



Don't Bite the Messenger

Dogs are attacking our USPS Workers

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Photo by [Seam Boyd](#) on [Unsplash](#)

Proportional Symbol Map

This proportional symbol map represents the total amount of dog bites per state. The circles on each state represent the amount of dog bites, the larger the circle the larger the number of dog bites.



Esri | ArcGIS Online sourced graticule, clipped by land and ocean polygons.

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Total Dog Bites represented by a Proportional Symbol Map. Click on each state to view details. The legend icon in the bottom left corner displays the ranges of data.

For example, when looking at California we see the circle is large in comparison to Nevada. When you click on the circle it informs you there were 887 dog bites in California in 2017; whereas, Nevada only had 47 dog bites total.

Graduated Symbol Map

With the graduated symbol map we can see that it is using circles and the size of these circles to represent the amount of dog bites; however, it is different than a proportional symbol map. In the graduated symbol map, many of the circles are the same exact size, this is because with this style of map each circle size has a set range.

A graduated symbol map of the United States where each state is represented by a circle. The size of the circle corresponds to the total number of dog bites in that state. A legend at the bottom shows five categories of bite counts, each associated with a different color and a range of values. The map shows that states like Mississippi and Alabama have circles of the same size, despite Mississippi having more bites overall.
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Total Dog Bites represented by a Graduated Symbol Map. The circles display a certain set range of values as we can see in the legend.

For example, Mississippi had a total of 53 dog bites and Alabama had a total of 66, but you can see that the circles are the same size even though Alabama had more overall. If you look at the legend you can see that they both fall in the range of 6-89 dog bites so they are the same size.

Bivariate Map

In the bivariate map you can see that there are two different types of information being displayed. This can be confusing because you see we are dealing with circles again, but the circles are all different colors. This is because this map is displaying total number of dog bites and total population. It is beneficial to do this because the larger the population the higher the chance is that a USPS worker will be bitten. While this map is a bit difficult to read it provides more information that is valuable when analyzing data.



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Dog Bites and Total Population displayed by a Bivariate Map. In the legend you can see the circles represent total population, while the color of the circle represent total dog bites.

For example, we can see that New York and Florida's circles are the same size but different colors. This is because their population falls in the same range, but the amount of dog bites is different amounts. The population of both Florida and New York fall in the 20,000,000 range; however, New York is darker because they had a total of 360 bites while Florida only had 216 bites.

Choropleth

This map is displaying the same data as all of the others, but instead of total population or total dog bites, it is per capita. Per capita is per person, which means the rate being displayed is per 100,000 people. This can help put things in a better perspective because the states with the larger population are no longer the largest. This is because the states with the smaller populations but a larger amount of dog bites in comparison are more alarming.

A choropleth map of the United States where each state is shaded according to its rate of dog bites per 100,000 people. The colors range from dark blue (lowest rates) to dark red (highest rates). California is shown in a light green shade, while Missouri is in a dark red shade.

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Dog Bites per 100,000 people.

Disecting this further, California had a total of 887 dog bites but the population is 36,637,290 while Missouri had 213 dog bites there population is only 5,922,314. This is alarming because with a significantly larger amount of dog bites you would assume Californias rate was worse; however they had a rate of 2.42 while Missouri has a rate of 3.60.

Data

- State polygns are from the National Historic GIS database.
- The state population data is also from the National Historic GIS database.
- The number of postal workers bitten by dogs in calendar year 2017 is from the USPS.