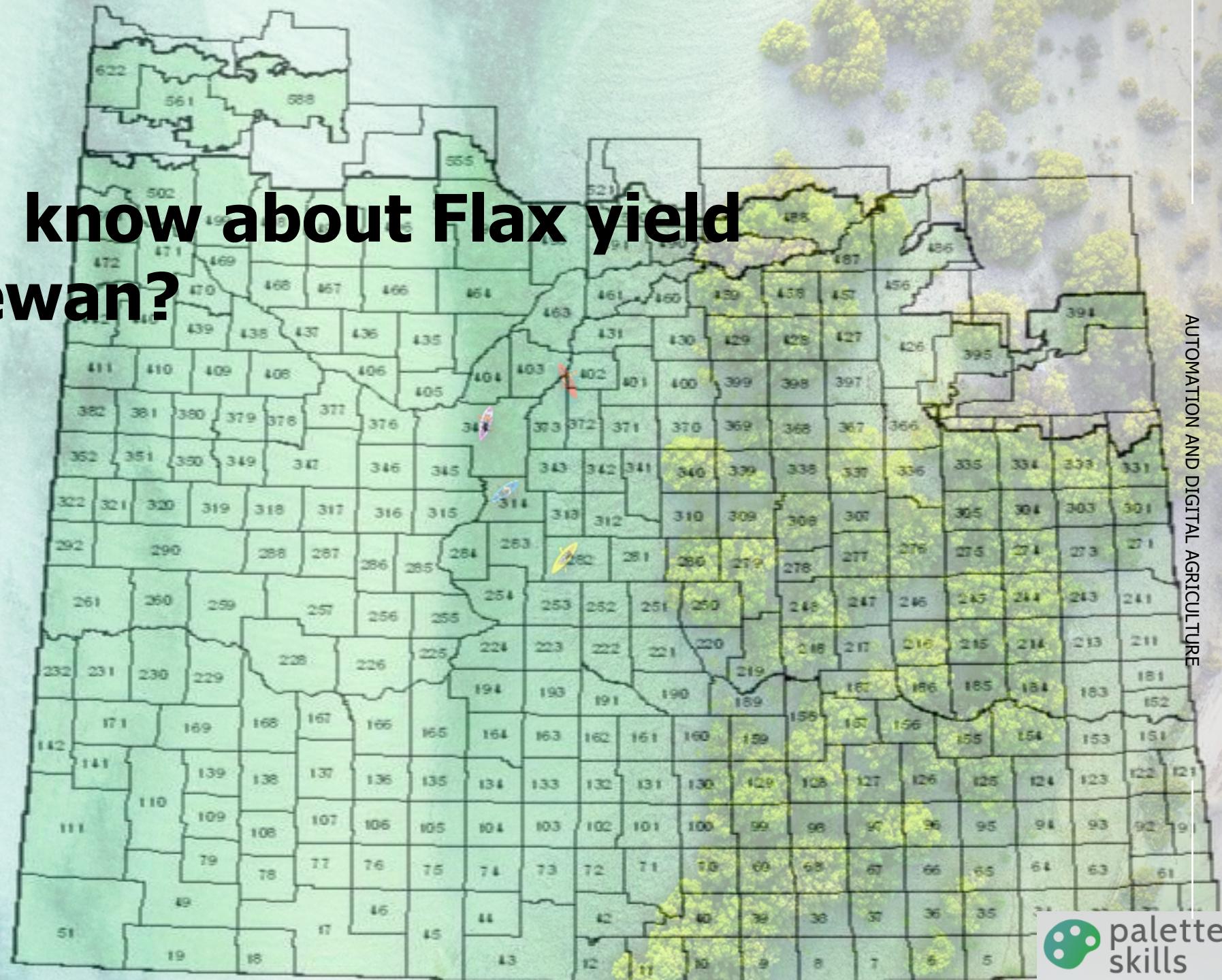


What do you know about Flax yield in Saskatchewan?



Abel Soltani

Data

Winter Wheat - bu/ac

- Canola - bu/ac
- Spring Wheat - bu/ac
- Mustard - lbs/ac
- Durum - bu/ac
- Sunflowers - lbs/ac
- Oats - bu/ac
- Lentils - lbs/ac
- Peas - bu/ac
- Barley - bu/ac
- Fall Rye - bu/ac
- Canary Seed - lbs/ac
- Spring Rye - bu/ac
- Tame Hay - tons/ac
- Flax - bu/ac
- Chick Peas - lbs/ac

Crop: Winter Wheat - bu/ac ▾

What are you looking for?

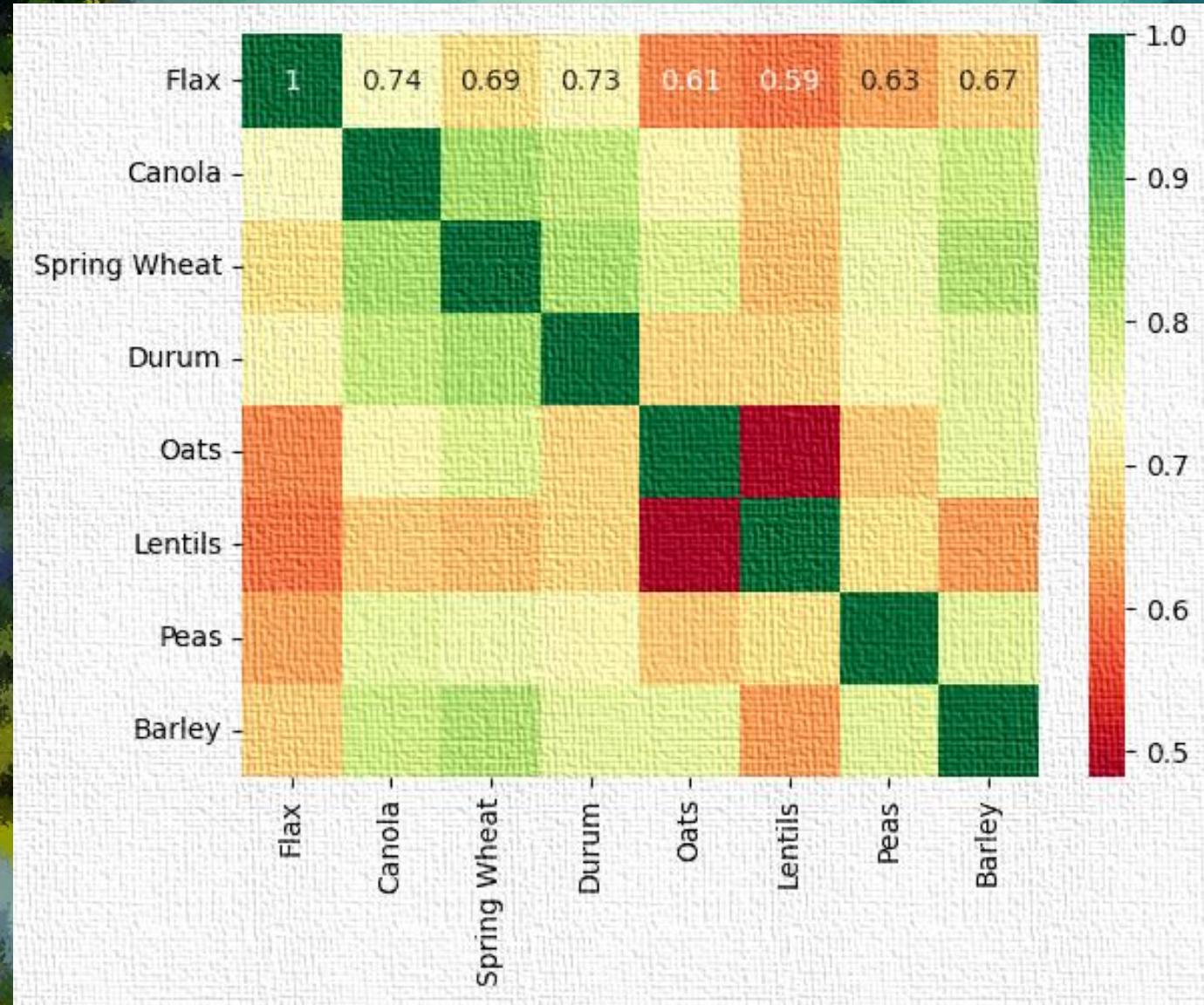
Provincial GIS Data

Exploratory Data Analysis

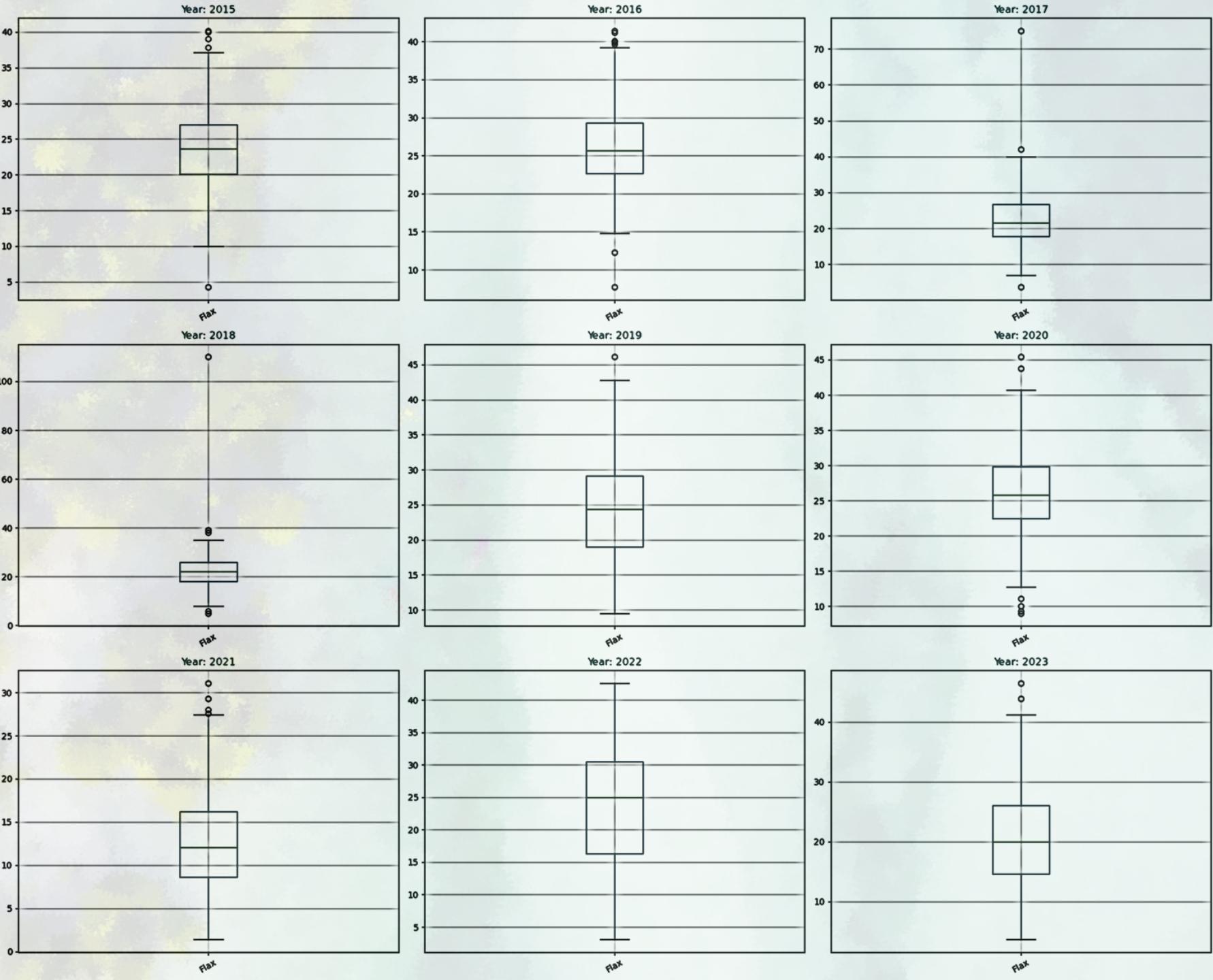
Flax Yield per Year (2012 - 2023)



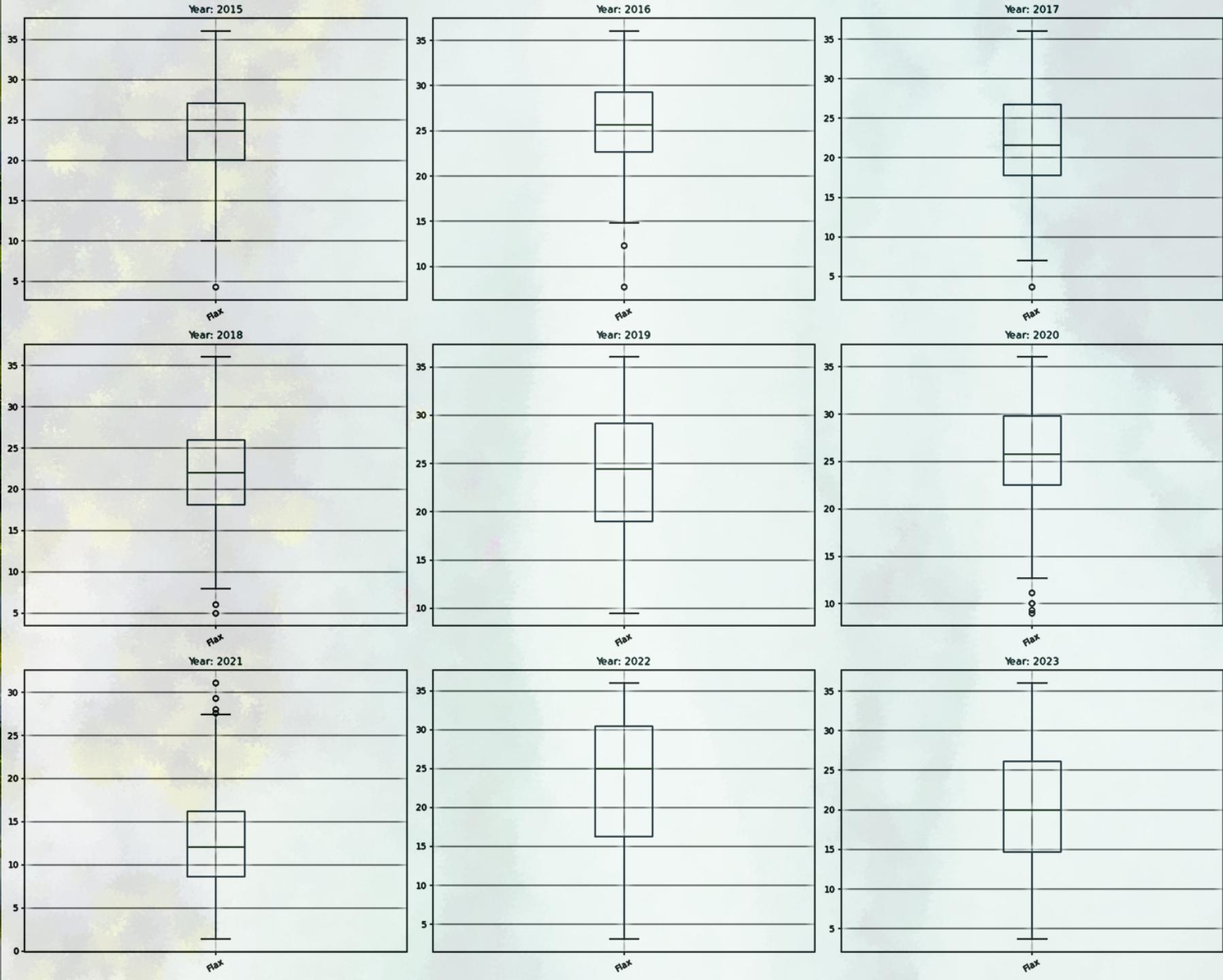
Correlation Analysis



Before Outlier Treatment



After Outlier Treatment



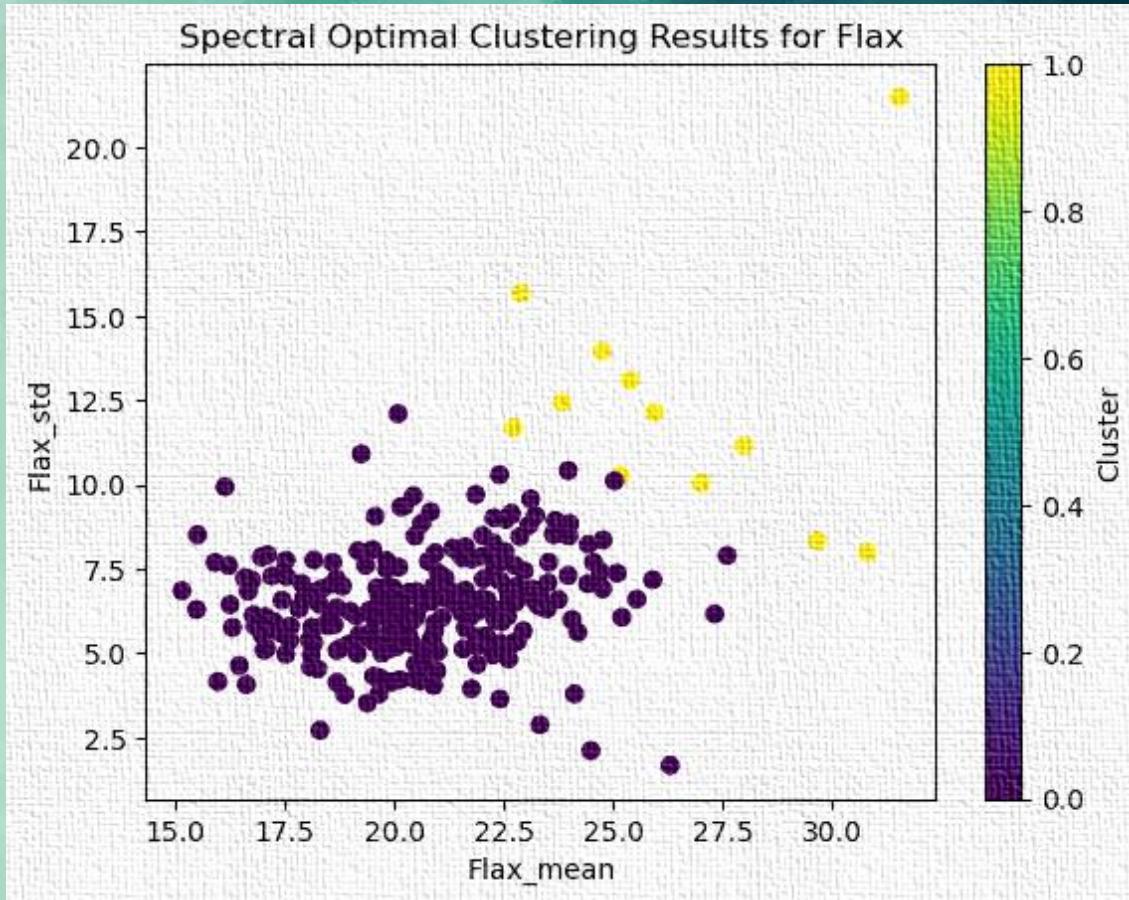
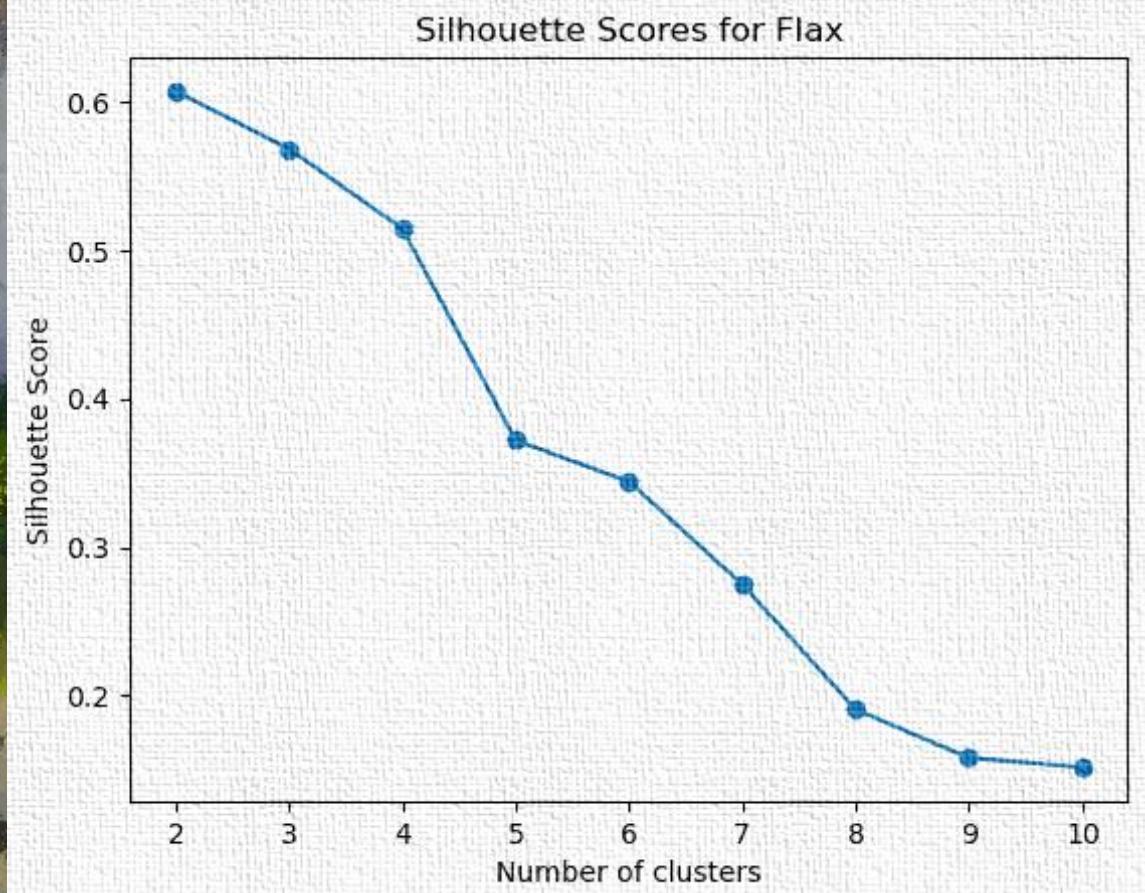
Spectral Clustering

is better for capturing complex, non-convex cluster shapes and handling overlapping clusters but is computationally expensive and requires a similarity matrix.

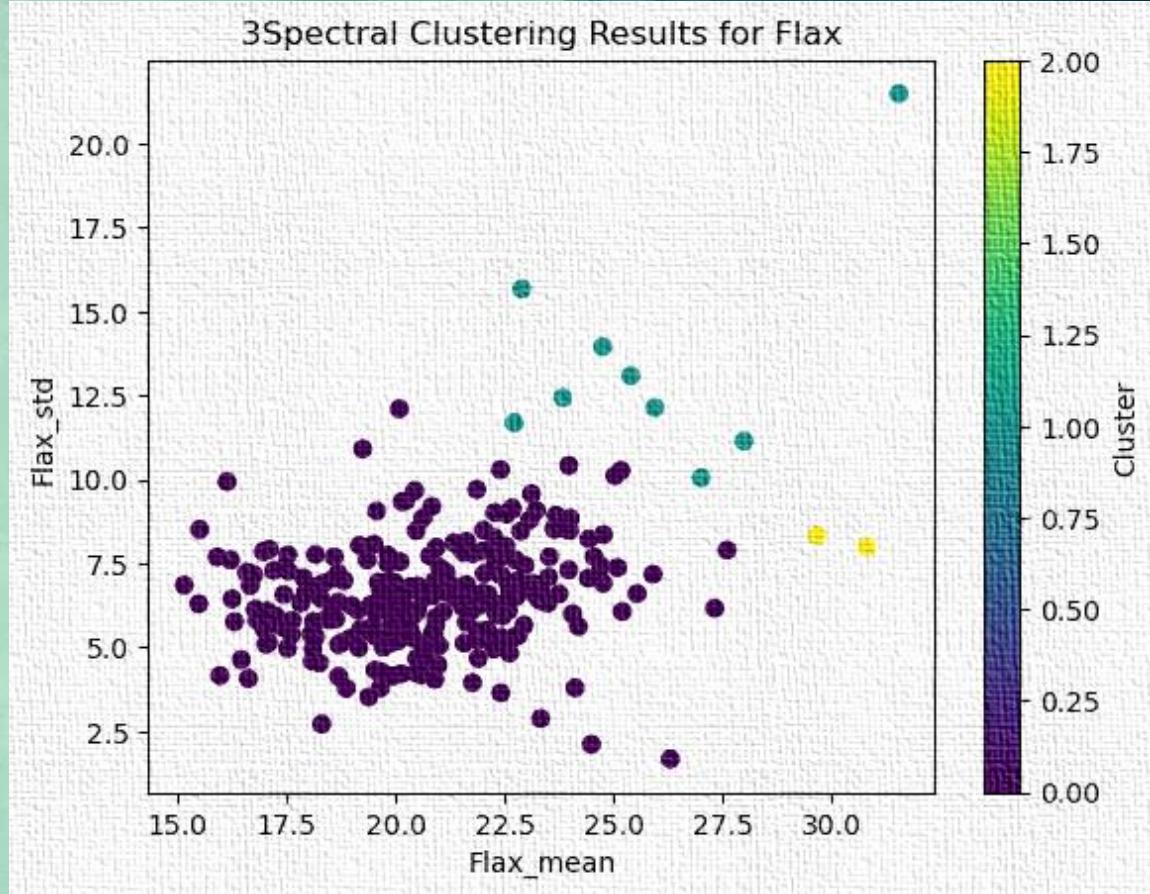
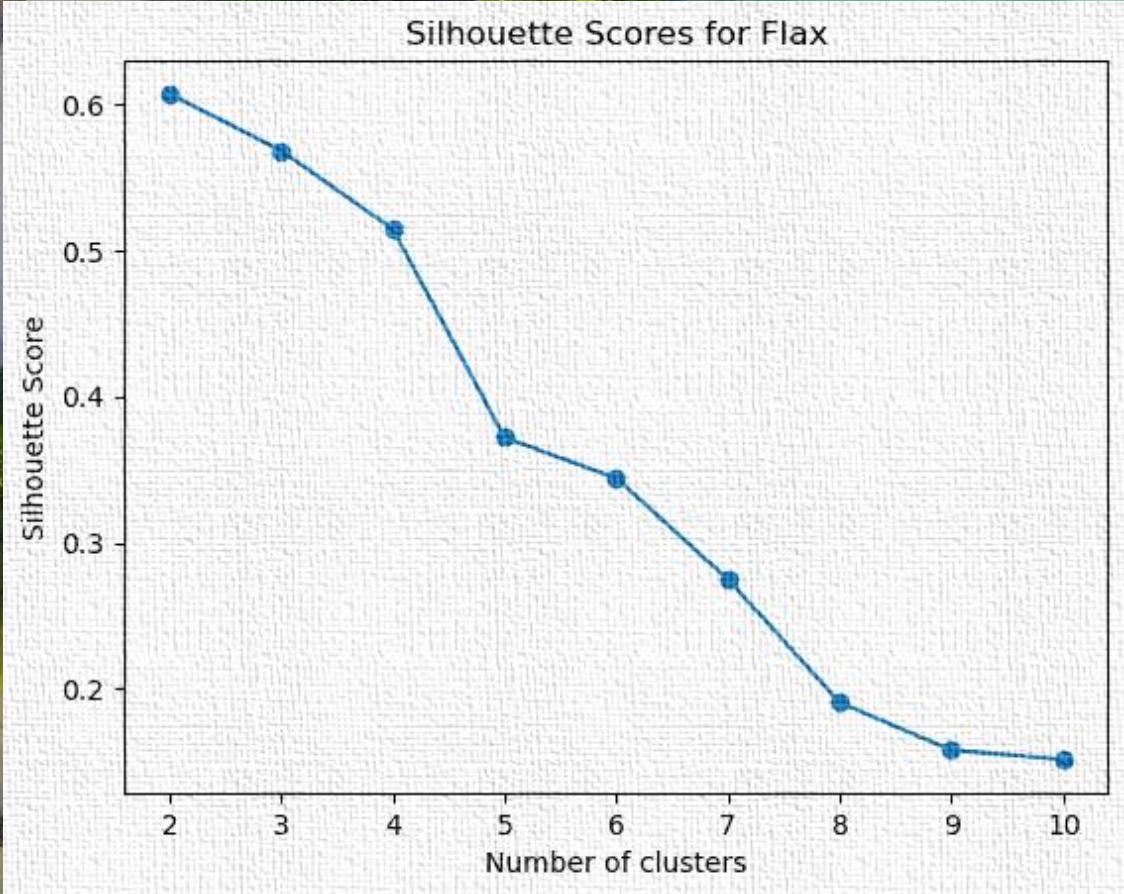
K-Means Clustering

is simple, efficient, and scalable but assumes spherical clusters of similar size and struggles with non-convex clusters and varying densities.

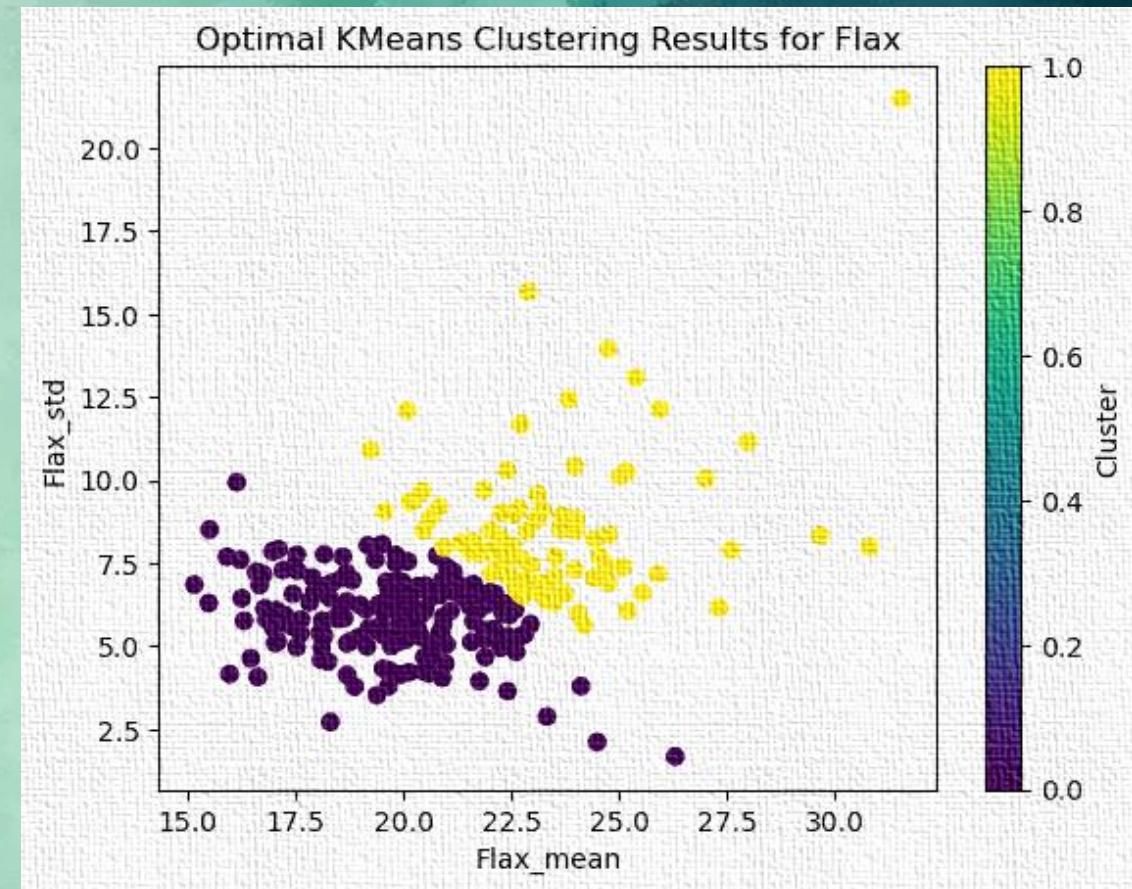
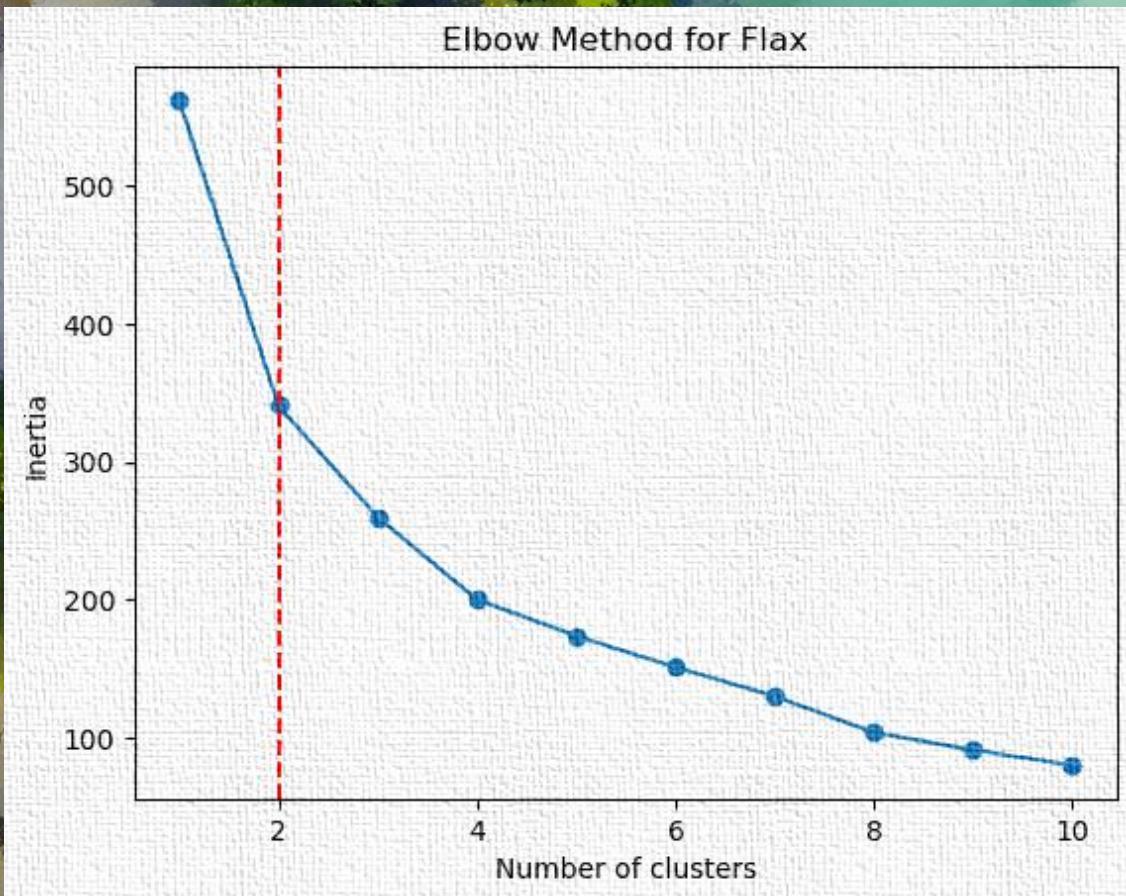
Spectral Clustering- Optimal Clustering



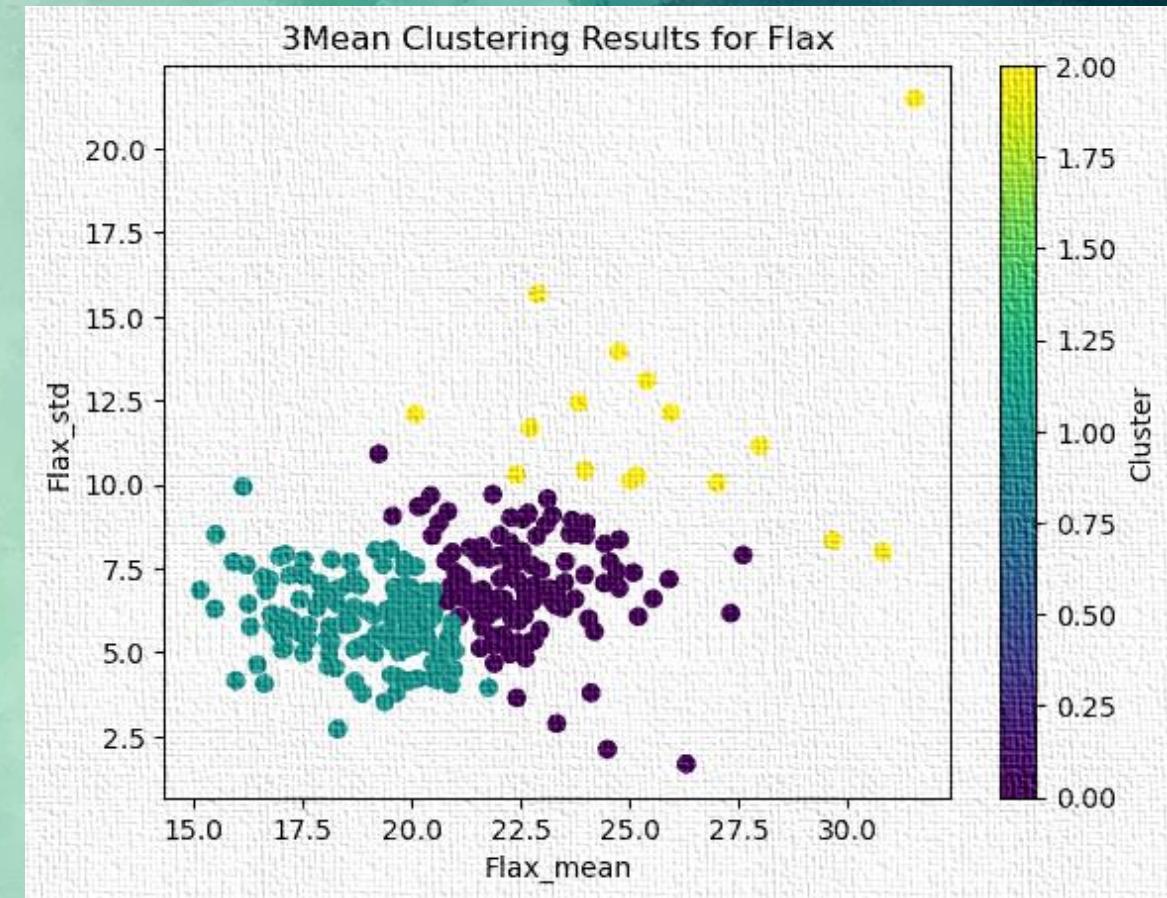
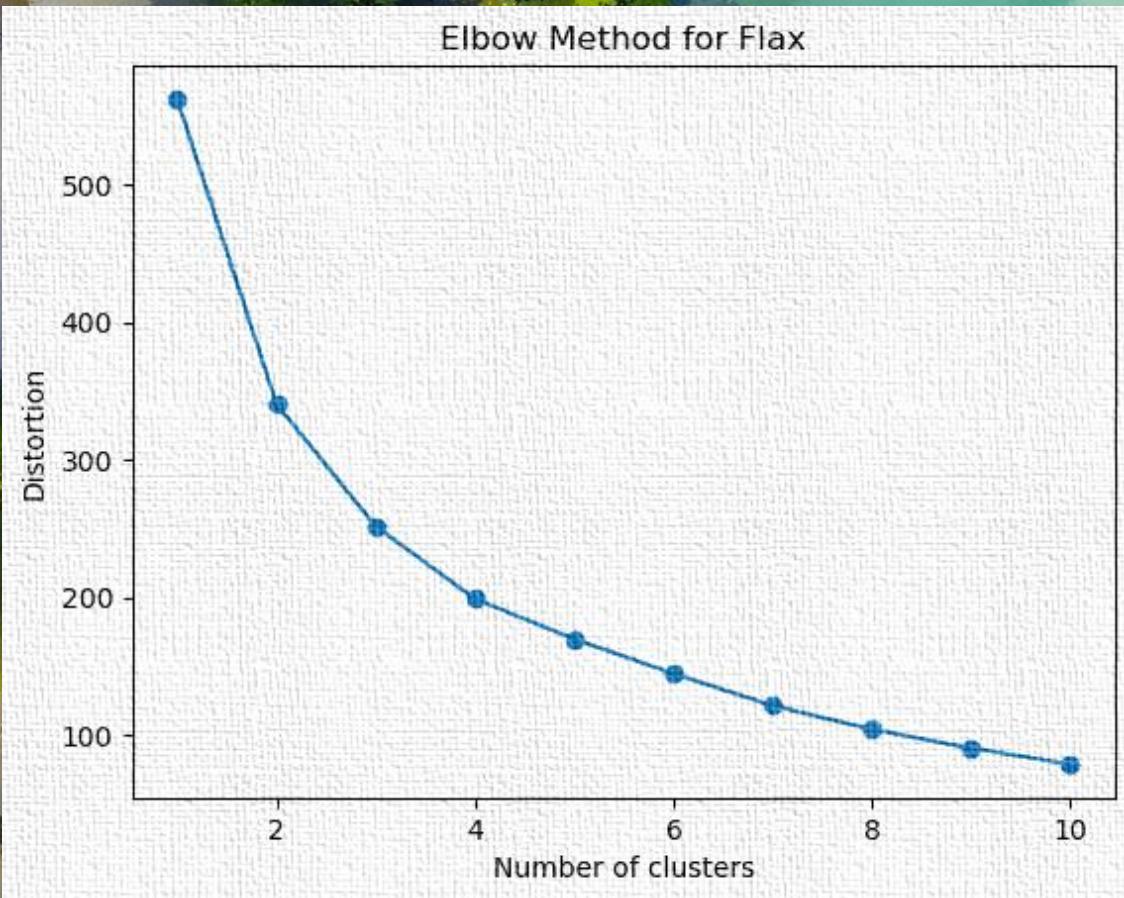
Spectral Clustering- 3 clusters



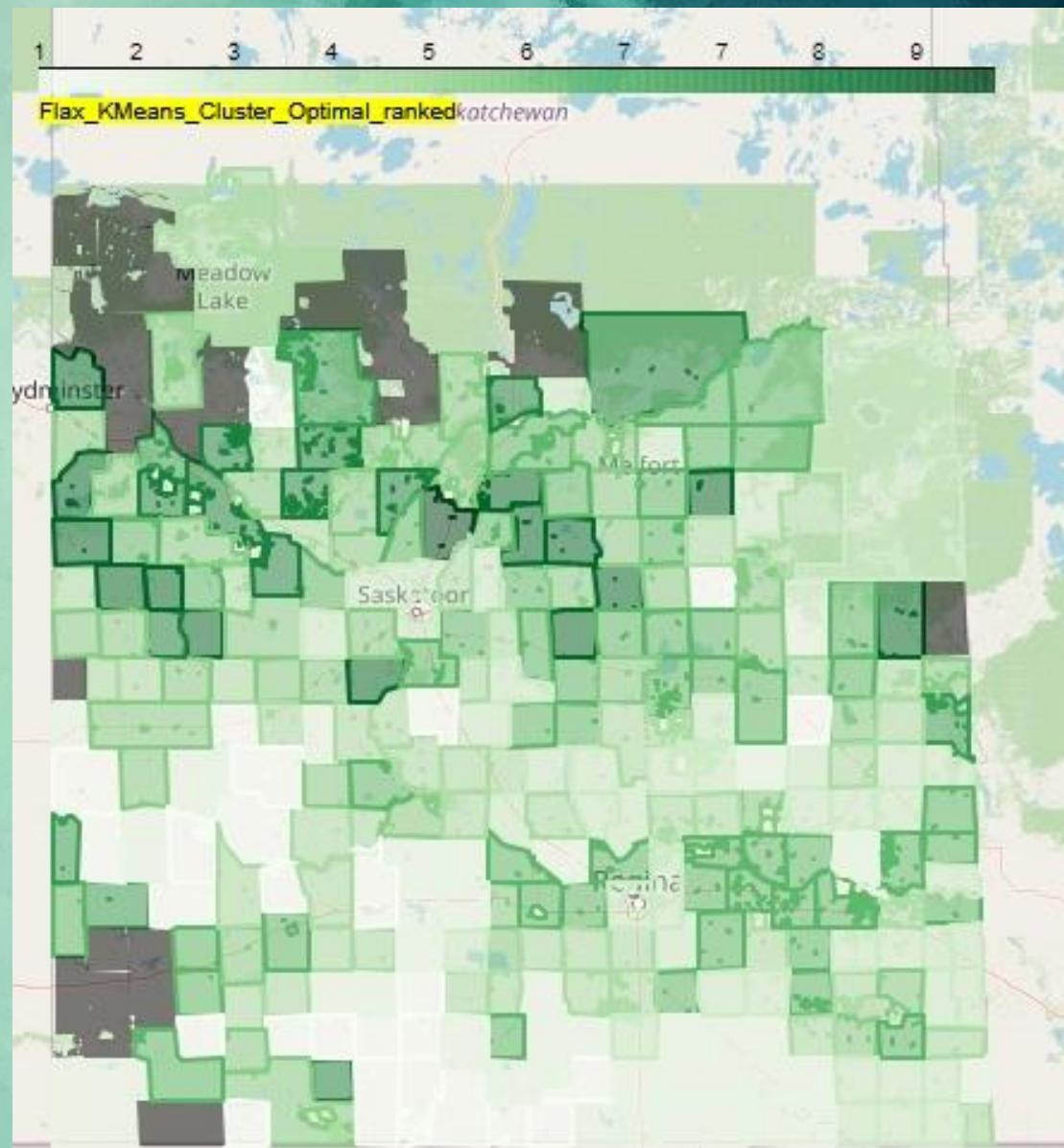
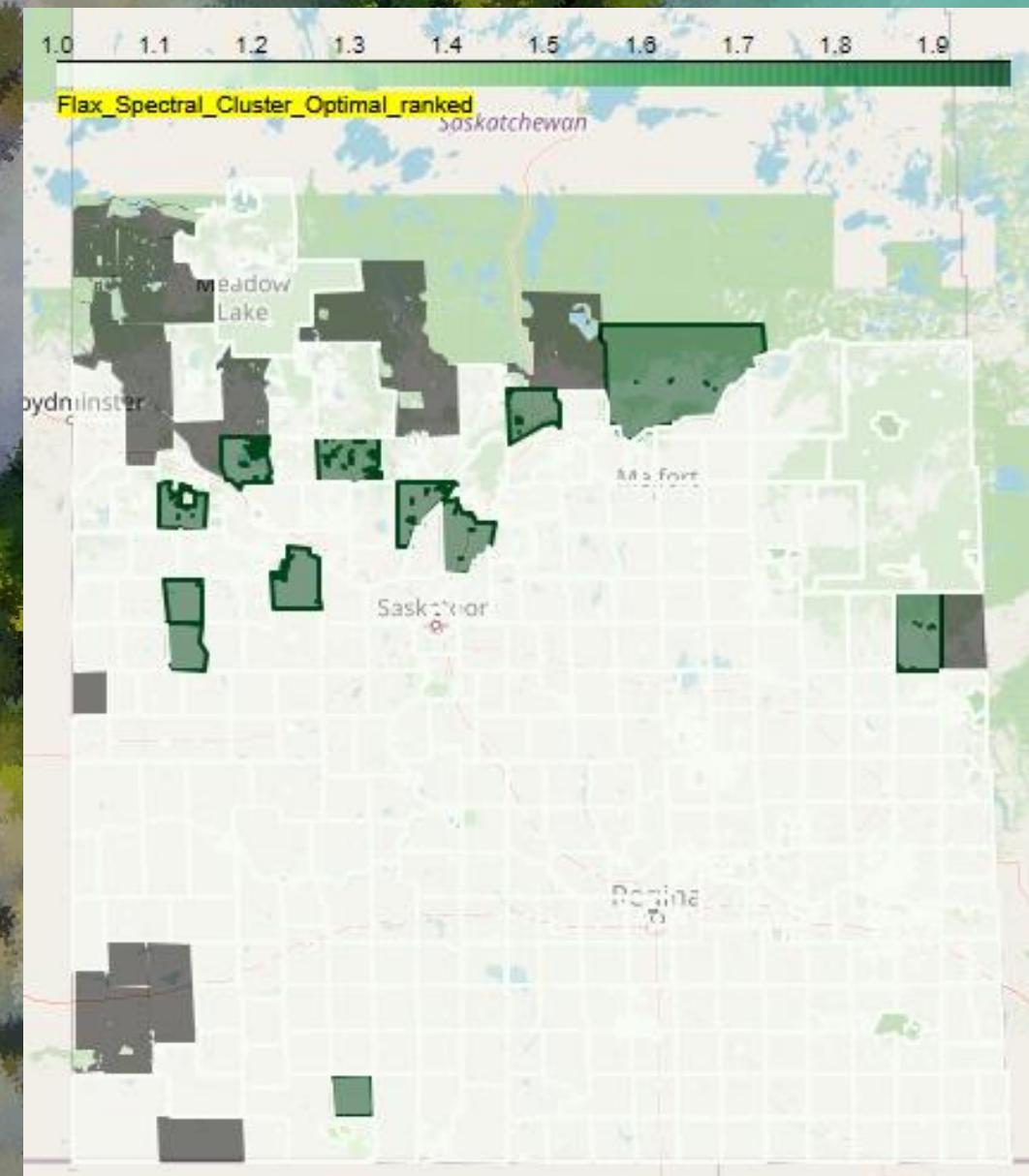
K-Means Clustering- Optimal Clustering



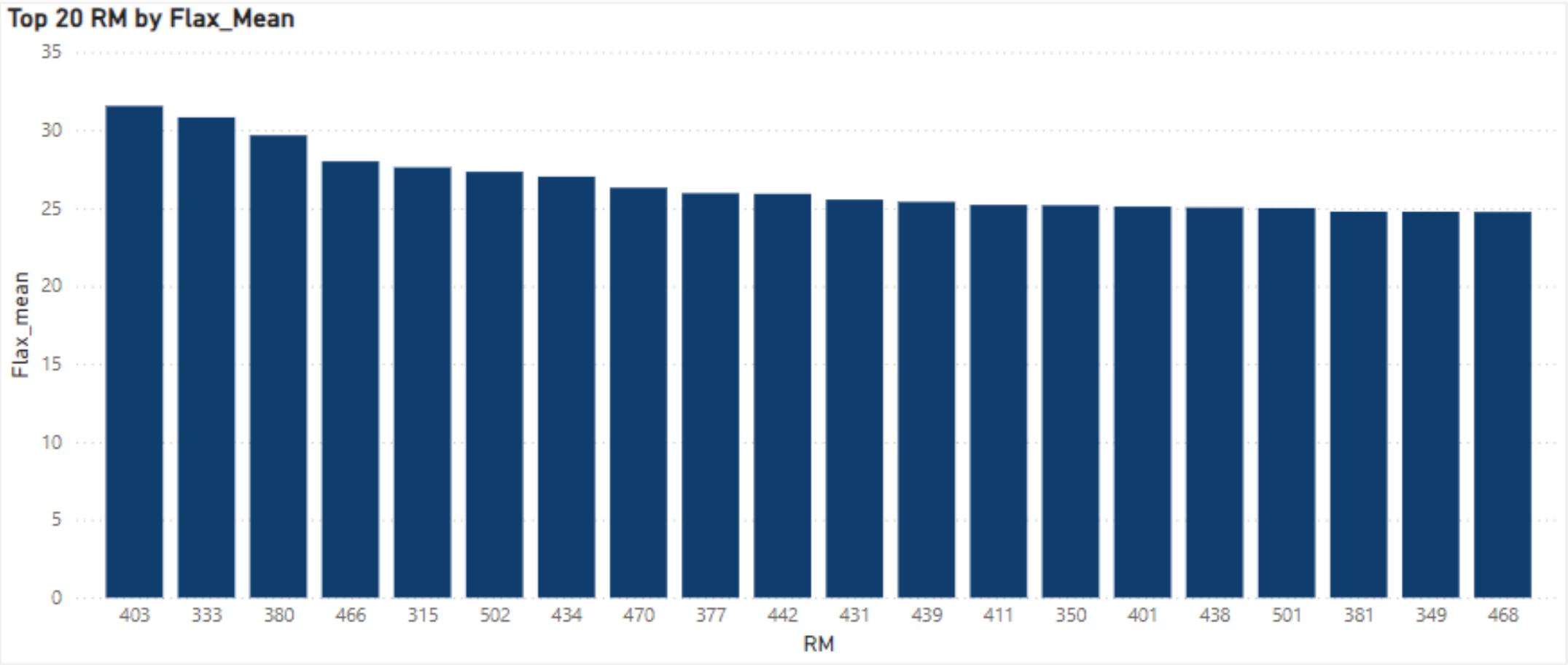
K-Means Clustering- 3 clusters



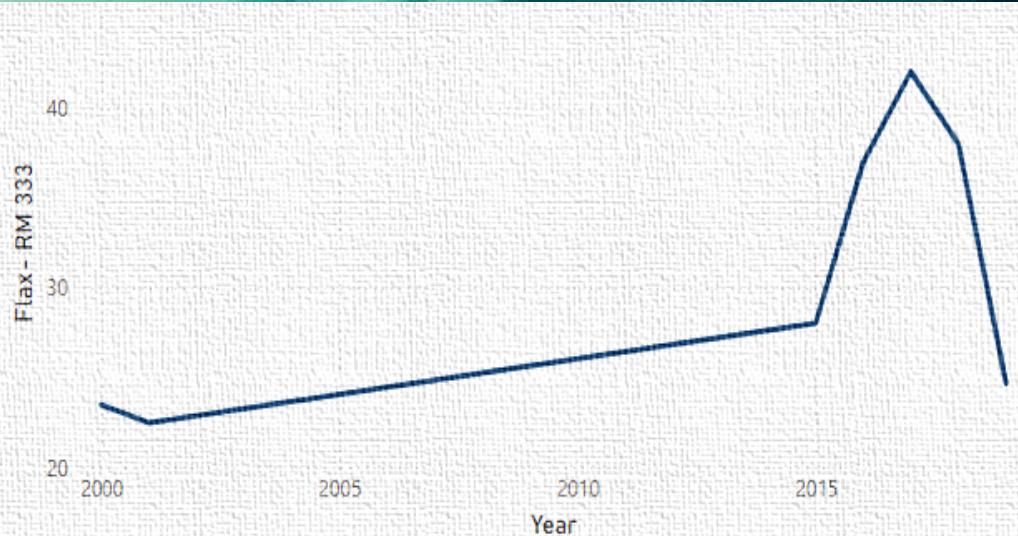
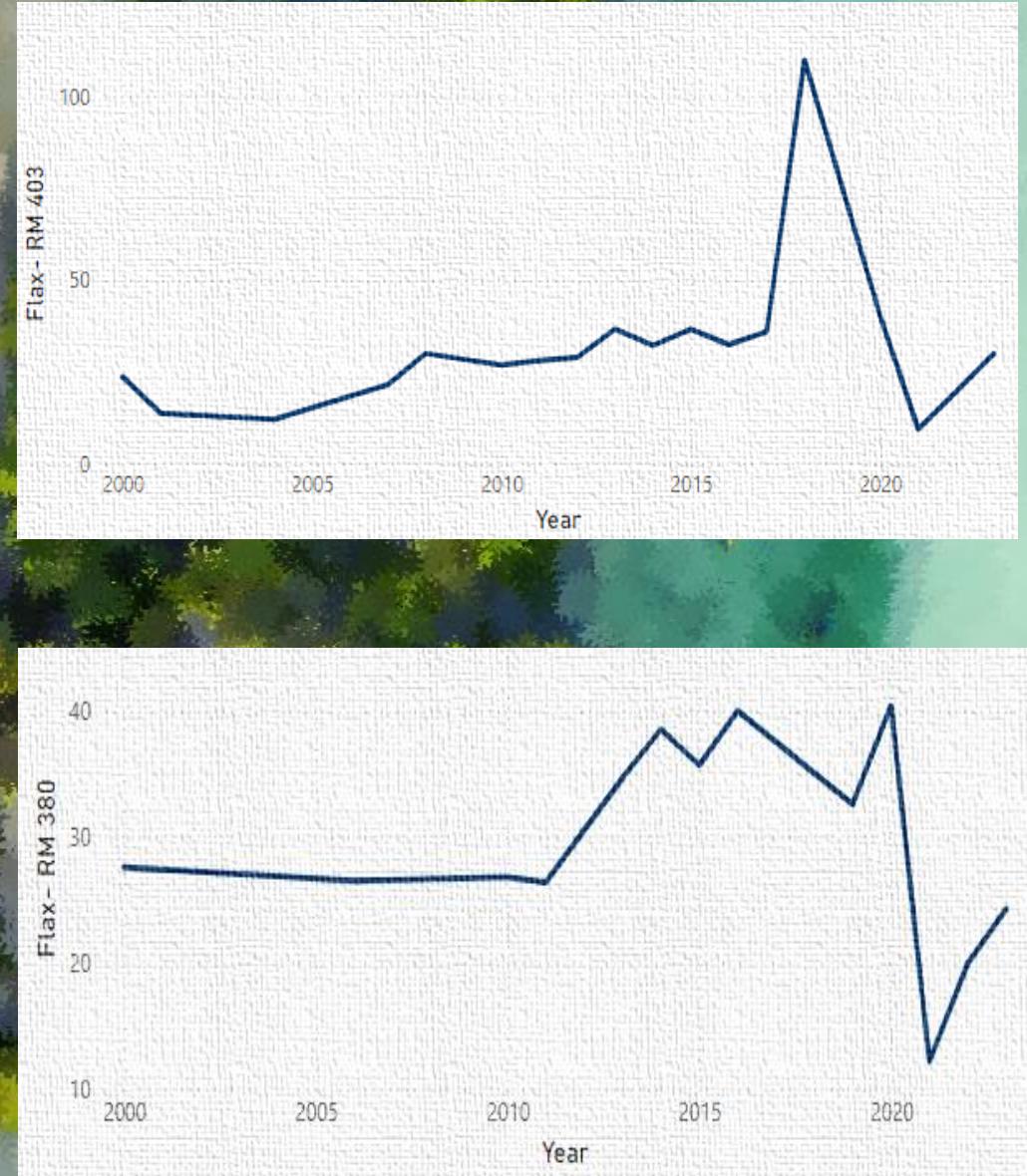
GIS Analysis to visualize areas with highest production



Top 20 RM



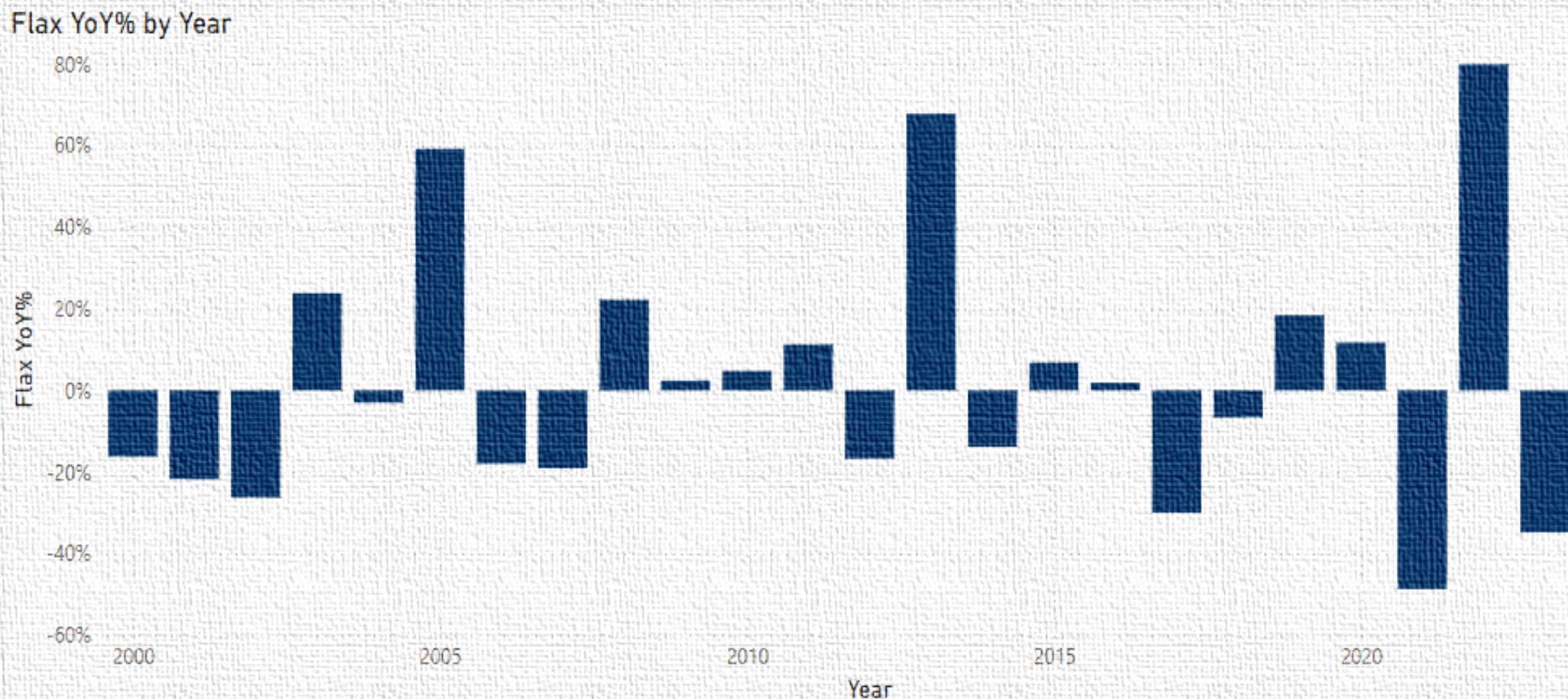
Top 4 line charts



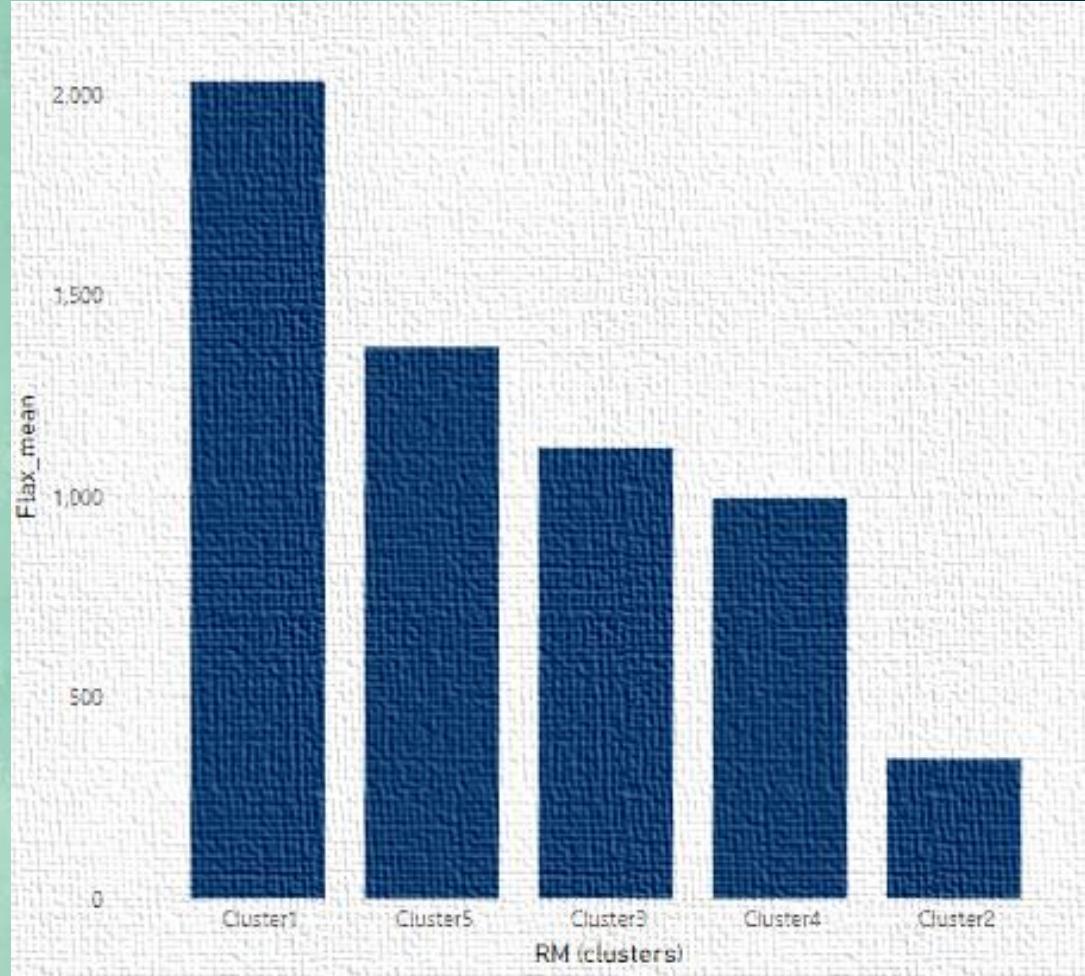
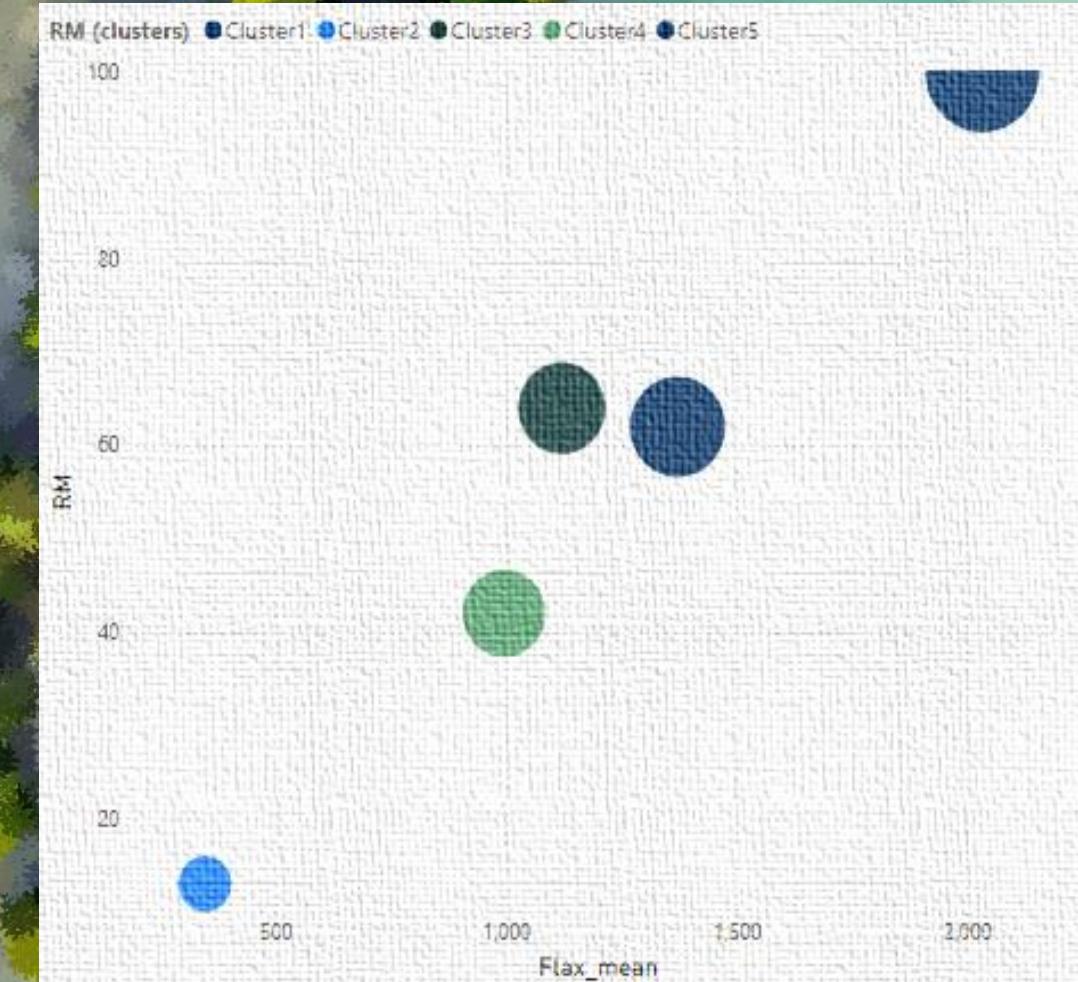
Forecasting



Year by Year Change



Clusters by Flax mean

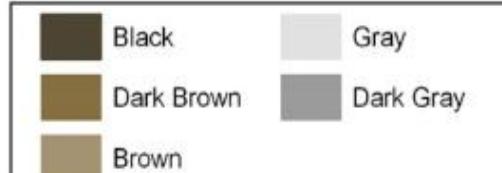
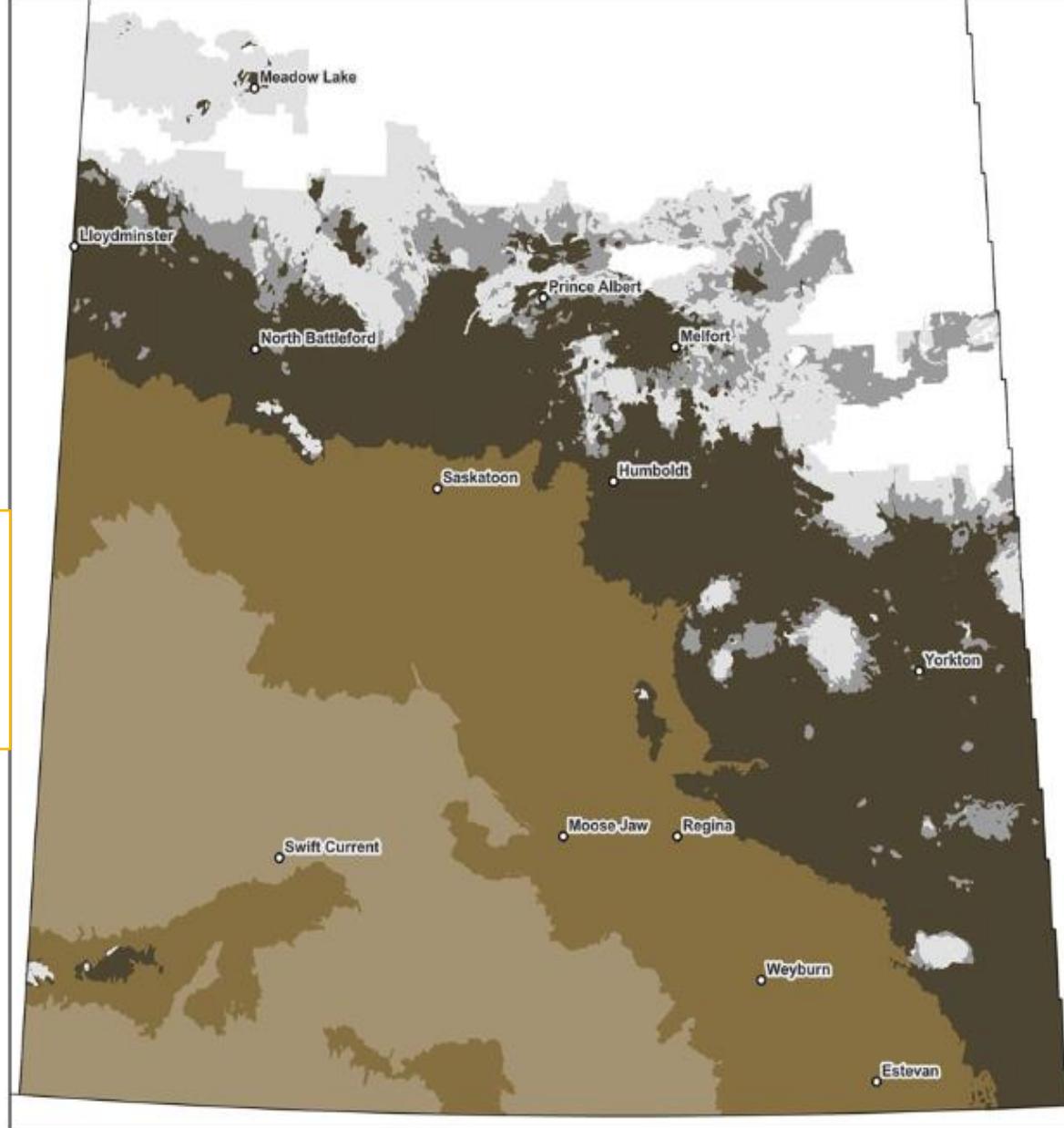


Takeaway:

The crop rotation list may include barley, canola, spring wheat, and drum.

Northern Saskatchewan has the most productive averages for Flax, probably due to the black and dark brown soil types.

RM #403, #333, and #380 have the highest amount of harvest, ~ 31 bu/ac.



Projection: UTM Zone 13 Datum: NAD83



THANK YOU