

Spatial Analysis of Oil and Natural Gas Deposits in Southwest Reservations and its Effect on Median Household Income



Project Overview

The United States of America and the indigenous people of this land have had a long and complicated history with one another. Indigenous groups all across America were forced off their own land and forced into land set aside for their tribes known as reservations. This project aims to investigate the effect of oil pipelines and valuable oil/natural gas wells on the people that live on these lands where the natural resources sit.

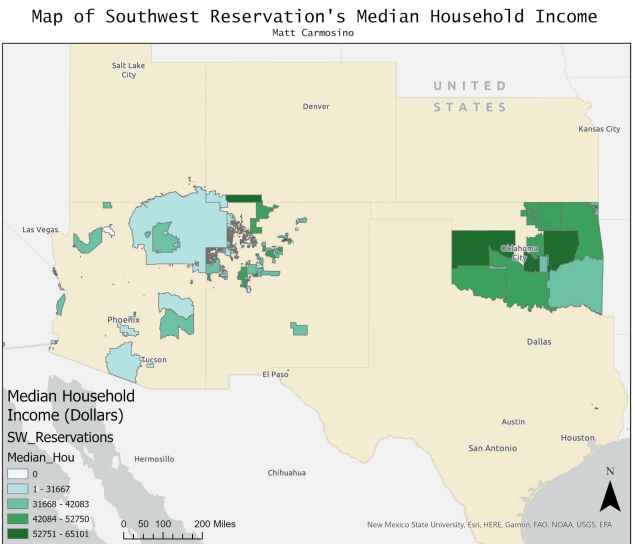
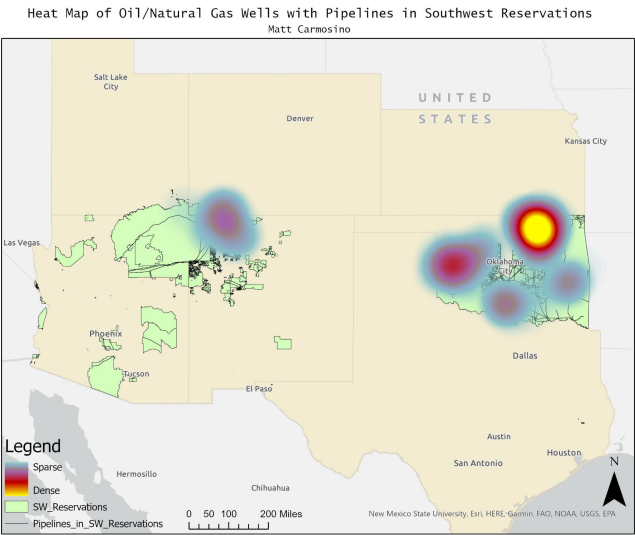
Hypothesis

The guiding hypothesis for this project is that if there are oil/natural gas pipelines and deposits in reservation territories, then the people that live in these lands should benefit from it through either the selling of the resources or through charging others (oil companies) to extract from their land.

Data/Observations

Data on oil and natural gas wells, pipelines, and reservations were gathered for this investigation. Then, the data was clipped to show wells and pipelines exclusively on the Southwest reservations. After filtering, there are approximately 46,000 oil and natural gas wells and over 2,000 pipelines that go through Southwest reservations. The reservation census data was then used to compare and contrast median household income across the reservations to investigate whether or not they have benefited economically from the rich deposits of natural resources. A natural breaks classification was used for the map.

Results



Discussions

An important takeaway from this investigation is that many of the wells that sit on these reservation lands belong to oil and gas magnates like BP, Chevron, Shell, and much more. Take the Navajo Nation, in the northeast corner of Arizona, for example, there are a total of 1,712 wells in the reservation. Of the 1,712 the Navajo Nation owns only 71 of the wells. The largest holders are Elm Ridge Exploration, a oil and gas company out of Dallas, and BP oil. The lack of reservation-owned wells in the Navajo could be reflected in their low median household income of only \$31,667. In regards to median household income, the highest of these reservations is \$65,101 and the US national median is \$67,521, so the people of these oil/natural gas rich reservations are still living below average. Also, the median household income data around Oklahoma, the highest median of the data, is skewed because those territories have large amounts of suburbs from cities like Oklahoma City and Tulsa, so they are unlike other reservations that have large amounts of land with a low population.

Conclusion

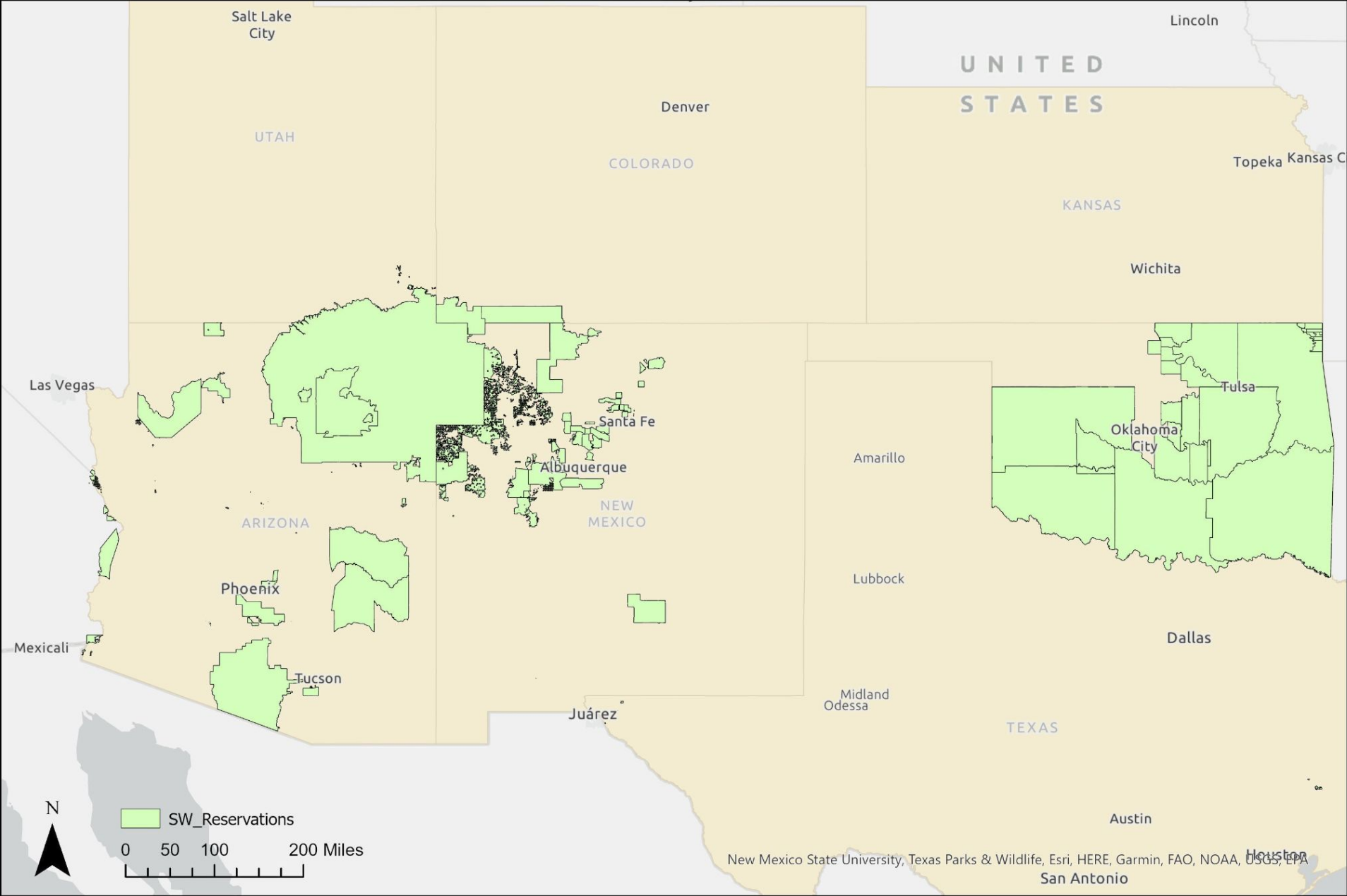
In conclusion, much more research is needed to be done to see whether or not the reservations are gaining from their natural resource deposits. However, the fact that these people are living below the national median household income shows that they are most likely not benefitting from the resources.

Acknowledgements

Thank you to Professor Stacy Curry-Johnson for assisting me with data acquisition and guidance throughout this project.

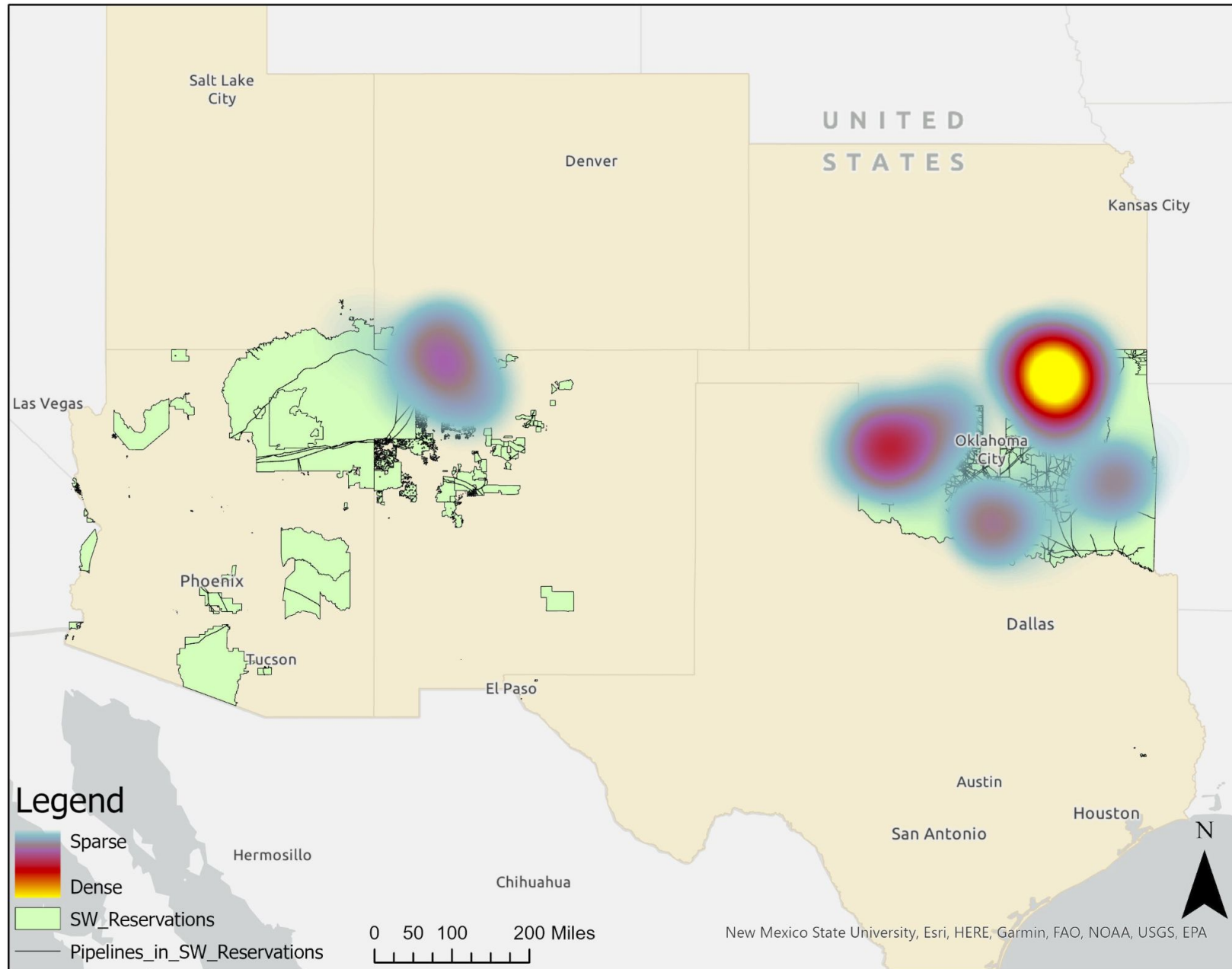
Map of Southwest Reservations

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Heat Map of Oil/Natural Gas Wells with Pipelines in Southwest Reservations

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Map of Southwest Reservation's Median Household Income

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