? Third, how closely was population change associated with change in the per-resident measure?

Data and methods

The analysis uses the 46 South Carolina counties. For each county and year (2005, 2010, 2015, 2020, and 2025), forestland/resident is calculated by dividing estimated forestland acres by population. Endpoint changes compare the 2005 value with the 2025 value. The association between population change and change in the per-resident measure is summarized with a Pearson correlation across counties.

Results

Statewide change

South Carolina's population increased from 4,270,150 in 2005 to 5,570,274 in 2025, a 30.4% increase (Figure 1). Over the same period, estimated forestland declined from 13.01 to 12.83 million acres (Figure 1). The combined effect reduced the estimated forestland/resident by -24.4%, from 3.05 acres to 2.30 acres.

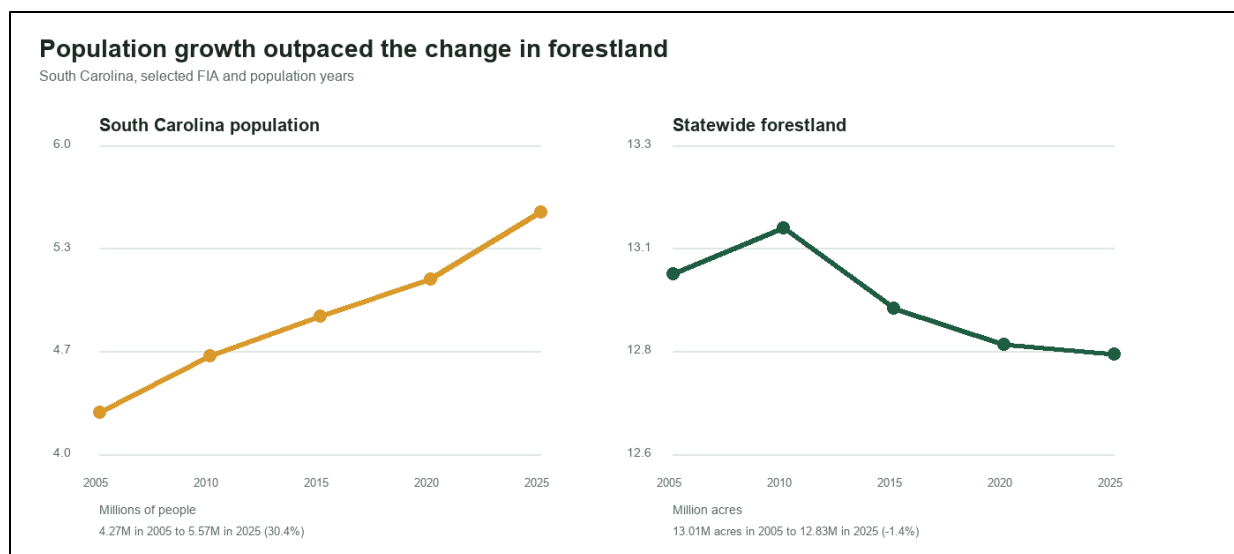


Figure 1. South Carolina population and estimated forestland in selected years from 2005 to 2025.

County differences in 2025

The median county had an estimated 5.49 acres of forestland/resident in 2025. The highest value was in Allendale, at 25.42 acres/resident (Figure 2). The lowest was in Greenville, at 0.35 acres (Figure 2). The difference between those endpoints was 73.2 times (Table 1).

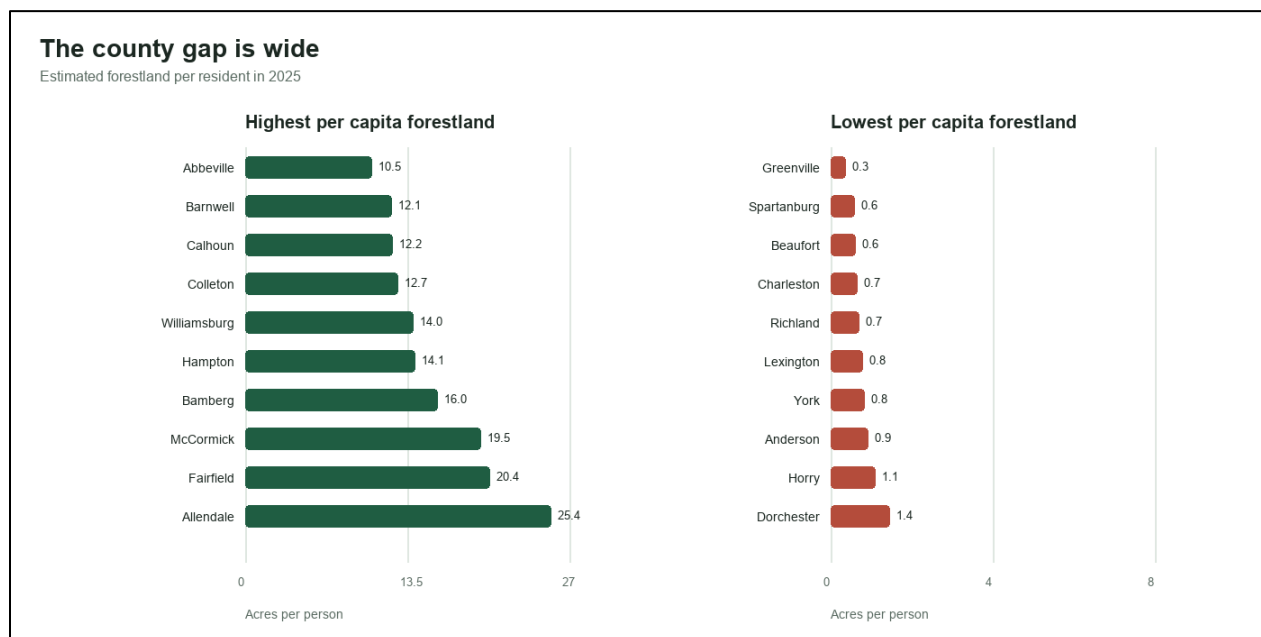


Figure 2. South Carolina counties with the highest and lowest estimated forestland /resident in 2025.

Table 1. Selected counties with the highest and lowest estimated forestland per resident in 2025.

County	Acres per resident	Population	Change since 2005
Allendale	25.42	7,355	49.8%
Fairfield	20.36	20,340	20.6%
McCormick	19.54	10,215	-2.5%
Bamberg	16.01	12,796	41.0%
Hampton	14.07	18,174	18.5%
Greenville	0.35	583,125	-38.2%
Spartanburg	0.57	380,857	-36.4%
Beaufort	0.61	204,433	-31.6%
Charleston	0.65	436,200	-28.4%
Richland	0.70	434,956	-19.8%

Population change and the per-resident measure

Across the 46 counties, the correlation between population changes and changes in estimated forestland/resident was -0.94. Counties that gained residents generally experienced a decline in the per resident measure (Figure 3). Counties that lost residents often experienced an increase. This pattern is partly arithmetic, i.e., when population grows faster than estimated forestland, the denominator increases more quickly than the numerator (Figure 4).

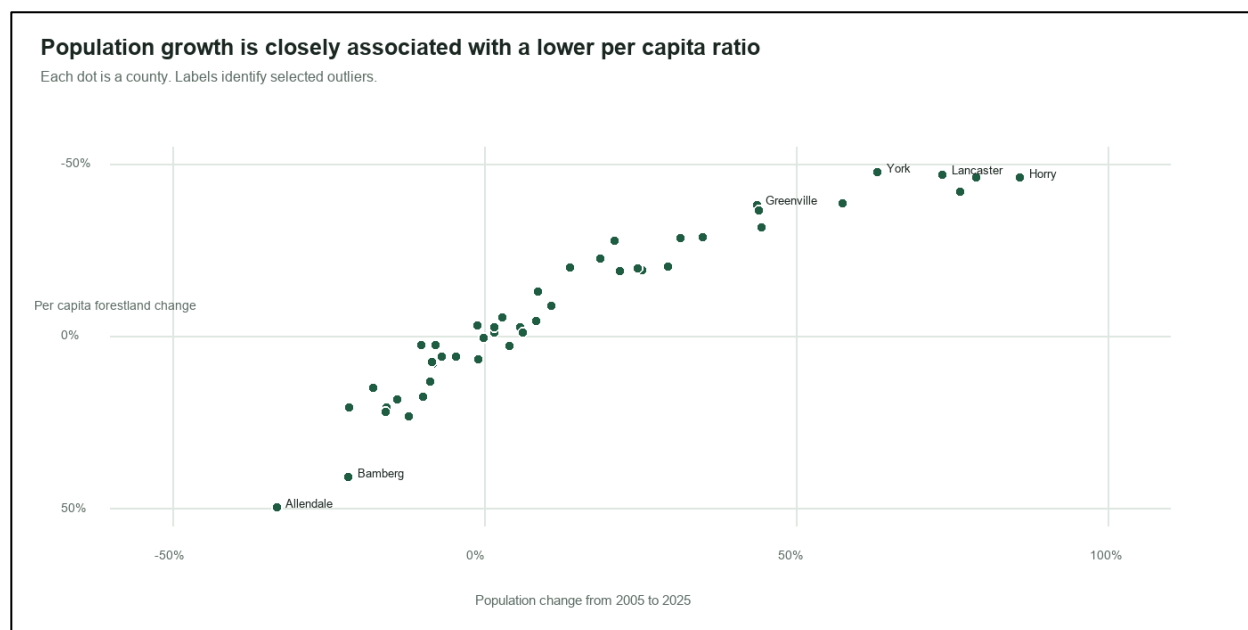


Figure 3. Population and estimated forestland/resident by county in 2025. Bubble size represents population.

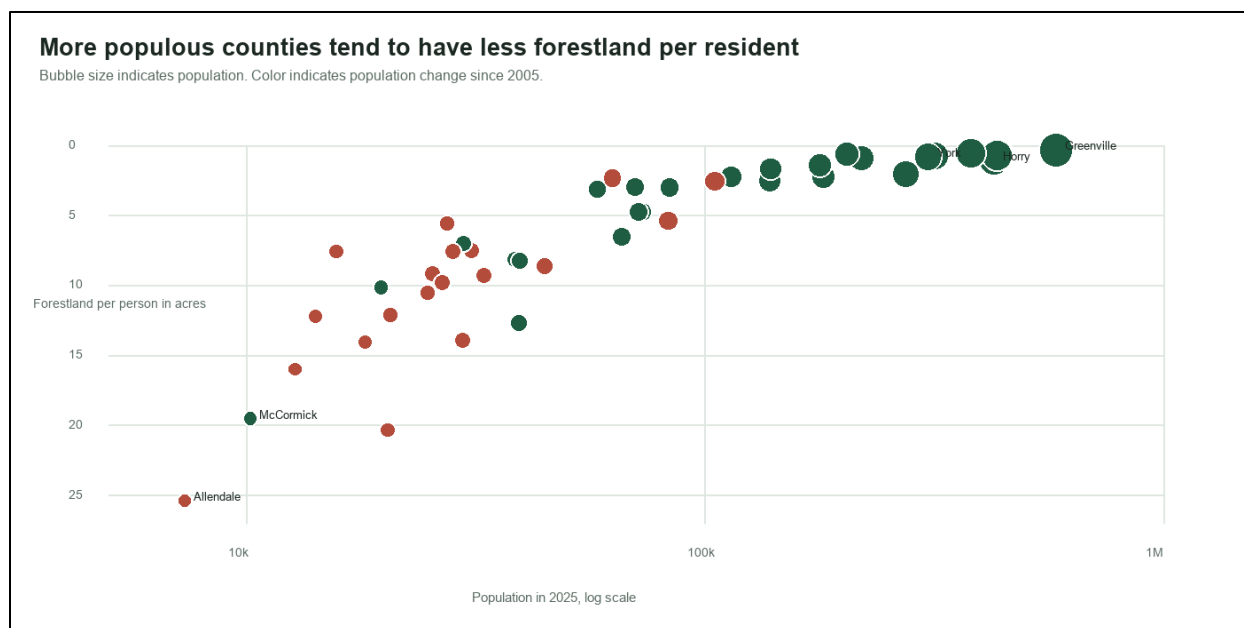


Figure 4. Population change and change in estimated forestland/resident from 2005 to 2025.

Discussion

The statewide results show a gradual decline in the amount of estimated forestland associated with each resident. The change is not explained by a large statewide shift in the forestland estimate. Instead, population growth increased the denominator in the ratio. This distinction matters because a decline in forestland/resident does not necessarily mean that the same amount of forestland was converted to another use. The county results show why statewide averages can conceal meaningful local differences. Smaller counties often have large forestland ratios because their population denominators are small. Larger counties often have lower ratios because more residents share a comparatively limited forestland base. The ratio, therefore, reflects both land conditions and settlement patterns. The most pronounced increase occurred in Allendale, where the ratio rose from 16.97 to 25.42 acres/resident. The sharpest decline occurred in York, where the ratio fell from 1.55 to 0.81. These changes should be interpreted alongside local data on land conversion, ownership, development, and conservation.

Limitations

The forestland/resident measure is not a measure of public access. It does not distinguish public from private land, protected from unprotected land, or accessible from inaccessible land. It also does not describe forest conditions, ecological integrity, or the distribution of forestland within a county. The analysis uses endpoint comparisons and does not estimate annual rates of change. County forestland estimates are sample-based and carry uncertainty. Small differences between counties may not be meaningful when sampling error is considered.

Conclusion

Between 2005 and 2025, South Carolina's population grew by 30.4%, while estimated forestland remained close to 13 million acres. The estimated forestland/resident consequently declined from 3.05 acres to 2.30. County values varied substantially, and population growth was strongly associated with a lower per-resident ratio. The measure offers a useful starting point for understanding demographic pressure on the forestland base, provided it is not confused with access, ownership, or conservation status.