Austin Kocher

Cartography & Data Visualization Portfolio

INTRODUCTION

style sheet

Style sheets are a tool used in cartographic and graphic design to establish design principles for a design product, such as a map, document, or website. This page of the portfolio shows a relatively simple style sheet that I developed and used specifically for this portfolio. The design choices here anticipate this document being viewed quickly on a screen (hence the bold fonts and large lettering), but allow for being printed off (hence the page proportions fit onto standard printer paper). I would expect students to produce a style sheet as part of a map design course.
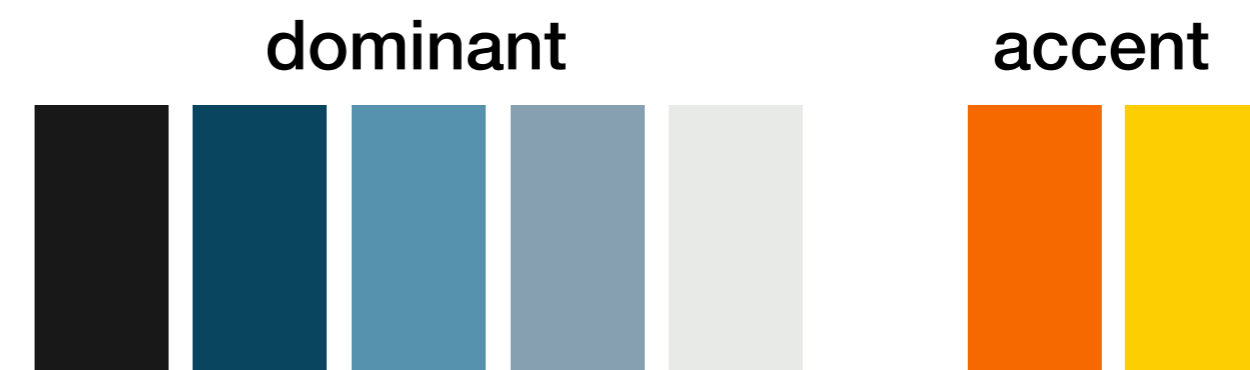
colors

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headings:

Oswald

subheadings:

Baskerville

descriptive text:

Helvetica Neue

layout

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Title

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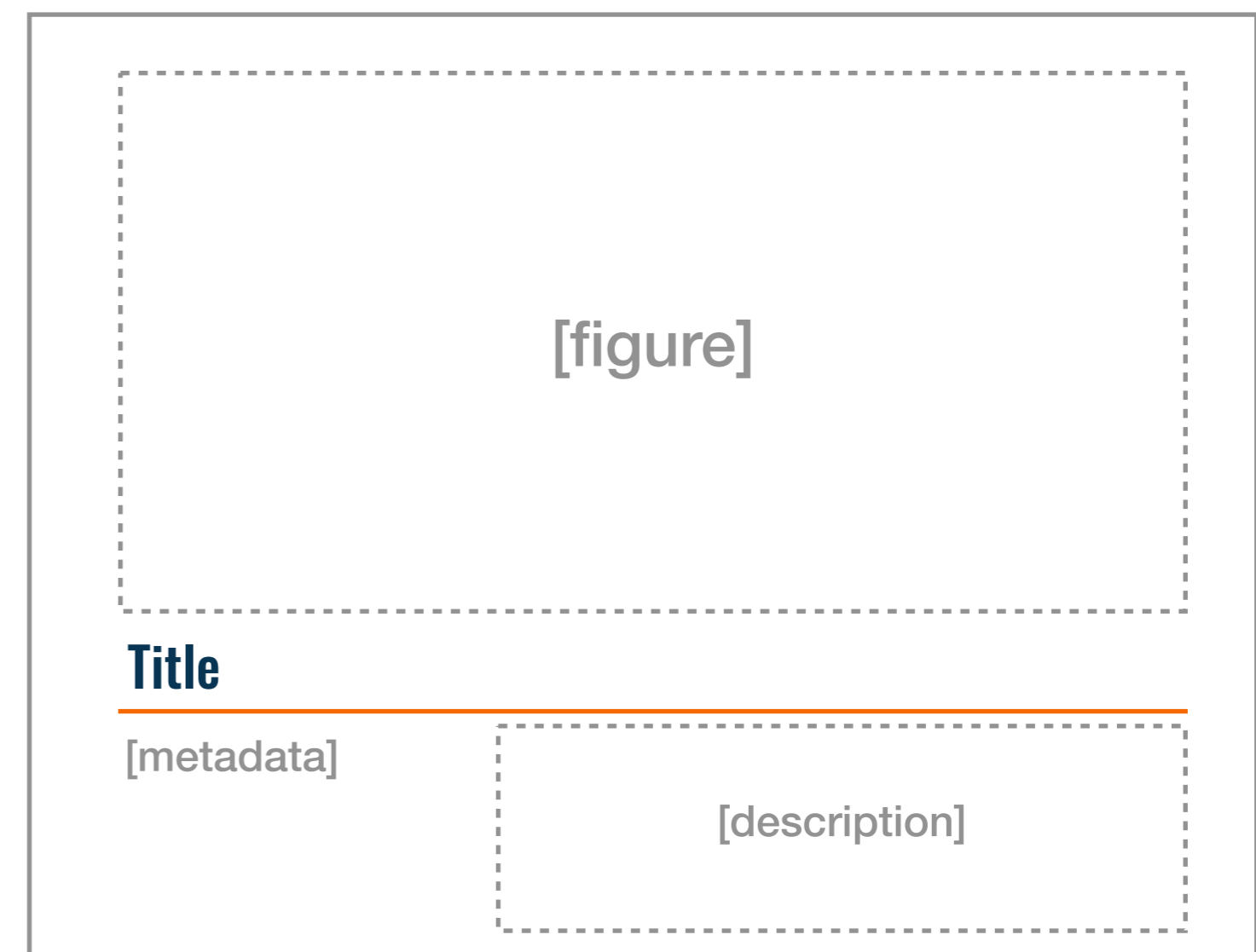
a word about design

rigorous validation

My cartographic style begins with rigorous validation that is not always readily apparently in the final product. Some of the maps and graphics in this portfolio represent entirely original datasets constructed and validated by hand while others represent over a million of individual records. At the core of my work is a commitment to rigorous data management and validation that often takes much longer than producing the final visual image itself.

aesthetic minimalism

My design style is intentionally minimalist and my process typically involves subtraction rather than addition so that the final product tells a clear and accurate story. Although I am capable of making more complex, multidimensional, layered maps (indeed, this is often where my process begins), I aim to leave my readers and viewers enlightened rather than confused, informed rather than perplexed, and, in some cases, even entertained.

design for impact

I am committed to public impact, which means that before I even begin creating a map, I take the time to think about the audience for whom I am creating and consider how to add meaning and purpose for them through the strategic use of design principles. This extends to how I develop and teach courses, how I manage a large team of student interns, and how I have attempted to increase TRAC's impact by making internal design improvements, as well.

CARTOGRAPHY

SAMPLE REPRESENTATION OF MIGRANT SAR OPERATIONS IN THE CENTRAL MEDITERRANEAN ROUTE

Map by Author

Mediterranean Search & Research Geographies

2018 — Marie Curie Grant Application

I created this map of search and rescue operations in the Mediterranean Sea as part of a Marie Curie grant application in collaboration with Dr. Nick Gill at the University of Exeter.

The intended purpose of the grant was to map how maritime legal geographies were changing in response to search and rescue operations that had been undertaken by civil society and increasingly regulated by the European Union and specifically the Italian state.

I conducted preliminary research in order to create this map, including several interviews with members of search and rescue organizations (e.g. Sea Watch and the International Rescue Committee) and the research organization Borderline Europe.

The only element that I would modify for accuracy today would be the following: due to a multitude of changes between 2015 and 2020, the contact point between maritime migrants and search and rescue organizations (to the extent that any still operate, which most no longer do) occurs, it now occurs close to the coast of Africa rather than in the open ocean.

The grant application received an honorable mention by the reviewers, but was not funded.

County Residents with Pending Immigration Court Cases

Legend
- 0-3
- 4-99
- 100-999
- 1,000-9,999
- ≥10,000
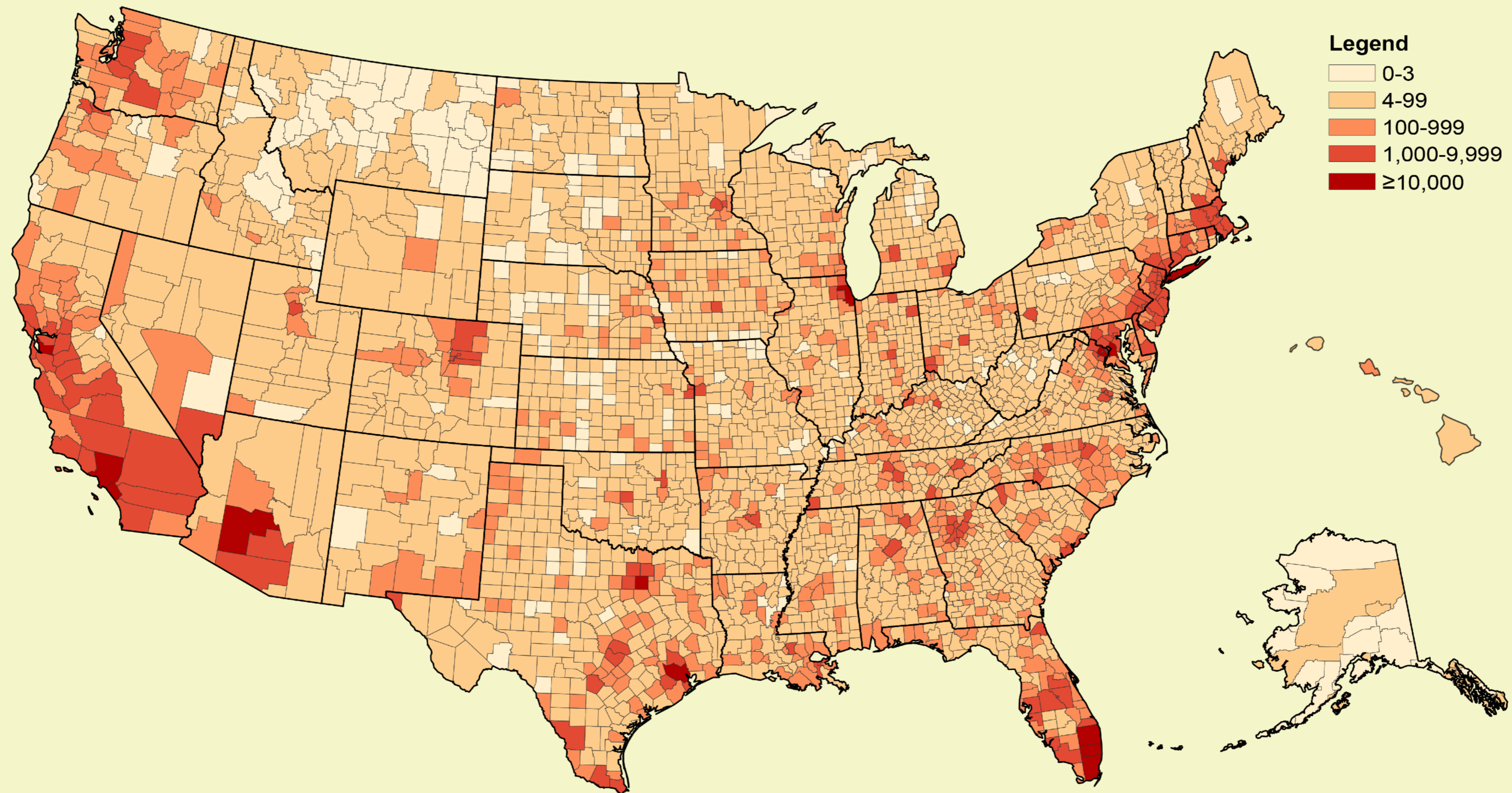
© TRAC 2020

Data valid through the end of February 2020. Alaska and Hawaii not drawn to scale.

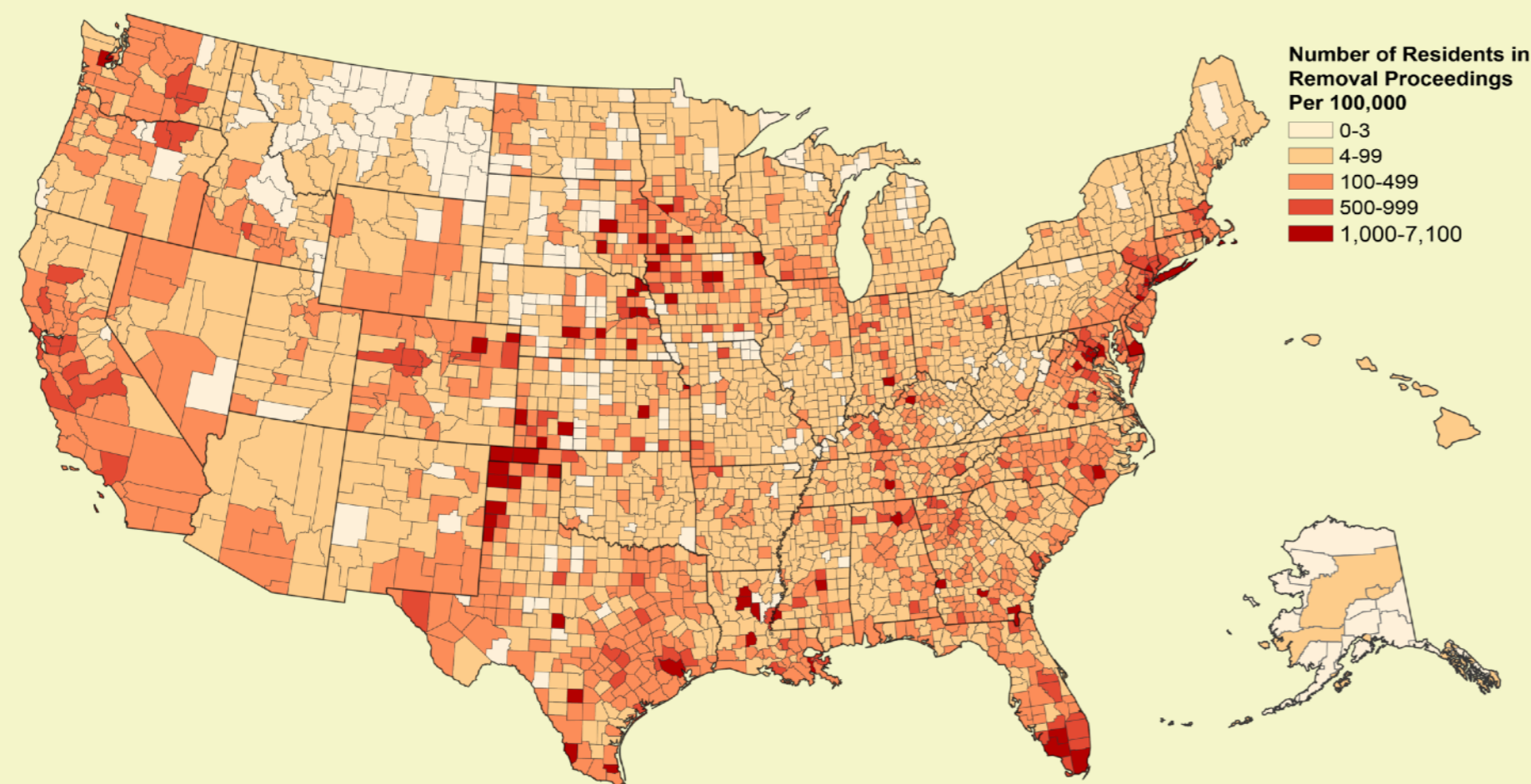# Pending Deportation Cases in Immigration Court, Part 1

March 2020 — TRAC

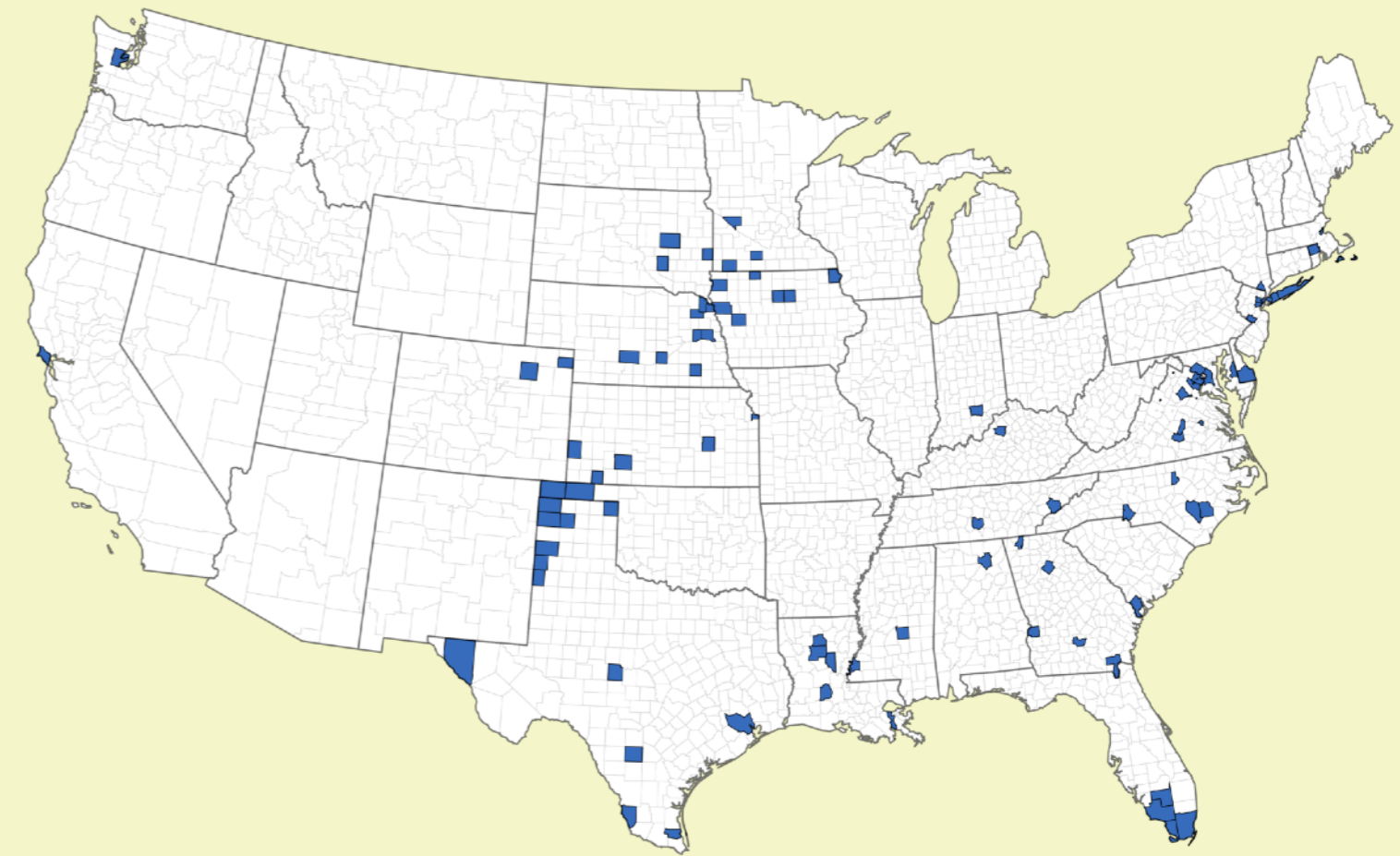https://trac.syr.edu/immigration/reports/600/

This map was produced by analyzing over one million deportation cases that were pending in the U.S. immigration court system at the end of February 2020. This map was one part of a more in-depth study of immigration court cases. This was part one of a two-part series.

The analysis depended on identifying available zip code data provided by the court, converting to county subdivisions using a crosswalk table, then merging with county-level FIPS (Federal Information Processing Standards) codes. Categorical breaks were chosen for public legibility rather than through statistical methods.
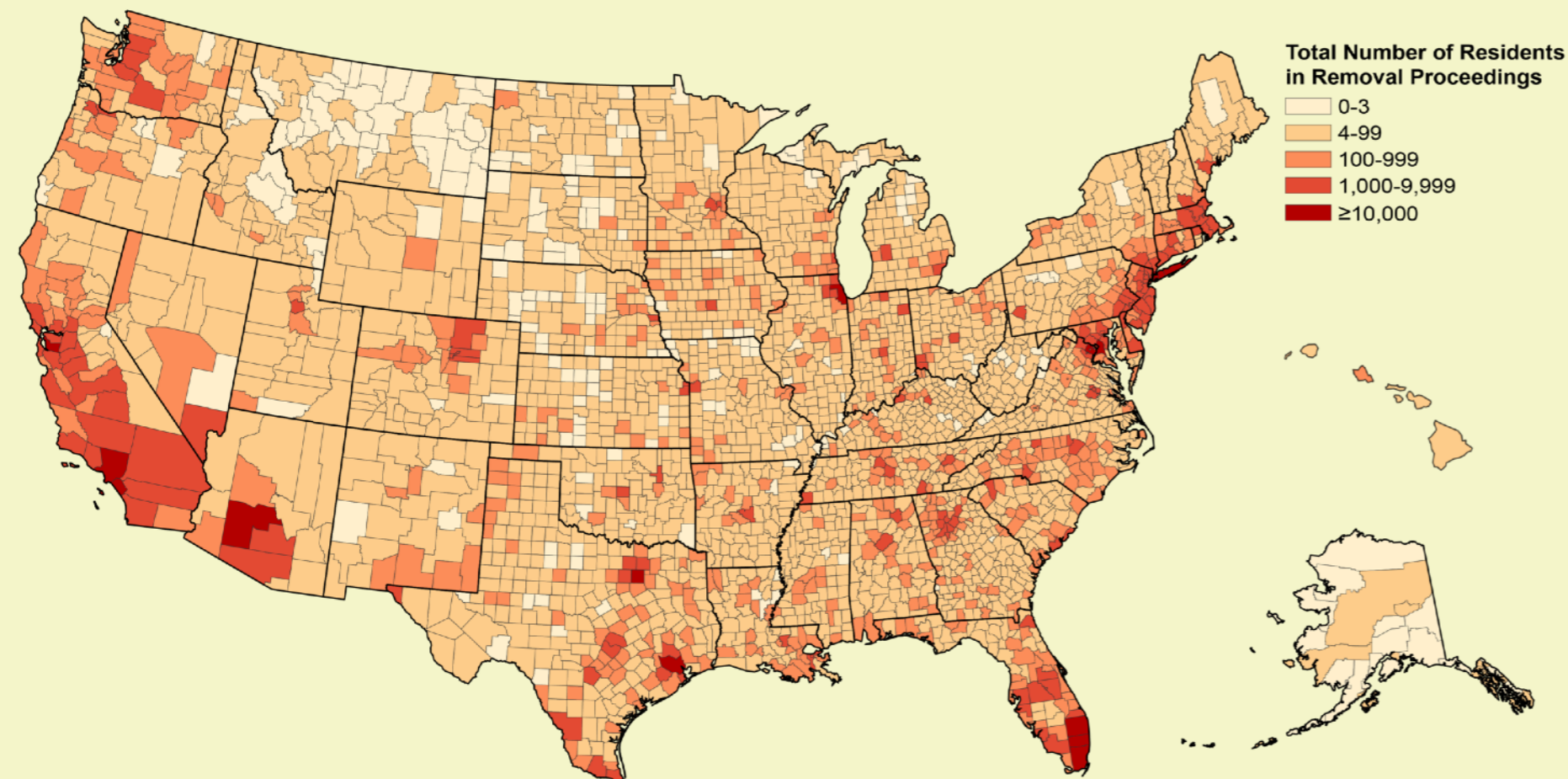
**Rate of County Residents with Pending Immigration Court Cases**

Number of Residents in
Removal Proceedings
Per 100,000
- 0-3
- 4-99
- 100-499
- 500-999
- 1,000-7,100

Top 100 Counties by Rate of Pending Immigration Court Cases

Number of County Residents with Pending Immigration Court Cases

Total Number of Residents
in Removal Proceedings
- 0-3
- 4-99
- 100-999
- 1,000-9,999
- ≥10,000

Top 100 Counties by Number of Pending Immigration Court Cases
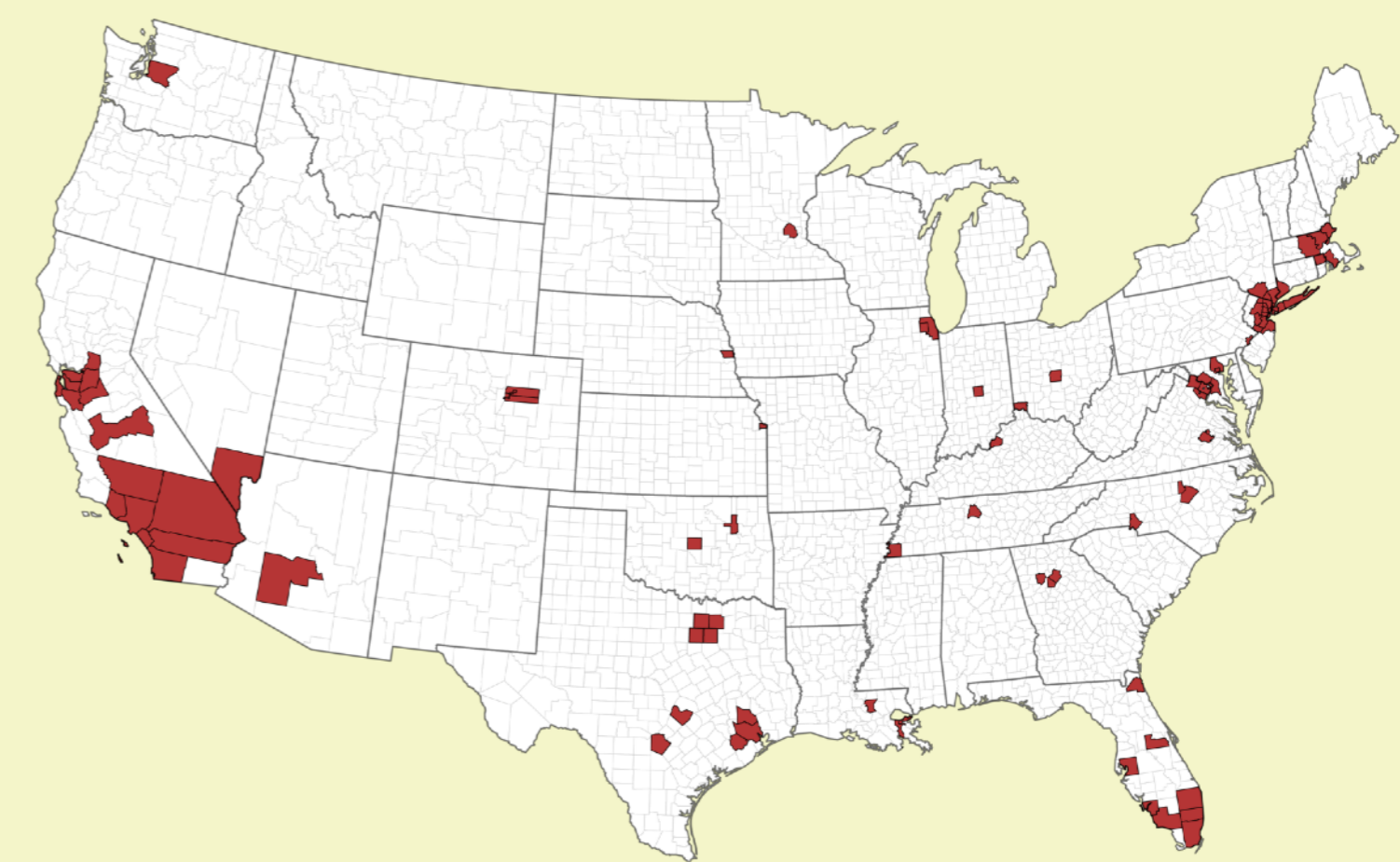
© TRAC 2020

Data valid through the end of February 2020. Alaska and Hawaii not drawn to scale.

© TRAC 2020

Data valid through the end of February 2020. No counties in Alaska and Hawaii met criteria.

Pending Deportation Cases in Immigration Court, Part 2

April 2020 — TRAC

https://trac.syr.edu/immigration/reports/602/

These maps were produced by analyzing over one million deportation cases that were pending in the U.S. immigration court system at the end of February 2020. These maps are part two of a two-part in-depth study of immigration court cases. I analyzed the density of cases relative to population and comparing top 100 counties using two different metrics (total cases versus per capita cases). The analysis shows that, in fact, some of the highest rates of cases are located in rural counties. In some places, this is due to the presence of rural immigrant detention centers, while in others, more complicated factors are at work.

Counties with 287(g) Agreements in January 2017
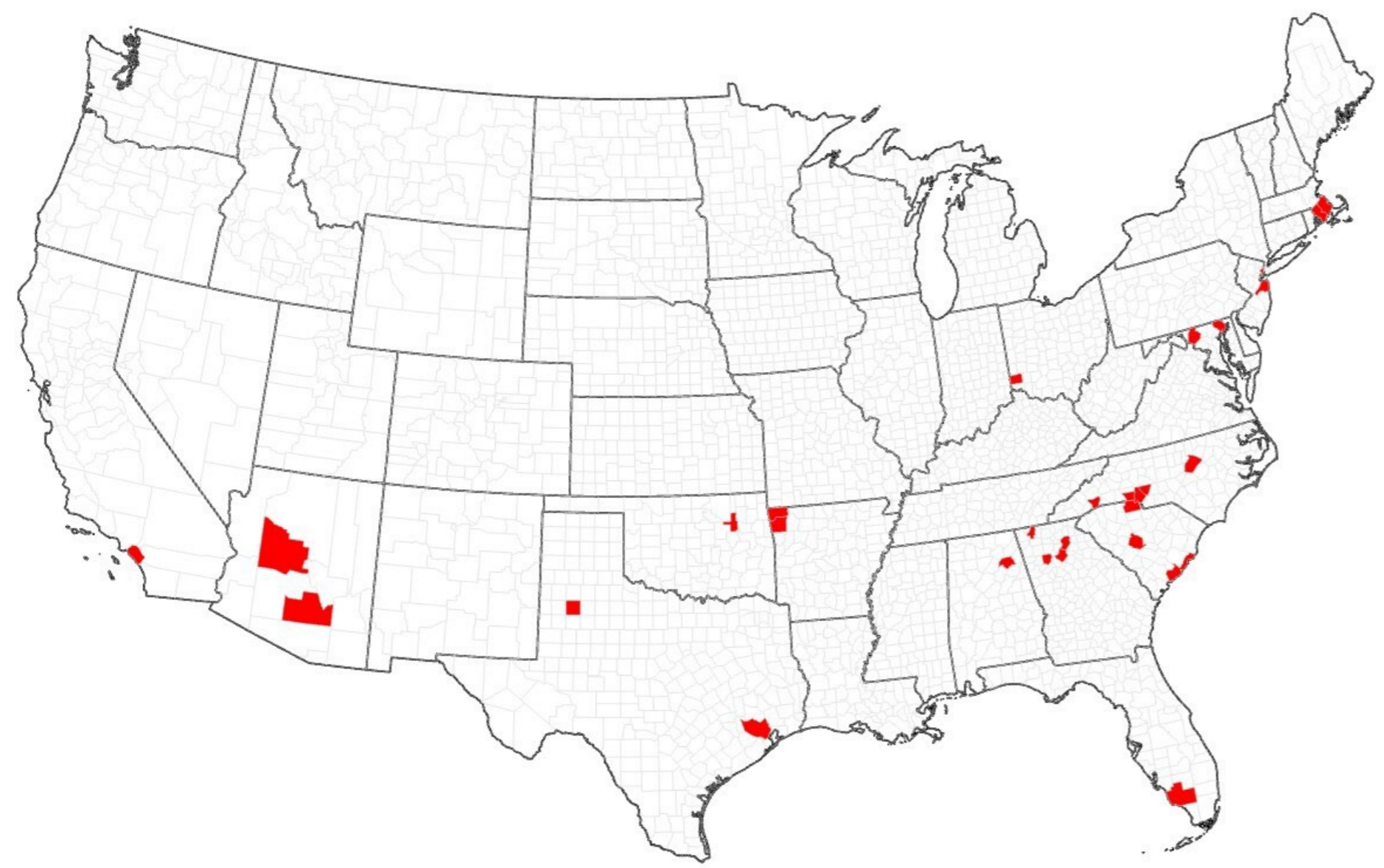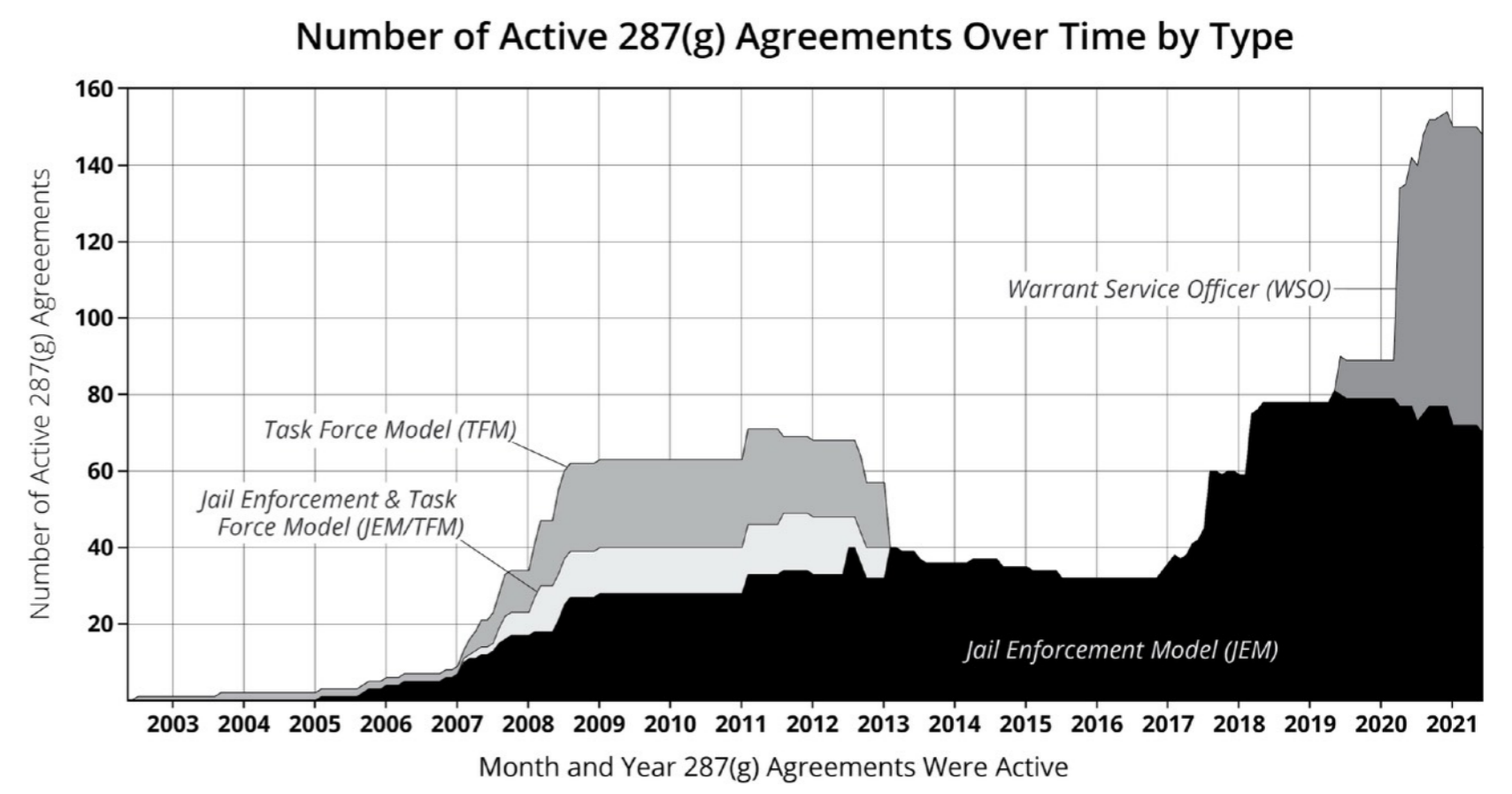

Counties with 287(g) Agreements in January 2021
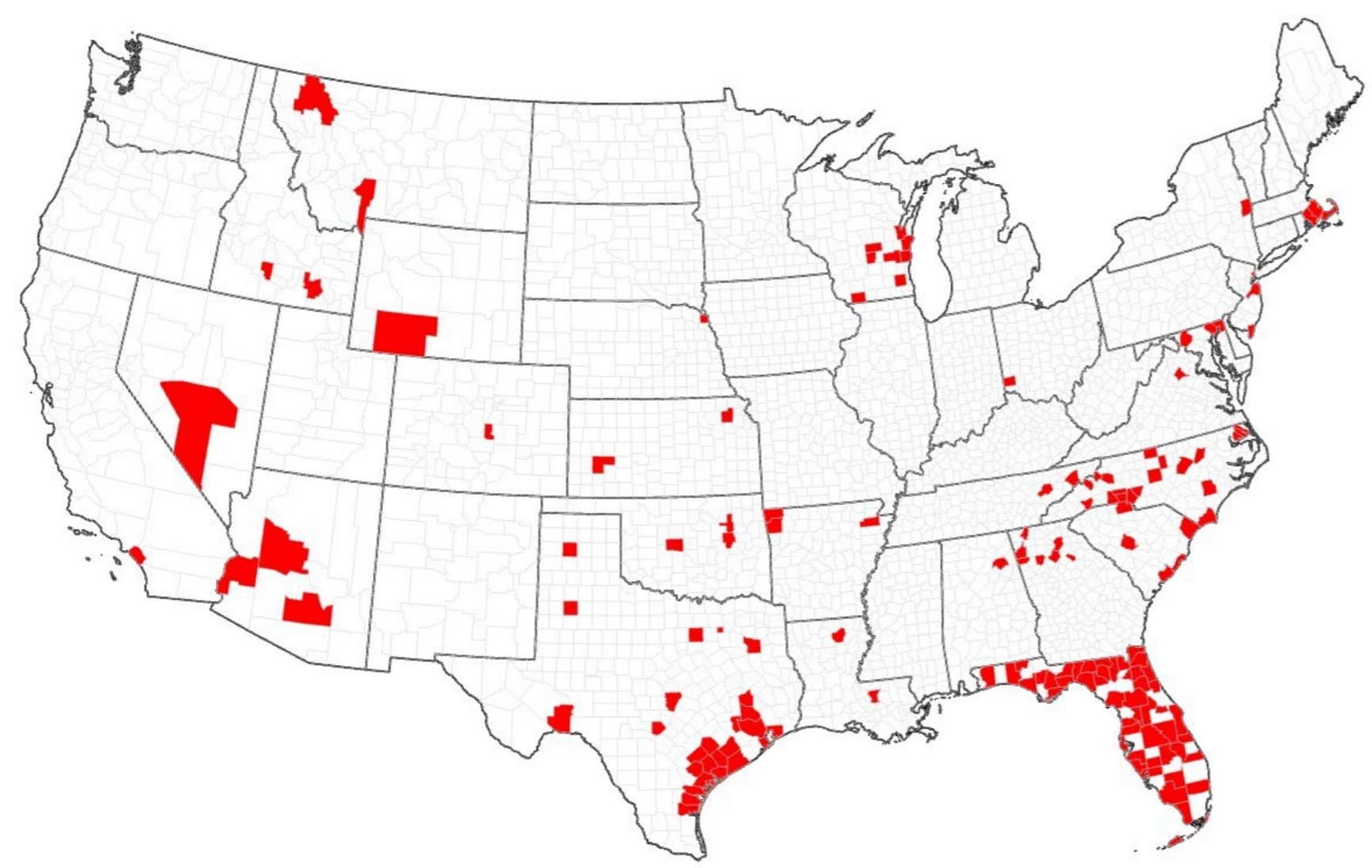
Mapping Immigration Enforcement
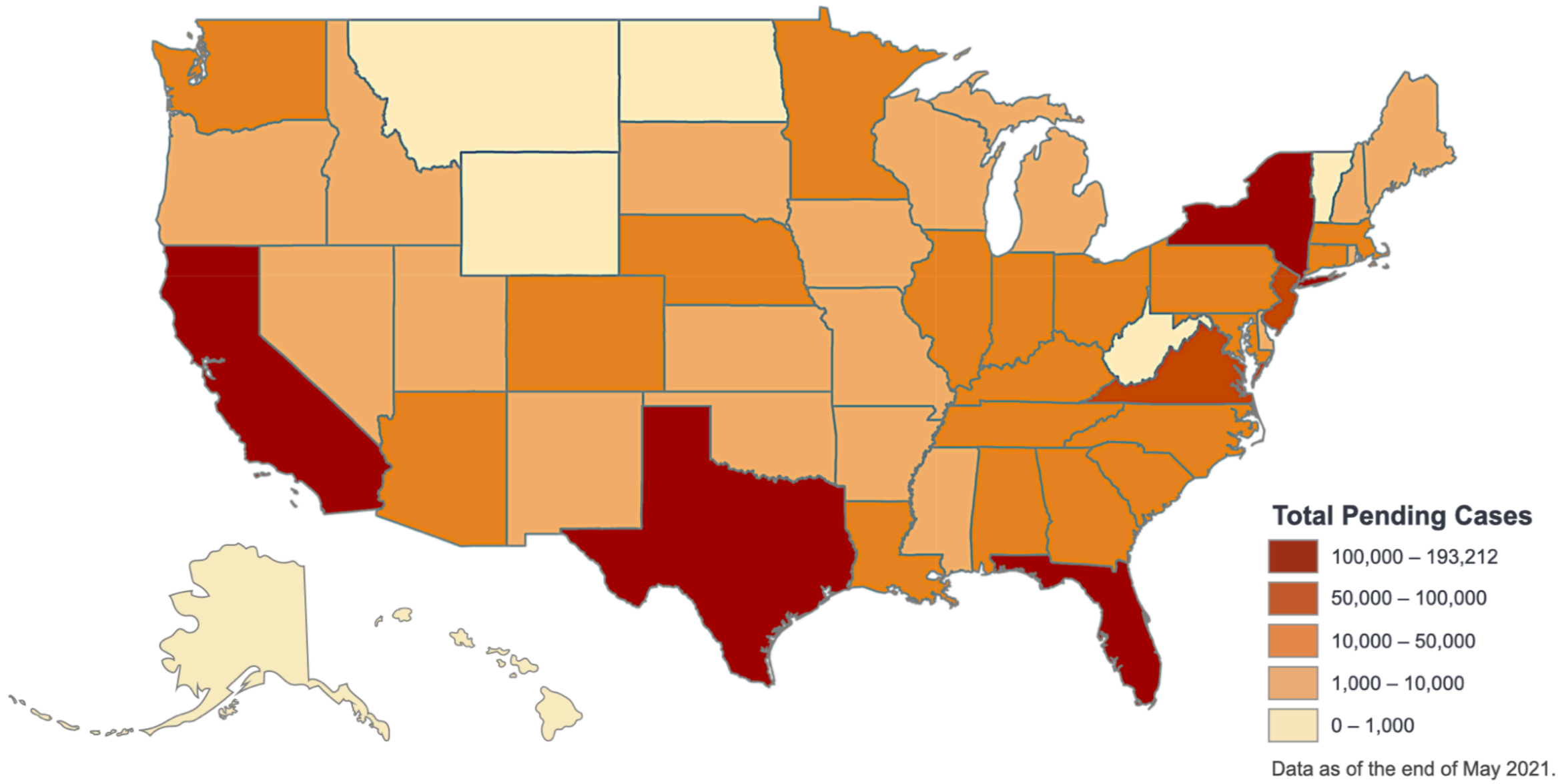
In Process, Intended for Annals of the AAG

The pair of maps to the left and the graph below belong to an article that I will be submitting to the Annals of the AAG in December that goes by the working title: "The Death and Life of 287(g)." This paper is based on over a decade of research and a new, original dataset of counties with active immigration enforcement policies known as 287(g).

The maps have not been finalized for publication because the underlying data is currently undergoing review by the ACLU's Immigrant Rights Project. A Syracuse University honors student who is working with me this year on related research identified contractural inconsistencies among a subset of these counties that raise significant questions about the legality of hundreds of arrests.
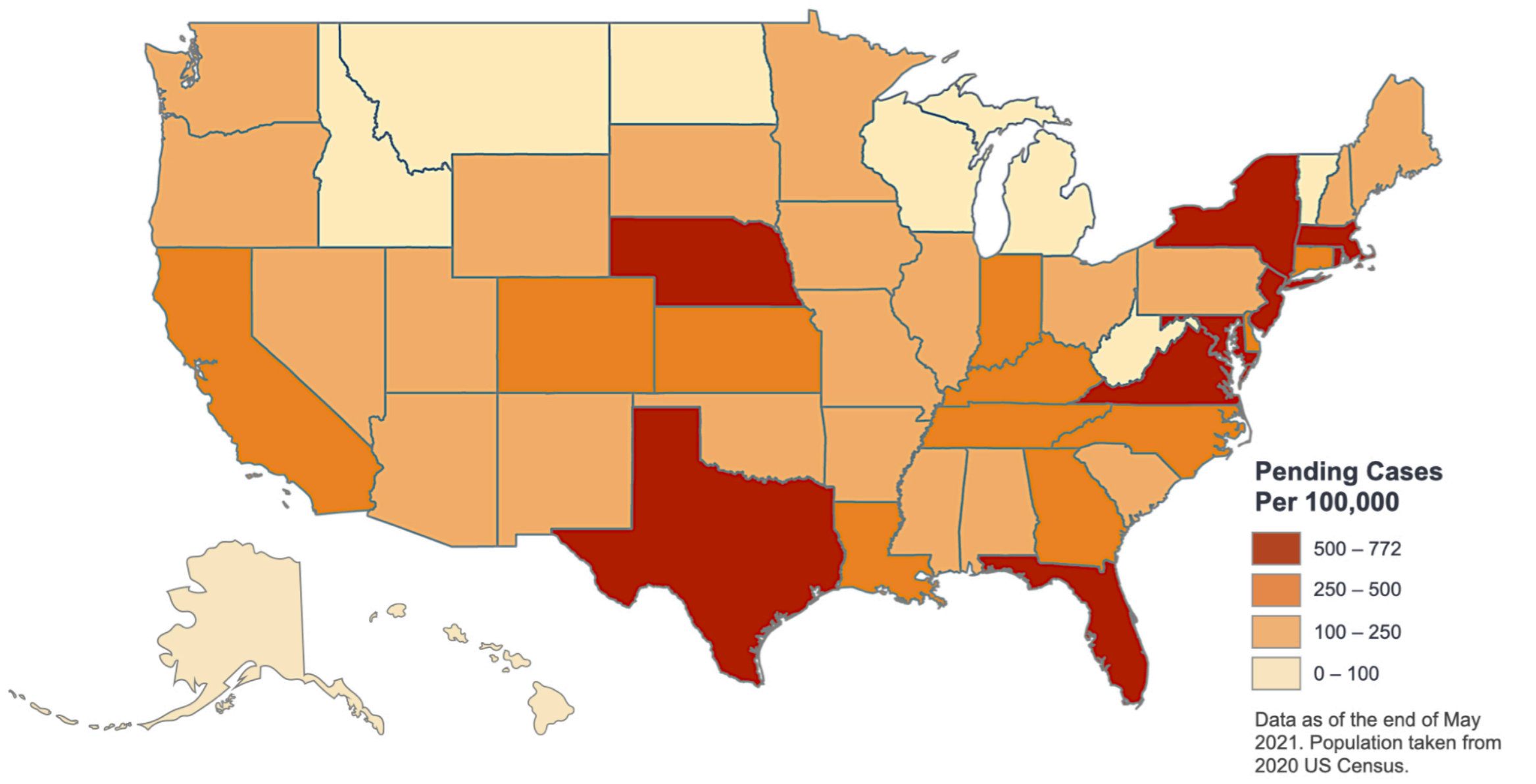
The graphic below is publication-ready.

Number of Active 287(g) Agreements Over Time by Type

Total Pending Deportation Cases By State

Total Pending Cases
- 100,000 – 193,212
- 50,000 – 100,000
- 10,000 – 50,000
- 1,000 – 10,000
- 0 – 1,000

Data as of the end of May 2021.

Pending Deportation Cases Per 100,000 Residents

Pending Cases Per 100,000
- 500 – 772
- 250 – 500
- 100 – 250
- 0 – 100

Data as of the end of May 2021. Population taken from 2020 US Census.

Pair of Maps of Pending Deportation Cases

June 2021 — Unpublished

This pair of maps were produced by analyzing over one million deportation cases that were pending in the U.S. immigration court system at the end of May 2021.
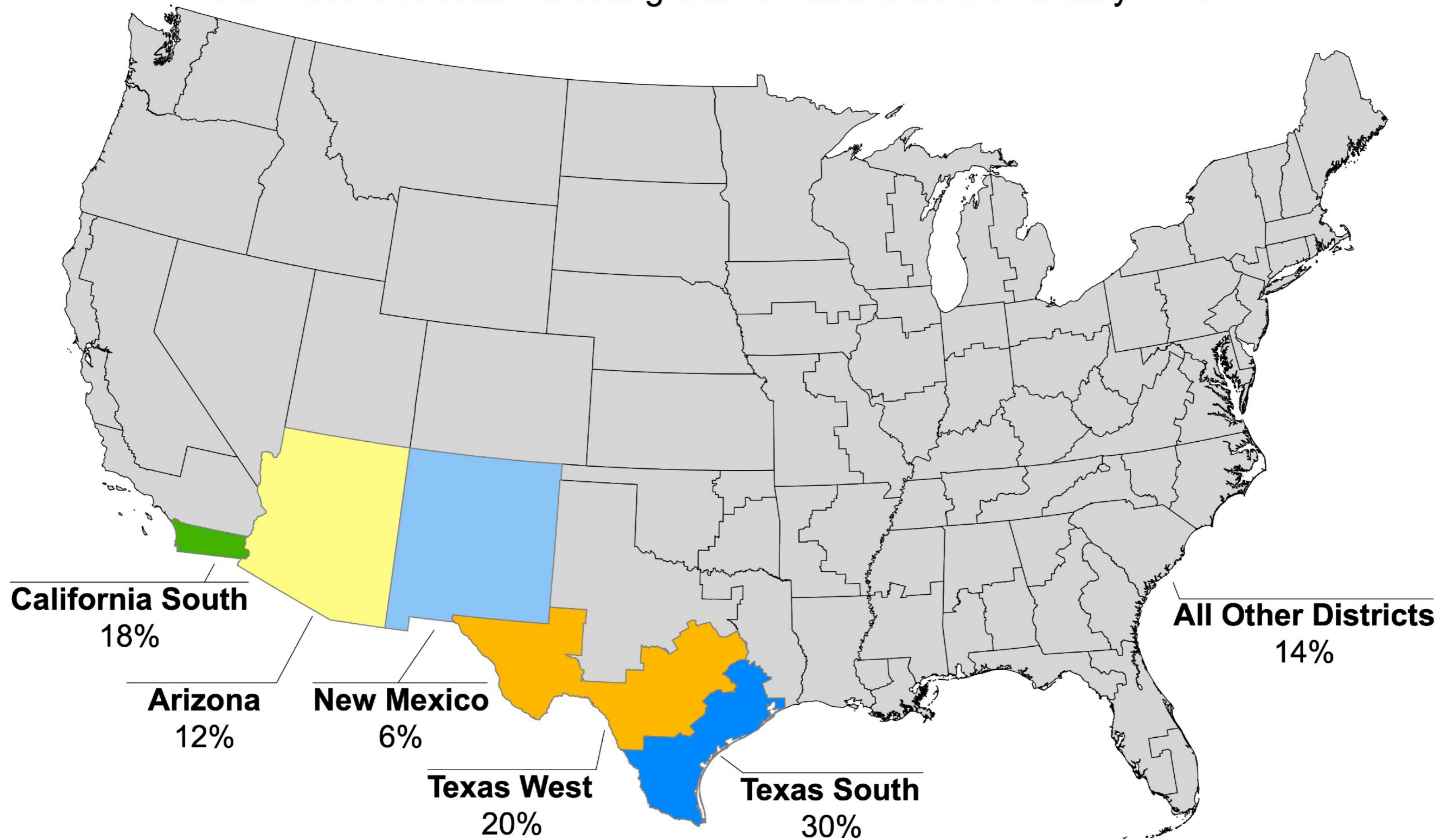
The analysis depended on identifying available zip code data provided by the court, converting to county subdivisions using a crosswalk table, then merging with county-level FIPS codes. Categorical breaks were chosen for public legibility rather than through statistical methods.

Because population alone is such a strong driver of the total number of cases, a map of absolute cases is contrasted here with case density to reveal important phenomena, such as the high per capita number of cases in Nebraska, a state with a small population but large numbers of migrant laborers.

These maps, which only show states—not counties—were not published because it was decided that the granularity of data at the state level was insufficient for the purposes of the intended report, but I have used them instead for public presentations and data visualization workshops.

Top 5 US District Courts for Harboring Prosecutions
### As Percent of Total Harboring Cases Nationwide in February 2020

California South
18%

Arizona
12%

New Mexico
6%

Texas West
20%

Texas South
30%

All Other Districts
14%

© TRAC 2020

Harboring Prosecutions in Federal Court

April 2020 — TRAC

https://trac.syr.edu/tracreports/crim/603/

The map above represents the distribution of harboring prosecutions (8 USC 1324) in federal court in February 2020. The map was created as part of a broader analysis of the rise in harboring prosecutions starting in FY 2019 and continuing in FY 2020 until the start of the COVID-19 pandemic.
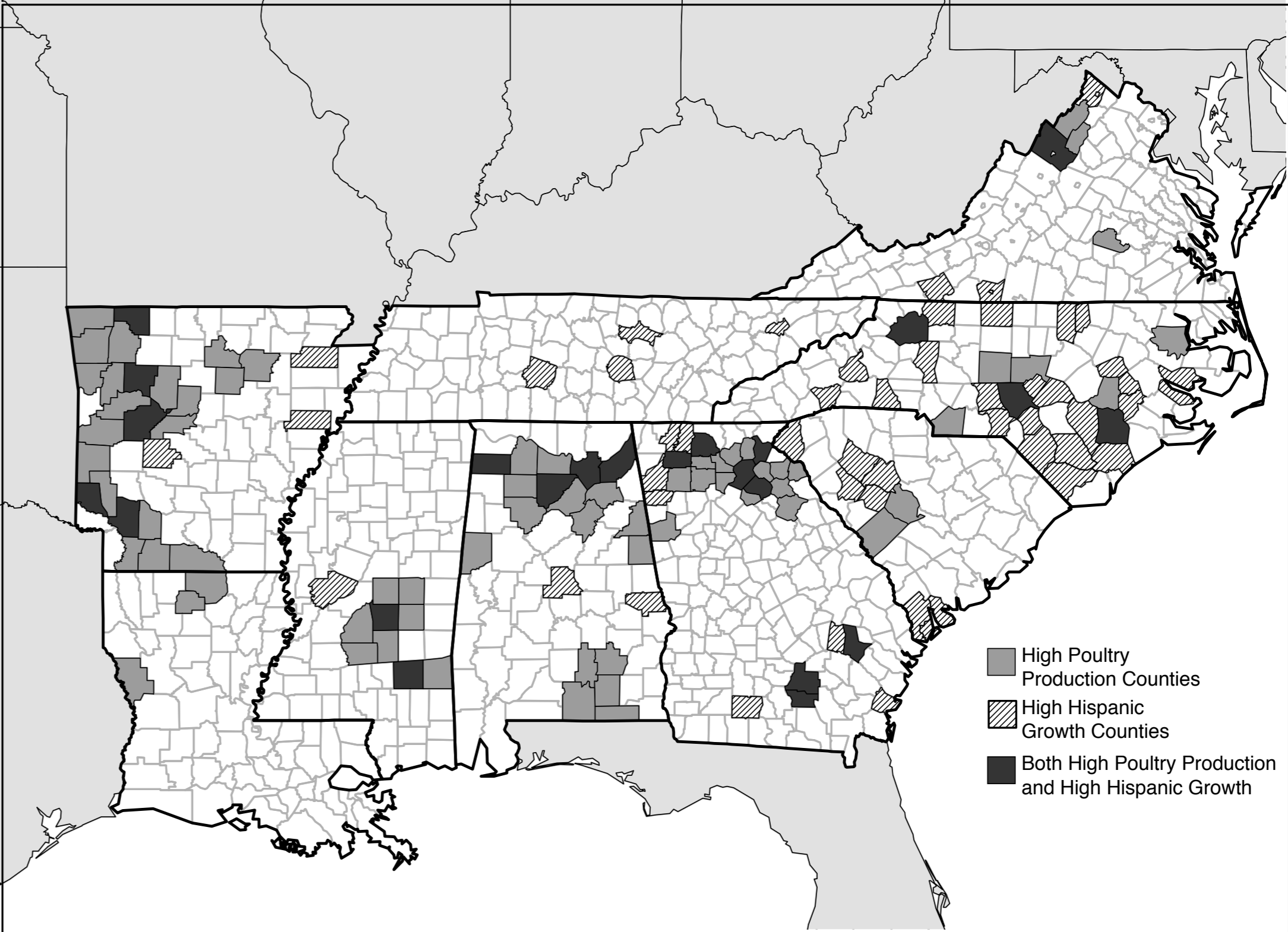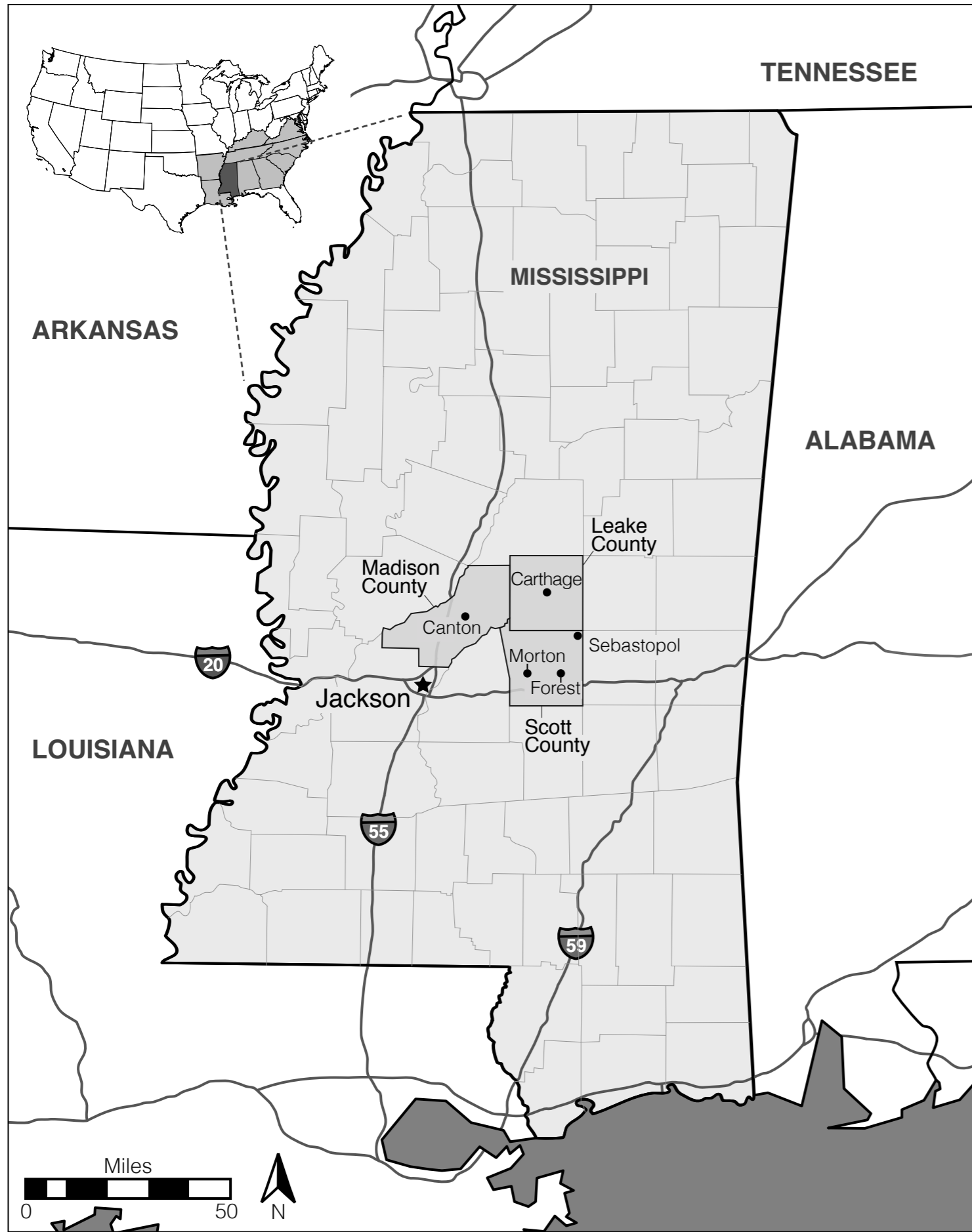
Poultry Production Maps for Dr. Angela Stuesse

Stuesse, A. (2016). *Scratching Out a Living: Latinos, Race, and Work in the Deep South*. Oakland, CA: University of California Press.

The pair of maps above as well as an additional chart (not shown here) were produced for Dr. Angela's Stuesse's book *Scratching Out a Living* (2016). The maps were designed to provide both analytical and contextual information for her study of migrant poultry workers in the U.S. South. The project required several rounds of revisions based on feedback from Stuesse and the book publisher.

Following a raid on precisely these chicken processing centers in 2019 during the Trump administration, these maps became a useful way for the public and reporters to orient themselves to the affected communities.
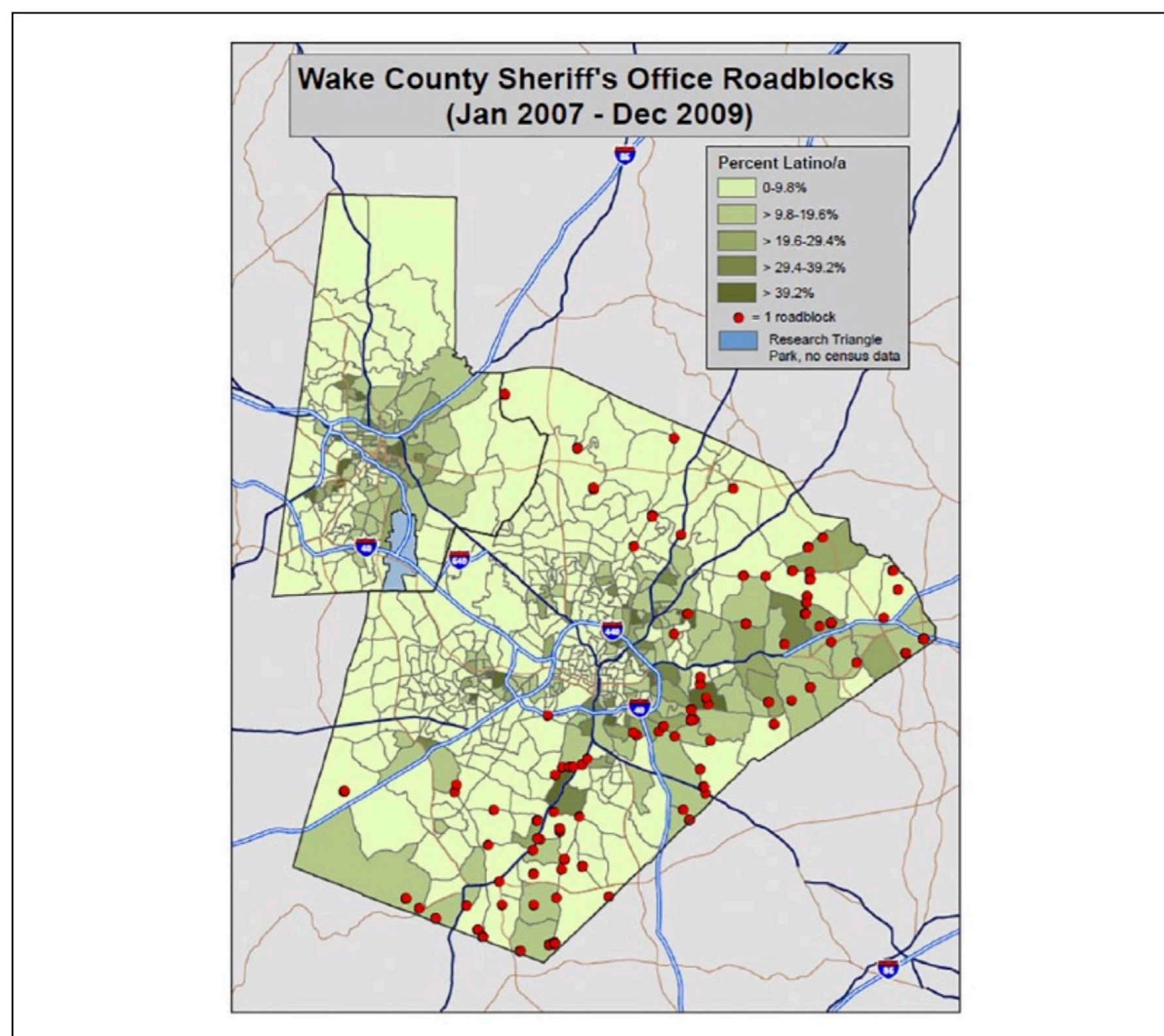
Figure 1. Roadblocks by the Wake County Sheriff's Office, January 2007 to December 2009.
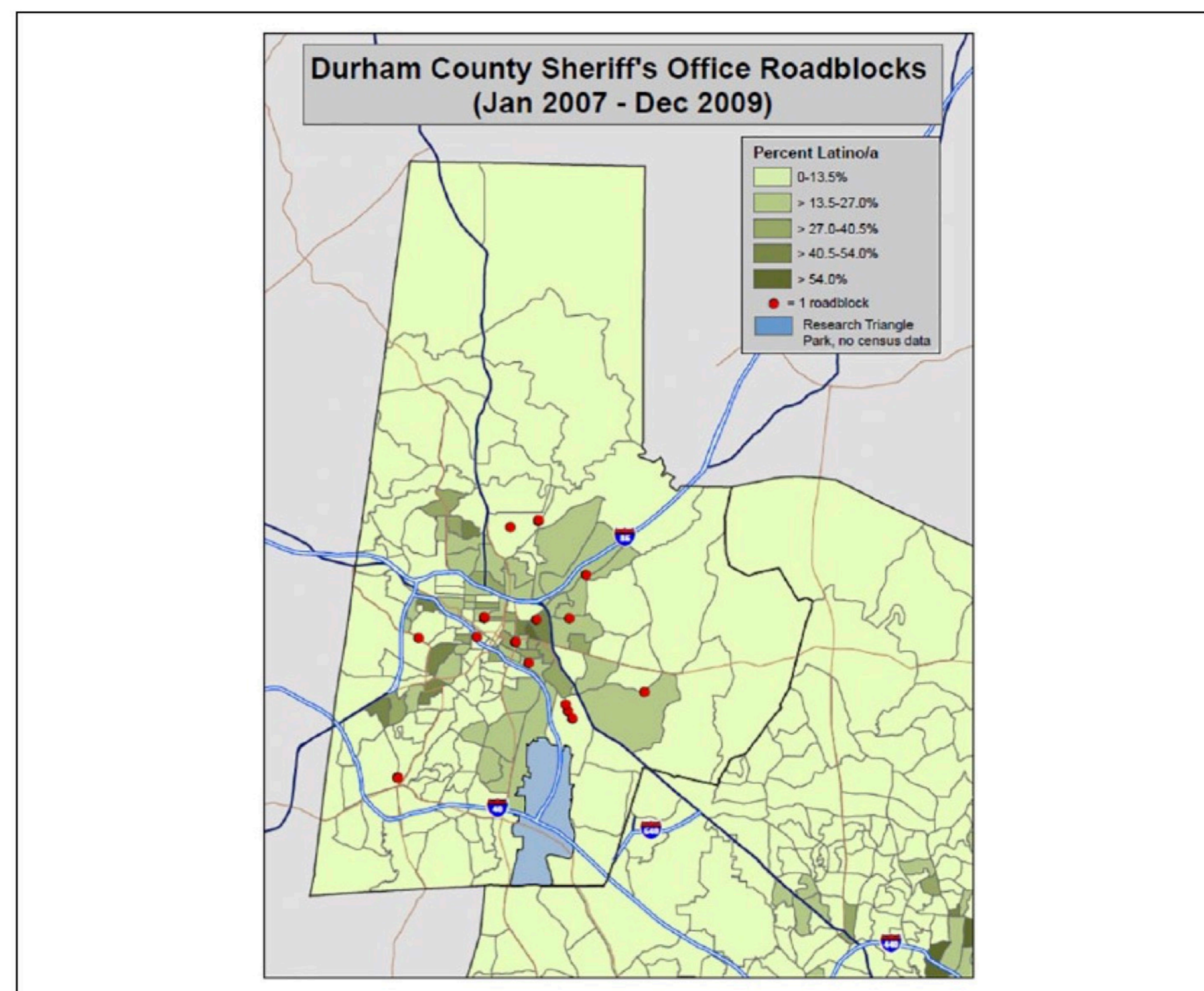

Figure 2. Roadblocks by the Durham County Sheriff's Office, January 2007 to December 2009.

Traffic Checkpoint Maps in North Carolina

Coleman, M., & Kocher, A. (2019). Rethinking the "Gold Standard" of Racial Profiling: §287(g), Secure Communities and Racially Discrepant Police Power. *American Behavioral Scientist*, 63(9).
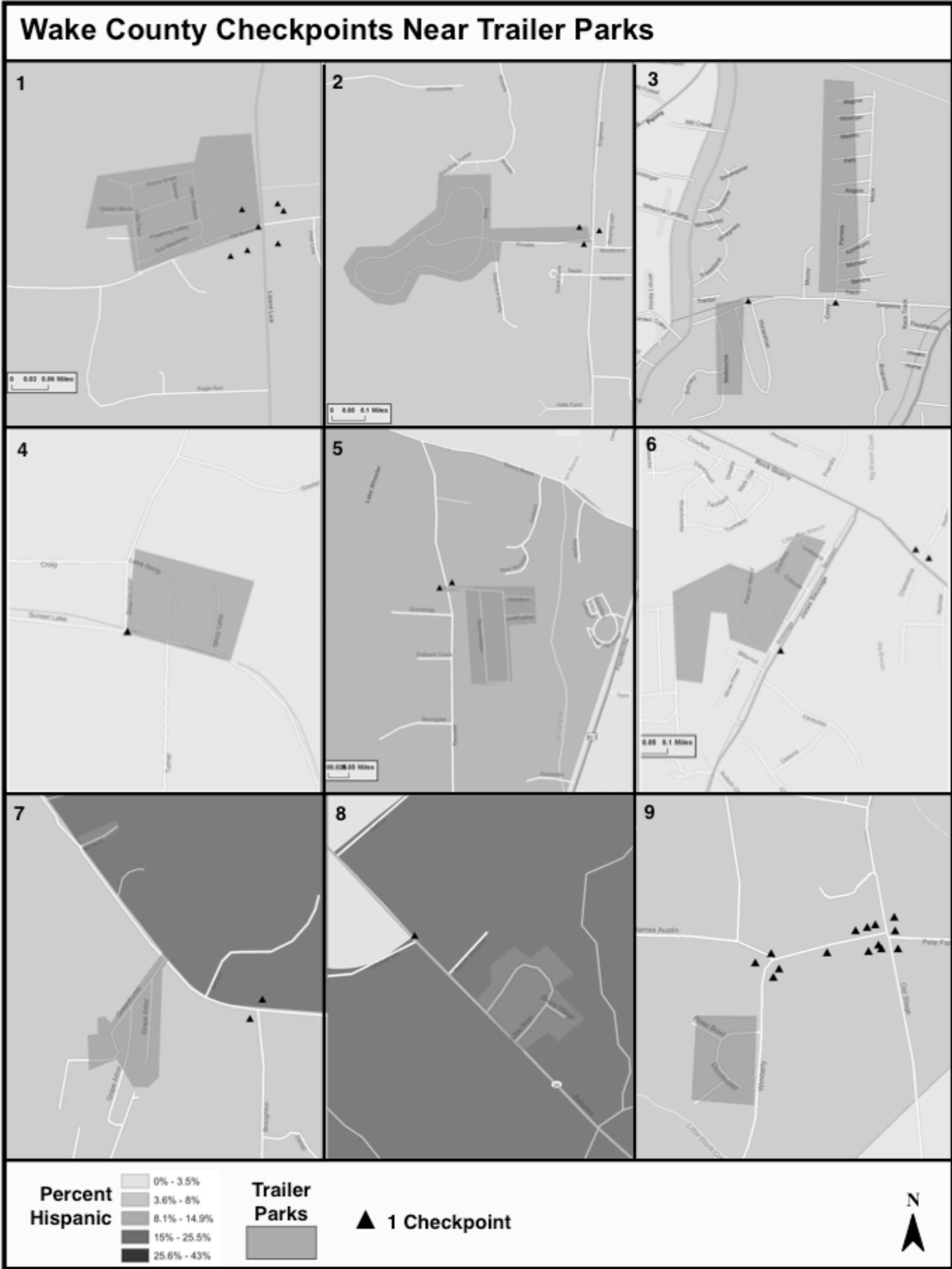
The pair of maps above are only two out of a set of five similar maps that I produced as part of an ongoing project to understand the racial and spatial characteristics of local immigration enforcement. The underlying data was obtained in collaboration with the ACLU of North Carolina. We received over 1,000 PDF documents that represented checkpoint records for five separate law enforcement agencies.

I then digitized these documents, validated the data, mapped the checkpoints in ArcGIS alongside demographic data, and then drove to every single intersection in Wake and Durham Counties to conduct field investigations. The underlying data is currently being updated as part of a book project on methodological approaches to studying race, policing, and immigration enforcement.

Police Checkpoints Clustering

2011 — MA Thesis

Using the checkpoint data that I digitized and mapped in North Carolina, I also produced a set of large scale maps that highlighted findings from my fieldwork in which I found that many clusters of police checkpoints occurred near mobile home divisions occupied predominantly by Latine immigrants.

Wake County Checkpoints Near Trailer Parks

Percent Hispanic
- 0% - 3.5%
- 3.6% - 8%
- 8.1% - 14.9%
- 15% - 25.5%
- 25.6% - 43%

Trailer Parks

▲ 1 Checkpoint

N

Poverty Distribution in San Juan, Puerto Rico

Poverty Levels

- 1 Dot = 50
- Severe Poverty
- Moderate Poverty
- Poverty
- Total Population
- No Population Recorded

Distribution of Severe Poverty Across Census Tracts

Number of Census Tracts

Percentage Living in Severe Poverty

Data Source: US Census 2000. Map compiled by Austin Kocher 2008.

Pobre en San Juan

San Juan is a beautiful, vibrant city that looks out over the Atlantic Ocean on the northeast coast of Puerto Rico. It is a city graced with modern luxuries and historic architecture, yet marred with disparities. Abject poverty is still a visible feature of the topography as shantytowns such as La Perla (small patch on the far northwest tip) lie withing shouting distance of the freshly-painted government buildings and tourists traps of Old Town San Juan. In this dot density map, it is clear that poverty is concentrated in the Santurce-Orient which starts in the northeast corner of San Juan Municipio and extends south and east in a swath of red. The proximity of this blighted area to the beautiful beaches places the area at high risk of gentrification. In the coming decade, the City of San Juan will pump $500 million into this area. It will be interesting to see how this map will changes as urban development displaces thousands of residents.
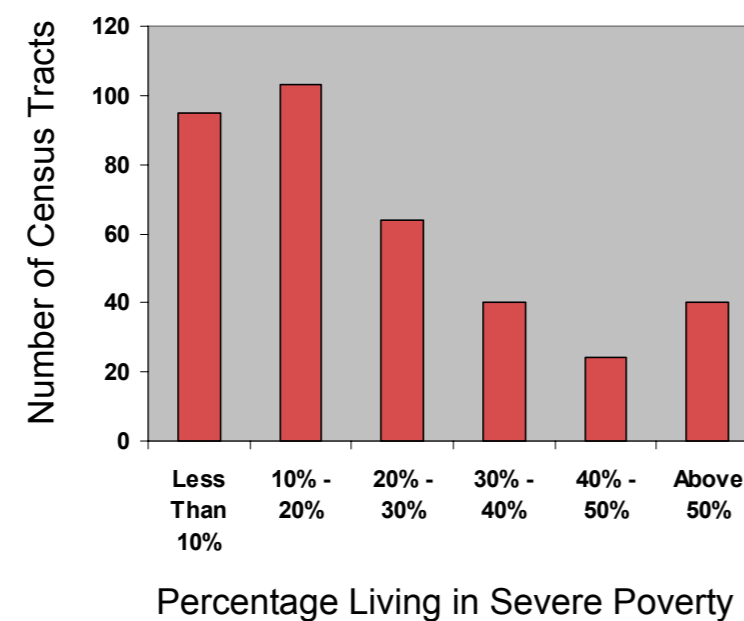
Explanation of Data

A graded dot density map was considered the best choice in representing the data accurately. Since the dots represent actual values, a total population dot (grey) was introduced to allow for a comparison of total population and poverty. The graph at the bottom of the map shows the distribution of severe poverty across total number of census tracts. Severe poverty was defined as less than half the poverty line; moderate poverty as .50 to .75 of the poverty line, and poverty as .75 to 1.0 times the poverty line.

Poverty Density Map

2008 — Unpublished

One of my first projects using GIS involved mapping the poverty density in San Juan, Puerto Rico, near where I lived for a little over four years.

The description that accompanies the map provides adequate context for the map, but I would just note that, in hindsight, many of the design elements that I incorporate in my mapping and design work today are already present in this early sample, specifically the use of grounded, first-person narratives and data graphics alongside the map itself.

Section 2

DATA VISUALIZATION

Almost no one in MPP was granted asylum

Asylum was not easy to obtain before Remain in Mexico, but the Trump administration used MPP to make asylum nearly impossible. In 2018, the last fiscal year without MPP, 42,269 cases were closed, with more than 30 percent of those receiving asylum. For the 41,732 MPP cases that were closed, less than 2 percent received asylum.
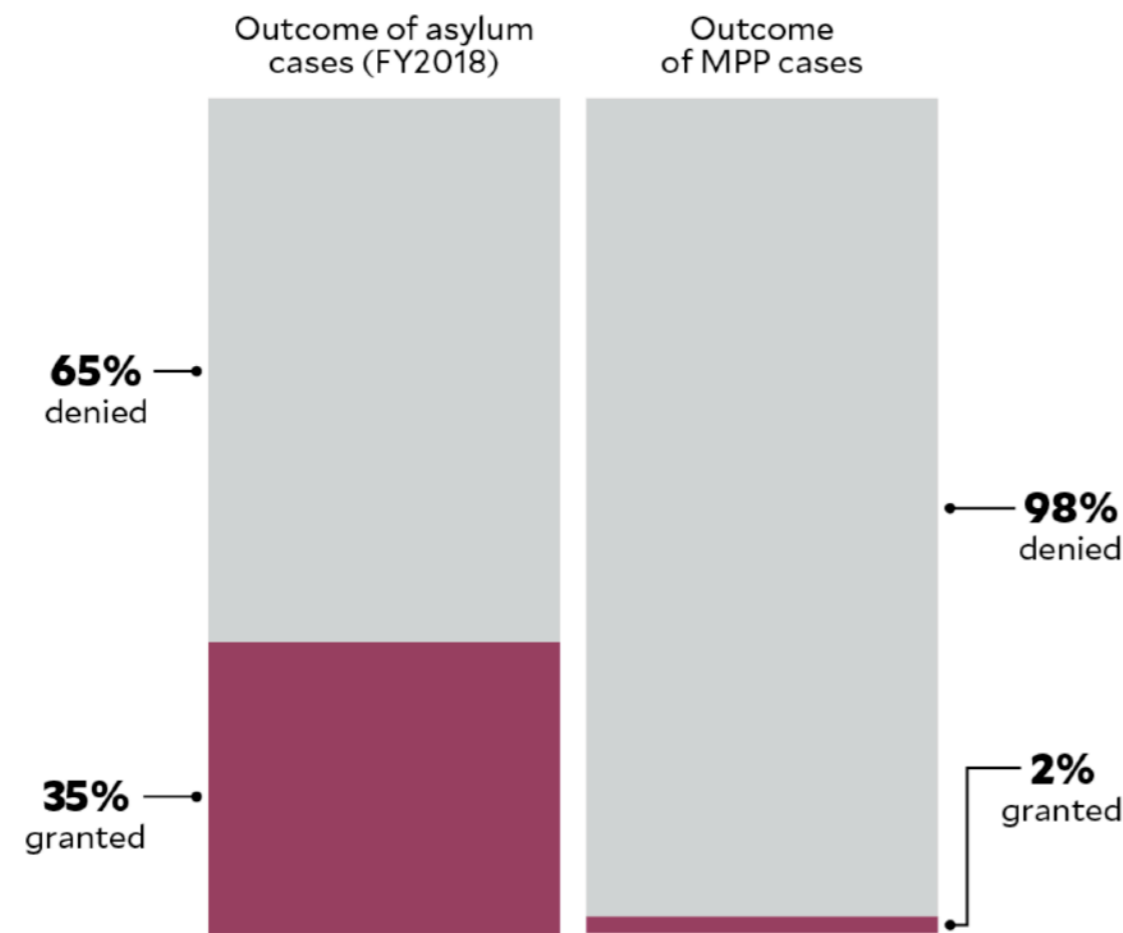
Outcome of asylum cases (FY2018)

Outcome of MPP cases

65% denied

35% granted

98% denied

2% granted

Chart: Mother Jones Source: TRAC

It was almost impossible to get a lawyer from Mexico

MPP was designed for failure. Asylum outcomes rely heavily on access to attorneys, and, as the story of the Perla family shows, MPP made finding an immigration attorney nearly impossible while stuck in Mexico. As a result, migrants in the program were forced to navigate a confusing, messy, and foreign legal system all by themselves.
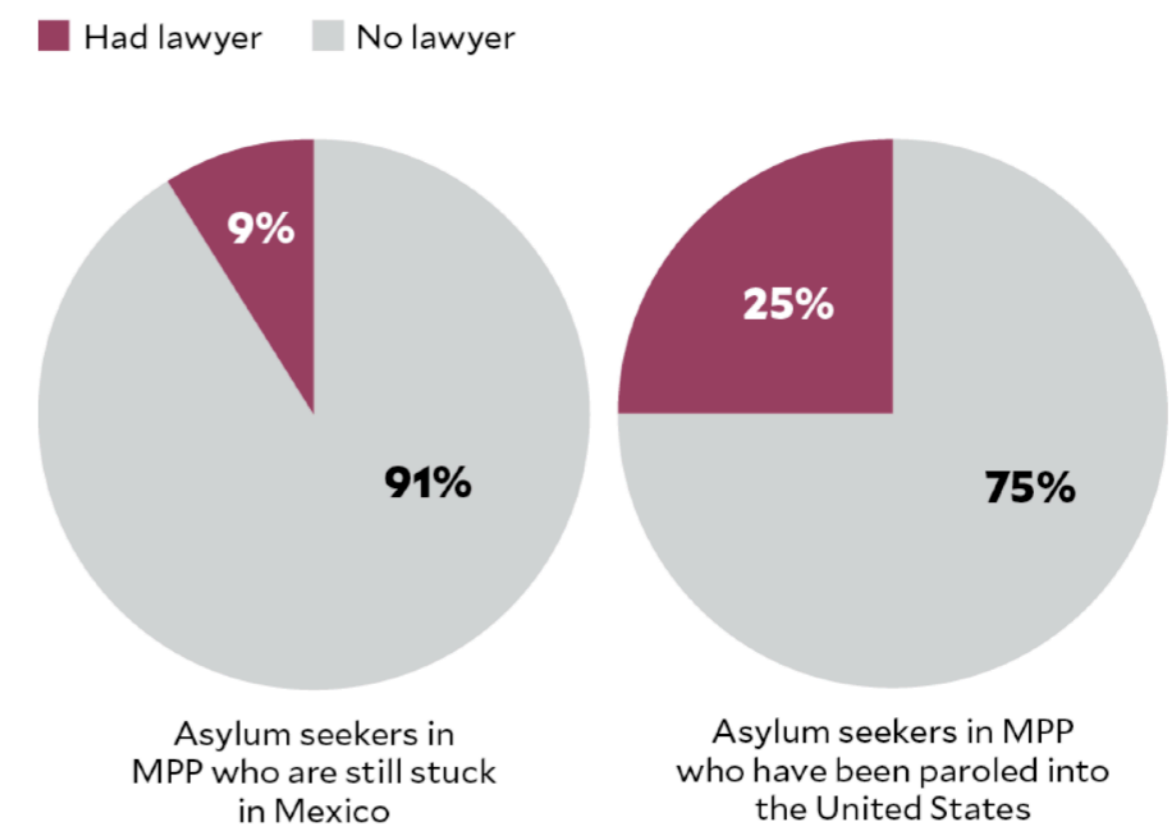
■ Had lawyer ■ No lawyer

9%
91%

Asylum seekers in MPP who are still stuck in Mexico

25%
75%

Asylum seekers in MPP who have been paroled into the United States

Chart: Mother Jones Source: TRAC

More than 70,000 asylum seekers enrolled in Remain in Mexico

In total, more than 70,000 individuals were placed in the program, with nearly 30,000 people added in just three months in the summer of 2019 as MPP expanded to more ports of entry. The top five nationalities of asylum seekers in MPP were, in descending order, Honduras, Guatemala, Cuba, El Salvador, and Ecuador.
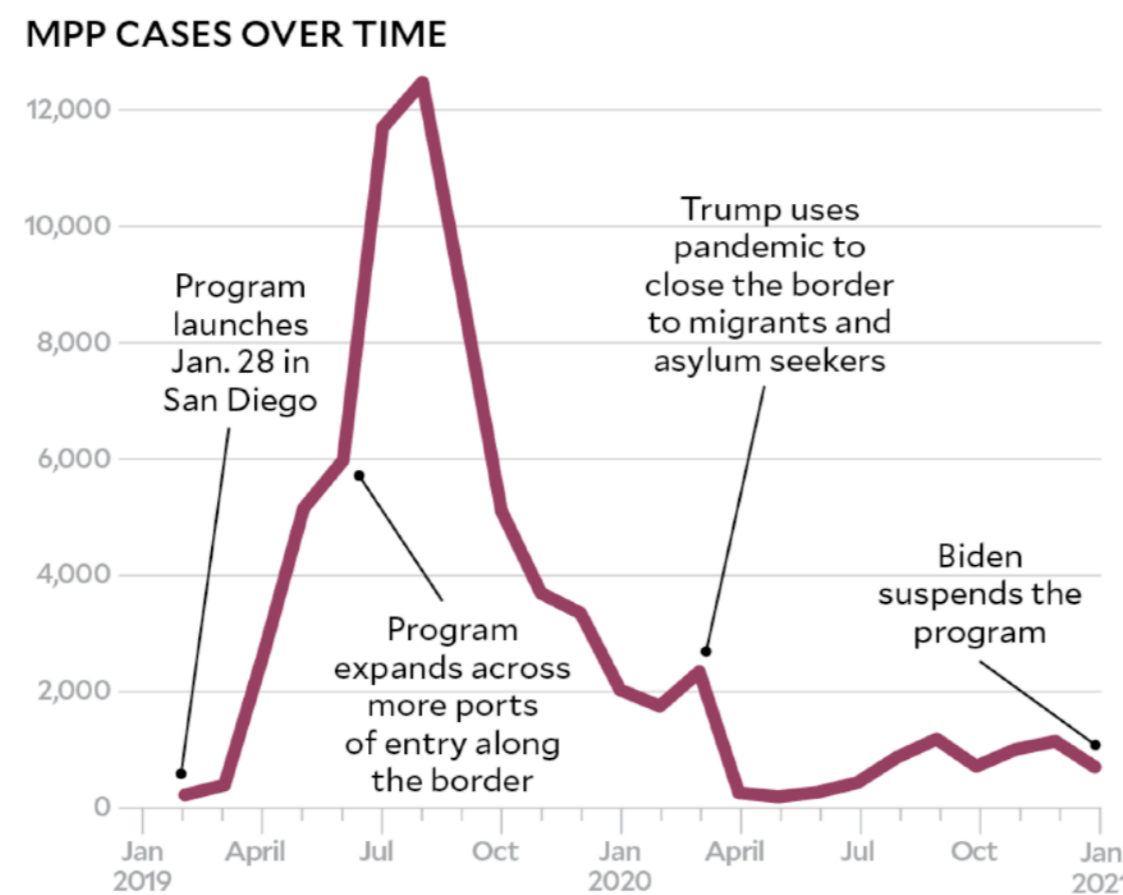
MPP CASES OVER TIME

Program launches Jan. 28 in San Diego

Program expands across more ports of entry along the border

Trump uses pandemic to close the border to migrants and asylum seekers

Biden suspends the program

Chart: Mother Jones Source: TRAC

A majority of immigration judges deny more than 70 percent of cases

Immigration judges are supposed to decide asylum cases impartially but massive disparities exist between judges and between immigration courts, regardless of the merits of individual cases. Between 2015 and 2020, most judges denied over 70 percent of asylum cases they heard. One judge in Houston denied 100 percent of them. Others in Georgia, Louisiana, and North Carolina denied more than 99 percent of the asylum cases they heard.

Number of judges
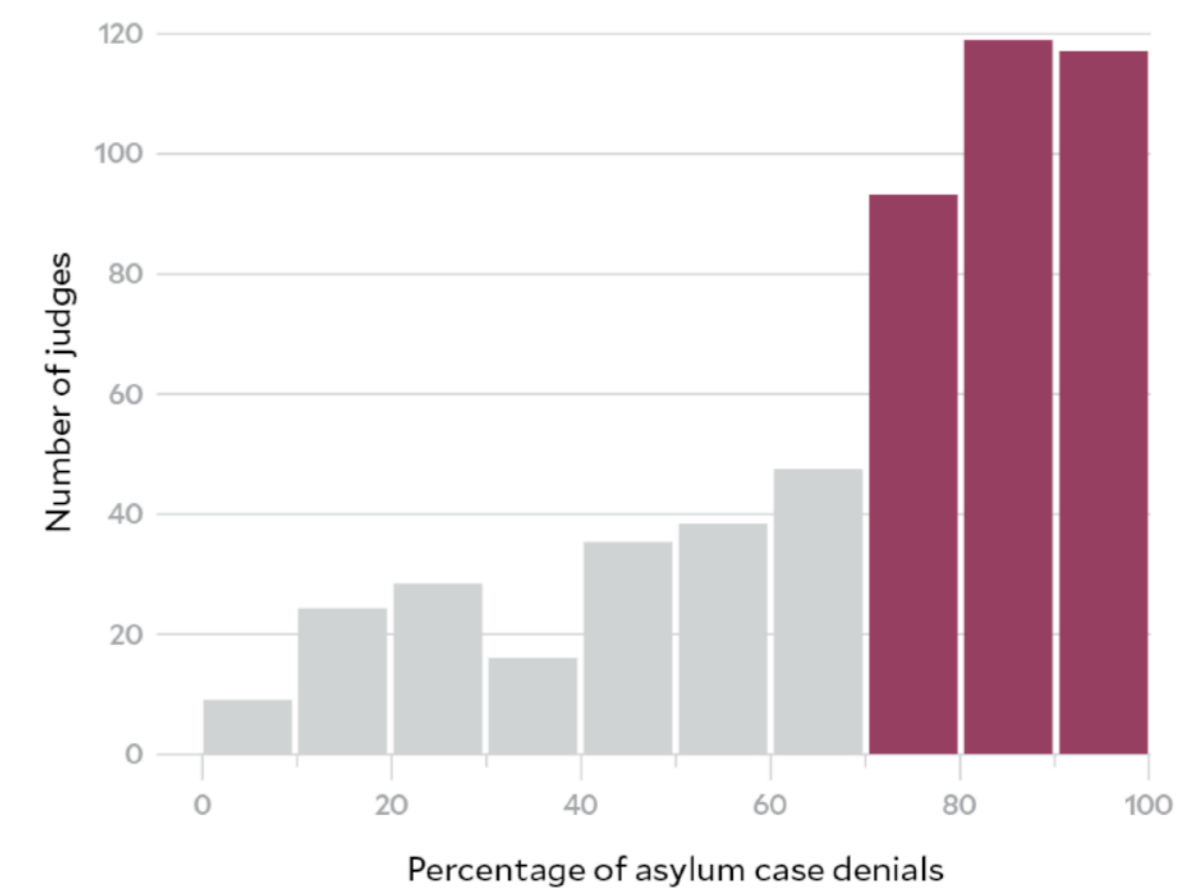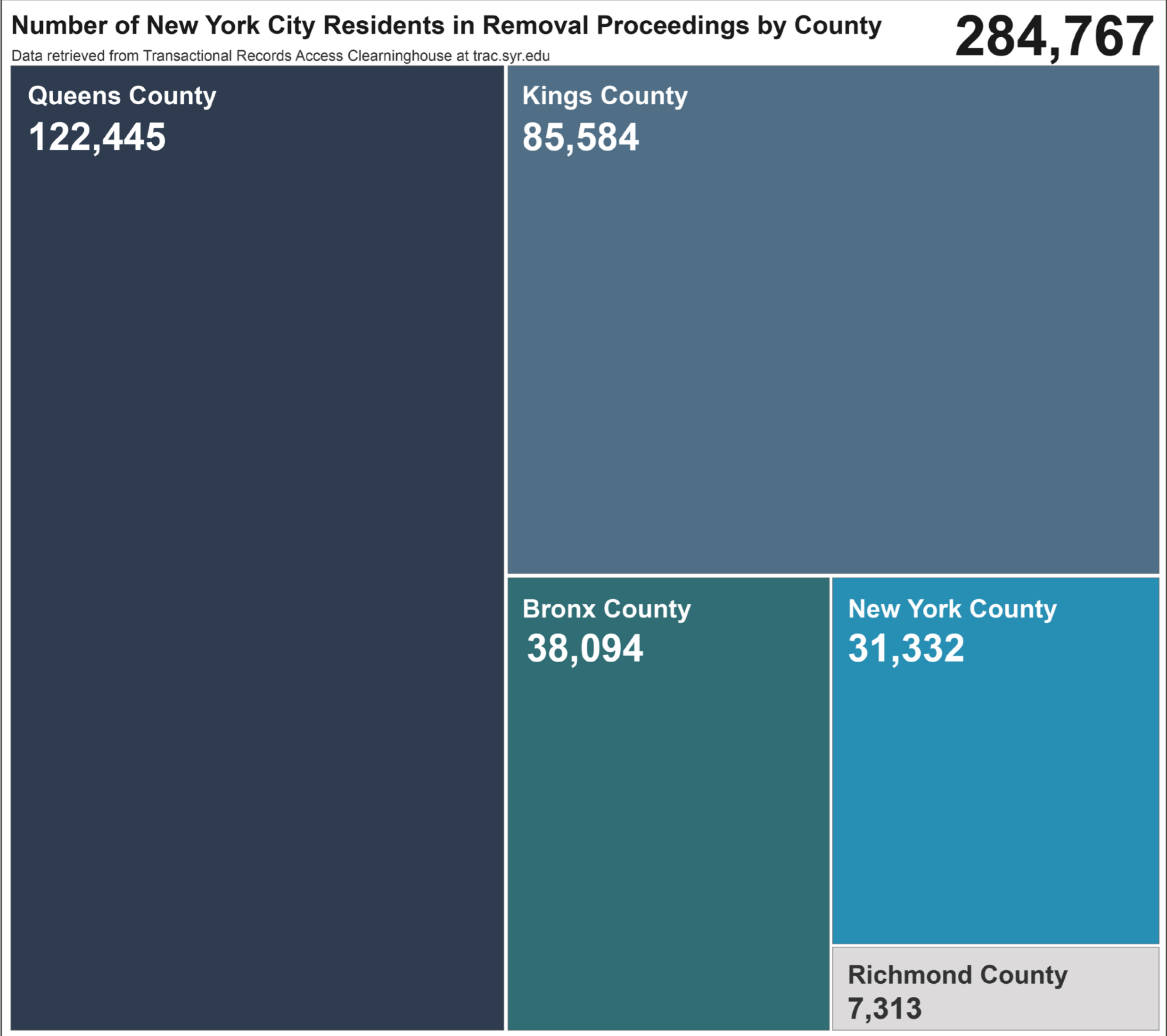
Percentage of asylum case denials

Chart: Mother Jones Source: TRAC

Data Analysis and Visualization for Mother Jones Magazine

Echavarri, F. (2021). One Family's Escape From Trump's Border Hell: A 130-Week Diary. *Mother Jones*. Retrieved from https://www.motherjones.com/politics/2021/06/trump-immigration-legacy-mpp-remain-in-mexico-impact-family/

I worked with journalist Fernanda Echavarri at *Mother Jones* magazine to provide data analysis and data visualization for her excellent, in-depth article on the effects of the Migrant Protection Protocols (MPP).

This Trump-era policy forced asylum seekers to wait for their court hearings in dangerous parts of northern Mexico. Echavarri's article was published digitally in June then published in print in September; I have a credit in both versions.

Number of New York City Residents in Removal Proceedings by County

Data retrieved from Transactional Records Access Clearninghouse at trac.syr.edu

284,767

Queens County
122,445

Kings County
85,584

Bronx County
38,094

New York County
31,332

Richmond County
7,313

Pending Deportation Cases in NYC

Kocher, A. (2020). ICE Filed Over 100,000 New Cases and Clogged the Courts at the Peak of the Pandemic. Documented. Retrieved from https://documentedny.com/2020/09/16/ice-filed-over-100000-new-cases-and-clogged-the-courts-in-the-peak-of-the-pandemic/

To accompany an article I published in Documented NY, I created a graphic representation of the relative number of pending deportation cases in each of New York City's five boroughs. I identified more than a quarter of a million cases where the immigrant in removal proceedings was listed as a resident in one of the five counties listed. I used Tableau to create the initial graphic, then exported it into Adobe Illustrator to complete the design.
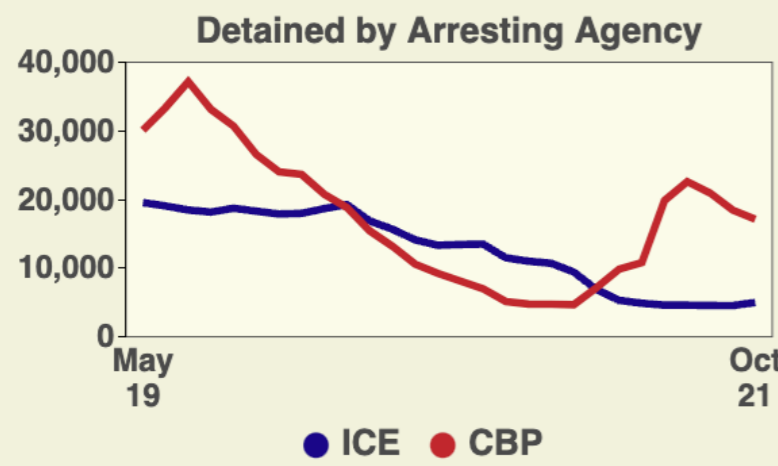
Immigration Detention Quick Facts

Immigration Detention Primer

22,129
in detention on
October 1, 2021

Detained by Arresting Agency

40,000
30,000
20,000
10,000
0
May 19 — Oct 21
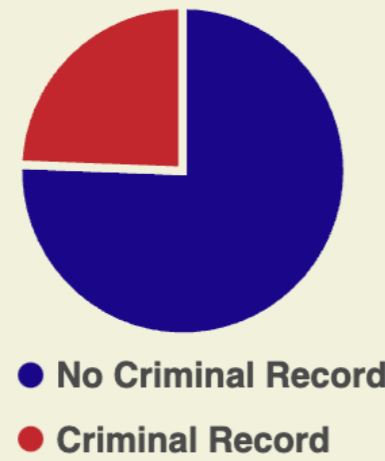
● ICE ● CBP

Immigration and Customs Enforcement held **22,129** in ICE detention according to data released on **October 1, 2021**.

Click here to see more data

75.6%
of ICE immigrant detainees have no criminal record

● No Criminal Record
● Criminal Record

16,740 out of **22,129**—or **75.6%**—held in ICE detention have no criminal record, according to data released on **October 1, 2021**. Many more have only minor offenses, including traffic violations.
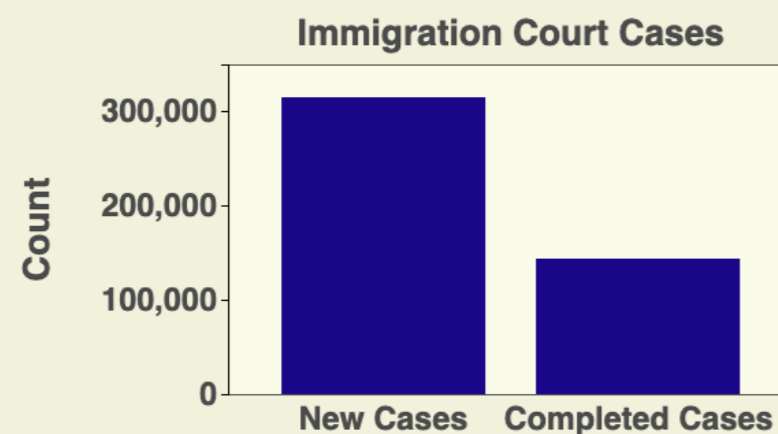
Click here to see more data

Immigration Court Quick Facts

Immigration Court Primer

Select Quick Facts Category

Immigration Court Quick Facts ▼

315,491
new court cases recorded so far in FY 2021

Immigration Court Cases

Count
300,000
200,000
100,000
0
New Cases Completed Cases

Immigration Courts recorded receiving **315,491** new cases so far in FY **2021** as of **September 2021**. This compares with **144,654** cases that the court completed during this period.

Click here to see more data

2.0%
based on alleged criminal activity

● Alleged Criminal Activity
● Other Basis Alleged

According to court records, only **2.0%** of FY **2021** new cases sought deportation orders based on any alleged criminal activity of the immigrant, apart from possible illegal entry.

Click here to see more data

TRAC's Immigration Quick Facts Tools

2020 – current

https://trac.syr.edu/immigration/quickfacts/

In 2020, I designed TRAC's newest immigration data tools out of a concern that journalists and the public who were not already familiar with the immigration system were struggling to make sense of our more complicated tools.

In response, I developed a modular, interactive, and dynamically-updated set of easy-to-understand tools that give users a high altitude view of the data in the form of easy to understand charts and graphs, with links to dive deeper into the datasets and source material.

TRAC currently has two quick facts pages, but plans on adding a third by the end of this year including one with a mapping component that I am currently testing.

Federal Prosecutions Per Month for Unlawful Entry, Unlawful Reentry, and Harboring
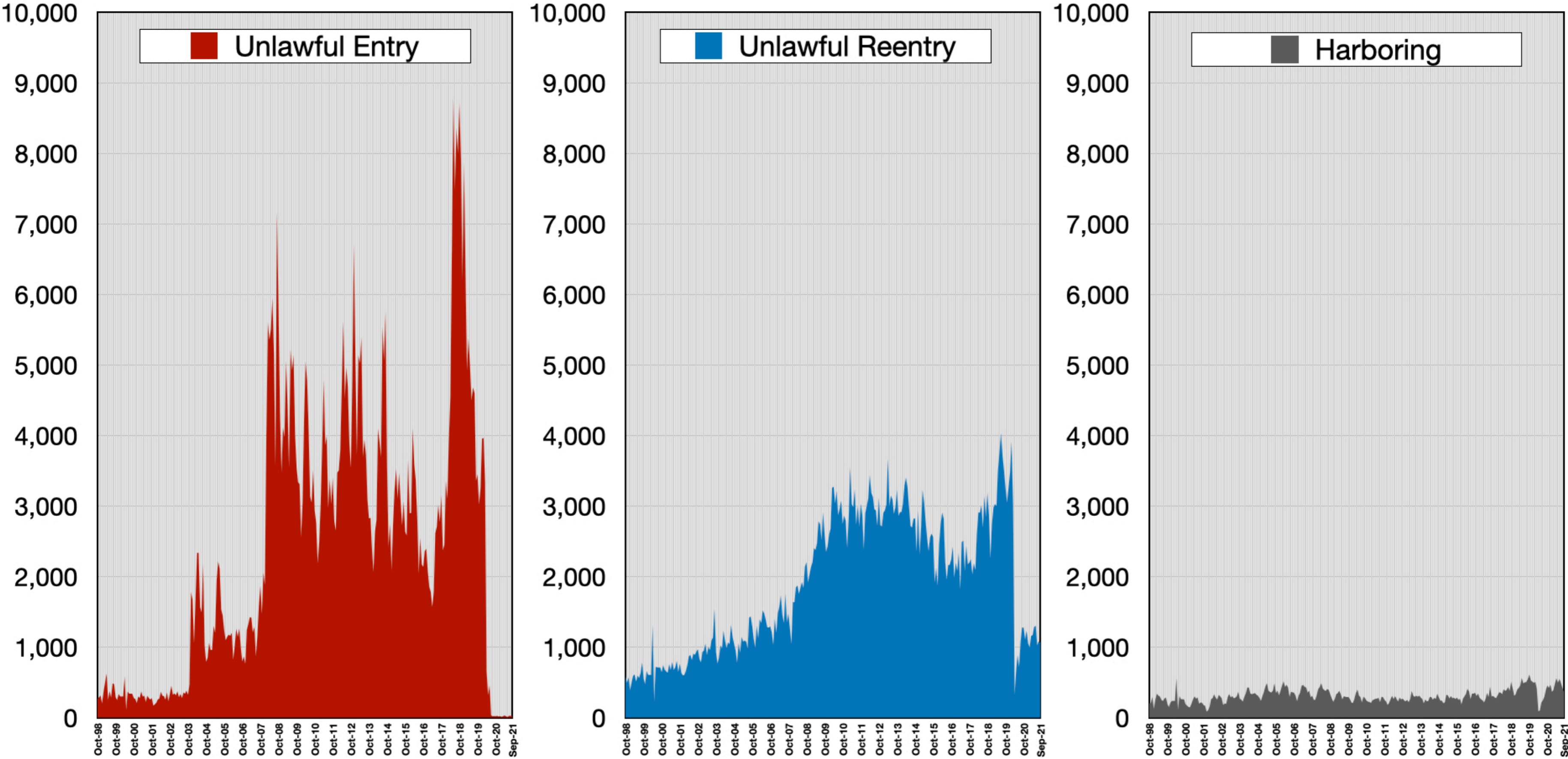
Based on federal prosecution data obtained by TRAC through the end of September 2021.

Immigration Prosecutions in Federal Court over 20 Years

November 1, 2021

https://www.austinkocher.com/blog/2021/11/1/behind-the-report-immigration-prosecutions-in-federal-court

Throughout 2021, I have written short data explanation essays on my professional blog in response to questions from the media or to provide the public with background information on reports we publish. I recently began posting "behind the report" essays with graphics that we did not choose to publish with the original post.

This is one such graphic that shows 20 years of prosecutions for each of the three most common immigration-related charges: unlawful entry, unlawful reentry, and harboring. This graphic made up of three charts demonstrates basic design principles of proportionality and contrast.
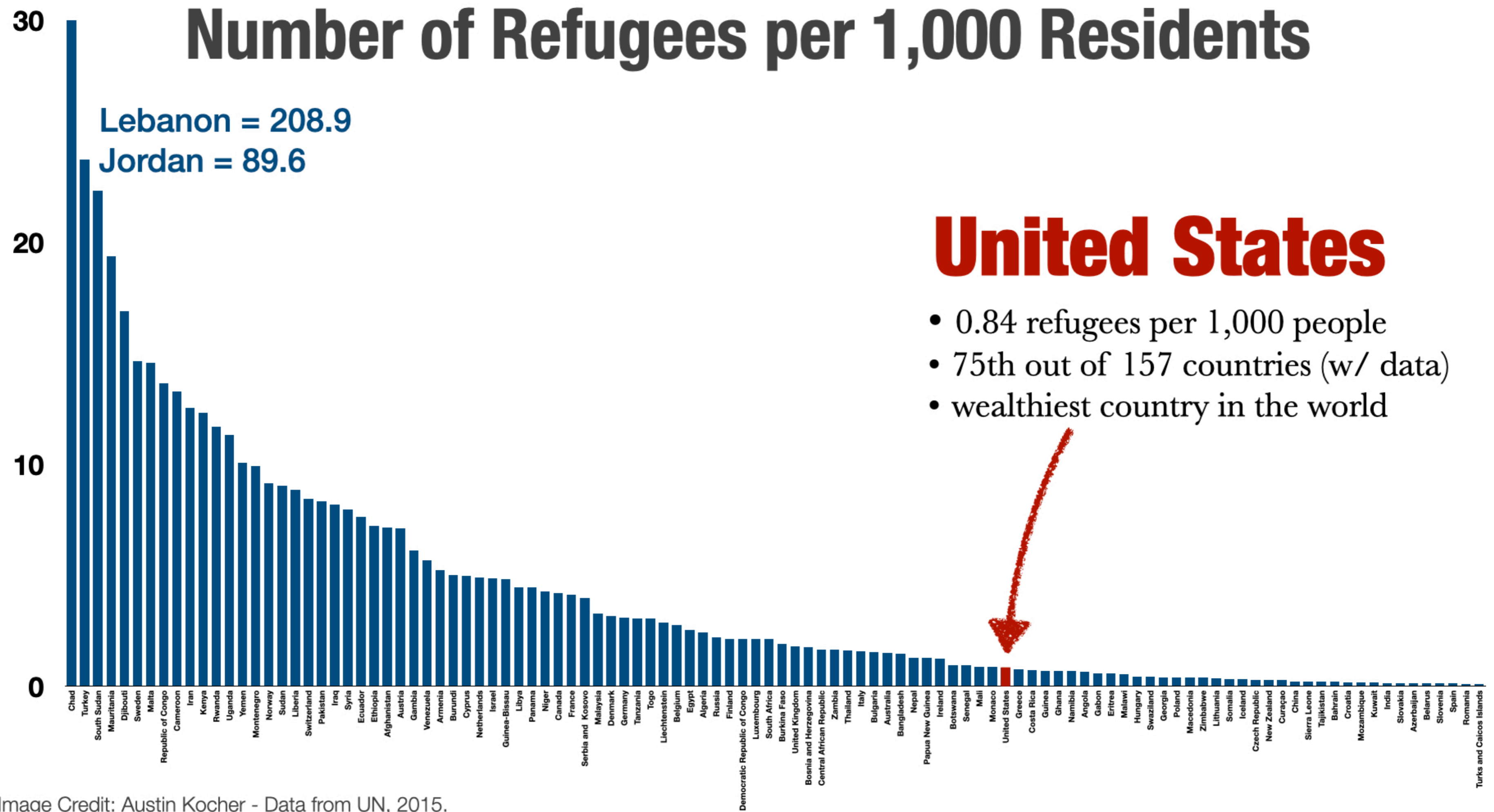
Number of Refugees per 1,000 Residents

Lebanon = 208.9
Jordan = 89.6

United States
• 0.84 refugees per 1,000 people
• 75th out of 157 countries (w/ data)
• wealthiest country in the world

Image Credit: Austin Kocher - Data from UN, 2015.

Refugees per 1,000 Residents

Unpublished

Motivated by a concern to confront public controversy and misinformation surrounding the international refugee system, I created this graphic in 2020 to demonstrate the low density of refugees in the United States compared to other countries. 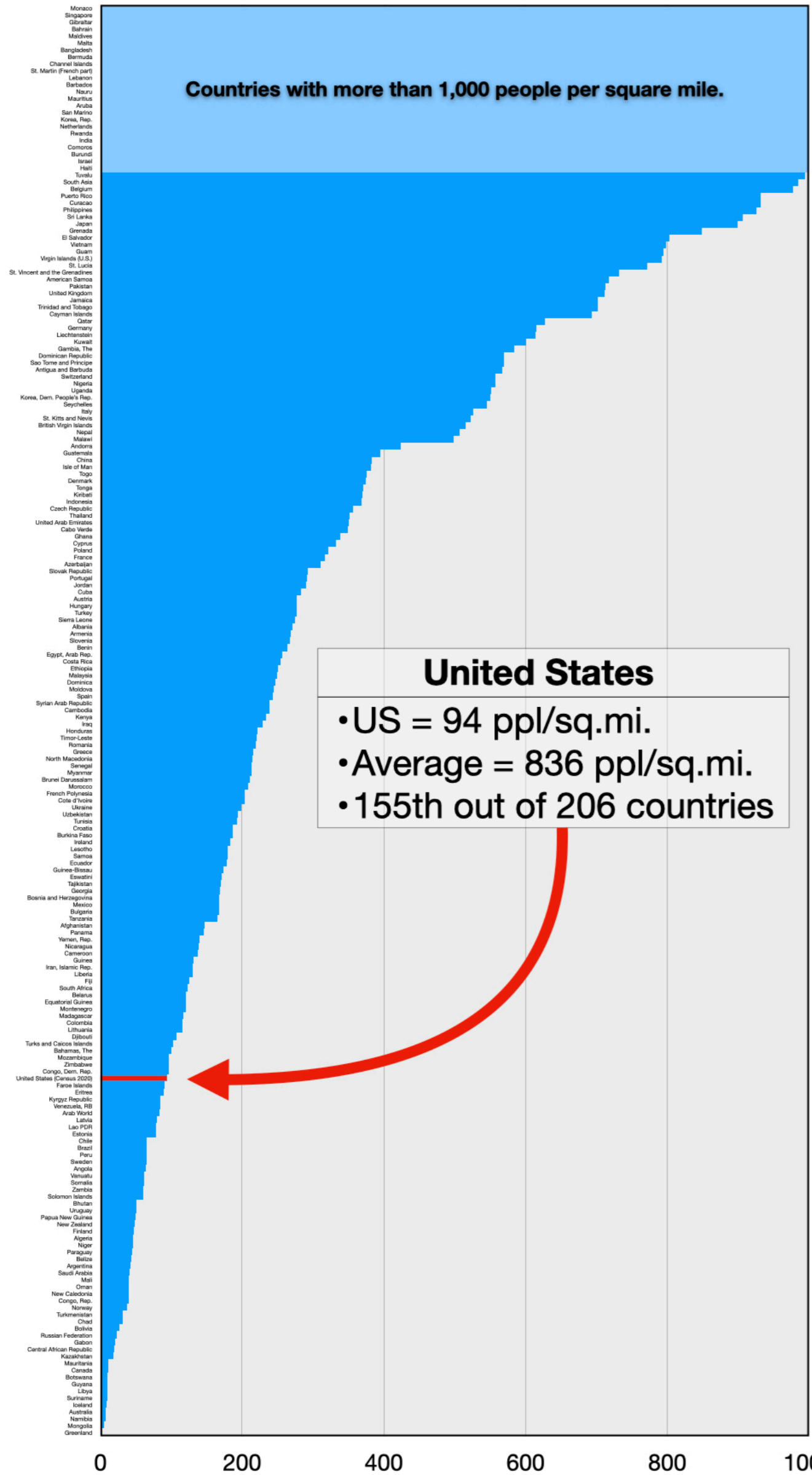The chart illustrates my approach to, shall we say, a more polemical application of principles of data analysis and visualization. The data is accurate and the image provides all necessary sources and qualification. But the argument of the image is communicated through the dramatic use of relative scale.
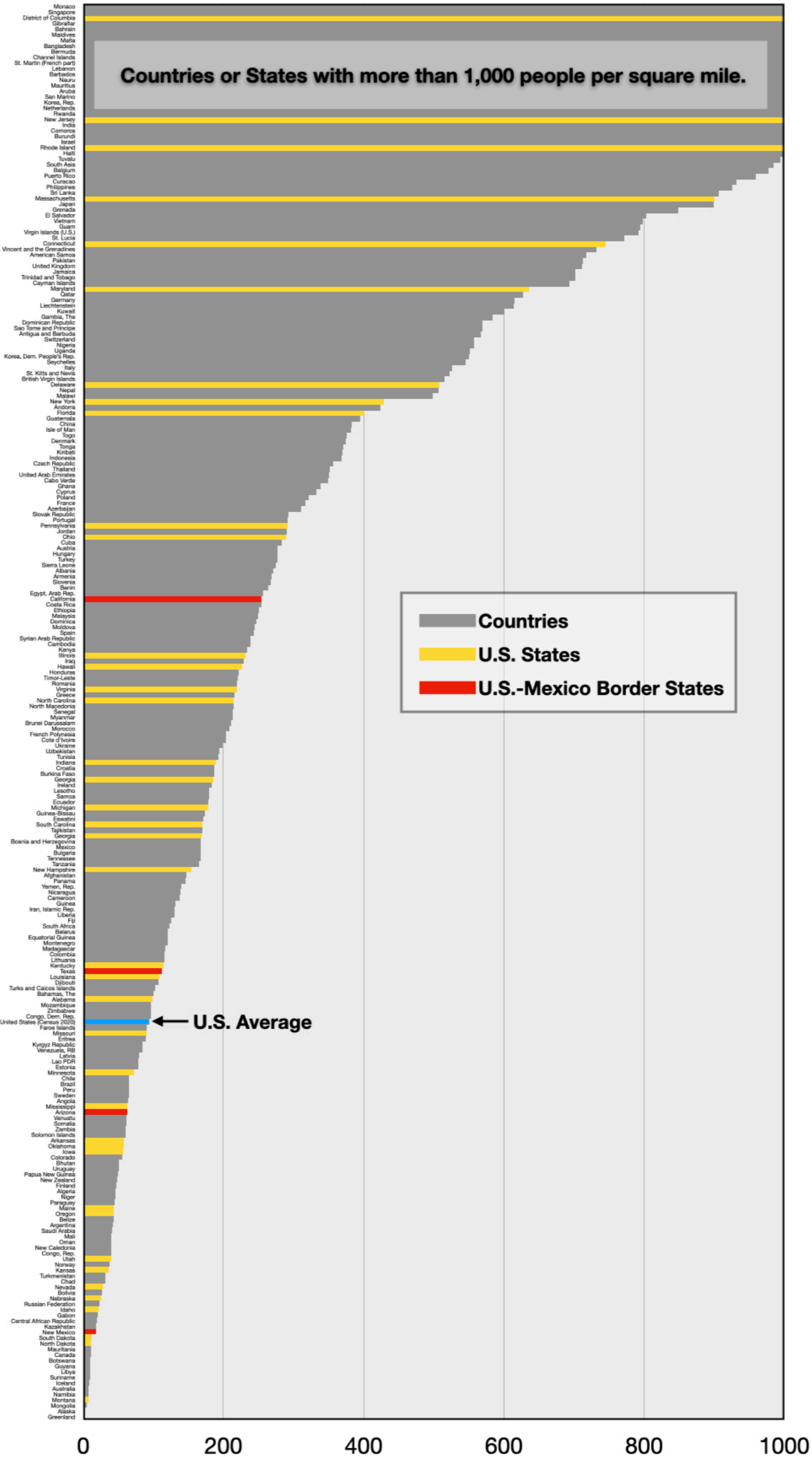
Population Density with 2020 Census Data

Population Per Square Mile*

Countries with more than 1,000 people per square mile.

United States
- US = 94 ppl/sq.mi.
- Average = 836 ppl/sq.mi.
- 155th out of 206 countries

0   200   400   600   800   1000

Population Per Square Mile*

Countries or States with more than 1,000 people per square mile.

Legend:
- Countries
- U.S. States
- U.S.-Mexico Border States

← U.S. Average

0   200   400   600   800   1000

April 27, 2021

https://www.austinkocher.com/blog/2021/4/27/putting-new-us-census-bureau-data-in-context

Similar in style to the refugee population graph, I used population density data for states from the 2020 Census as soon as it was released as well as similar population density data from other countries in the world to show how the United States stacks up against other countries.

Like the previous graph, this also came at a time when concerns about "overpopulation" and the white supremacist theory of "racial replacement" were circulating. This was one attempt to use data and TRAC's audience to make a simple statement debunking the idea that the United States is "full."

Thank You