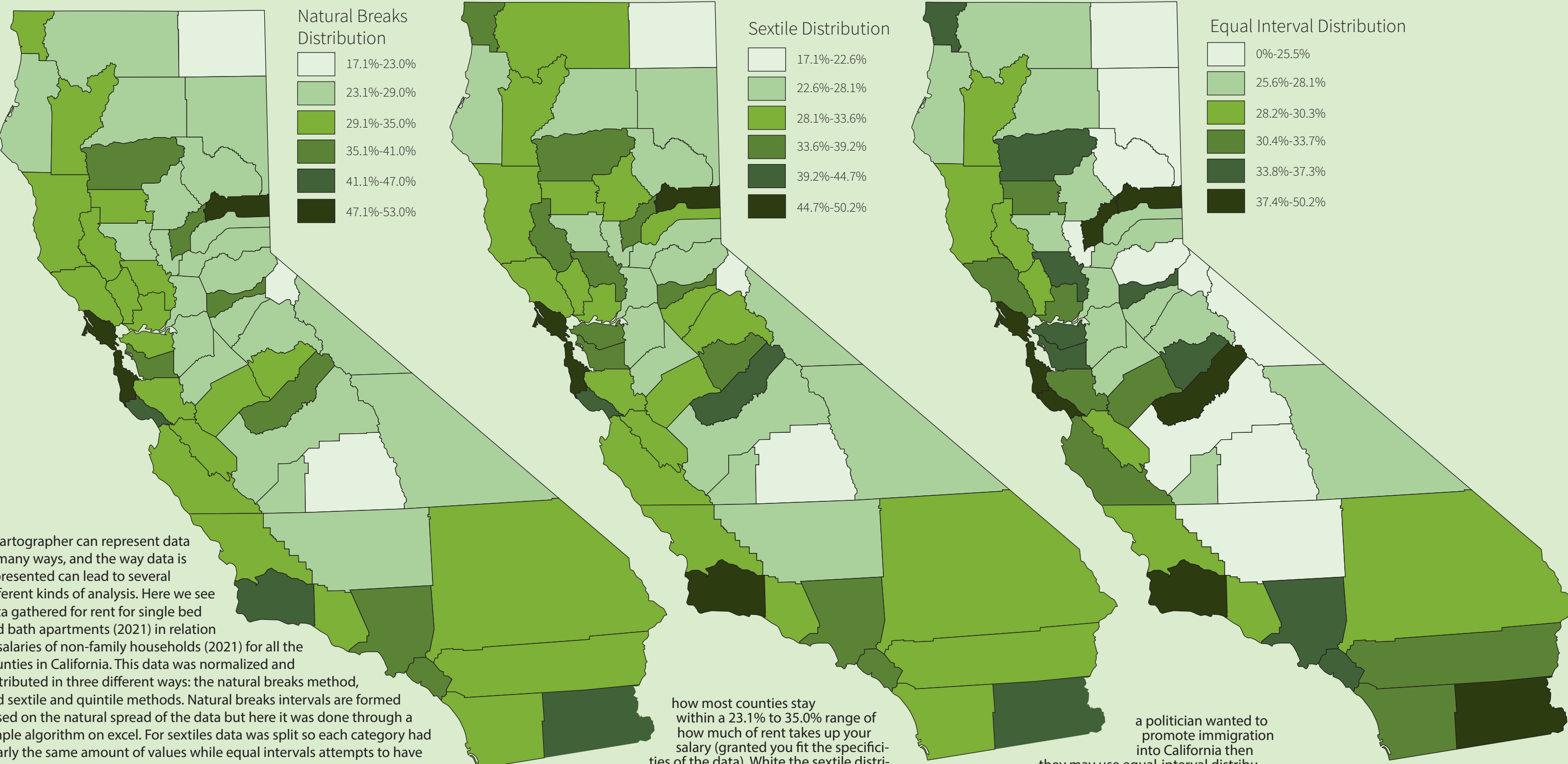


The Expense of Living in California

Rent for a Single Bed and Bath Apartment (2021) as a Ratio of Non-Family Household Salaries (2021).



A cartographer can represent data in many ways, and the way data is represented can lead to several different kinds of analysis. Here we see data gathered for rent for single bed and bath apartments (2021) in relation to salaries of non-family households (2021) for all the counties in California. This data was normalized and distributed in three different ways: the natural breaks method, and sextile and quintile methods. Natural breaks intervals are formed based on the natural spread of the data but here it was done through a simple algorithm on excel. For sextiles data was split so each category had nearly the same amount of values while equal intervals attempts to have consistent intervals.

Here we can see how equal intervals lead to far more drastic results than the other two types of distribution as more counties fall into higher intervals than in the sextile and natural breaks distributions. And the difference between natural breaks and sextile lies in the fact that the ladder shows greater variance near the median of the data set in comparison to the former.

An ethical dilemma lies in the fact that specific distribution can skew data so it can be perceived one way or another. Natural breaks here tells a story of

how most counties stay within a 23.1% to 35.0% range of how much of rent takes up your salary (granted you fit the specificities of the data). While the sextile distribution shows that the ratio lies more in the 22.6% to 39.2% range and equal interval distribution claims its roughly split equally between all counties. In other words, completely different stories are told. This is an ethical dilemma because an audience can be given a completely biased or incorrect analysis of data if the distribution isn't chosen to best represent the data truthfully. For example if this data were to educate people on places to live that won't take out much of your income, sextile distribution would be best as it shows smaller differences within the data better. If someone wanted a general overview of California's rent to salary ratio then natural breaks would be used as data is distributed between clumps and gaps in the data. If

a politician wanted to promote immigration into California then they may use equal-interval distribution as it shows more affordable areas than not. For this reason, we as cartographers must not just ensure we use true and accurate data but that we also display it truly and accurately so that it shows facts, rather than line up with the intent of those funding/producing the map. The best distribution depends on the topic at hand and who it benefits most. Here the general public would benefit the most and thus the sextile distribution would be best as it doesn't skew data one way or another and doesn't clump data and therefor hide differences in counties which would be a detriment to those tight on cash.