Tennessee Tourism Economic Development

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Data Analytics Cohort 7
Capstone Project

Motivation

After a lifelong interest in anthropology and archaeology, I briefly studied archaeology at Middle Tennessee State University. My interest has always been in the large amount of recorded archaeological sites in Tennessee.

My motivation is to see if there are counties in Tennessee with higher instances of recorded archaeological sites, but with less economic impact from tourism. This way, the Department of Tourism Development can see which counties could potentially benefit from grants, such as the Tourism Enhancement Grant and the Tourism Marketing Grant.

Data Sources

Through the Tennessee Division of Archaeology, I was able to obtain information on the recorded archaeological sites in Tennessee, including the counties they are located in. This information was provided as an Excel workbook, that I then downloaded as a csv file.

Information on the tourism tax receipts, employment dollars, and expenditures was obtained from the Tourism Related Expenditures datasets provided by the TN Open Data Portal.

Technologies Used

I first downloaded the datasets provided on the TN Open Data Portal as csv files. I downloaded the information provided by the Tennessee Division of Archaeology as a csv file from their provided Excel workbook.

I then used Python to clean and further explore the data, including accounting for blank values and values labeled as “unknown.” Additionally, the Tennessee Division of Archaeology datasets needed extensive cleaning of values that were misspelled or formatted differently from other identical values in the dataset.

After I completed cleaning the datasets, I downloaded the new sets as csv files and uploaded them to Tableau, in order to create visuals displaying the data.

Challenges

I initially wanted to include data from the TN Department of Environment and Conservation that corresponded to an interactive GIS map on their website (FOUND HERE). Unfortunately, the response to my inquiry wasn't returned in enough time to use the data.

Additional challenges included the extensive cleaning needed on the dataset provided by the Tennessee Division of Archaeology. The dataset was originally started as DBASE file, then converted to Excel in the late 1980s. There have been numerous reporters adding to the dataset, resulting in spelling discrepancies and blank values.

With the assistance of Aaron Deter-Wolf, Prehistoric Archaeologist with State of Tennessee Division of Archaeology, I was able to ask for clarifications in order to properly clean the data.

Key Definitions

Prehistoric = Pre-1600 CE

Historic = Post-1600 CE

Owner = Entity or individual that owns the land that the archaeological sites is on

Reporter = Entity or individual that first reported the archaeological site to the Tennessee Division of Archaeology

Land Use = Describes the classification of the land where the archaeological site is located

Tourism Tax Receipts = Revenue-generating measures targeted at tourists

Tourism Employment = Jobs generated by the tourism industry

Tourism Expenditures = total consumption expenditure made by a tourist, or on behalf of a tourist during their stay. Includes advance payments, payments made after the trip, and passenger transport.

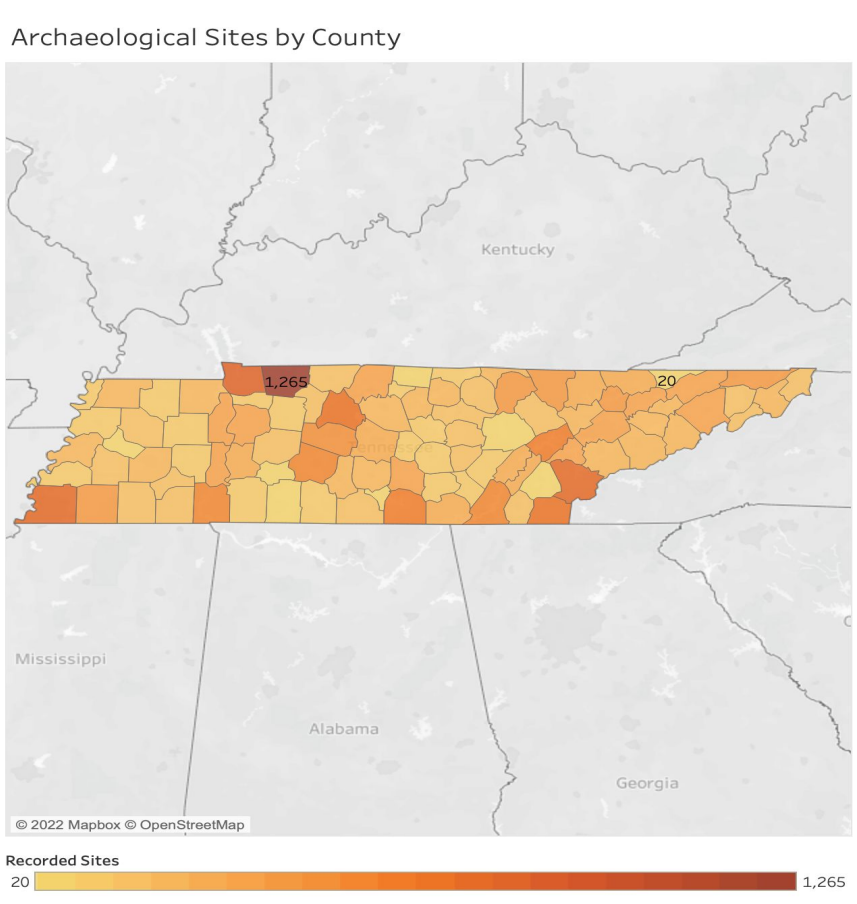
Facts regarding Archaeological History in Tennessee

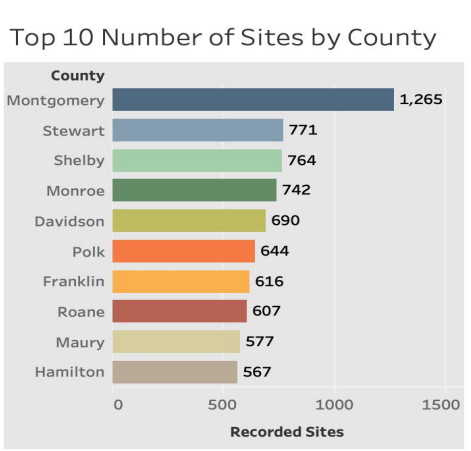
- There are over 22,000 recorded archaeological sites in the state of Tennessee
  - These include sites as early as 12,000 BCE, known as the Paleoindian period
  - There are two state archaeological parks and five state archaeological areas
  - Some examples of sites include:
    - Mound Bottom - A Native American mound center, located in Cheatham County and dating to 1000-1300 CE.
    - Pinson Mounds - the largest Native American mound complex in Tennessee and one of the largest from it's time period (0 CE to 500 CE) in the United States. It includes Sauls Mound, which is the tallest in the US for that time period and one of the tallest for any time period in the US.
- One of Nashville's best known artifacts is a saber tooth tiger skull, found when the First American National Bank was built on Demonbreun. It now resides at the arena hosting the hockey team named in it's honor, The Predators!

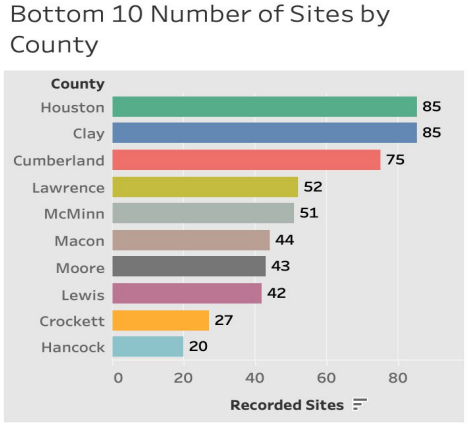
Archaeological Sites by County

- **Montgomery County** has the most recorded sites. This county is home to Fort Campbell, which does extensive surveying on the property through The Cultural Resources Management Program.

- **Hancock County** has the least amount of recorded sites. This county is located in the Appalachian Mountains and is the fourth least populous county in Tennessee.

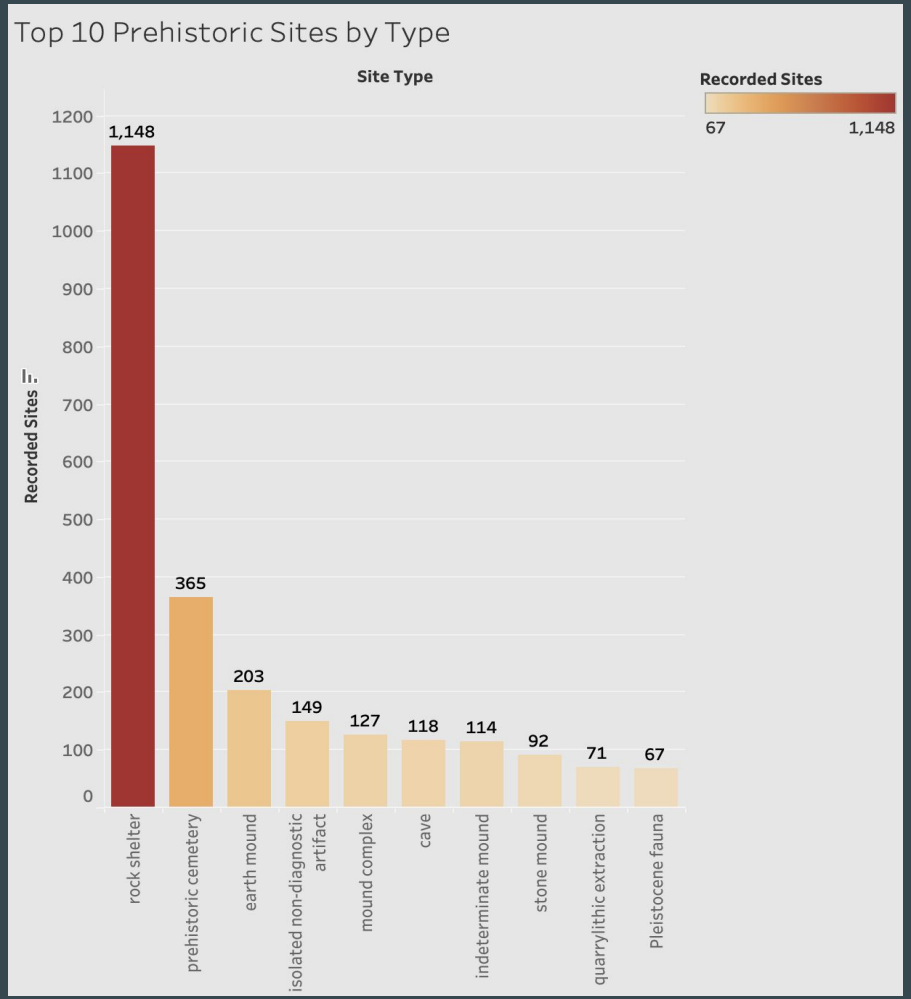






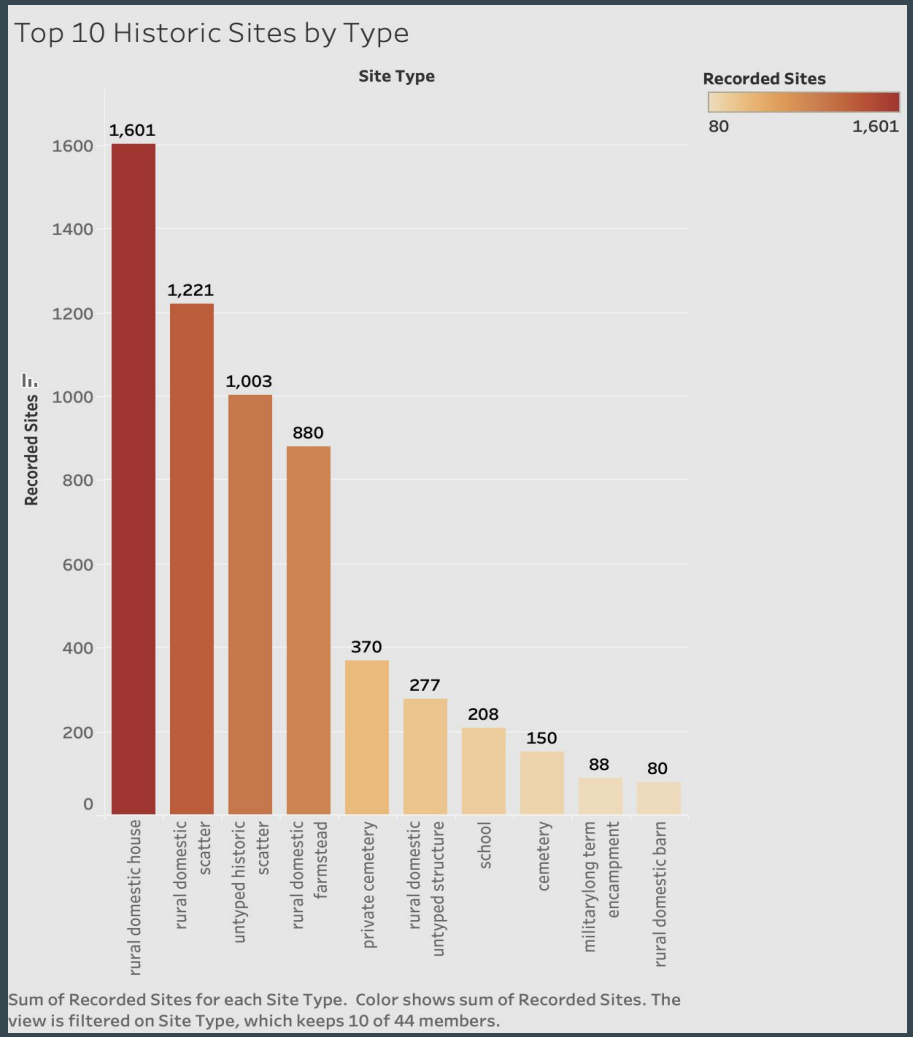
Prehistoric Sites by Site Type

- Prehistoric is defined as pre 1600 CE, which is shortly after the arrival of Spanish colonizers in 1540.
- This chart focuses on the top 10 types of prehistoric sites, however there were types that were excluded.
  - Sites defined as open habitation were significantly higher at 16,528
  - There were 6,410 sites labeled as “unknown”
  - There were 13 site types that had sites with less than 65 recorded sites.



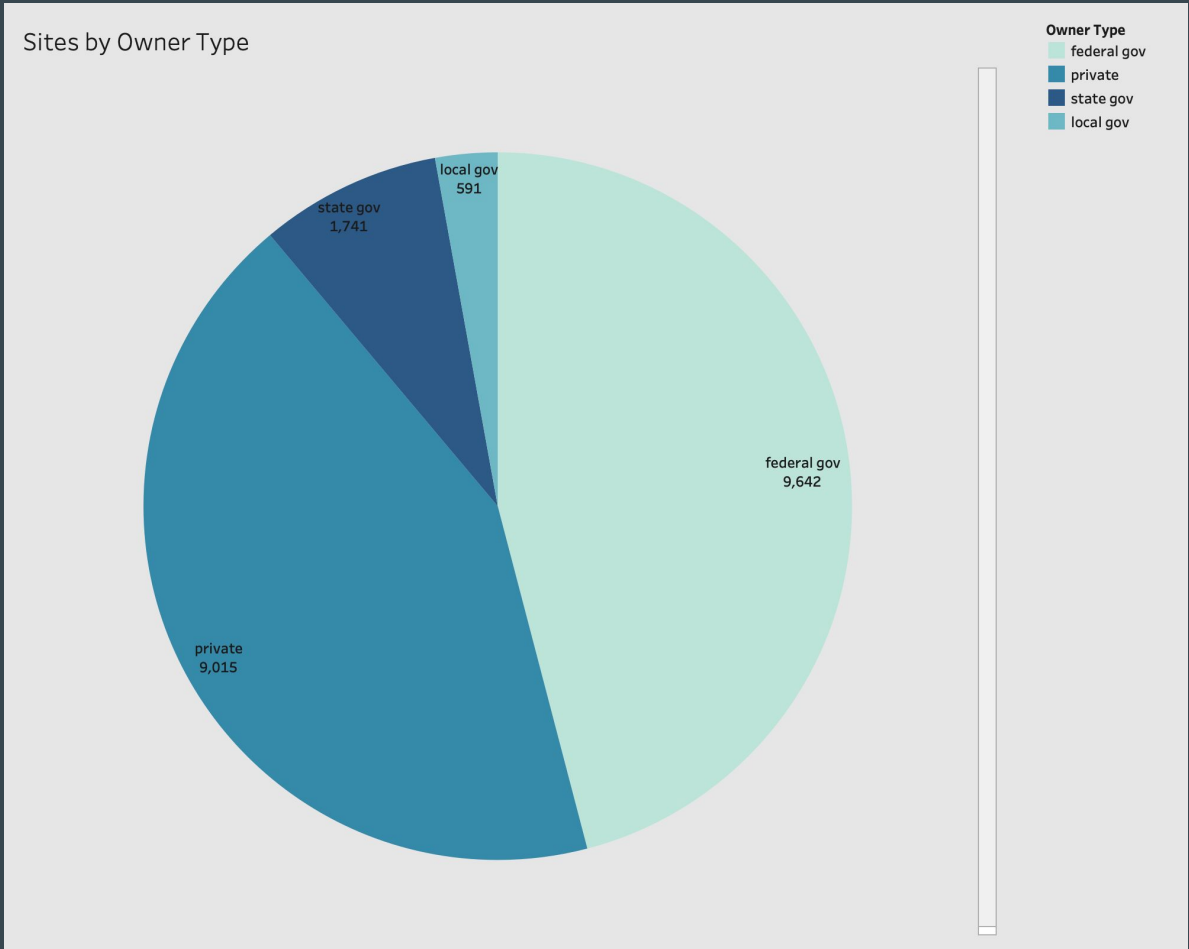
Historic Sites by Site Type

- Historic is defined as post 1600 CE.
- This chart focuses on the top 10 types of historic sites, however there were types that were excluded.
  - There were 16,830 sites listed as “unknown”
  - There were 872 site types that had sites with less than 80 recorded sites.



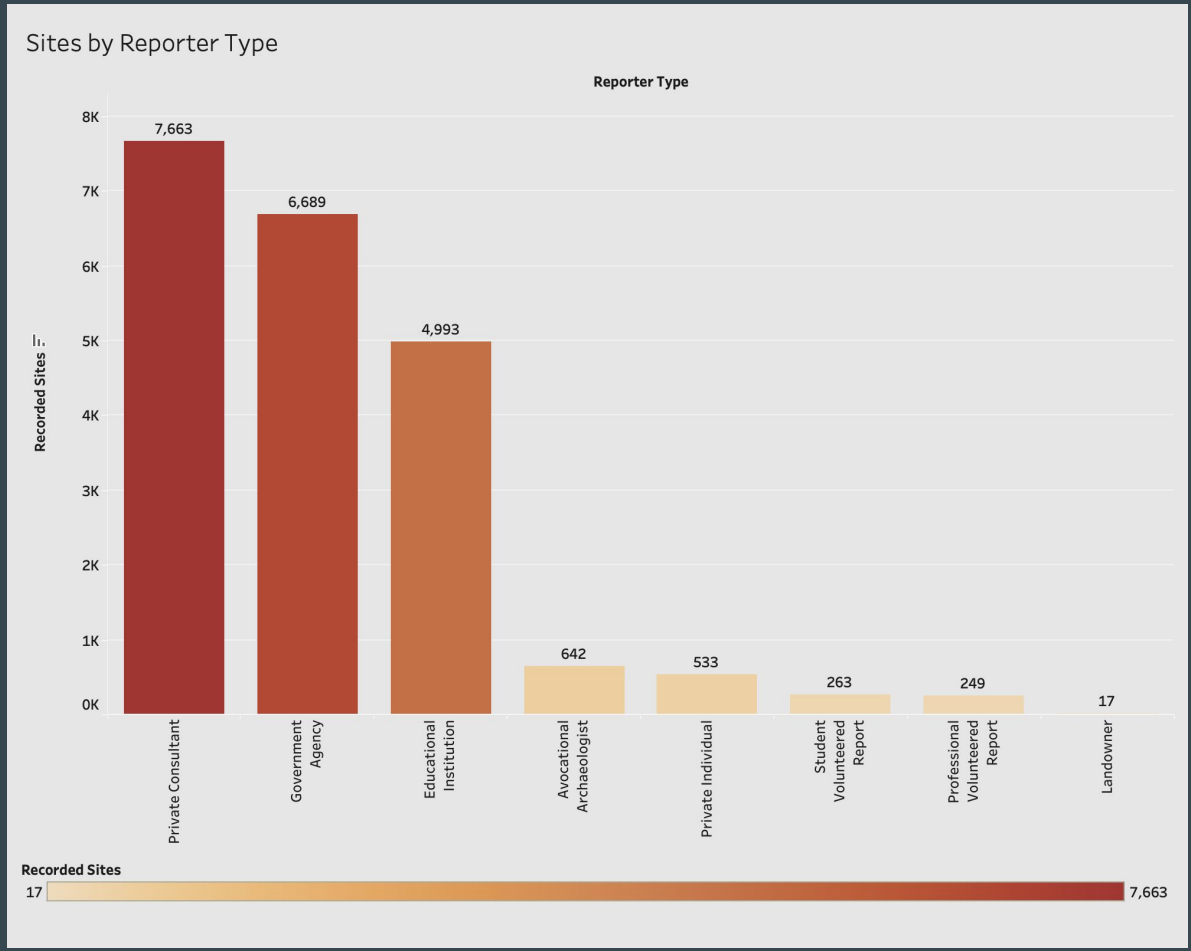
Sites by Owner Type

- As seen in Montgomery County, where the federal government has surveyed more sites than any other county in Tennessee, the federal government represents the largest owner type, followed by private owners.



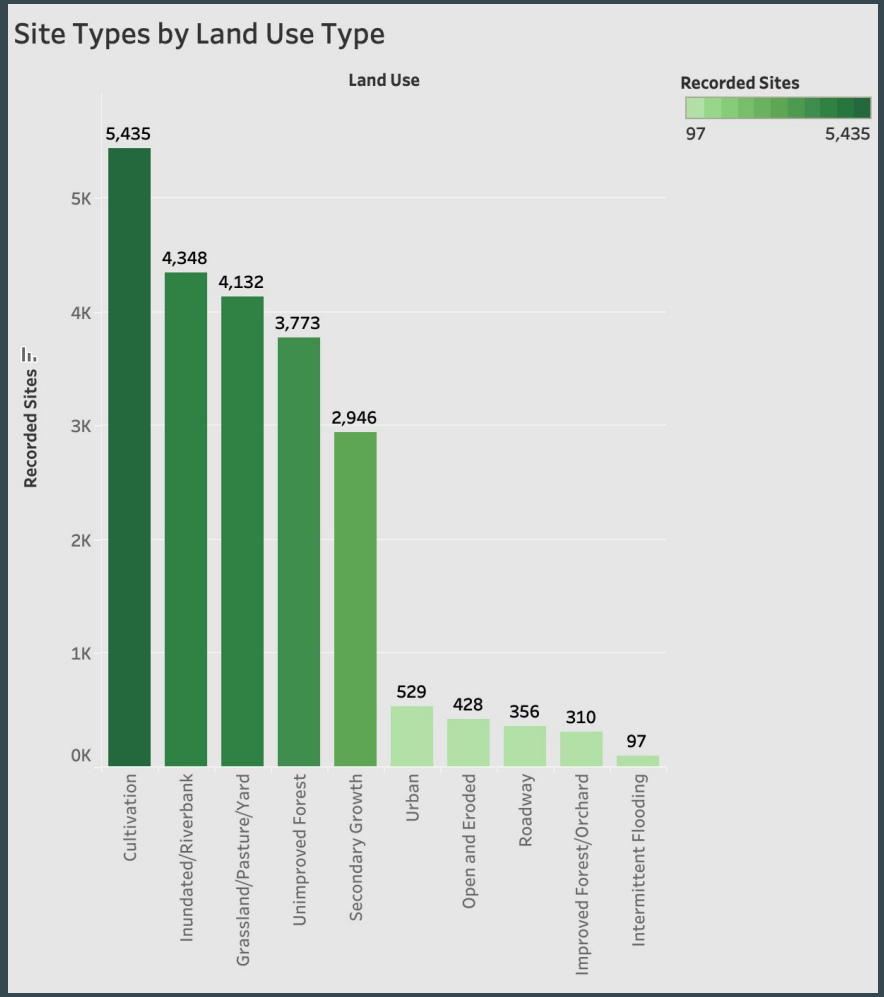
Site by Reporter Type

- Corresponding with the two largest owner types: federal government and private owners, the two most common types of reporters are private consultants and government agencies.



Sites by Land Use Type

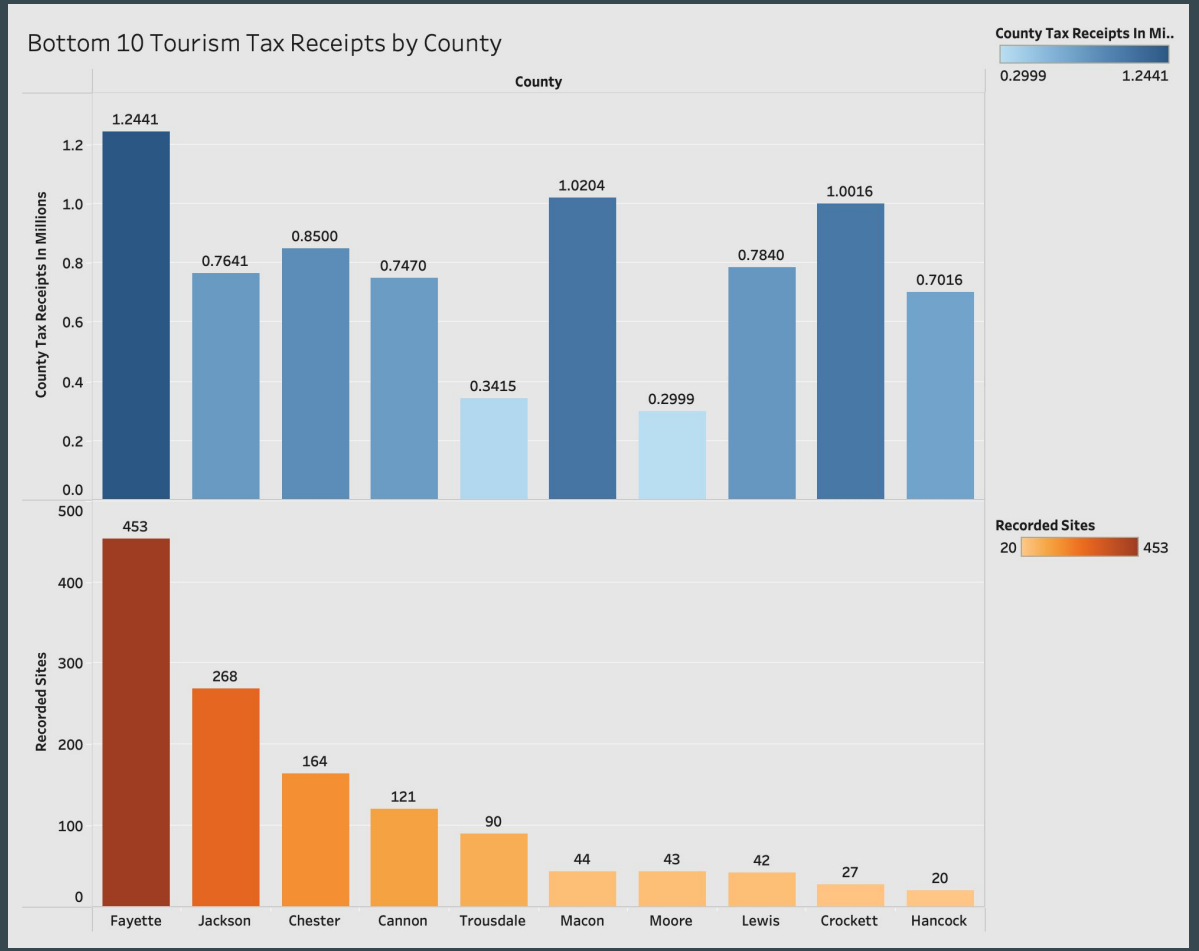
- The data shows that most recorded sites are in rural or wooded areas, with only 529 recorded sites in areas classified as urban.
- There were 3,366 sites that were listed as “unknown,” so they were not included in the chart.



Tourism Tax Receipts vs Recorded Sites

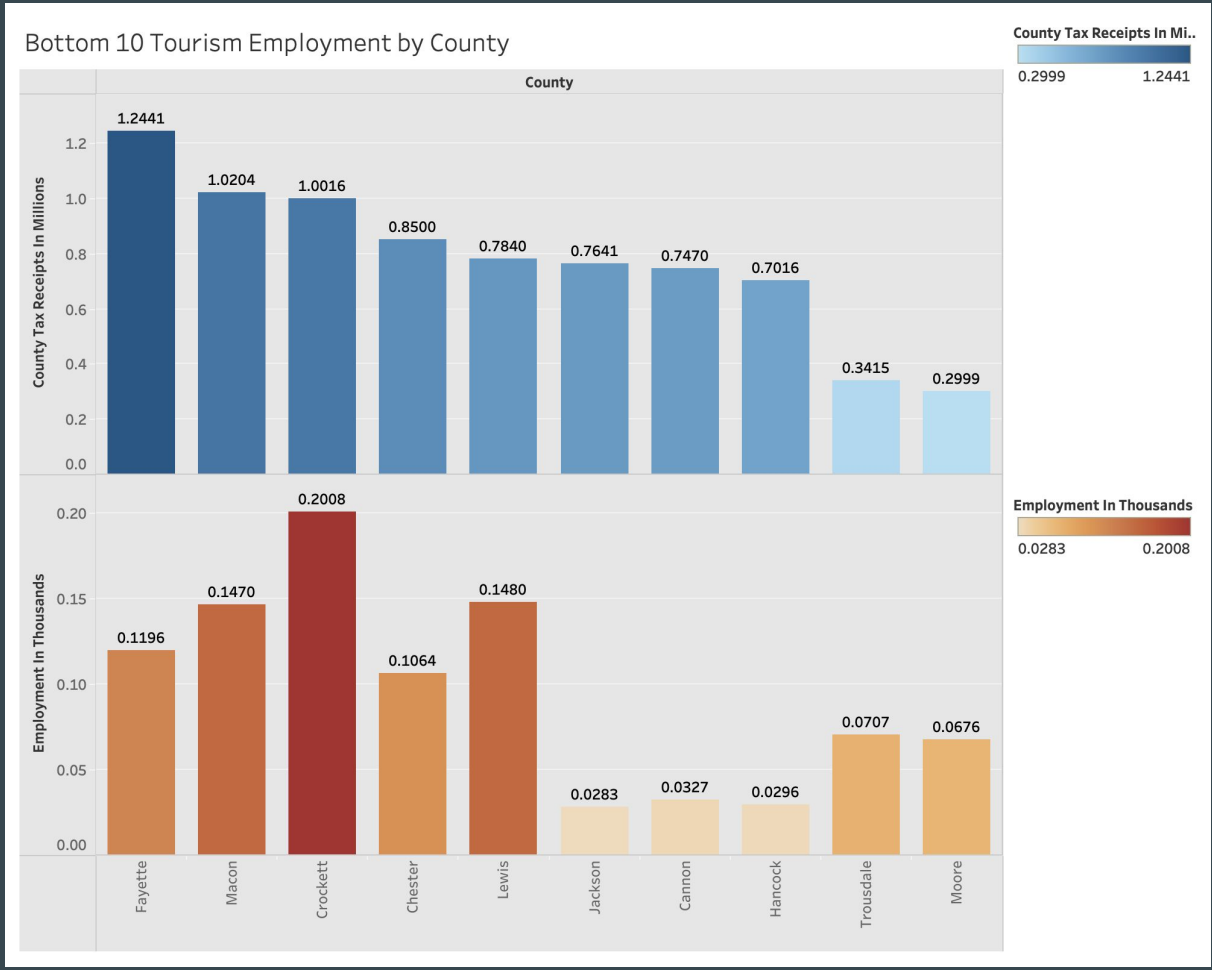
Bottom 10 Tax Receipts

- The data shows that counties such as Trousdale and Moore are showing lower tax receipts on average compared to other counties with similar amounts or less recorded sites.



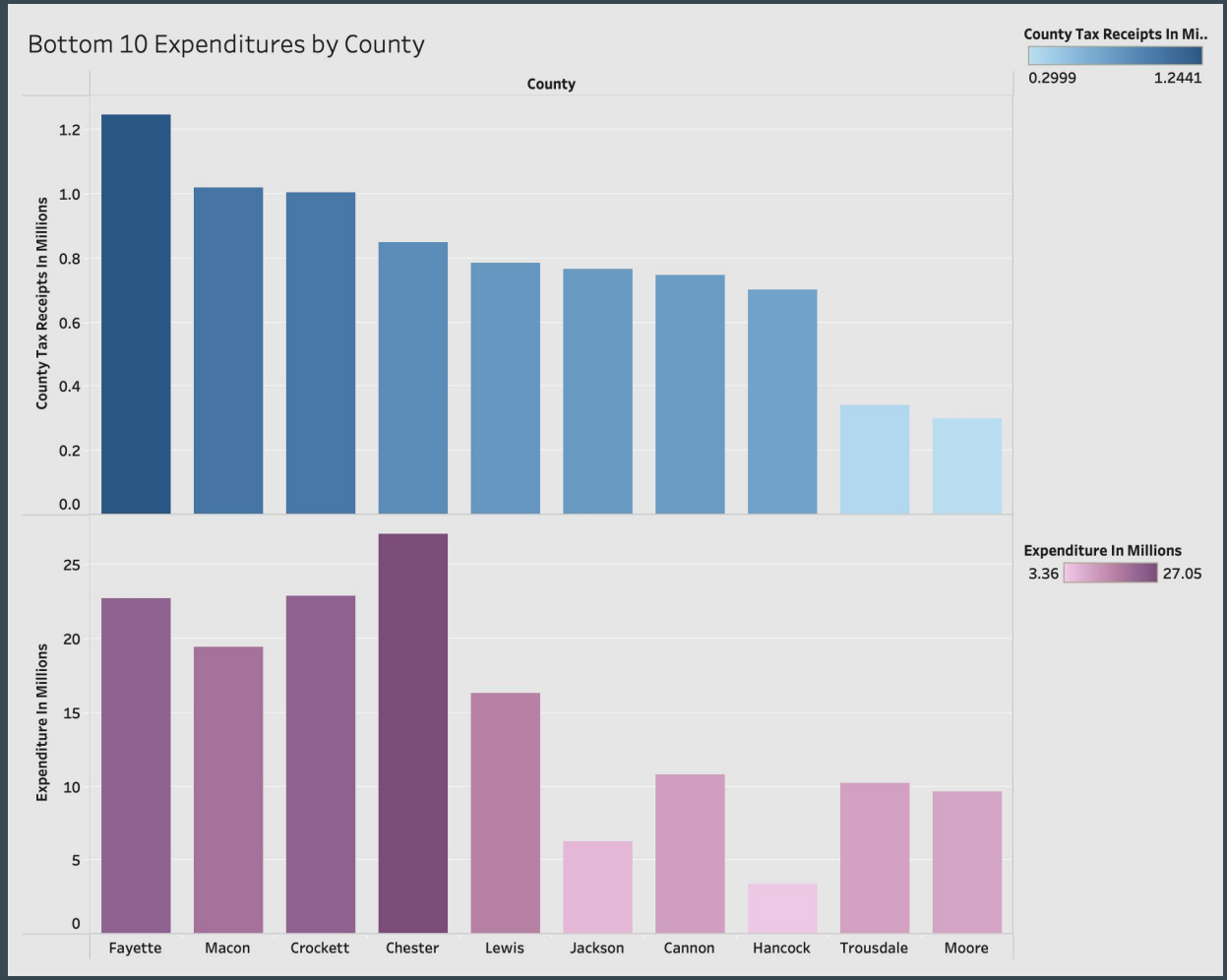
Tax Receipts vs Tourism Employment Dollars

- This compares the counties receiving the 10 lowest tax receipt dollars, in comparison to dollars spent on employment in the tourism industry.



Tax Receipts vs Tourism Expenditures

- This compares the counties receiving the 10 lowest tax receipt dollars, in comparison to tax expenditure dollars.



Available Grants from Tennessee Department of Tourism

Regional Endowment Grant = "...a mechanism to assist the nine tourism organizations representing all the area within a planning region..." - Department of Tourism Development

Tourism Enhancement Grant = "...developed to help communities improve their tourism assets and increase tourism-related economic impact." - Department of Tourism Development

W.A.T.R. Grant = "The Waterways Accessibility for Tennessee Recreation (W.A.T.R.) Grant provides assistance to marinas to support the local economic impact derived from these businesses.

Available Grants by the Tennessee Department of Tourism

Tourism Marketing Grant = “The Marketing Grant provides tourism organizations such as CVBs, chambers of commerce or regional tourism organizations a way to expand their marketing message. The grant is designed to increase visitation to their community and increase travel-generated revenue, while leveraging TDTD’s brand, ‘The Soundtrack of America. Made in Tennessee.’” - Department of Tourism Development

Adventure Tourism Applications = “...designed to identify the category and help businesses in the classification gain a foothold in rural areas. The act promotes outdoor recreational opportunities and helps support businesses that grow out of those activities.” - Department of Tourism Development

Acknowledgements

I would first like to extend thanks to Aaron Deter-Wolf, Tennessee State Prehistoric Archaeologist. He not only allowed access to the state archaeological files, but patiently answered the numerous questions that I sent him over the course of this capstone.

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Questions?

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