2013 Rainfall Analysis

Historical Rainfall Comparison

The rainfall volume for 2013 was 16% below the historical record. The rainfall for the period of record (1981 to 2012) is 36.19 inches, while the 2013 total was 30.53 inches.

In these three charts below, one can see that the year of 2013 was somewhat unusual with respect to historical trends. Despite having close to average amount of annual rainfall, 2013 had an unusual pattern of monthly rainfall. A summary of the main trends is outlined below.

- Only four months of the year had rainfall volume totals within the expected range. No rain occurred in July, yet September produced the highest rainfall on record. In contrast, October, November and December rainfalls were much lower than average.
- The number of rain days generally corresponds with the findings on rainfall amounts, except for the month of June. Even though June had a typical number of rain days, its rainfall amounts were much higher than average because of two high intensity storms which contributed the majority of June's monthly rainfall.

Over the last two years, our rainfall patterns have been well outside historical patterns and the variation has not been consistent between years. It is uncertain whether the recent variability is an on-going trend as our period of record is not sufficient to make assumptions about climate change.

Monthly Averages

The charts on the following two pages show historical rainfall amounts. The first chart (bar graph) shows the historical average monthly rainfall (blue) and the 2012 and 2013 totals (orange and red, respectively). The second chart is a box plot[1] showing historical monthly rainfall statistics with the monthly totals for 2012 and 2013 represented by the orange and red diamonds, respectively. Both charts include 2012 and 2013 in order to demonstrate the variability of recent rainfall patterns.

Number of Rain Days

In addition, on the last page is a box plot showing statistics for the number of rain days[2] with 2012 represented by the orange diamond and 2013 represented by the red diamond. This graph was included to show how often it rains each month. Both 2012 and 2013 fall outside the normal number of rain days, but in very different patterns. Note that for this graph, the period of record begins in 1990 when the gage was moved to its present location because rainfall patterns can vary by location within the city.

[1] A box plot is a graphical depiction of a statistical summary of a dataset. The upper-most and lower-most boundaries of the box represent the upper and lower quartiles (75^{th} and 25^{th} percentiles), respectively. The line in the center of the box represents the median data point (50^{th} percentile). The upper and lower points, connected to the box by vertical lines, represent the highest and lowest observed data points.

[2] A rain day is defined here as a calendar day with greater than 0.10 inches of rain.

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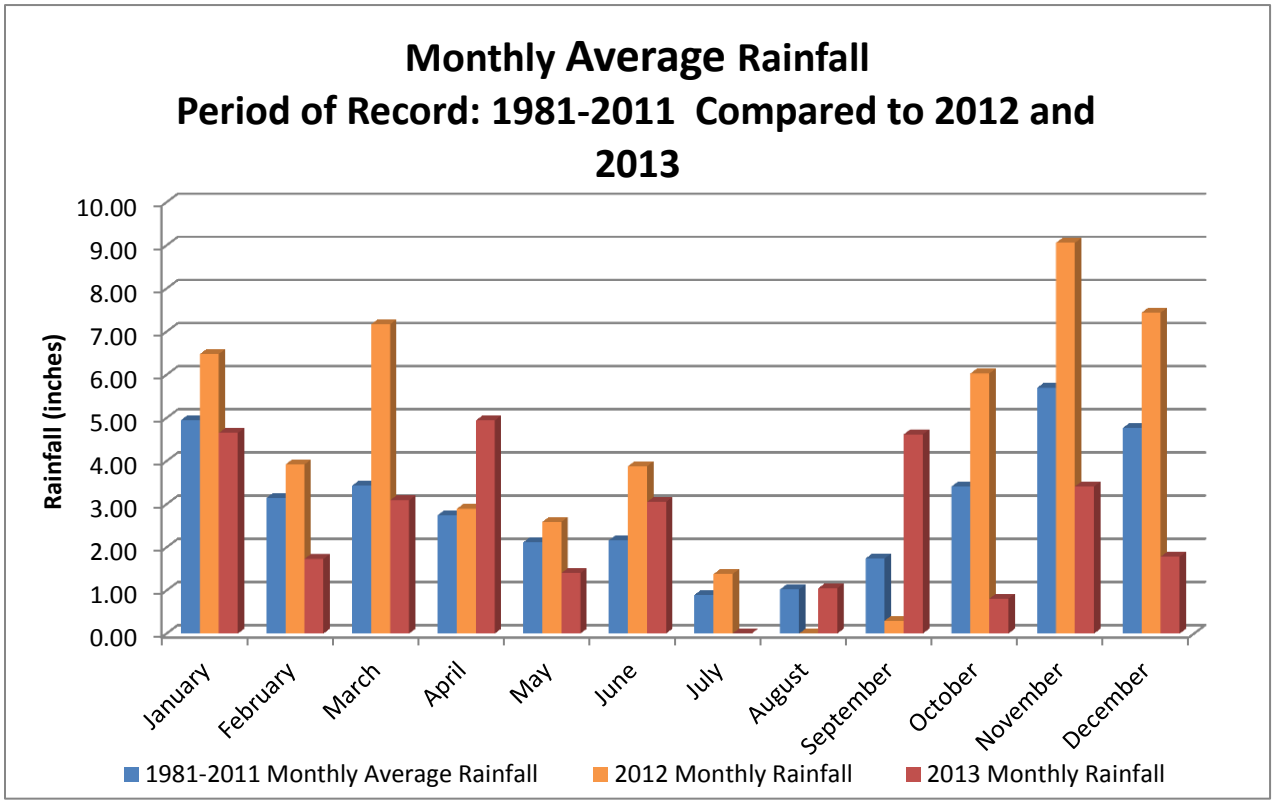
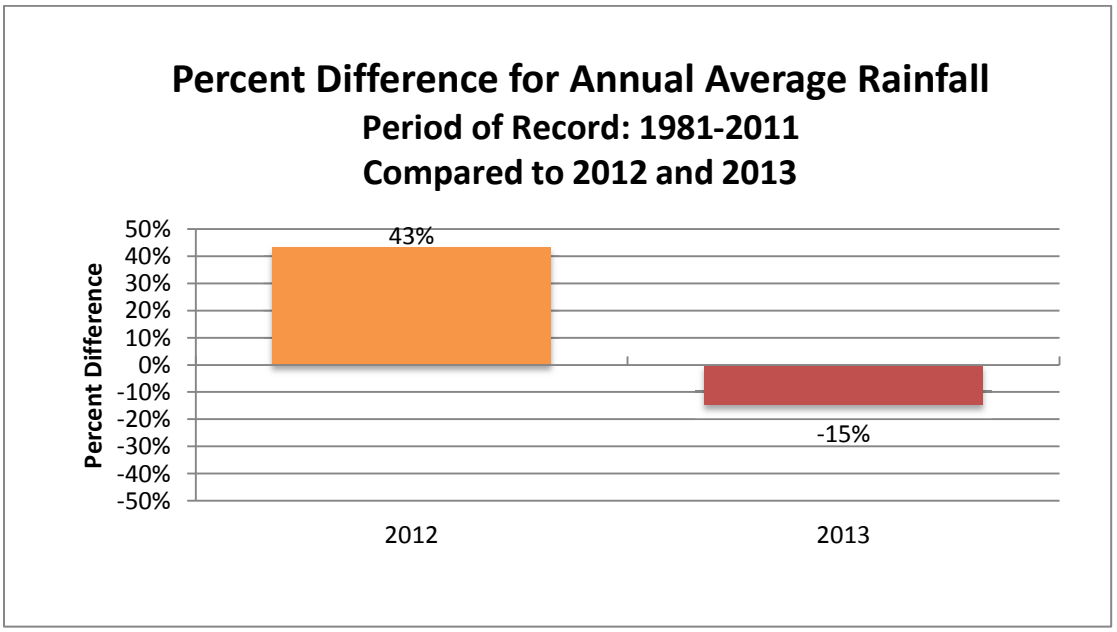
Monthly Averages: Chart 1

This chart shows the historical average monthly rainfall (blue) and the 2012 and 2013 totals (orange and red, respectively). The second chart on this page shows the percent difference in annual average rainfall for 2012 and 2013, compared to the average for the period of record 1981-2011.



*Gauge location: near I-405 and SR 520 interchange, Bellevue, WA

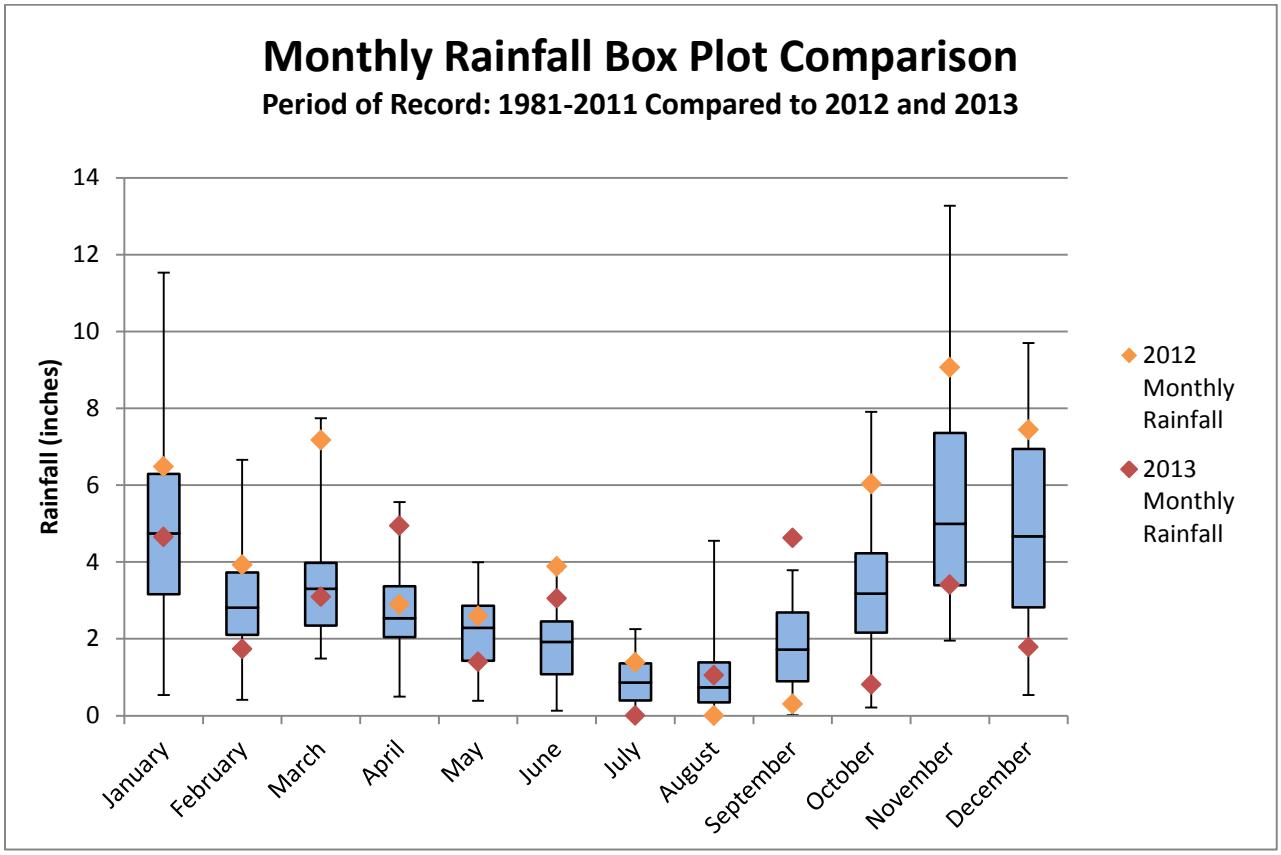


*Gauge location: near I-405 and SR 520 interchange, Bellevue, WA

2013 Rainfall Analysis

Monthly Averages: Chart 2

This chart is a box plot[3] showing historical monthly rainfall statistics with the monthly totals for 2012 and 2013 represented by the orange and red diamonds, respectively.



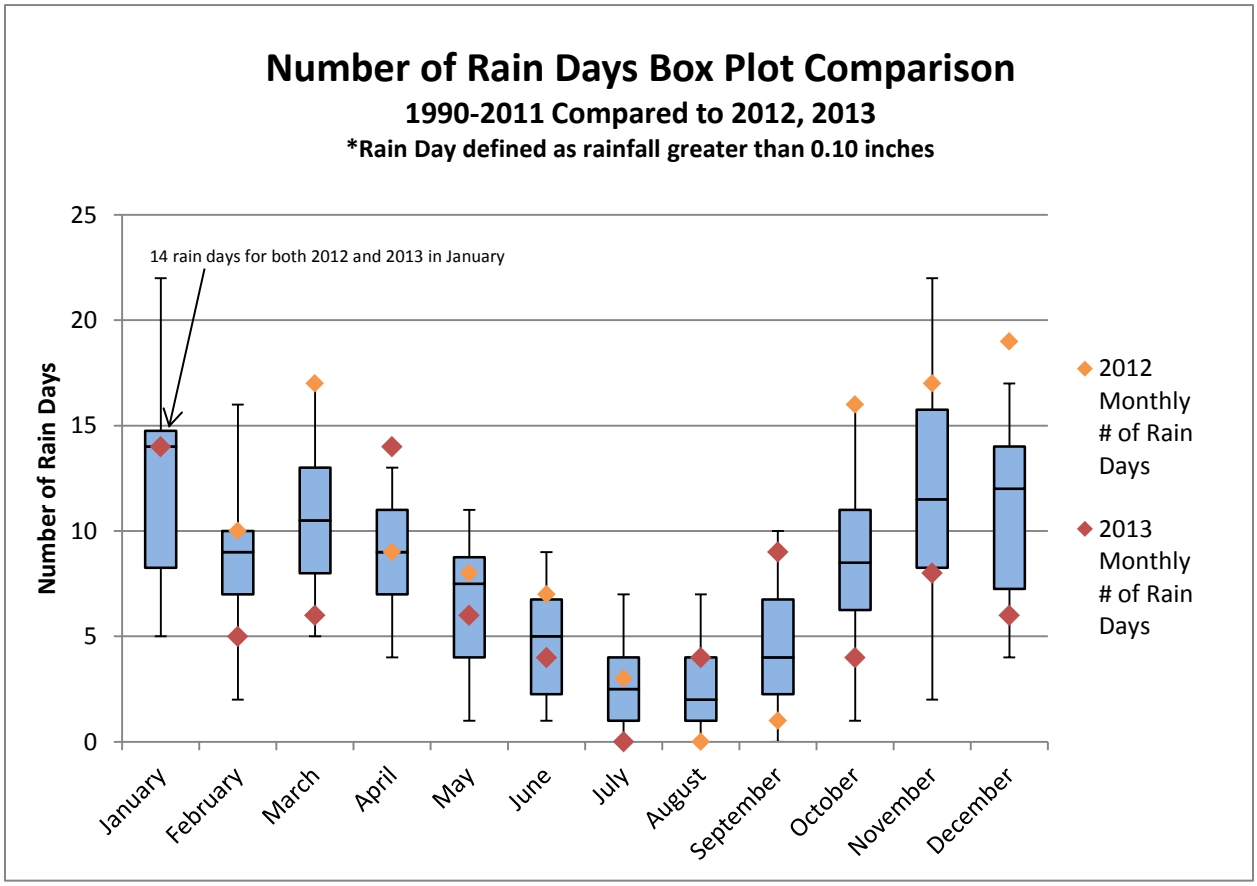
*Gauge location: near I-405 and SR 520 interchange, Bellevue, WA

[3] A box plot is a graphical depiction of a statistical summary of a dataset. The upper-most and lower-most boundaries of the box represent the upper and lower quartiles (75th and 25th percentiles), respectively. The line in the center of the box represents the median data point (50th percentile). The upper and lower points, connected to the box by vertical lines, represent the highest and lowest observed data points.

2013 Rainfall Analysis

Number of Rain Days Chart

This chart is a box plot[4] showing statistics for the number of rain days[5] with 2012 represented by the orange diamond and 2013 represented by the red diamond. For this graph, the period of record begins in 1990 when the gage was moved to its present location.



*Gauge location: near I-405 and SR 520 interchange, Bellevue, WA

[4] A box plot is a graphical depiction of a statistical summary of a dataset. The upper-most and lower-most boundaries of the box represent the upper and lower quartiles (75th and 25th percentiles), respectively. The line in the center of the box represents the median data point (50th percentile). The upper and lower points, connected to the box by vertical lines, represent the highest and lowest observed data points.

[5] A rain day is defined here as a calendar day with greater than 0.10 inches of rain.