Analyzing Homelessness in Nevada County, California

Photo of downtown Nevada City from: https://www.gonewiththewynns.com/nevada-city

By Alex Gilardi

Purpose

The purpose of this project is to locate trends among homeless population density in three cities (two combined) by comparing Nevada County's homelessness statistics to the nearby resources.
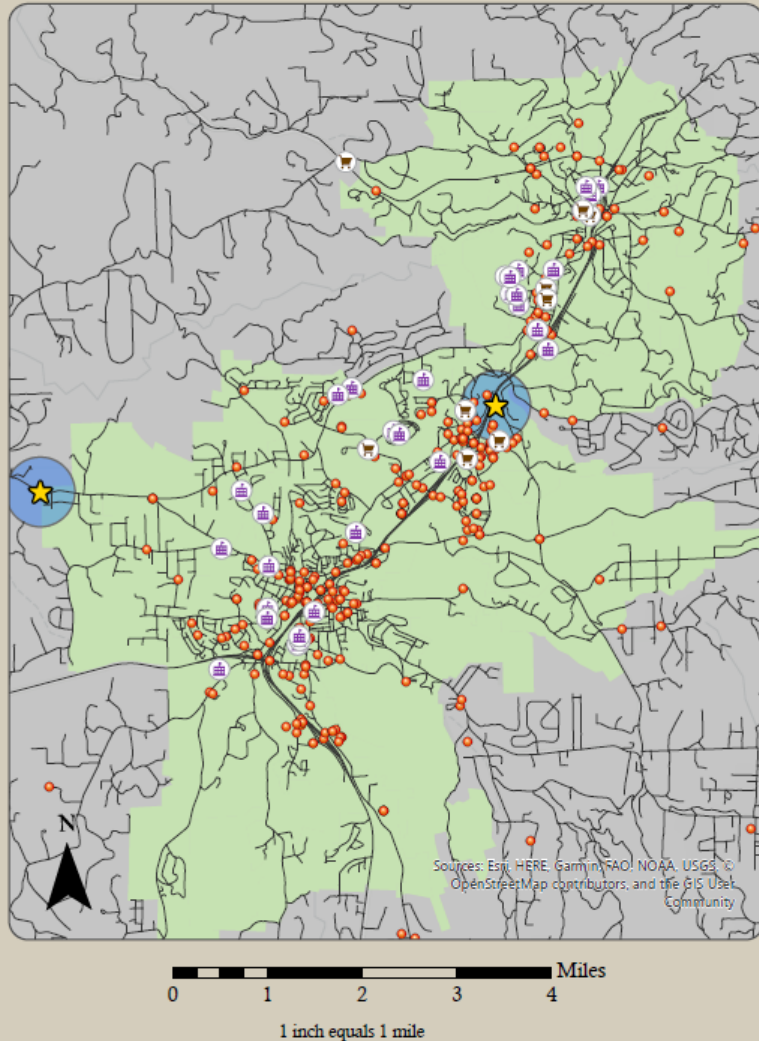
The frequency of narcotics use is also emphasized to determine whether these are influenced by the homeless community or not.

Population Information

Larger populations, of course, lead to larger numbers of homelessness. Nevada County as a whole has a total population of 99,755 as of 2019, whereas Nevada City and Grass Valley combined have a population of 16,056 and Truckee has a population of 16,561 (both in 2018). The difference between these cities is marginal, and by comparing them it can show how different resources could contribute to the amount of homelessness and narcotics use.

Homelessness in Nevada County, California

WEST COUNTY - GRASS VALLEY AND NEVADA CITY
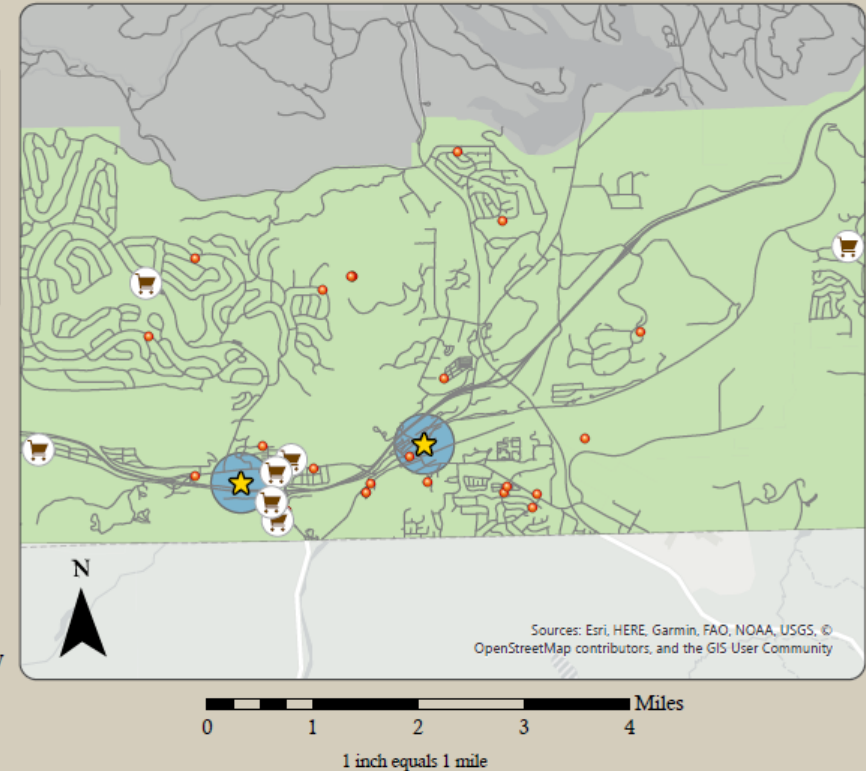
EAST COUNTY - TRUCKEE

Legend

- ⭐ Homeless Service
- 🏫 School/Daycare/College
- 🛒 Grocery Store
- 🔴 Narcotics Crime
- 🟩 City Boundary
- 🟦 500 Yard Buffer

These two maps display some resources and occurrences within Nevada County that could have an influence on homeless population density and patterns.

Both of these maps show the two most populated regions within Nevada County as well as narcotics related crimes that have occurred.

The 500 yard buffers around the homeless services imply that there is no significant increase of narcotics related crimes nearby these facilities.

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Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Miles
0   1   2   3   4
1 inch equals 1 mile

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N

Miles
0   1   2   3   4
1 inch equals 1 mile

Homeless Population	Unsheltered	Mental Illness	County Native	Residency > 1 Year	Families
410	160	86	242	328	28

Author: Alexander Gilardi
Date: 5/14/20

Spatial Reference
Name: NAD 1983 StatePlane California II FIPS 0402 Feet
PCS: NAD 1983 StatePlane California II FIPS 0402 Feet
GCS: GCS North American 1983
Datum: North American 1983
Projection: Lambert Conformal Conic

Analysis - Narcotics Crimes

There is a very evident difference between the amount of narcotics crimes committed between the West county and Truckee. This is likely due to the fact that despite having a similar population, Truckee is less urbanized than Nevada City and Grass Valley combined, meaning that many Truckee residents likely live in rural areas which lowers the frequency of narcotics related crimes occurring in a concentrated area.

Analysis - *Mental Health*

Based on the statistics from the previous slide, about 21% of the homeless population in Nevada County has some form of mental illness.

The entire population of California, not just homeless, is reported to be roughly 5% for serious mental illness and about 17% for other mental health needs.

This concludes that the homeless population of Nevada County has a noticeable difference in mental health than the general California population.

Analysis - Schools and Grocery Stores

The map dictates that many narcotics related crimes are concentrated nearby grocery stores and schools, but this is likely caused by the urbanization and higher traffic of these areas rather than any direct influence. This is also why there are less of these crimes reported in less populated areas.

California Suicides
in Relation to Food Banks and Population


Legend

- ▭ Nevada County
- 🛒 Food bank
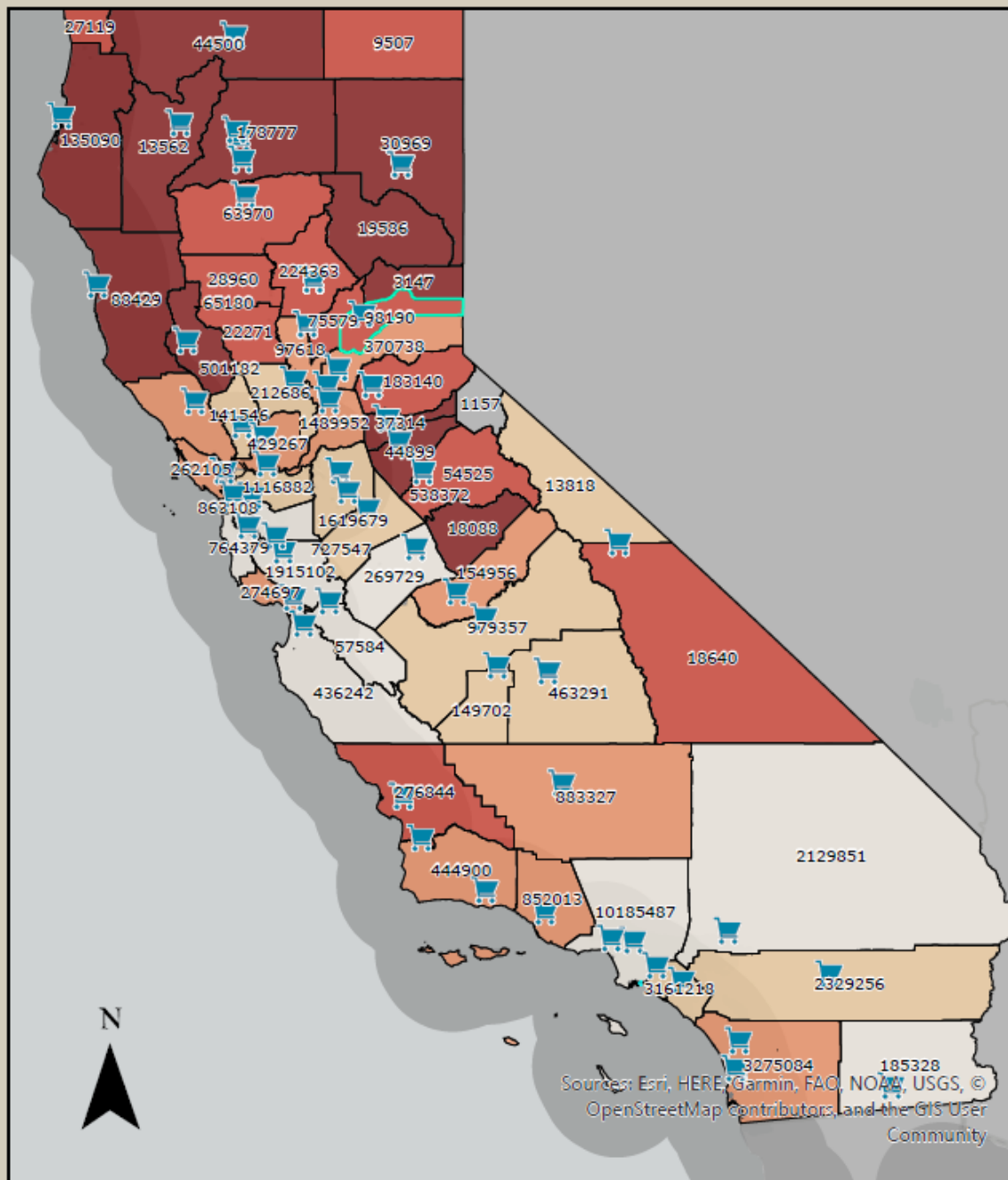
Suicide By County

Rank

- ■ 1 to 12
- ■ 13 to 24
- ■ 25 to 36
- ■ 37 to 48
- ■ 49 to 58

Each county is labeled by its population from 2015. This map dictates that each county has at least one food bank, and that suicides are more frequent in counties with lower populations. Food banks do not appear to have any effect on suicide rates.

Author: Alexander Gilardi
Date: 5/14/20

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Miles
0   100   200   300   400

1 inch equals 126 miles

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Problems

This project was initially designed with a much broader idea in mind: to compare homelessness statistics from several counties across California to how they relate to their local resources.

However, this was much more difficult to execute than I had initially expected due to the lack of spatial homelessness data available. This led me to adopt a smaller-scale topic by focusing on Nevada County specifically, and including a map of California in order to show other details.

Coming into this project with only ArcMap experience was a challenge in and of itself, so simultaneously learning how to perform the same processes in ArcPro has been fairly time consuming.

Learning Experiences

Aside from becoming familiar with ArcPro, one of the most important things that I learned from this project was to start small and avoid pursuing topics that were too ambitious for a college assignment without the resources to create large datasets by myself. Working on this project throughout the semester has been an enjoyable experience for me, and it is rewarding as always to see my work in a finalized state.