

The Economic Impact of Open Space on Residential Property Values in Tennessee

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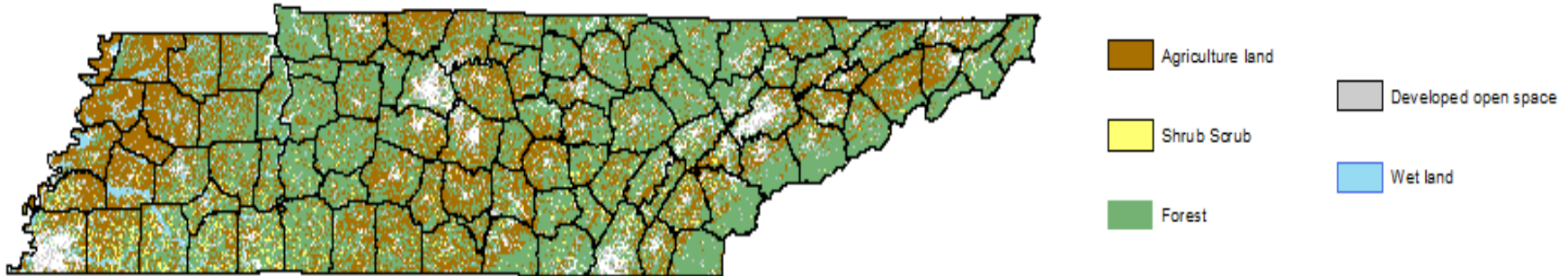
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Purpose of Report

- Over 93 percent of Tennessee is public and private land with no buildings or other built structures (open space)
- Individual values for many benefits produced by these open spaces are not reflected in markets
- The inability of markets to capture individual values for alternative land uses complicates local and state-level policy and planning decisions

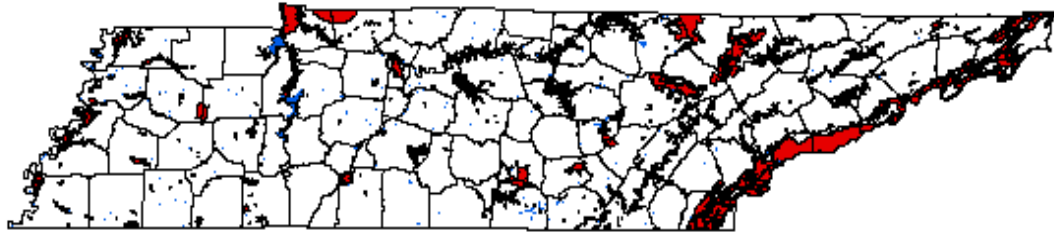
Report provides estimates of the impact of these open spaces on nearby property values

Overview of Open Space in TN



- Over half of Tennessee's open space is covered in forest and over a third is agricultural land used as pasture and for growing crops
- Remainder is divided between developed open space, shrubland, and wetlands.

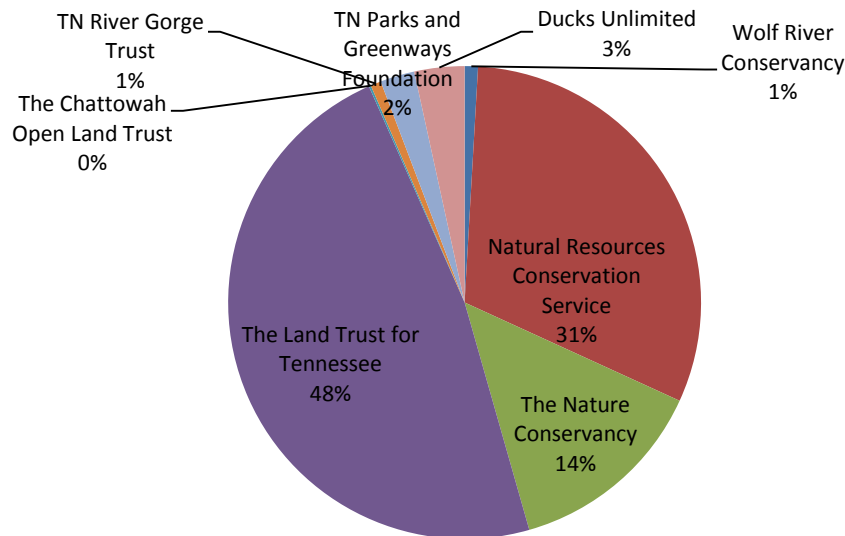
Overview of Open Space in TN



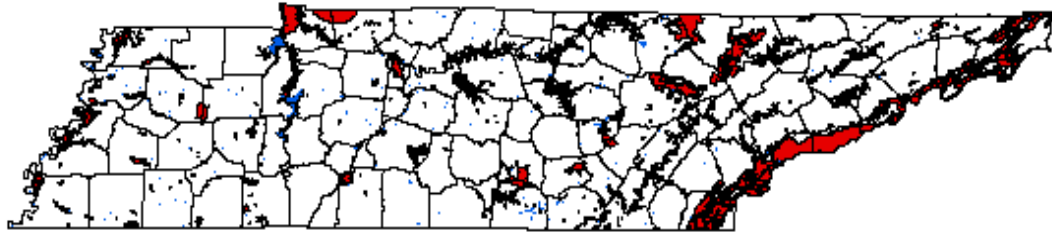
The vast majority of open space in the state (approximately 96 percent) is privately owned with no form of protection from development

Blue square: Private protected areas
Red square: Public protected areas

Less than 1 percent of this privately-owned open space has been protected from future development through a conservation easement, participation in the USDA's Conservation Reserve Program, or some other sale of development rights

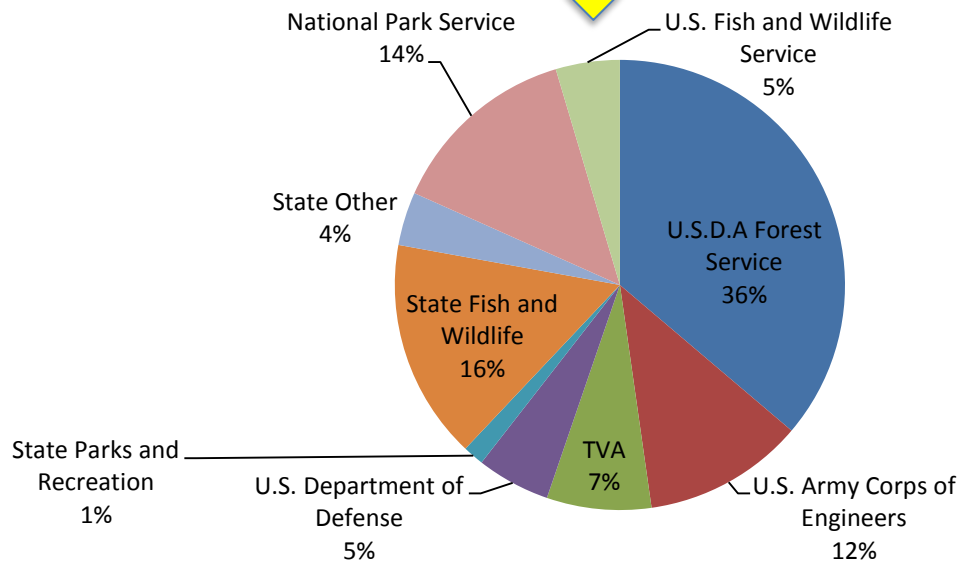


Overview of Open Space in TN



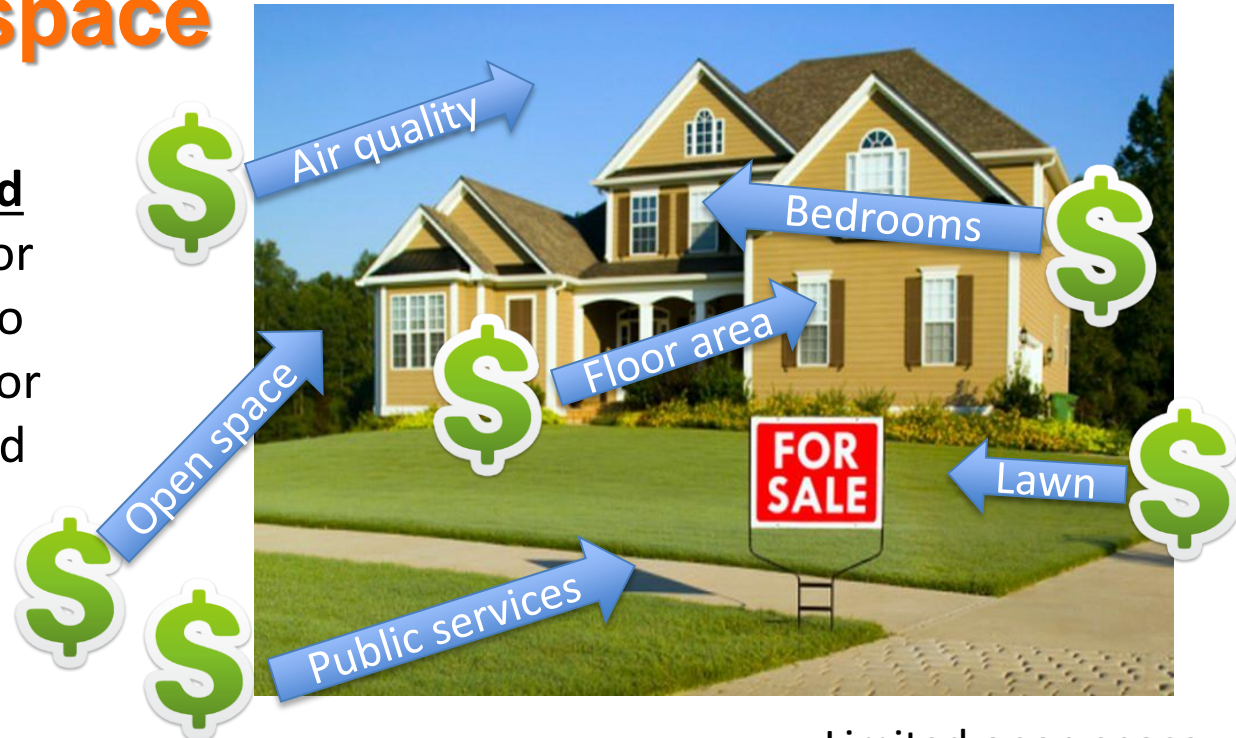
Blue Private protected areas
Red Public protected areas

Four percent of the open space is publically protected as national parks, national recreation areas, wild and scenic rivers, state parks, state natural areas, state forests, and wildlife management areas



Valuing open space

Hedonic pricing method
the value people have for a house can be traced to the values people hold for the attributed embodied in the house



Lots of open space



Moderate open space



Limited open space



Previous results

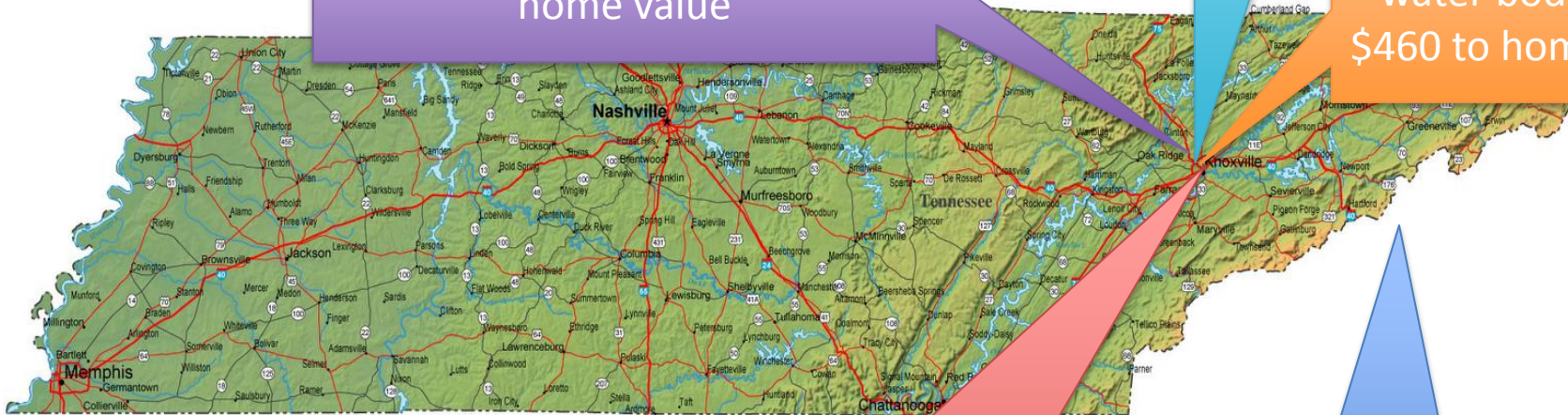
1,000 ft closer to greenway or park adds \$170 to \$180 to home value

1,000 ft closer to golf course adds \$290 to home value

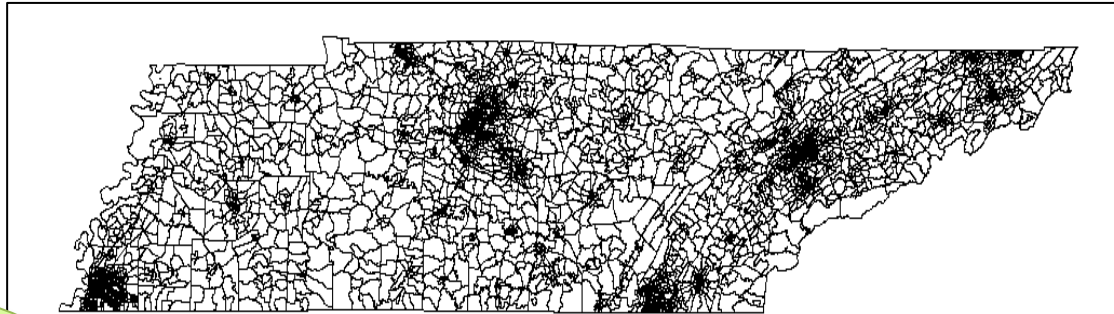
1,000 ft closer to water body adds \$460 to home value

100m closer to evergreen woodlot increases home value by \$682 but deciduous woodlot decreases home value by \$589

1% increase in forest patch size decreases home value by \$193



A statewide analysis



Socioeconomic characteristics

Median home value in a Census Block Group

Open space characteristics

Per capita income
Travel time to work
Vacancy rate
Unemployment rate
Education
Neighborhood stability
Population density

Structural characteristics

Rooms per house
Age of home
Gas heat
Percent bedrooms
Lot size

Location characteristics

Dist. to interstate
Dist. to lake
Urban/rural mix
Located in MSA

Developed
Forest
Shrubland
Agricultural land
Wetland
Dist. to federal protected
Dist. to state protected
Dist. to private protected

Results: developed open space

- Definition: impervious services account for less than 20% of total cover
- Detracts from home values in all areas
 - Rural CBGs: -\$4.44/acre
 - West MSAs: -\$18.09/acre
 - Middle MSAs: -\$19.38/acre
 - East MSAs: -\$12.86/acre
- Total impact of decreasing developed open space in TN by 4,125 acres
 - Home values: +\$38 million
 - Property tax revenues: +\$384,300
- This category lumps together many types of open space that may positively impact home values such as golf courses and municipal parks



Results: forest

- Definition: sum of deciduous, evergreen and mixed forest area
- No effect on home values or property tax revenues
- This result likely due to positive values for certain types of trees and negative values for others



Results: shrubland

- Definition: areas dominated by shrubs less than 5 meters tall
- Increases home values in Clarksville and Nashville MSAs
 - Adding an additional acre of shrubland increases the median home value by by \$224.82
- Shrubland has no impact on home values in other parts of the state
- Total impact of decreasing shrubland in TN by 4,125 acres
 - Home values: -\$179 million
 - Property tax revenues: -\$1.7 million



Results: agricultural land

- Definition: sum of grassland, pasture, and cultivated crops
- Increases home values in all areas
 - Rural CBGs: +\$0.31/acre
 - West MSAs: +\$8.89/acre
 - Middle MSAs: +\$2.13/acre
 - East MSAs: +\$2.20/acre
- Impact of agricultural lands more pronounced in west TN MSAs and less pronounced in rural areas
- Total impact of decreasing agricultural land in TN by 4,125 acres
 - Home values: -\$8 million
 - Property tax revenues: -\$94,000



Results: wetlands

- Definition: sum of woody and emergent herbaceous wetland
- An additional acre of wetland increases home values in East TN MSAs by \$156.61
- Detracts from home values in other parts of the state
 - Rural CBGs: -\$3.63/acre
 - West MSAs: -\$89.93/acre
 - Middle MSAs: -\$813.05/acre
- Total impact of decreasing wetlands in TN by 4,125 acres
 - Home values: +\$561 million
 - Property tax revenues: +\$5.5 million



Results: federally protected areas

- Definition: km to federally protected open space
- Being 1 km closer to federally protected open space lowers home values in East TN MSAs by \$74.41
- Proximity to federally protected open space increases home values in other areas
 - Rural CBGs: +\$22.83/acre
 - West MSAs: +\$27.78/acre
 - Middle MSAs: +\$21.14/acre
- Does not mean residents in East TN MSAs do not value federally protected areas



Results: state protected areas

- Definition: km to state protected open space
- Being 1 km closer to state protected open space increases home values in Middle TN MSAs by \$1,061.47
- Proximity to state protected open space decreases home values in other areas
 - Rural CBGs: -\$417.68/acre
 - West MSAs: -\$638.67/acre
 - East MSAs: -\$595.64/acre
- State protected areas often located in areas with low housing values in order to minimize cost of state designation



Results: private protected areas

- Definition: km to open space protected by private organizations or private land protected by federal agencies
- Being 1 km closer to privately protected areas increases home values in West TN MSAs by \$1,371.
 - This result likely due to Shelby Farms
- No impact in other parts of the state



Discussion



- Permanently protected open space in MSAs adds the largest value to nearby homes
 - Permanent protection supports long-term investment in housing
 - Open space tends to be less abundant in urban and suburban areas
 - No evidence residents substitute publically provided open space with larger residential lots.
- TN residents do not value all types of open space equally
 - Residents prefer agricultural lands to developed open space such as golf courses and cemeteries.
- Open space values vary considerably across the state
 - In areas where open space is scarce, impacts on home values tend to be large.
 - Control open space conversion for cover types that are scarce in a region

Caveats

- Finding of no impact or negative impact does not signal a lack of value for these open spaces
- Study does not consider tourism, recreation, health, biodiversity, and other goods and services that open space provides
- A lack of data on municipal parks and greenways prevents a full accounting of the impacts of these open spaces on housing values.