

## Buffalo Analysis

### Normality Test (Kolmogorov-Smirnov Test)

The Kolmogorov-Smirnov test was performed for each period to test normality.

Period 1:  $p\text{-value} > 0.05$

Period 2:  $p\text{-value} > 0.05$

Period 3:  $p\text{-value} > 0.05$

Since all  $p$ -values are greater than 0.05, we fail to reject the null hypothesis.

This means precipitation in Buffalo is approximately normally distributed for all periods.

### ANOVA Test

A one-way ANOVA was performed to test whether mean precipitation differs among periods.

ANOVA  $p\text{-value} = 0.02636$

Since  $p < 0.05$ , we reject the null hypothesis.

This means there is a significant difference in mean precipitation between periods in Buffalo.

### Kruskal-Wallis Test

The Kruskal-Wallis test was also performed.

$p\text{-value} = 0.03095$

Since  $p < 0.05$ , we reject the null hypothesis.

This confirms that precipitation differs across periods.

### Median Test

The median test was conducted using a chi-square test.

$p\text{-value} = 0.7401$

Since  $p > 0.05$ , we fail to reject the null hypothesis.

There is no significant difference in median precipitation between periods.

San Diego Analysis  
Normality Test (Kolmogorov-Smirnov Test)

The KS test results:

Period 1:  $p\text{-value} > 0.05$   
Period 2:  $p\text{-value} > 0.05$   
Period 3:  $p\text{-value} > 0.05$

All periods appear approximately normal.

ANOVA Test

ANOVA  $p\text{-value} = 0.9677$

Since  $p > 0.05$ , we fail to reject the null hypothesis.  
There is no significant difference in mean precipitation between periods.

Kruskal-Wallis Test

$p\text{-value} = 0.7362$

Since  $p > 0.05$ , there is no significant difference between periods.

Median Test

The chi-square test shows:

$p\text{-value} > 0.05$

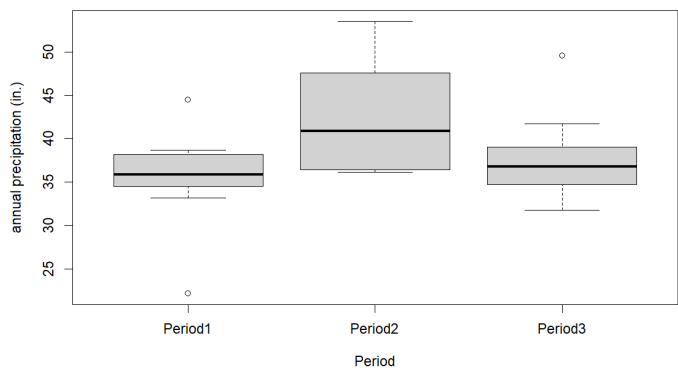
There is no significant difference in median precipitation between periods.

Final Conclusion

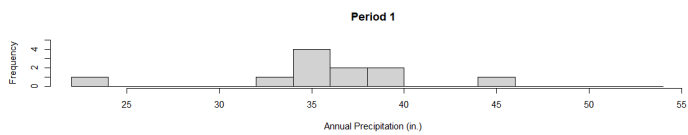
For Buffalo, precipitation shows significant differences between periods based on ANOVA and Kruskal-Wallis tests.

For San Diego, precipitation does not show significant differences between periods.

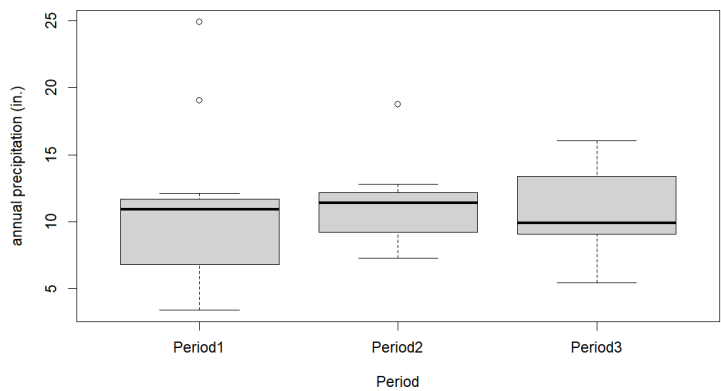
Buff box plot



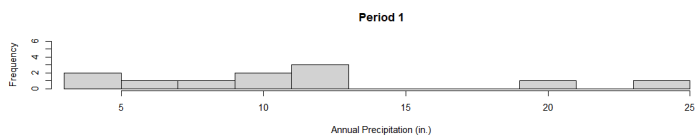
Buff Hist



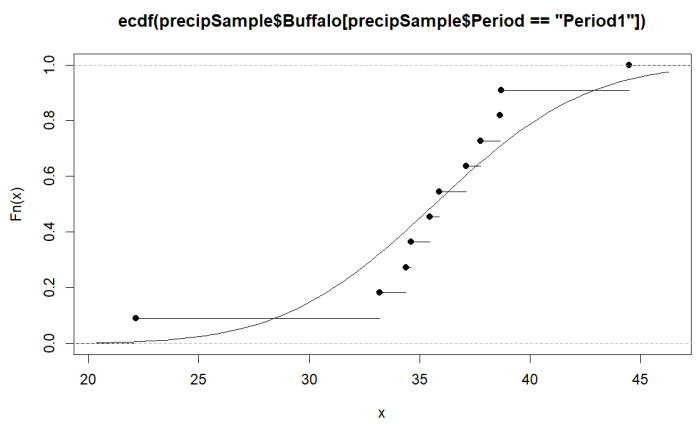
SanD box plot



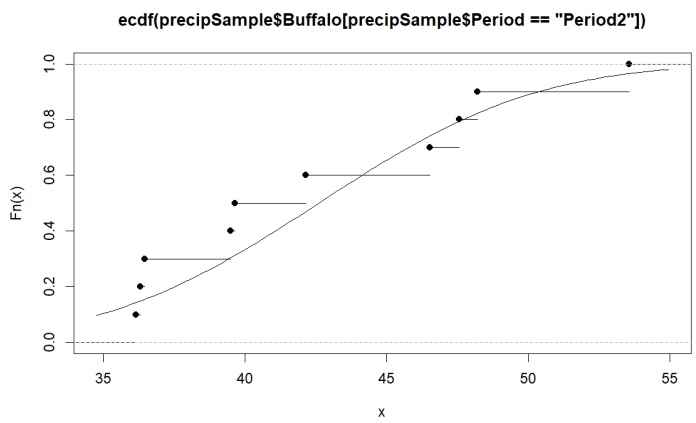
SanD Hist



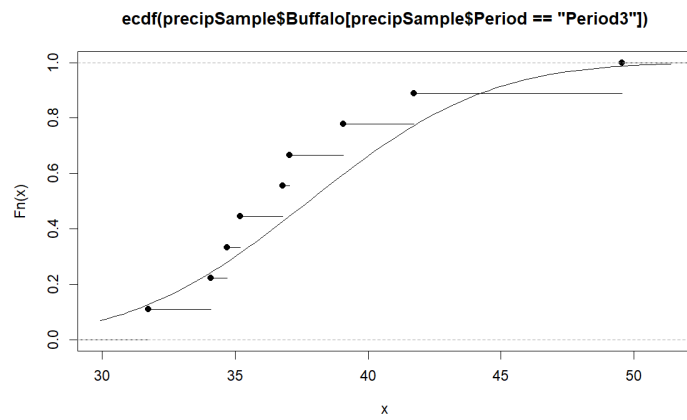
Buff KS test period 1



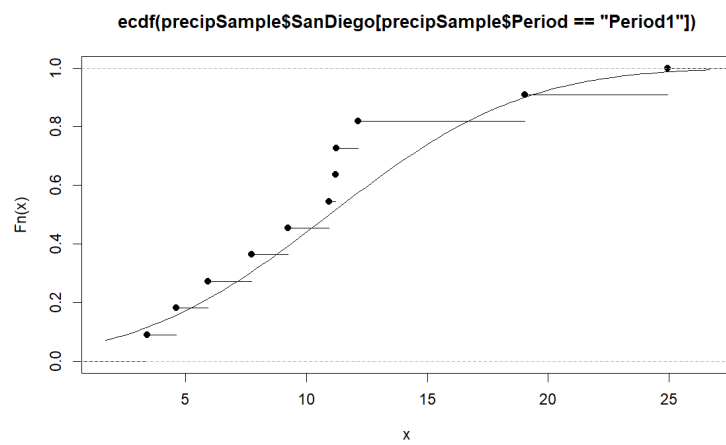
Buff KS test period 2



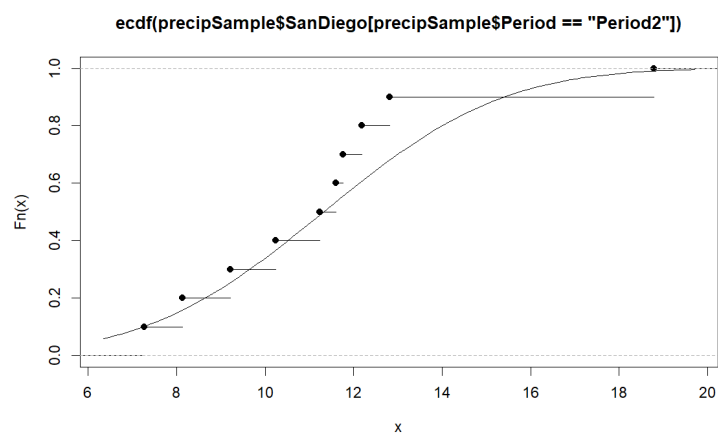
### Buff KS test period 3



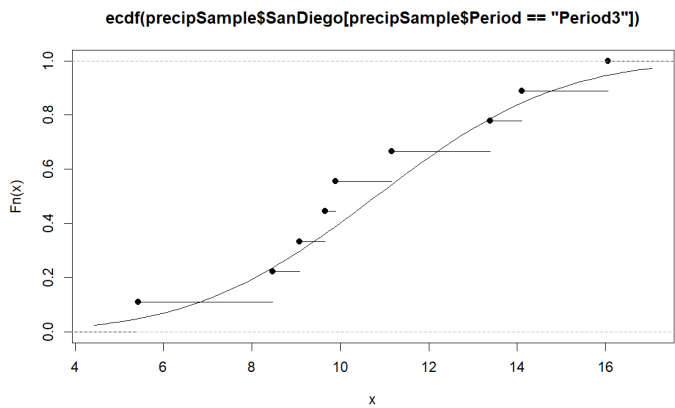
### SanD KS test period 1



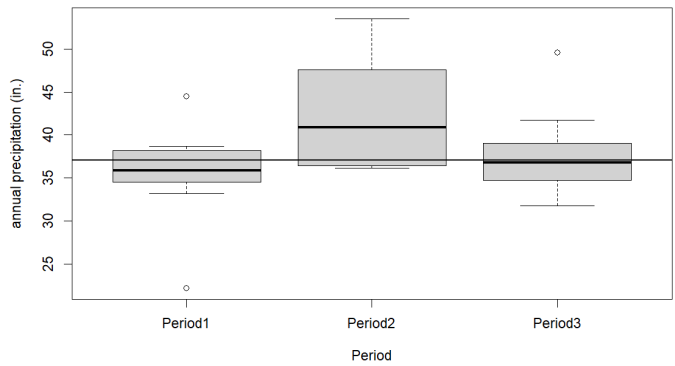
### SanD KS test period 2



**SanD KS test period 3**



**Buff Median box plot**



**SanD Median box plot**

