

# The Number of Workers and the Share that are Low Wage by MSA and Micropolitan areas

Map is an adaptation from a recent study of "Low Wage Workers" by the Brookings Institute

# Coronavirus (Covid-19) Mapping

**LEGEND**

**Map layers**

- MSA & Micropolitan
- State

**Share Low Wage Earners**

- 17% and below
- 17% to 22%
- 22% to 28%
- 28% to 35%
- 35% and above

**Population**

**Civ Noninst\_18-64**

- 10,000,000
- 5,001,945
- 3,890

△ Civ Noninst\_18-64

0 100 200 300 Miles

Methodology: Began with civilian, non-institutionalized 18- to 64-year-olds who worked at some point during the last year and made less than \$25,000 per year. Subtracted out those in college or graduate school, those who are physically disabled, those who are self-employed, and those who are

Brett Lucas  
City of Cheney



# Who is Brett Lucas

- ▶ I'm the City Planner for Cheney
- ▶ I have been employed in the planning industry for the past 20 years
- ▶ I'm the past chair of the Business Geography Specialty Group of the AAG
- ▶ I'm a economic/transportation/business/urban geographer
- ▶ I have a BS in Geography from Oregon State University and a MA in Geography from Cal. State Hayward

# My interest in this project

- ▶ With the current Covid-19 pandemic this is a relevant topic for epidemiologists as well as medical professionals
- ▶ How is the pandemic spreading? What spatial factors are in play? What role do medical facilities play?

# Organization

- ▶ The City of Cheney will be overseeing this project
- ▶ Depending on the quality of the analysis, the final results and maps may be shared with people at the CDC or other health organizations



# Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)



Total Confirmed

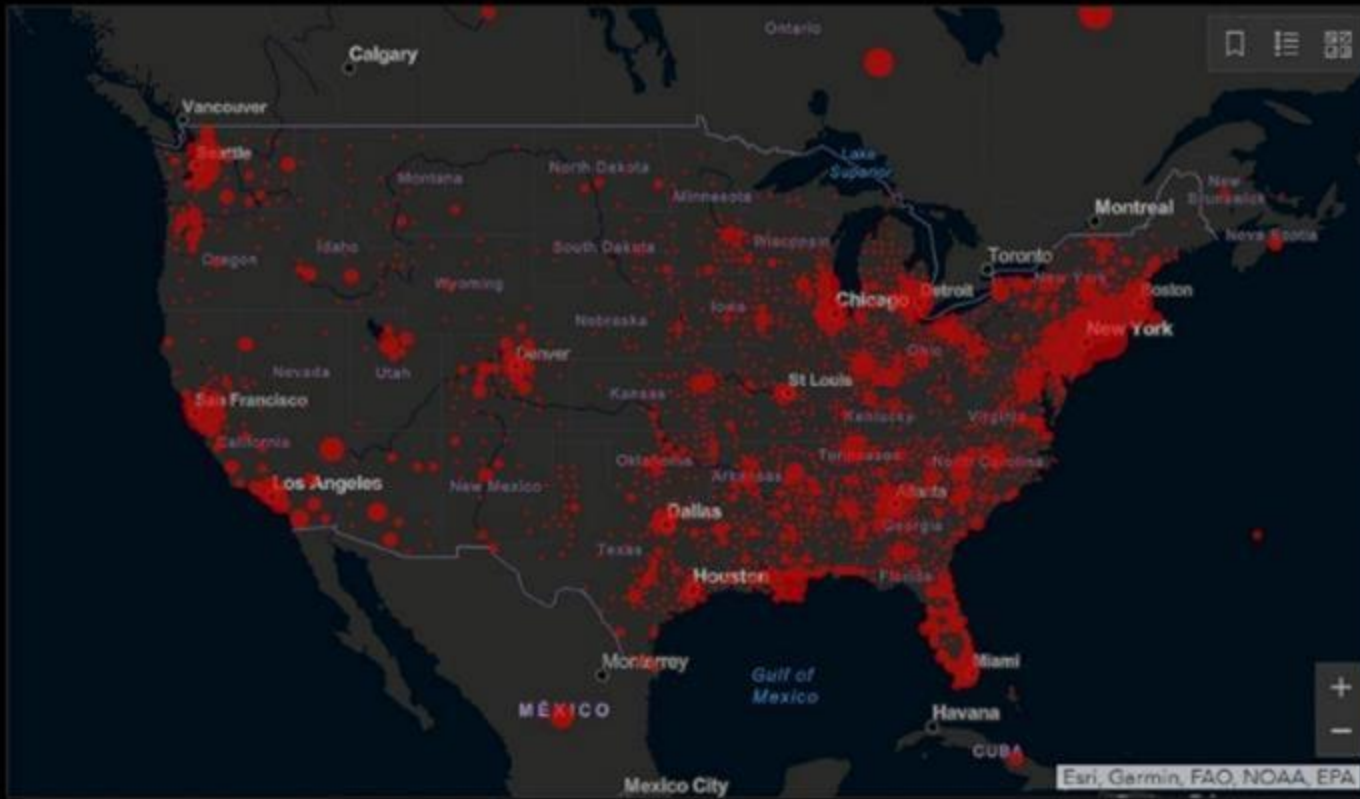
# 101,657

Confirmed Cases by Country/Region /Sovereignty

- 101,657 US
- 86,498 Italy
- 81,897 China
- 65,719 Spain
- 50,871 Germany
- 33,402 France
- 32,332 Iran
- 14,745 United Kingdom
- 12,928 Switzerland
- 9,332 Korea, South
- 8,647 Netherlands

7,457 Administration  
Admin1 Admin2 Admin3

Last Updated at (M/D/YYYY)  
3/27/2020, 4:27:48 PM



Cumulative Confirmed Cases Active Cases

# 176

countries/regions

Lancet Inf Dis Article: [Here](#). Mobile Version: [Here](#). Visualization: [JHU CSSE](#). Automation Support: [Esri Living Atlas team](#) and [JHU APL](#). Contact US. FAQ.

Data sources: WHO, CDC, ECDC, NHC, DXY, 1point3acres, Worldometers.info, BNO, state and national

health department, and local media reports. Read more in this blog.

Total Deaths

# 1,581

366 deaths  
New York City **New York** US

109 deaths  
King **Washington** US

87 deaths  
Unassigned **New York** US

82 deaths  
Unassigned **New Jersey** US

57 deaths  
Orleans **Louisiana** US

42 deaths  
Unassigned **Georgia** US

37 deaths

Total Recovered

# 869

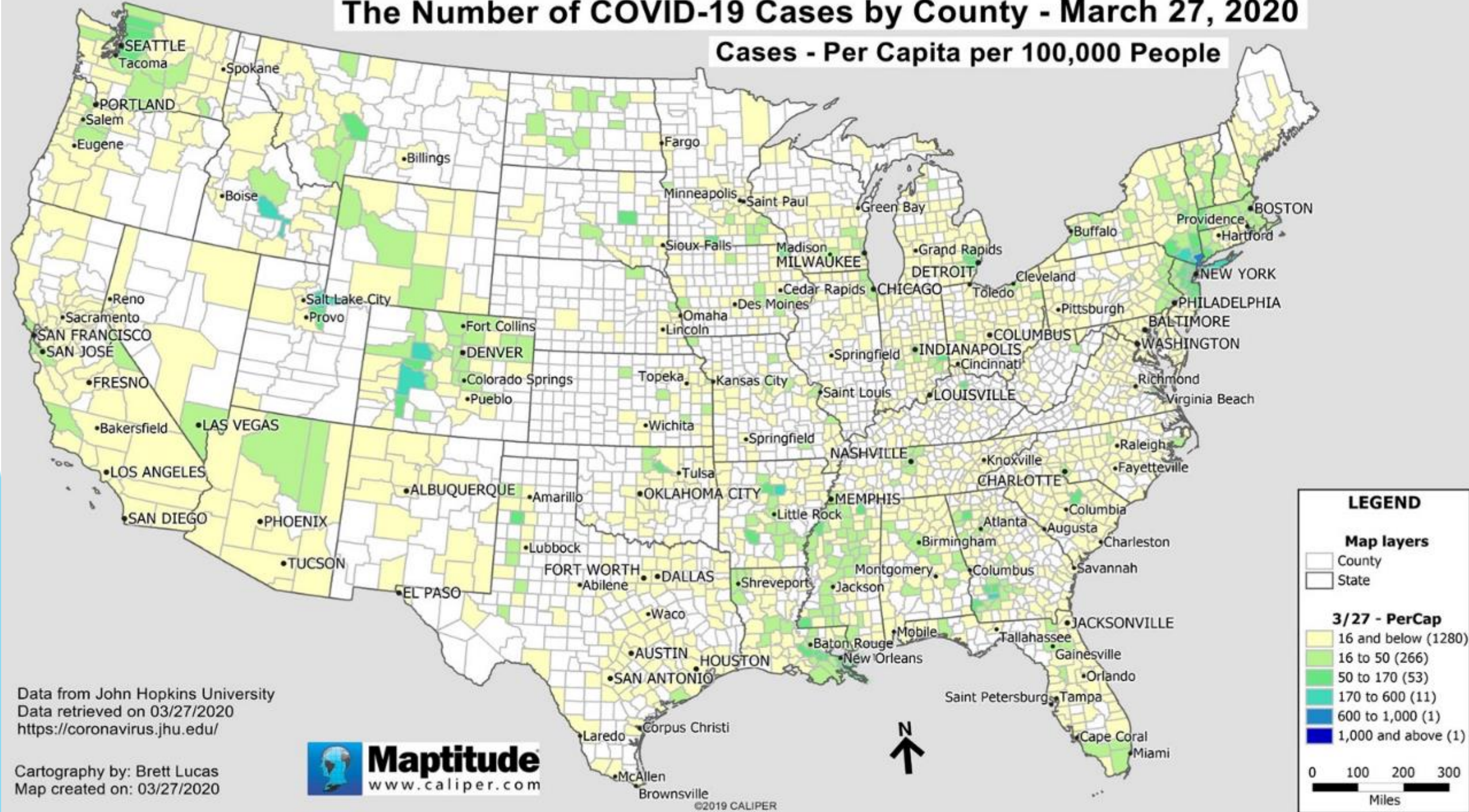
869 recovered  
**Recovered** US



Confirmed Daily Increase

# The Number of COVID-19 Cases by County - March 27, 2020

## Cases - Per Capita per 100,000 People



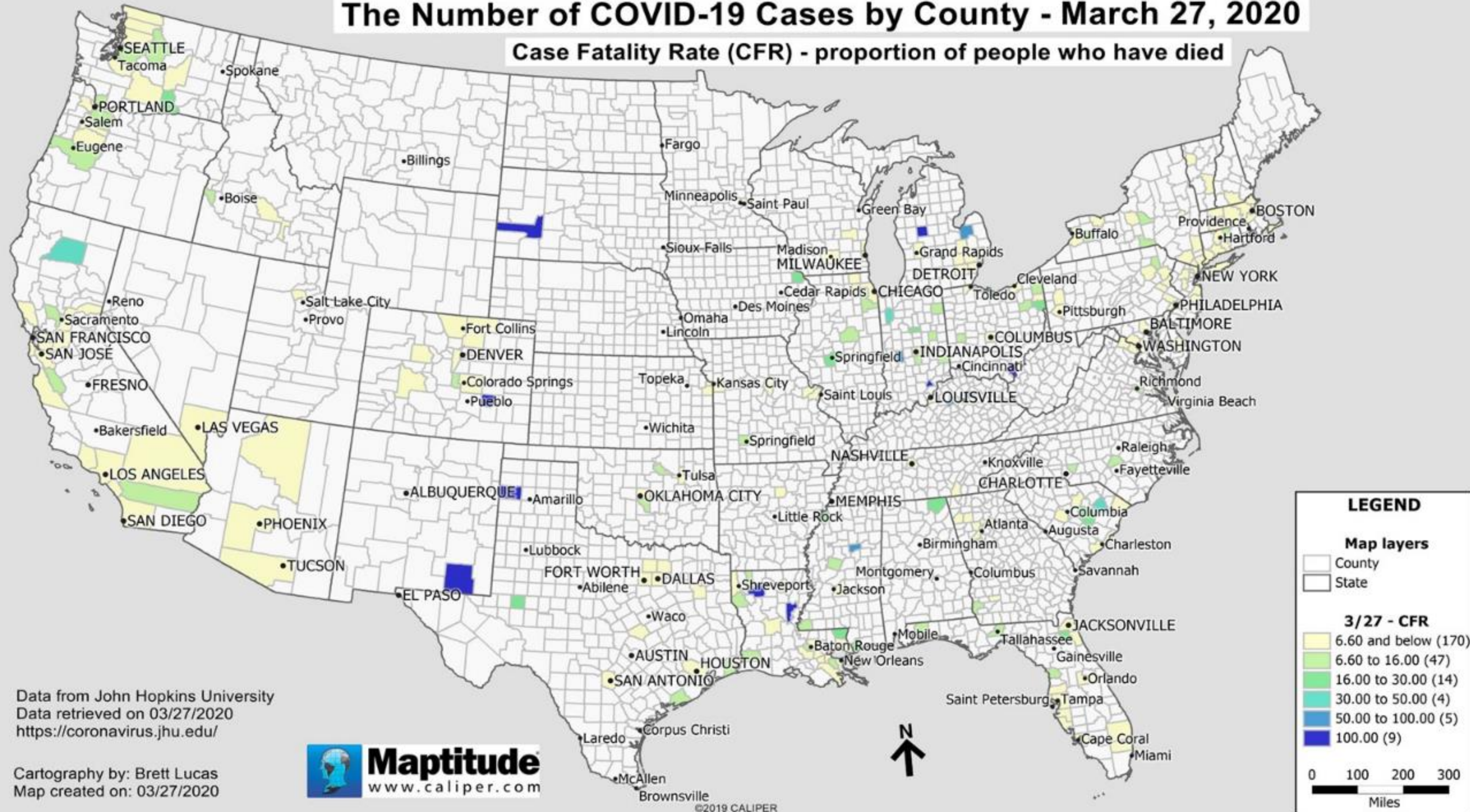
Data from John Hopkins University  
Data retrieved on 03/27/2020  
<https://coronavirus.jhu.edu/>

Cartography by: Brett Lucas  
Map created on: 03/27/2020



# The Number of COVID-19 Cases by County - March 27, 2020

Case Fatality Rate (CFR) - proportion of people who have died

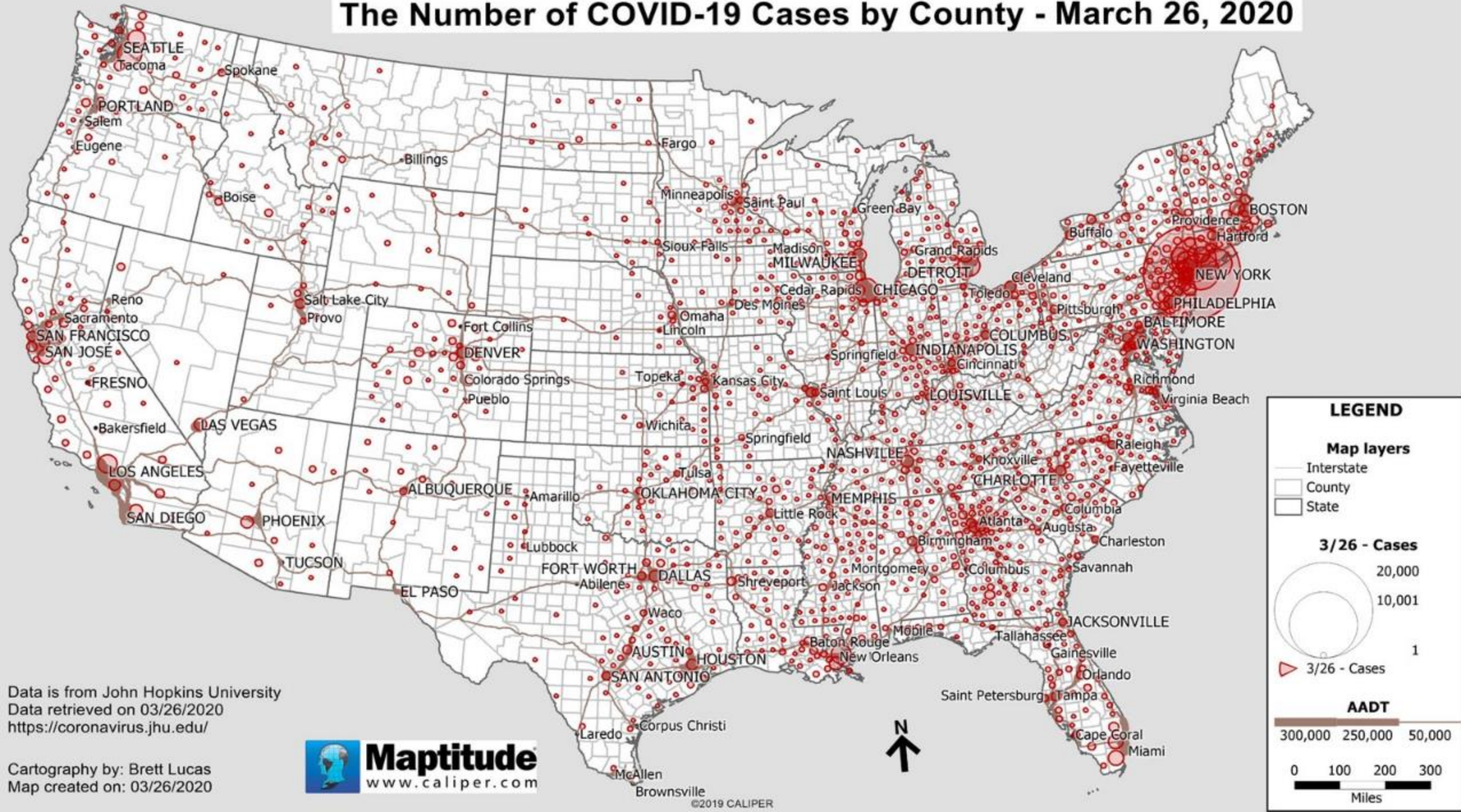


Data from John Hopkins University  
Data retrieved on 03/27/2020  
<https://coronavirus.jhu.edu/>

Cartography by: Brett Lucas  
Map created on: 03/27/2020



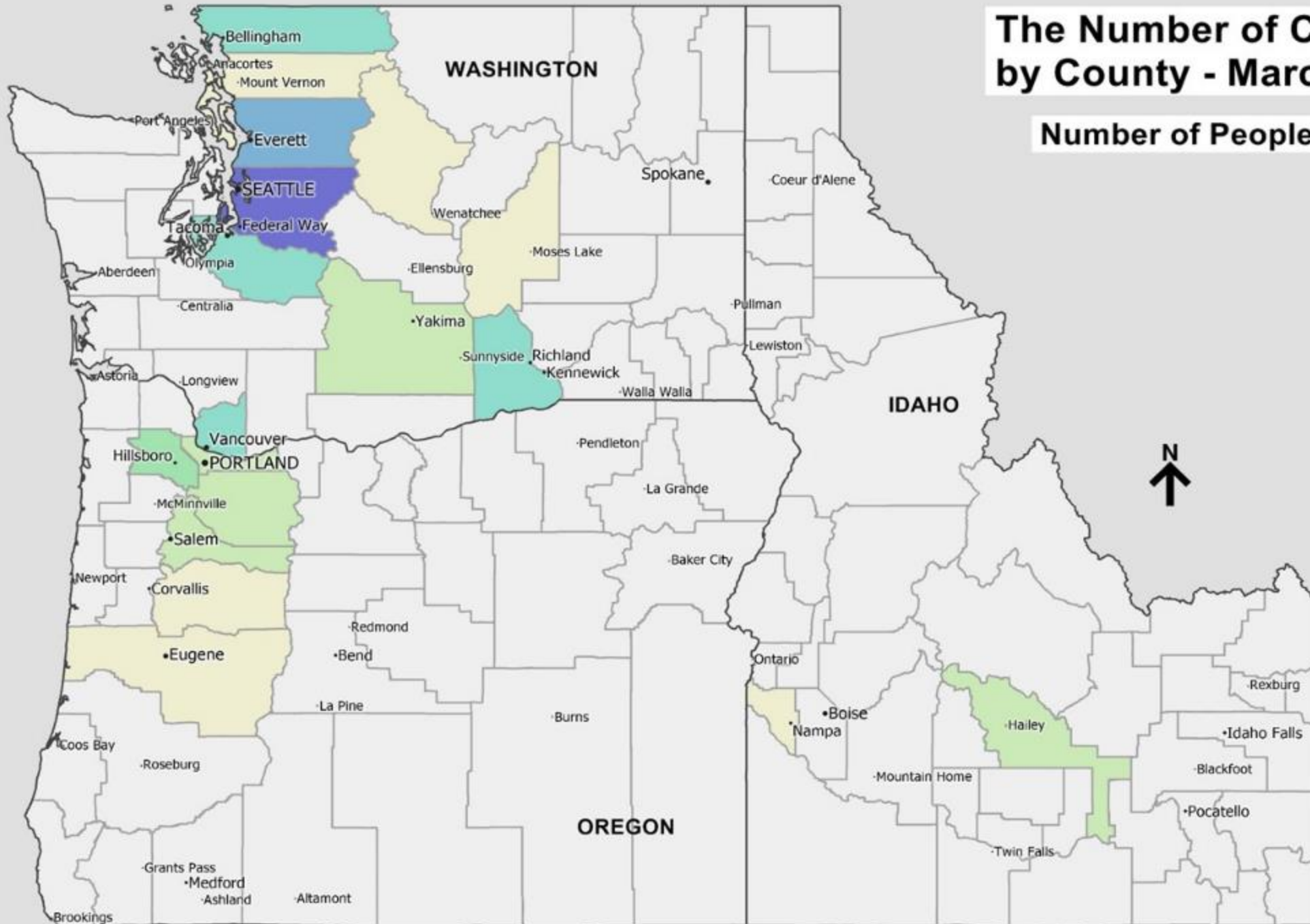
# The Number of COVID-19 Cases by County - March 26, 2020





# The Number of COVID-19 Cases by County - March 27, 2020

## Number of People Who Have Died



Data from John Hopkins University  
<https://coronavirus.jhu.edu/>  
Data retrieved on 03/27/2020

Cartography by: Brett Lucas  
Map created on: 03/27/2020

**LEGEND**

**Map layers**

- City/Town
- County
- State

**3/27 - Deaths**

- 1 and below
- 2
- 3
- 4 to 9
- 10 to 99
- 100 and above

0 33.3 66.7 100  
Miles

# Project and Student Role

- ▶ The project will be to map Covid-19 cases at the national and regional (Pacific Northwest - Oregon, Washington, & Idaho) levels
- ▶ Practice with Excel in bringing in data from John Hopkins University and data joins
- ▶ Students will work with data to create “time-series” analysis of cases between weeks

# GIS product to be used in the future

- ▶ This an opportunity for students to develop their GIS skill sets to perform spatial analysis
- ▶ Students will use their GIS toolbox to determine which mapping styles best communicate the data to the user
- ▶ Student will understand some of the data challenges including granularity issues

# Data sets available?

- ▶ Data hub - <https://www.bluemarblegeo.com/covid-19.php>
- ▶ Work with sand data  
<https://github.com/CSSEGISandData/COVID-19>
- ▶ Learn how to bring web based data into Excel

# Types of Projects

- ▶ Each student picks two different days of cases (a week apart) and brings the data into Excel
- ▶ Clean up the extemporaneous data, add additional sheet to do the time series analysis
- ▶ See were cases spiked during the selected week, and understand some the factors in play that may have caused the spike

# Deliverables

- ▶ 4 maps (jpg files). These will be for the beginning and end of the week at both the national and regional levels
- ▶ Bonus - is to map the case rate on a per capita bases and the CFR (Case Fatality Rate) which is the proportion of people who have died from COVID-1 - 2 additional maps
- ▶ A two page paper discussing the challenges and successes with the project including data manipulation, mapping techniques, limitations, etc.
- ▶ Final deliverables will be emailed to me

# Software

- ▶ If you are comfortable enough with the ESRI ArcMap suite you are welcome to create the maps there
- ▶ The software I used to create the maps is Maptitude <https://www.caliper.com/maptovu.htm>
- ▶ Maptitude is free to students. Click on the link below to order your free student license <https://www.caliper.com/maptitude/education-discount.htm>

# Opportunities

- ▶ *Cheney is looking for a GIS/Planning Intern to possibly start in this summer*
- ▶ This is a paid internship opportunity
- ▶ Use this GIS III project as a chance to demonstrate your GIS skill set, acumen, ability to problem solve, including thinking outside of the box
- ▶ The map will provide me an opportunity to evaluate your visual communication and cartography skills
- ▶ The paper will provide me an opportunity to evaluate your written communication skills



# Contact Info

- ▶ Since this is 100% online, I encourage students to keep me apprised of their progress or challenges via email
- ▶ Brett Lucas, City of Cheney, 112 Anderson Rd
- ▶ 509-498-9221
- ▶ [brett.lucas@yahoo.com](mailto:brett.lucas@yahoo.com) (preferred)
- ▶ [blucas@cityofcheney.org](mailto:blucas@cityofcheney.org)