

Does it rain more in Seattle or St. Louis? An analysis of precipitation data

Introduction

This project aims to answer the question: Does it rain more in Seattle, WA, or St. Louis, MO? In order to answer this question, we limited the scope to looking at rain measurements from 2018 to 2022.

Data Used

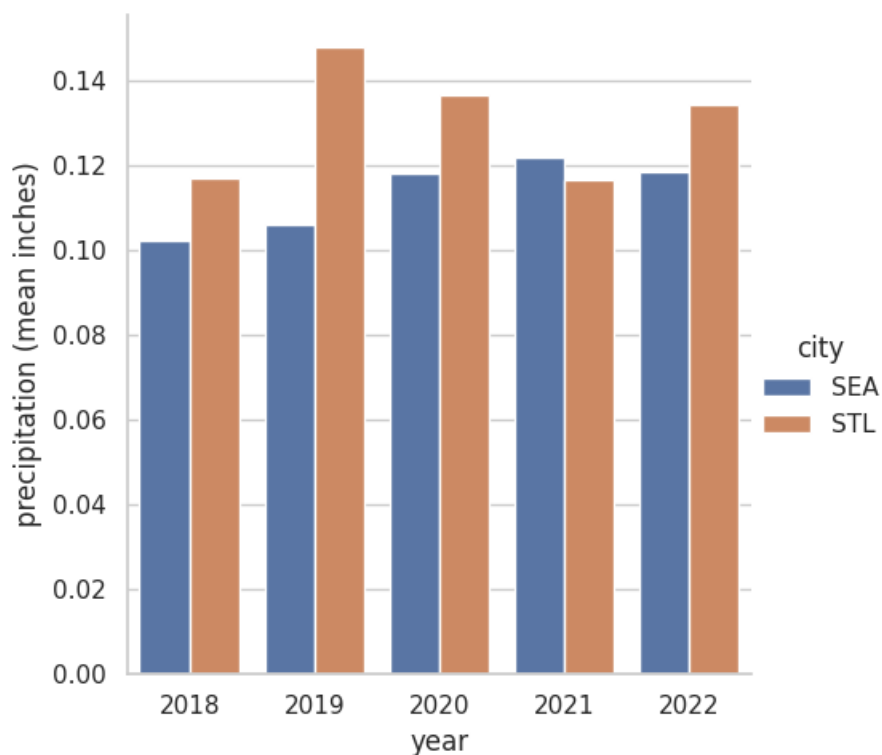
We used NOAA (National Oceanic and Atmospheric Administration) Weather Service precipitation data for this project. Specifically, we gauged how much rain fell in each city by how much rain was measured at the station at each city's airport each day. Missing data was replaced as needed, but we only had to do that in 2018 in Seattle, and we do not think the impact of those replacements affects the end results.

Analysis

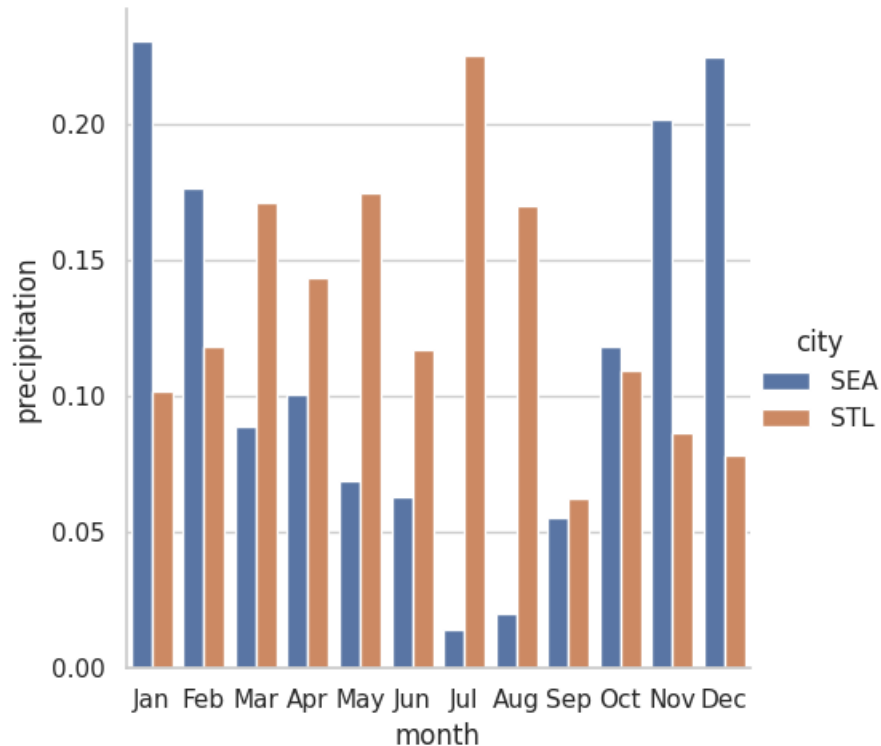
In order to gauge which place got more rain, we took the daily average of rain at each location on a month-to-month or year-to-year basis, and then graphed said results. We also found the rainiest day in each month & city, and graphed that result as well.

Results

For the year-over-year analysis (below), we found that St. Louis got more rain, on average, than Seattle did. In 2018, 2019, 2020, and 2022, St. Louis got more rain per day than Seattle did by a moderate margin. Neither city is particularly dry - notably, 2020 and 2022 in Seattle are *about* as rainy as 2018 in St. Louis, and neither city ever gets below 0.1 inches per day - but in general, St. Louis will get more rain than Seattle over the course of a year.



Another interesting analysis came when we calculated the month-to-month averages (below). In this case, we can see that Seattle has wet winters, with heavy rain from November through February, but has dry summers. This can especially be seen in July and August, which barely have any rain on average. On the other hand, St. Louis has very wet summers, with high amounts of rain in May, July, and August. In 7 out of 12 months, it will rain more in St. Louis. However, September in St. Louis *barely* exceeds Seattle's numbers, and we can somewhat call that month a wash. The same applies for Seattle exceeding St. Louis in October.



We also calculated the heaviest rain of each month in each city. For this, we can see a large spike in July and August 2022 in St. Louis, which might be due to some sort of flash flooding event. However, this did not distort the fact that St. Louis got more rain than Seattle in all other years.

Conclusion

In general, St. Louis gets more rain than Seattle. However, in winter (November through February), Seattle will experience more rain than St. Louis, with the inverse being true for spring and summer (March through August).