Locating Growing Communities using Change In Land Cover | Seth Machen
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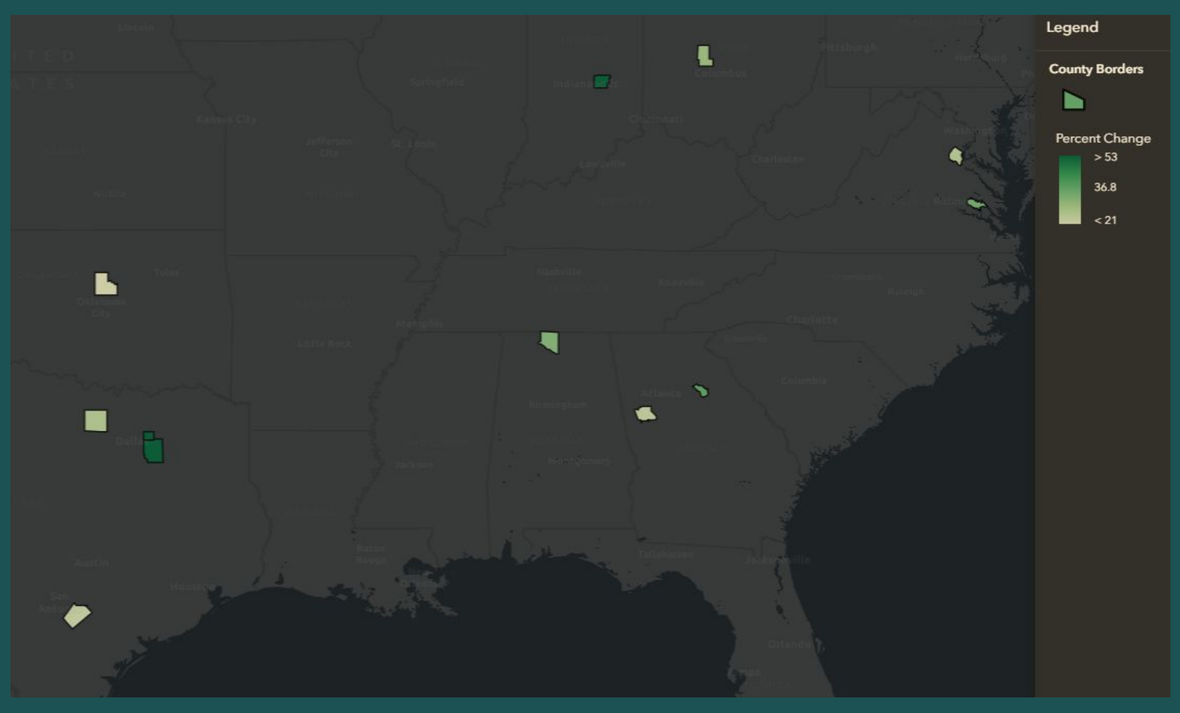
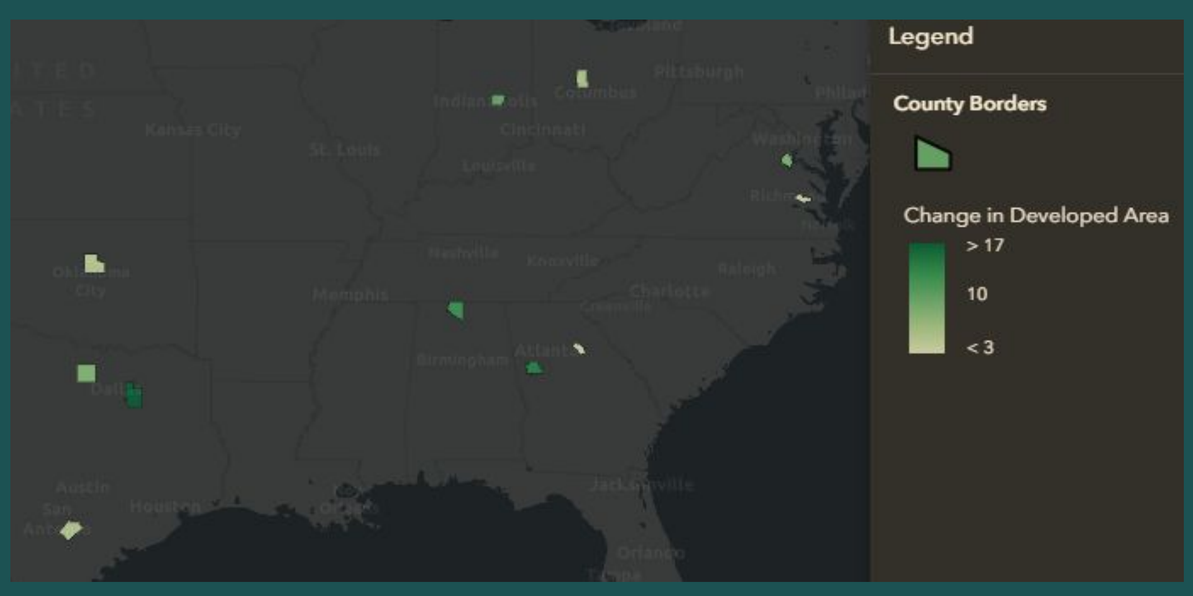
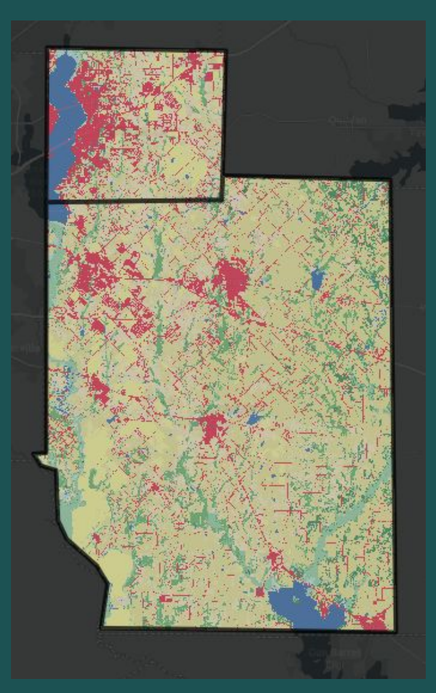
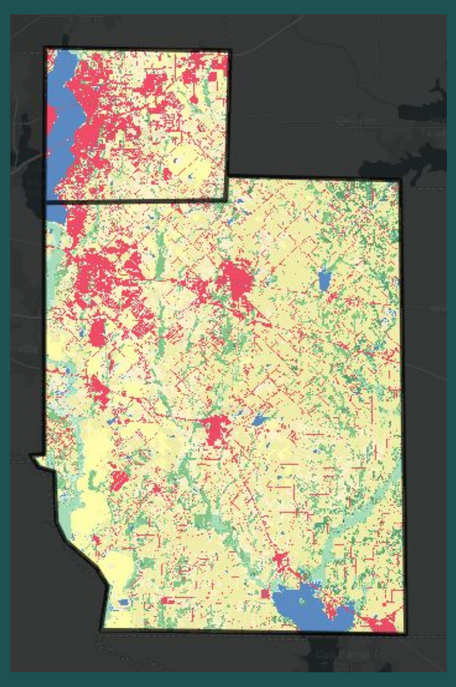
This final project is about locaing growing communities in the United states by looking at the change from undeveloped land cover to developed land cover. The final goal for this project was to find one specific area that had seen a significant amount of change from undeveloped change to developed that would be a good place to start a family or career.



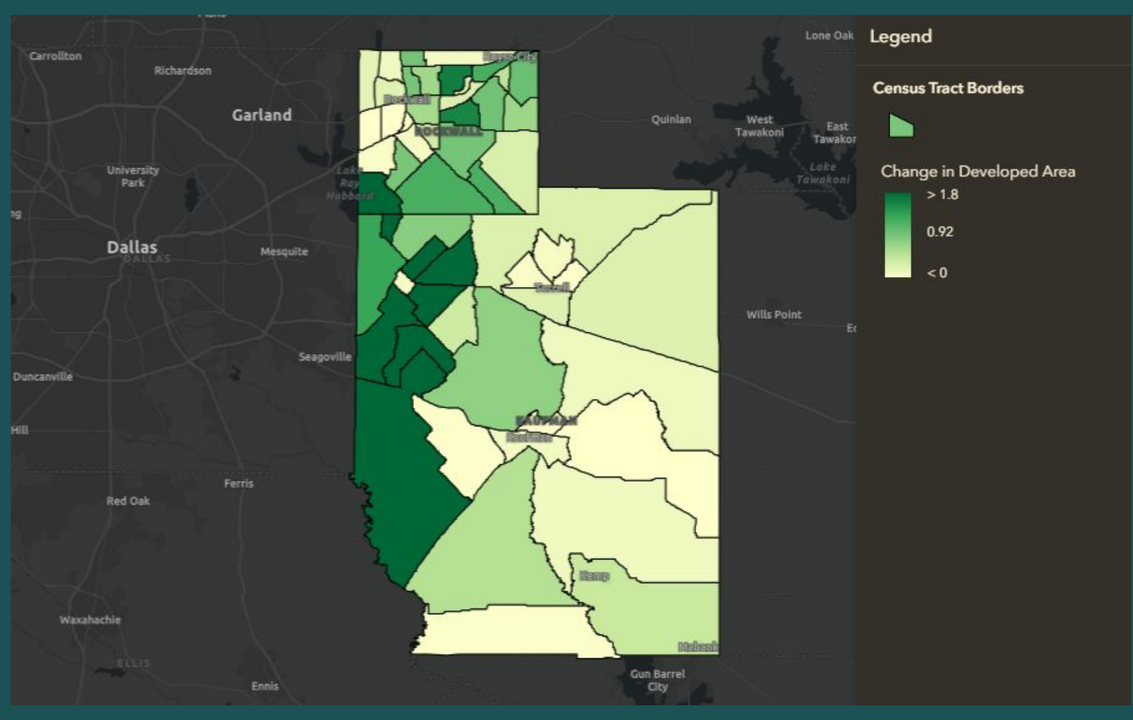
This first map shows 12 counties in the united states that fit certain criteria that would make a county a likely candidate for growth. I filtered down the counties by 6 different criteria. 1st, the county had to be with 25,000-200,000 population. 2nd, the population change from 2014 to 2024 had to be over 20%. 3rd, the counties had to be within 90 minutes of a city with over 250,00 population. 4th, the county had to have a housing affordability index of over 100. 5th, the county had to have a wealth index of over 100. 6th, the county had to have an unemployment rate of below 4%. These 6 criteria filters down to just 12 counties which are in a good population range and would be good for housing and employment. These are the 12 counties we will be looking at for this project. For this project, we will be looking at dates between 2014 and 2024.

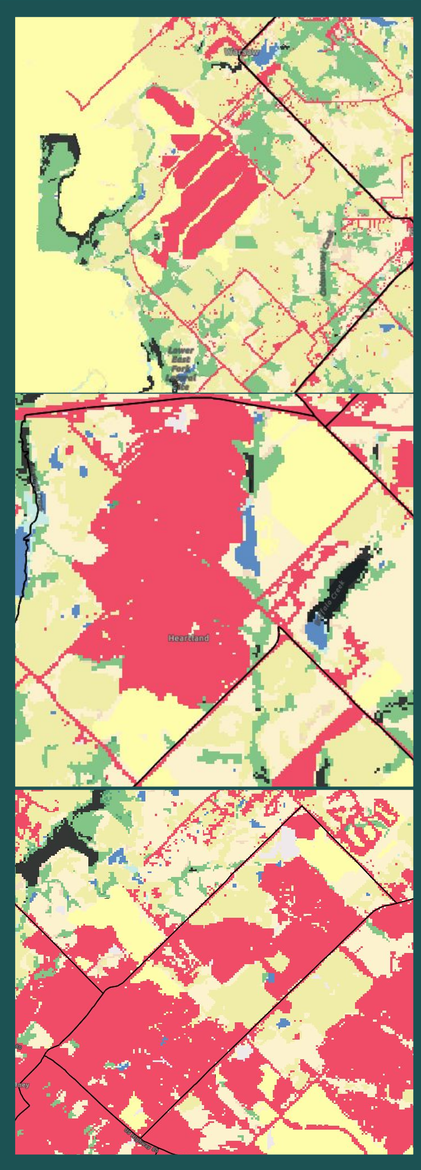






The map at the top shows the 12 selected countries and the total change in undeveloped to developed land cover from 2014 to 2024. To get this data I did a chain of analysis using the NLCD land cover layer. 1st, I clipped the NLCD later using clip, next I reclassified the raster to combine all the values in the raster that represent developed land to the same number, next I used the Int geoprocess, next I did a raster to polygon, next I did a pairwise dissolve to combine all the grid codes into one continuous polygon, then, I overlaid that layer with the counties layer to get all the names lined up with the gridoces, then I calculated the geometries of the different gridoces finally, I did all of that again fro 2024 and then subtracted the area of the developed areas. The top map shows the 12 counties. The darker the green, the greater the change in developed land cover is. The maps at the bottom represent the land cover in two specific countries. The map shows two counties, Rockwall county is the top little square and Kaufman county is the larger county at the bottom. These two counties are the two greatest counties for change in land cover. The left map is the land cover in 2014 and the right map is the same area but in 2024.





The map at the top shows Rockwall and Kaufman County split up by census tracts. Rockwell and Kaufman County are the top two countries with the greatest change in land cover from undeveloped to developed. These countries are also right next to each other which told me these countries were very special. I did the same process for this set of areas as I did for the last map. I looked deeper into the top 3 census tract areas to see which specific areas had the greatest change. The 6 maps at the bottom show the land cover in 2014 (left) and 2024 (right) in the top 3 census tracts with greatest land cover change. The map at the top had the greatest change but ended up being a solar farm which reveals a limitation of this method of locating areas. The next two sets of maps are the 2nd and 3rd place census tracts by land cover change. Both of these areas happened to be residential areas that have seen large growth.

The goal for this project was to use the change in land cover to find a growing community that could be a good place to live. In the end, I ended up choosing a community called Heartland in Kaufman county. It is the area with the second largest land cover change. I chose this area because it meets all of the criteria from the beginning and has the second greatest change in land cover. This community is also still under construction which fits the idea of the project well. Kaufman county is also recognized by many sources to be one of the best places to move to. Kaufman counties 2 fastest growing age ranges are 20 to 34 and 5 to 19. This shows that this area has many young people moving there with many younger families and things like that. Overall, the Heartland community in Kaufman county Texas would be the best pace to move in the United States.

Video QR Code

Story Map QR Code

References:
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