

BRAZILIAN AMAZON RAINFOREST

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Datasets:

1. Trajetorias Dataset: Measures Habitat Loss, Land Use, Transportation Networks and Climatic Anomalies.

- Deforestation
- Fires
- Degradation
- Vegetation Core
- Temperature
- Precipitation
- Crop
- Reforestation
- Pasture...

2. Kaggle: Fires from 1999 to 2019

	year	month	state	latitude	longitude	firespots
1	1999	1	AMAZONAS	-2.371113	-59.89993	3
2	1999	1	MARANHAO	-2.257395	-45.48783	36
3	1999	1	MATO GROSSO	-12.660633	-55.05799	18
4	1999	1	PARA	-2.474820	-48.54697	87

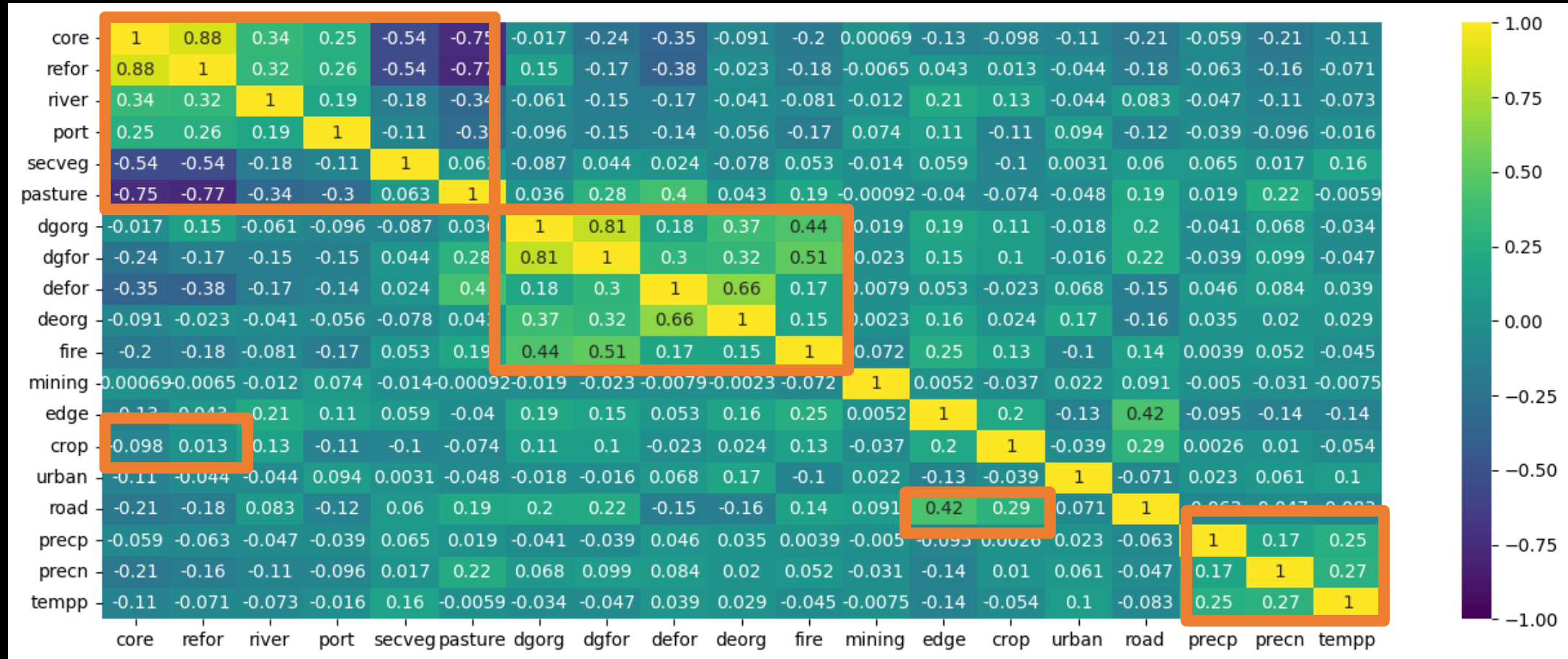
Both Datasets have LOCATION!

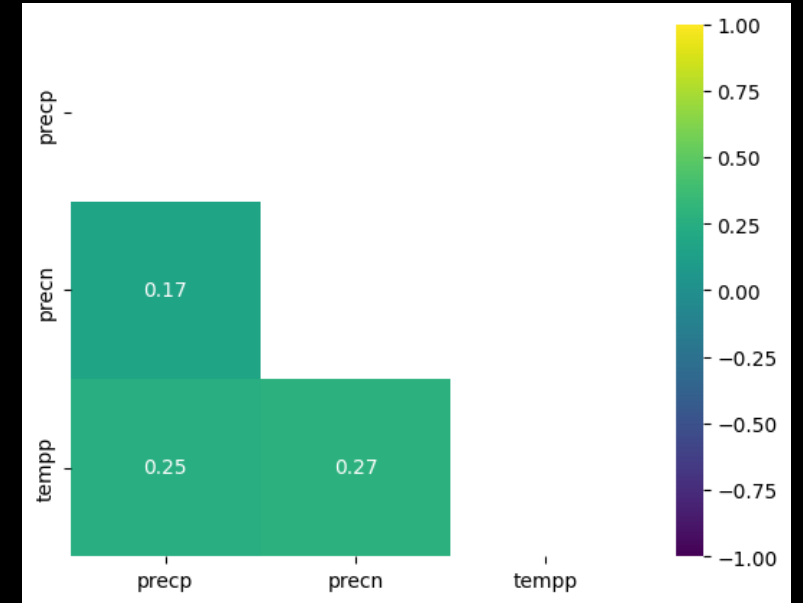
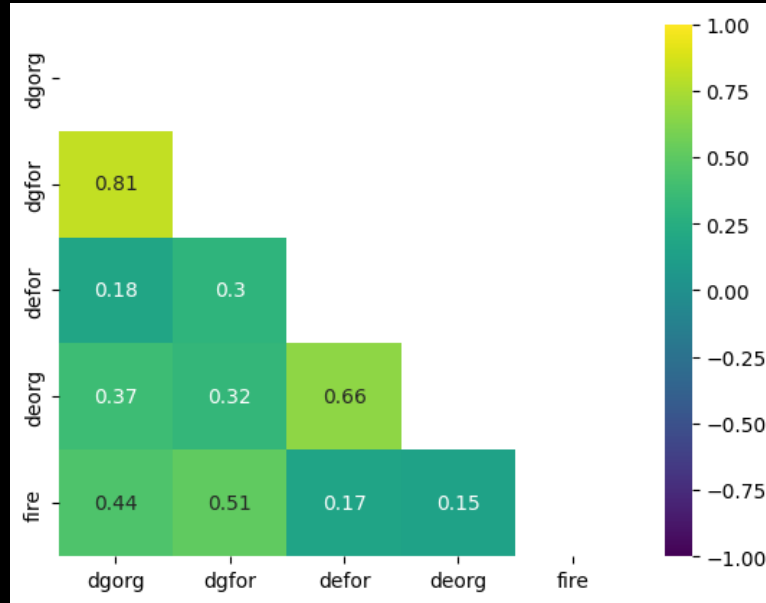
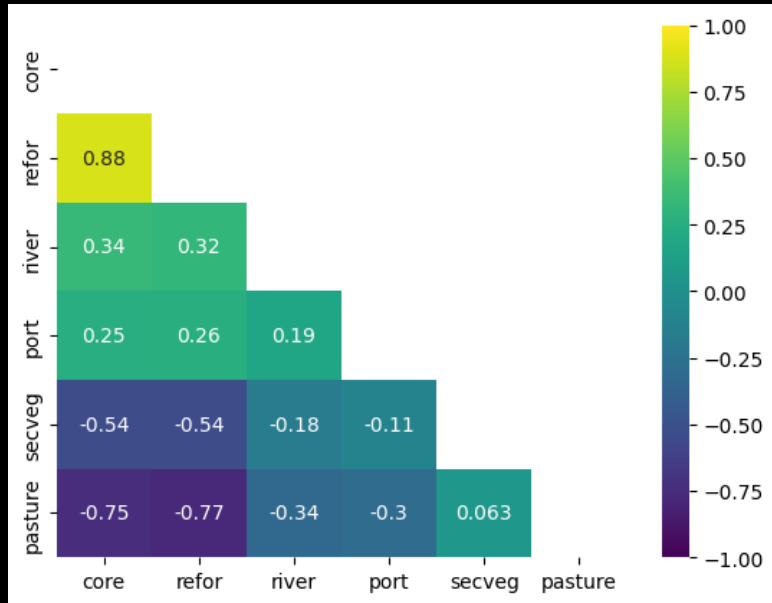
Tools:

- Tableau – Maps
- Ggobi
- Python



Heatmap





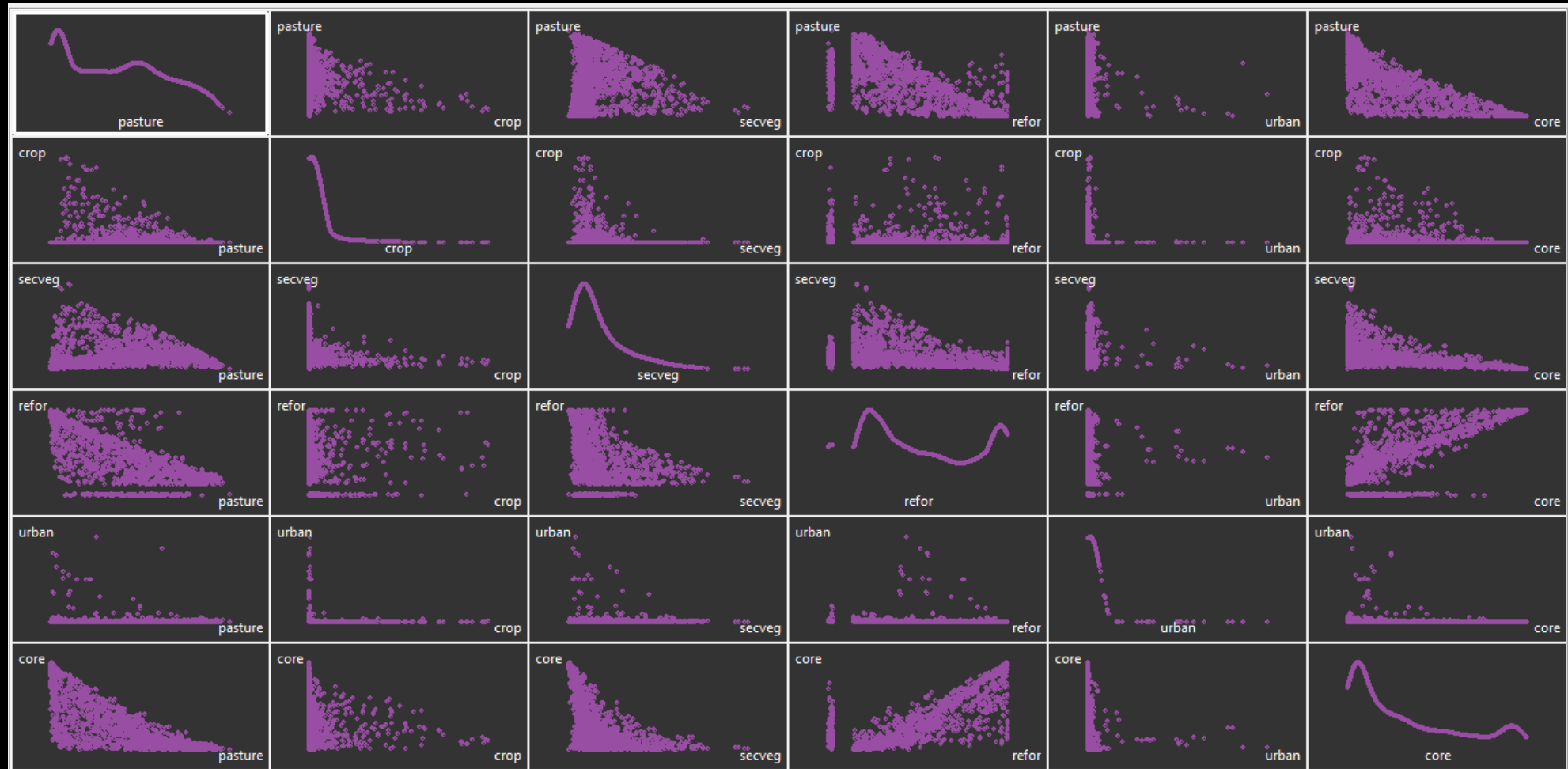
Expected Results:

- Fire related with deforestation and degradation +
- Precipitation related with temperature +

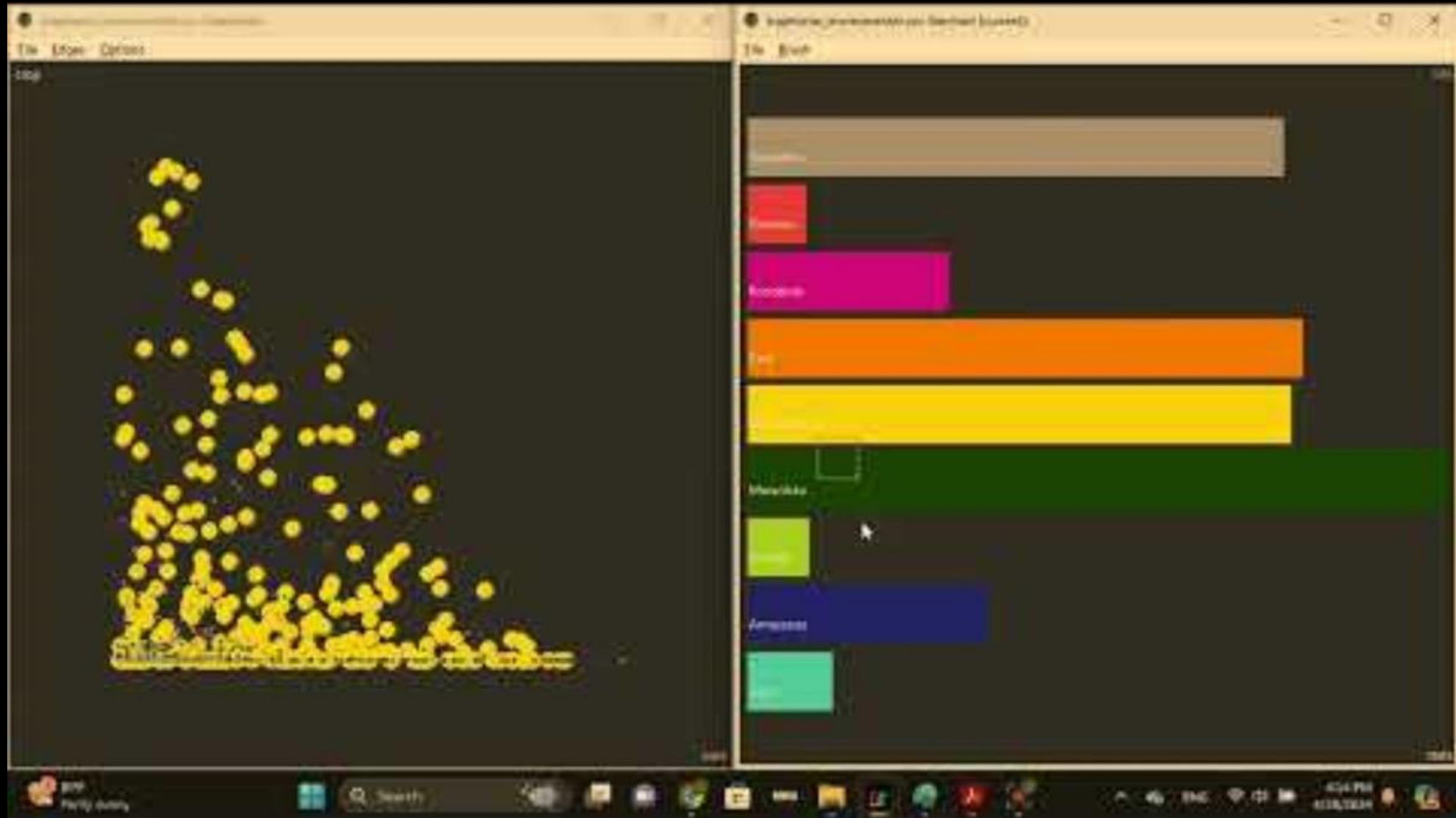
Unexpected Results:

- Negative correlation between secondary vegetation – (Core, Reforestation)
- No correlation between Crop – (Core, Reforestation)
- Road related with crop +

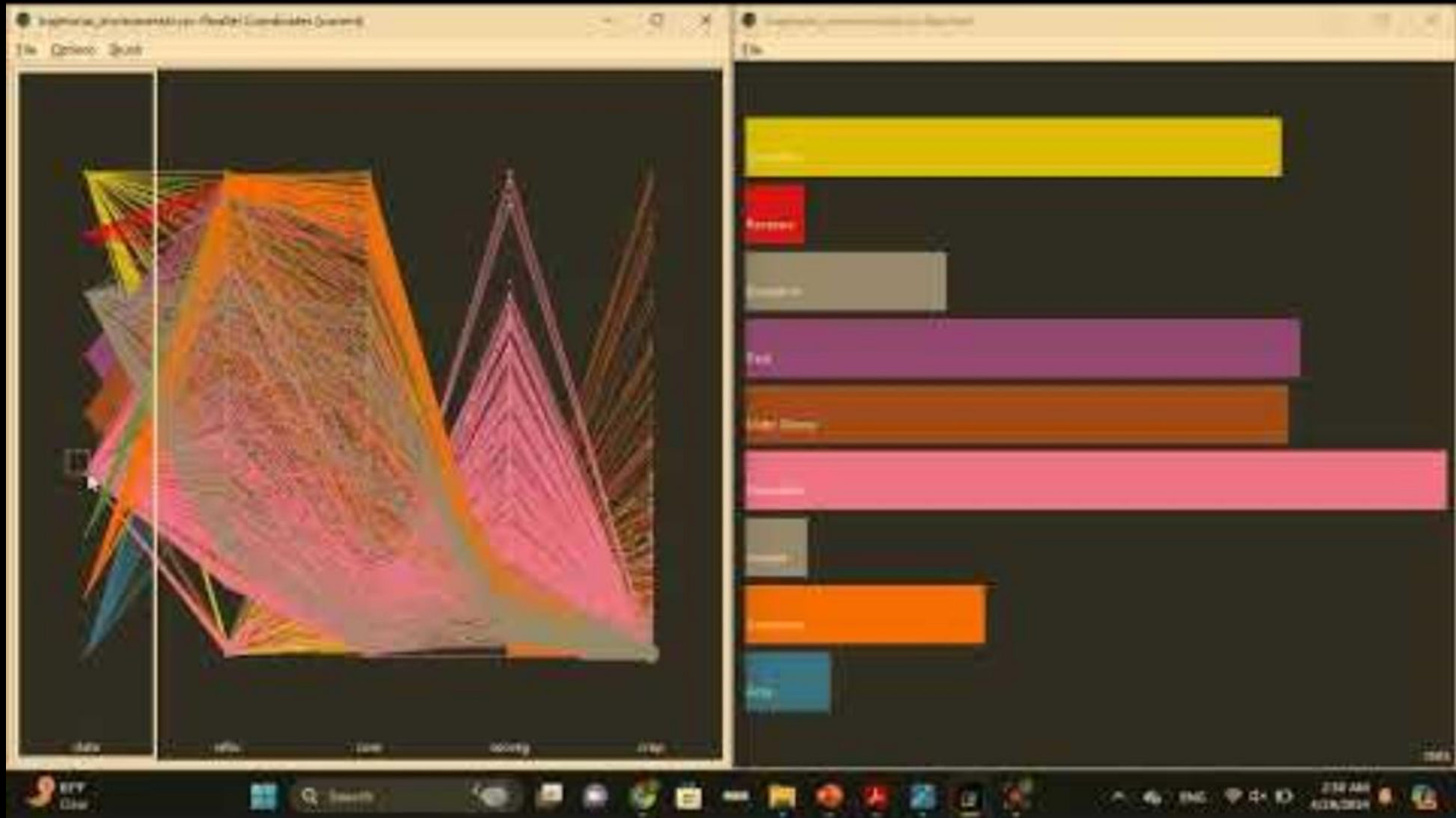
Scatterplots – Heteroscedasticity!



Crop vs Core

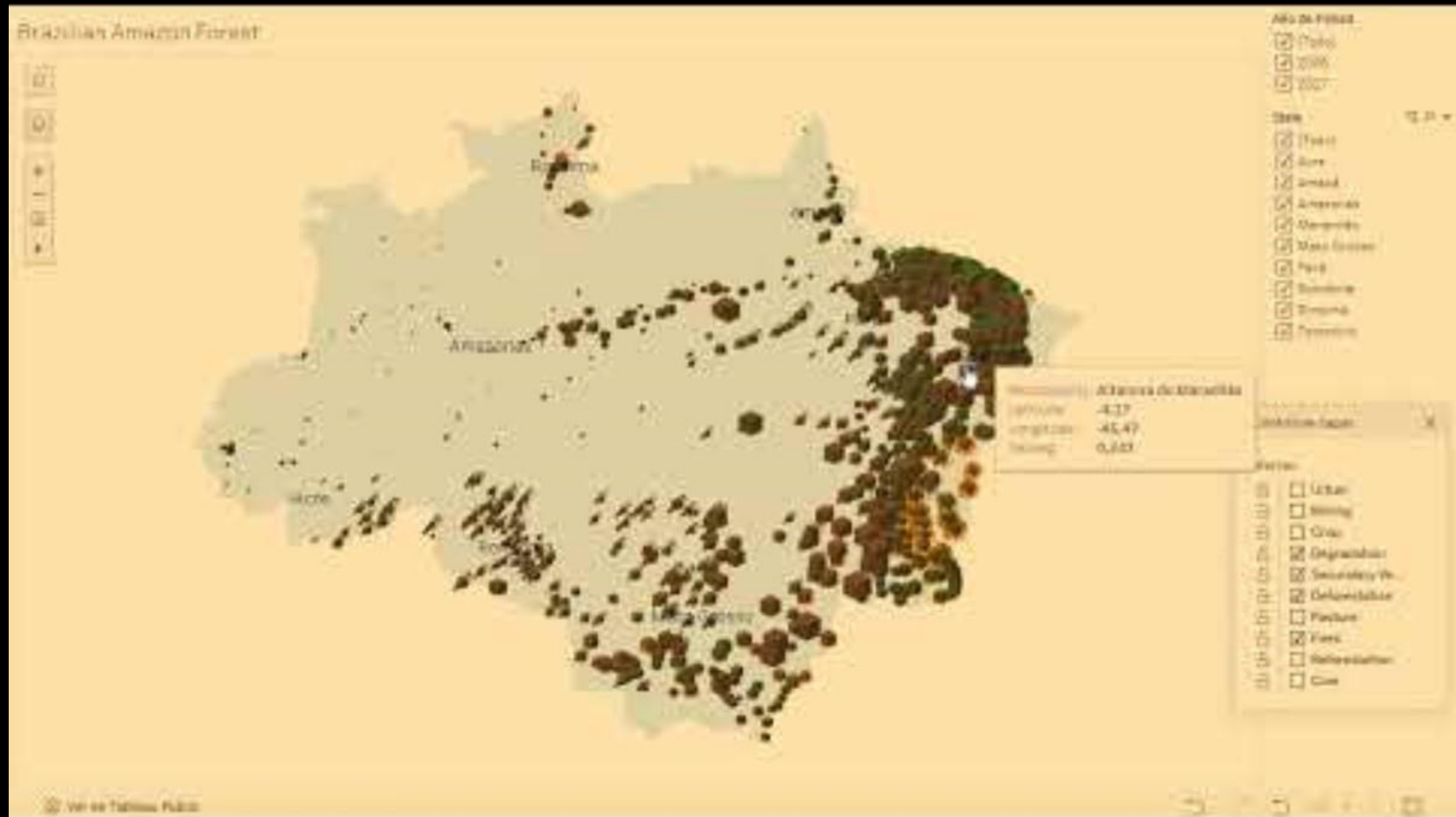


Parallel Coordinates

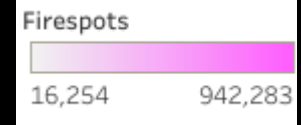
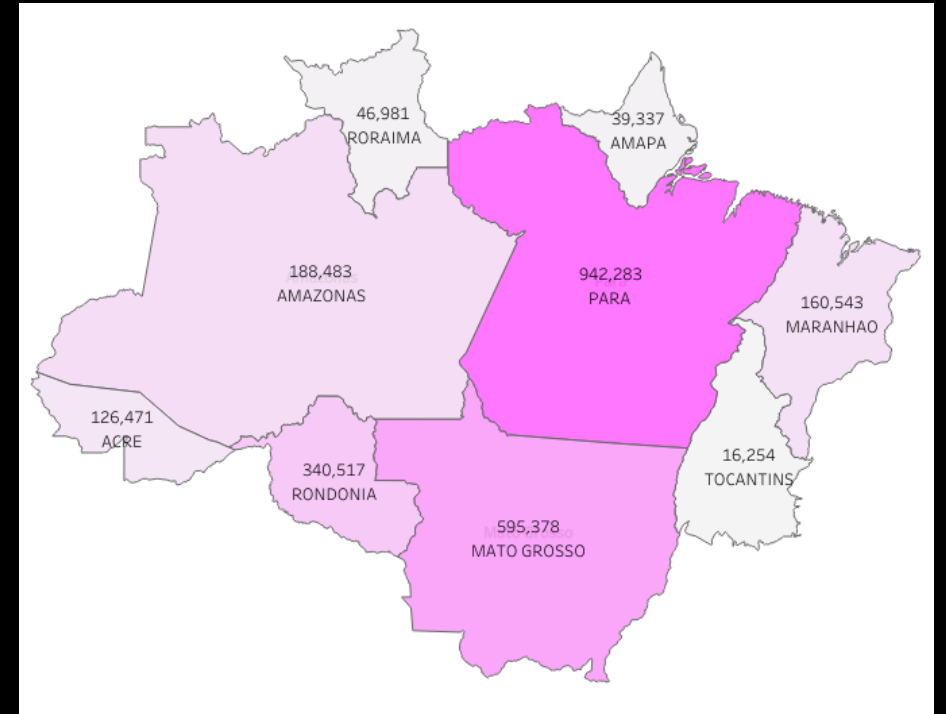
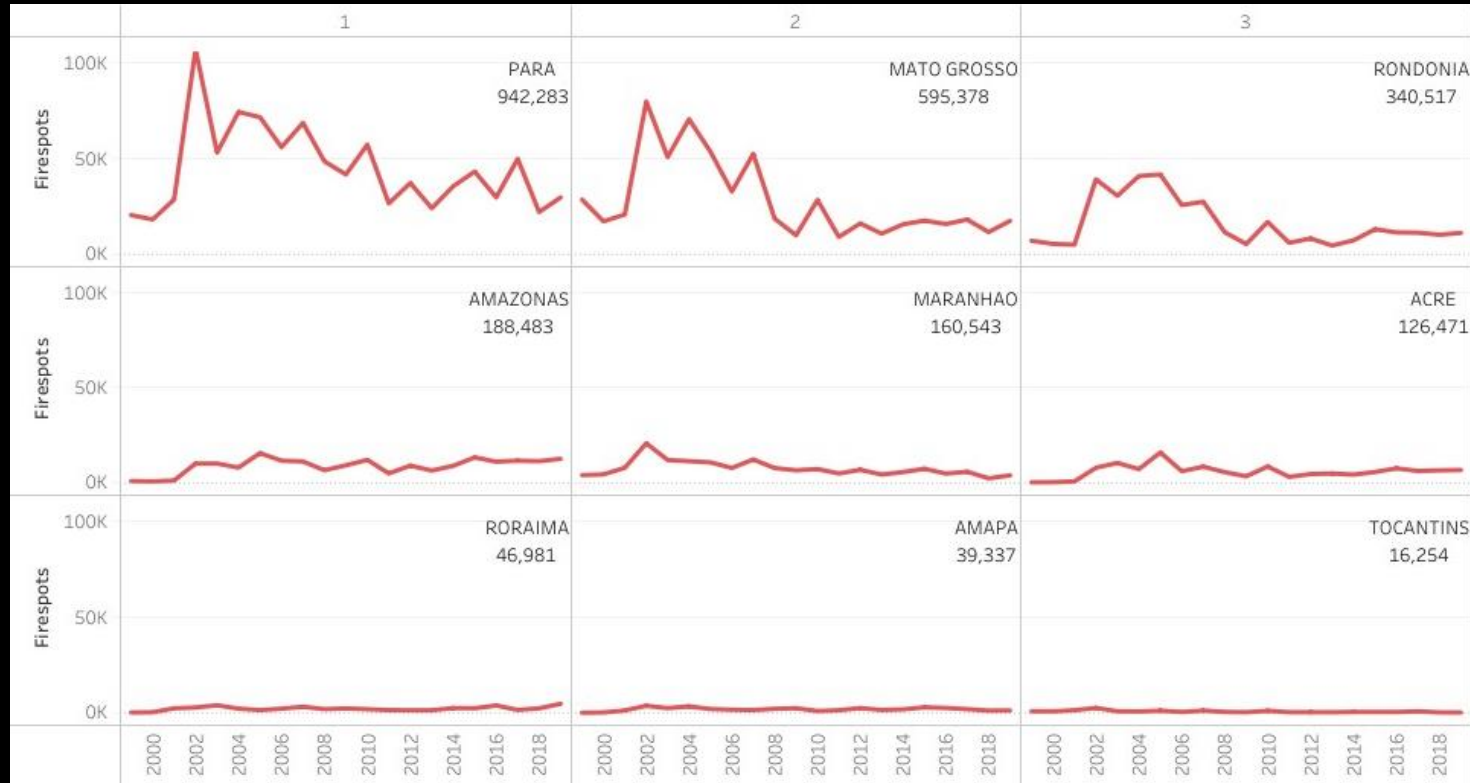


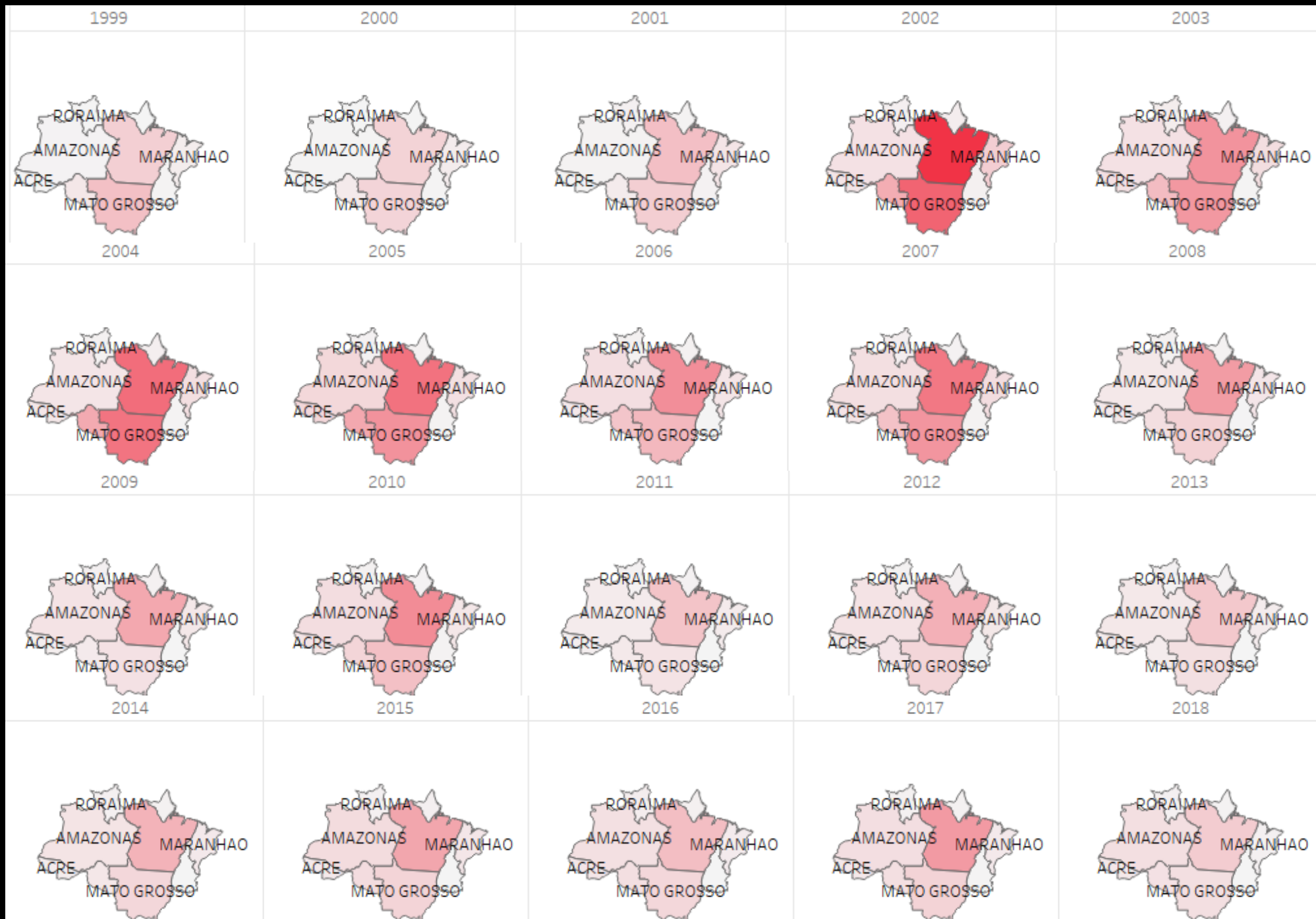
Maps:

[Tableau Link](#)



Fires – Time Series





[Tableau Link](#)

Results

- The most affected states were Para, Maranhao, Tocantis, and Mato Grosso.
- Comprehend how the fires change over the years by state.
- There is a correlation between fires and deforestation rates.
- Although the data didn't have economic or indigenous information, there was an increase in mining activities and population growth between 2006 and 2017.

Take Aways

- The different visualizations pointed me in the same direction but showed a much more complete picture of the data.
- The parallel coordinates in Ggobi are slow which makes the interaction difficult, but is a good tool to explore the relations between my variables. The palettes with a higher number of colors weren't color-blind friendly, I had to choose the colors manually.
- Tableau is a useful tool for map visualization and is public which makes it easily accessible, the calculated fields and the filters make Tableau more flexible.
- Minecraft has a wide catalog of forms to use in your maps!