



Project 2

Brazil Fires & Deforestation

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*The greatest library of nature on this earth...
burns.*



Topic

inspiration and rationale

We chose this topic due to the devastating impact these fires have on the Earth's largest rainforest and most biodiverse region, the Amazon. The implications of these fires drastically affects global climate, and scientists say the recent spate of fires reverse a long trend toward fewer fires and deforestation.

This recent spike of deforestation can bring this rainforest to an ecological “tipping point”, at which the entire ecosystem collapses, which in turn could cripple regional economies and cause the loss of many indigenous species.

Accumulating catastrophes have steered the public eye away from pressing matters such as this, so we chose to bring this danger to human life back to everyone's attention.

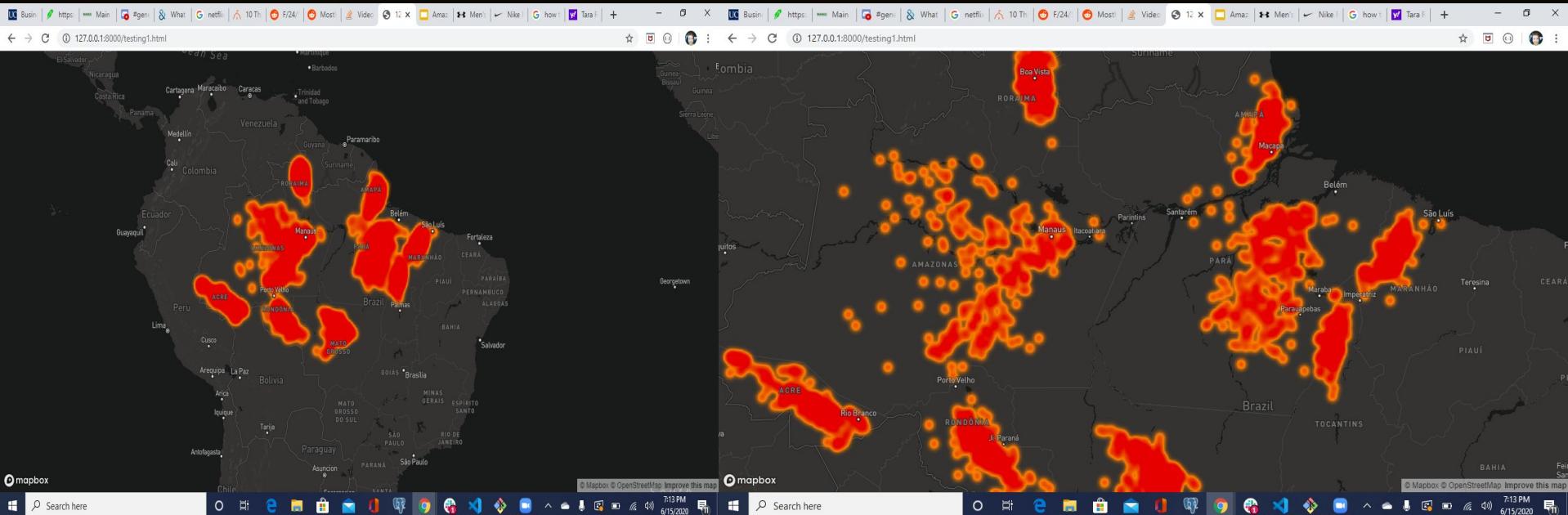
Datasets

- Kaggle
 - Brazil Fires Data
 - Over 2100 records
 - Brazil Deforestation Data
- IBGE - Brazilian Institute of Geography and Statistics
 - Brazil Cattle Data
- WorldBank
 - GDP (Brazil)
 - CO2 Emissions (Brazil)
- MDIC, SECEX, Abiec
 - Beef Exports (Brazil)

Code

- Javascript
- HTML/CSS
- D3
- Leaflet
- Chart.js
- MapBox
- Python
- MongoDB
- Flask

Heat Map - Ian

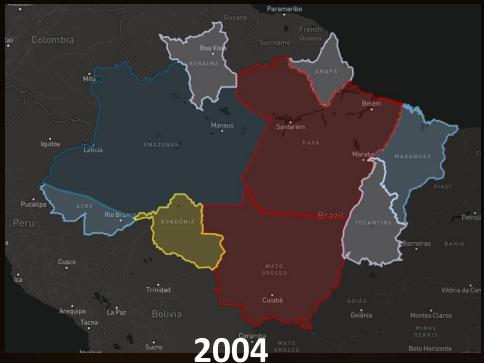


- Fires appear to be concentrated in northwestern part of Brazil
- Developed areas have no signs of fires

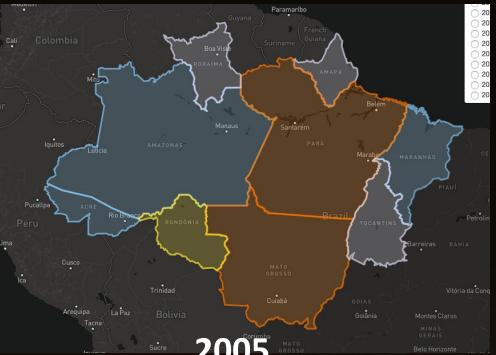
Deforestation

- DEFINITION*: the permanent removal of trees to make room for something besides forest.
 - can include clearing the land for agriculture or grazing, or using the timber for fuel, construction or manufacturing.
 - Human-lit 🔥's are commonly used for agricultural purposes:
 - First timber is harvested, then remaining vegetation is burned to make way for crops such as soy or cattle grazing.
- 🔥🔥🔥 are just one contributor to overall *deforestation*, therefore forest 🔥's and deforestation rates don't always correlate directly
- Today most deforestation is occurring in the tropics

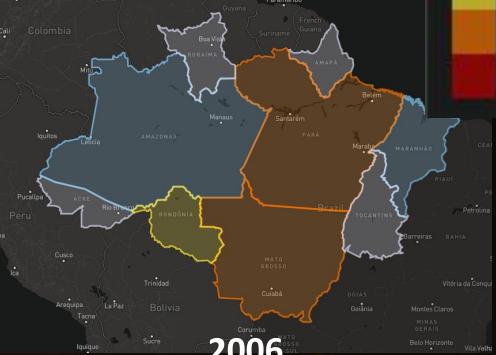
Brazil State Map - Alexander



2004



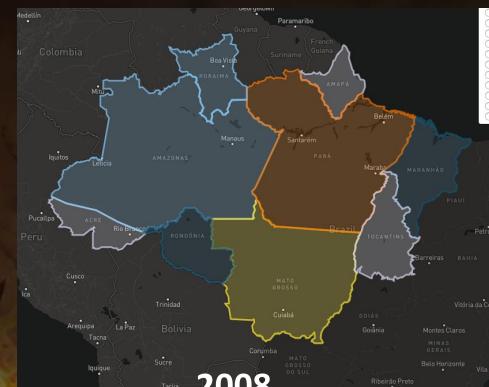
2005



2006



2007

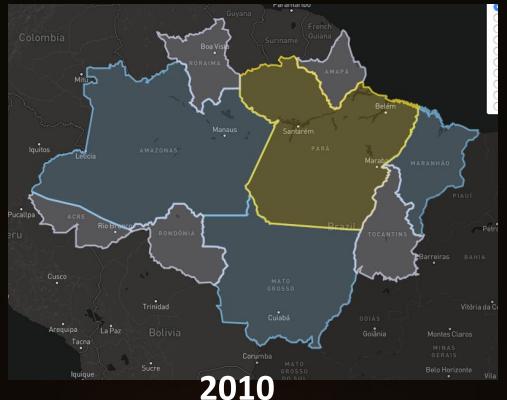


2008

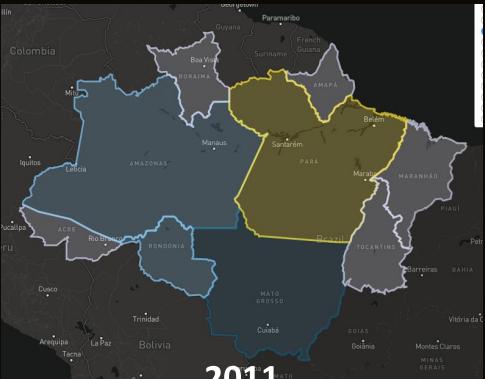


2009

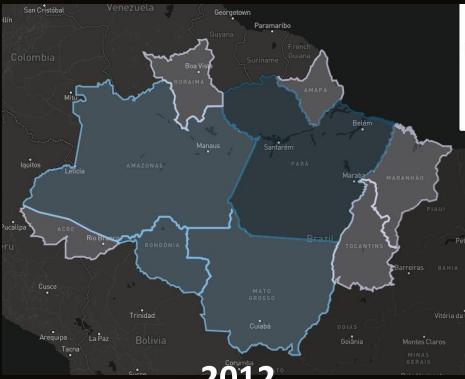




2010



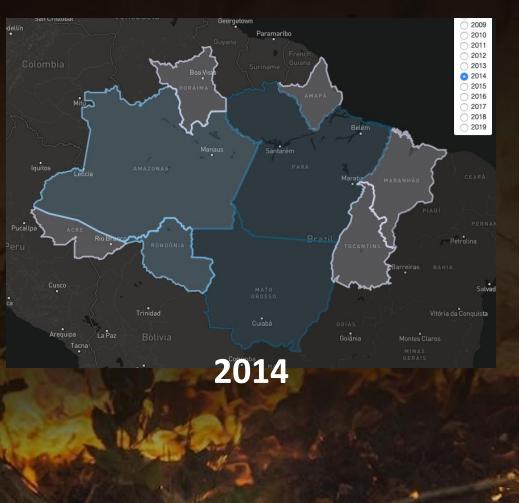
2011



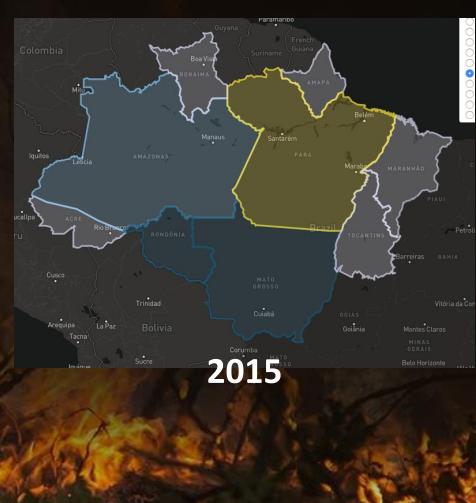
2012



2013

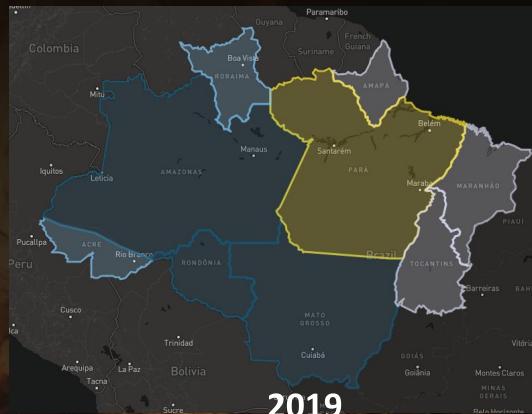
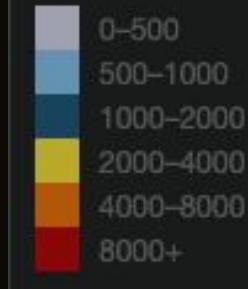
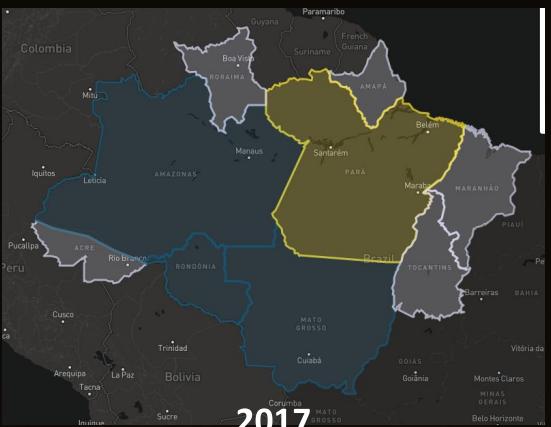
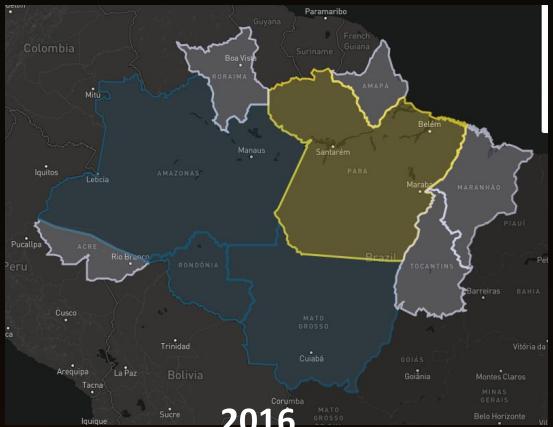


2014



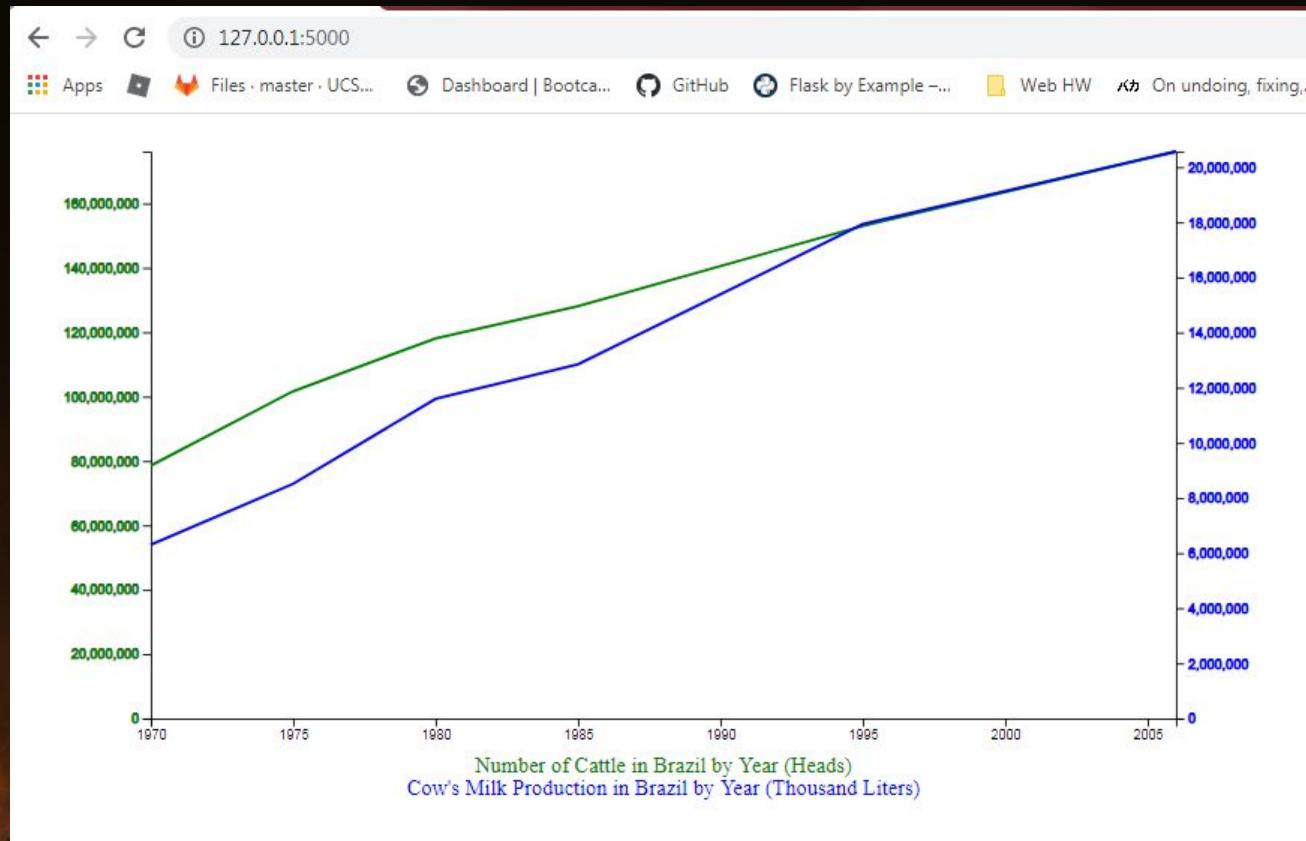
2015



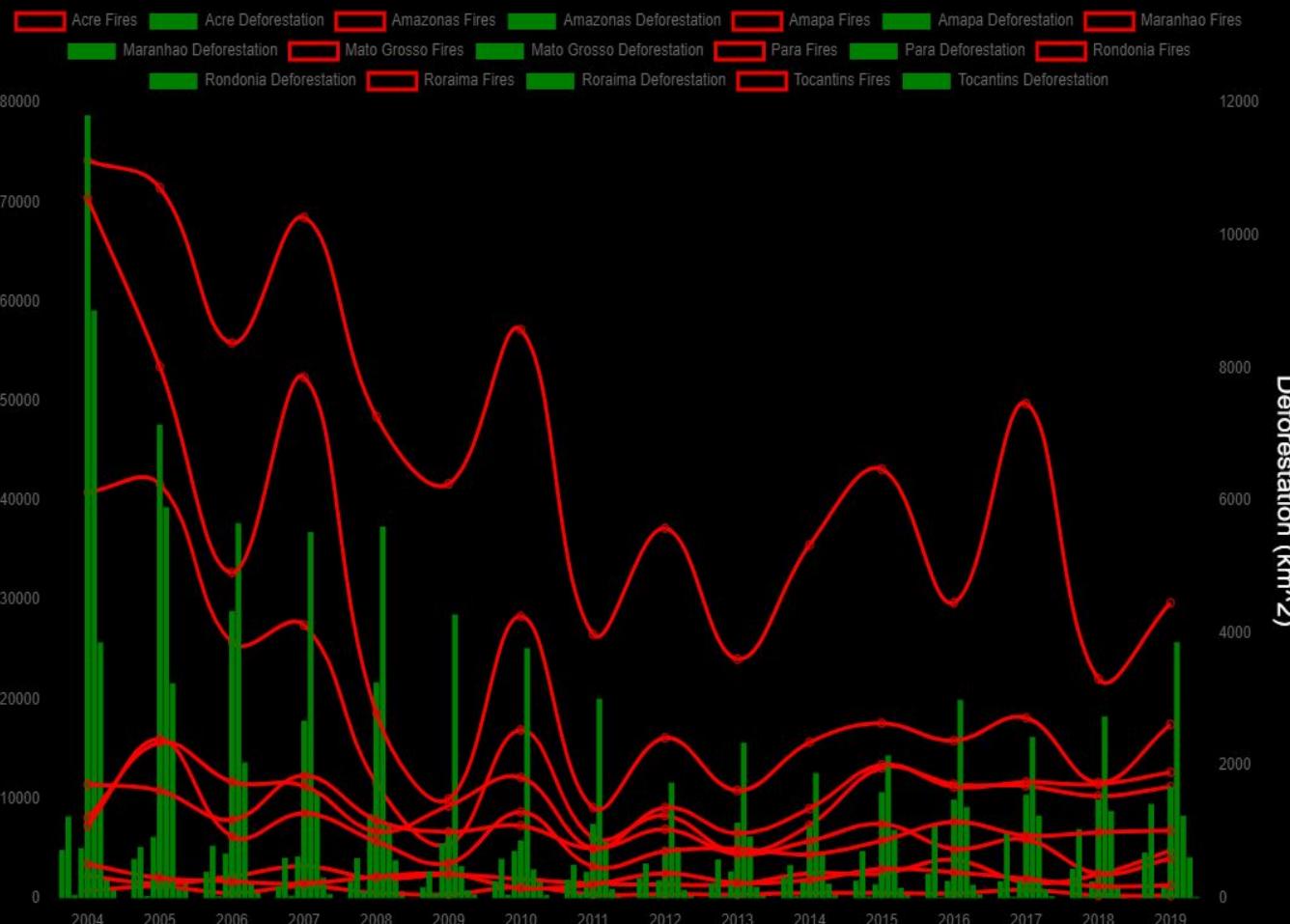


Flask/MongoDB & Cattle Multiline/Multiaxis Graph - Ivy

Deforestation in Brazil is largely due to expansion of agriculture, especially land-intensive cattle farming.



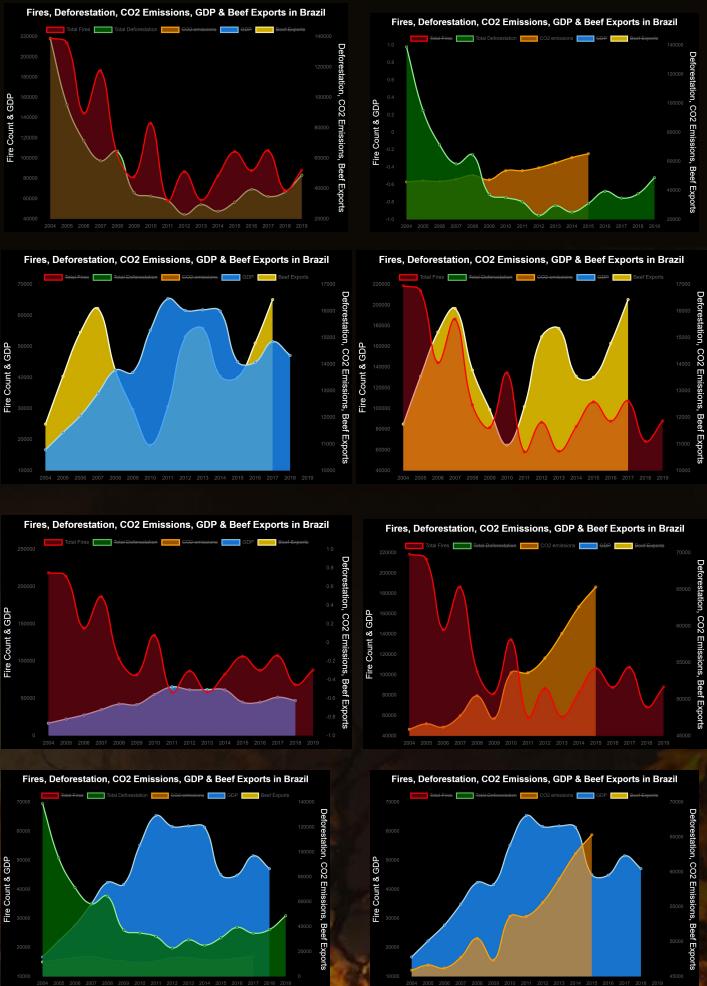
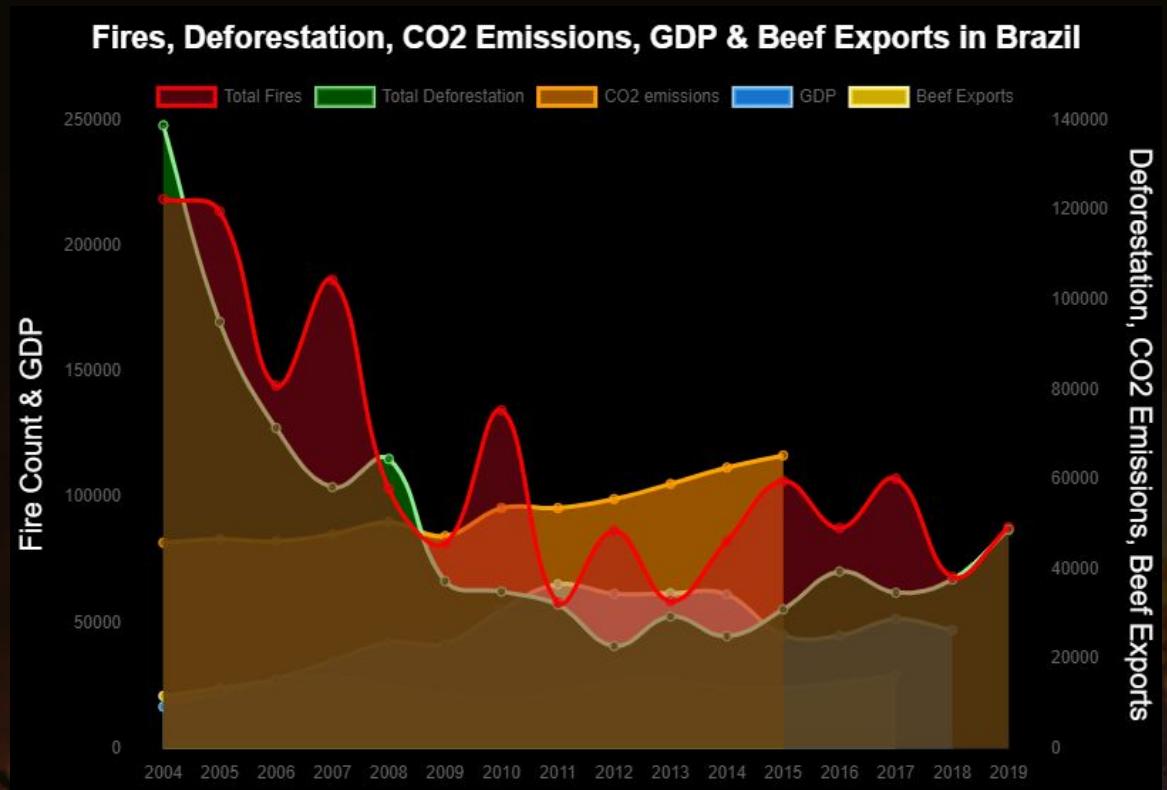
Fires and Deforestation in Brazilian Amazon



Fires vs. Deforestation per State / Year - Trevor

What is interesting from this chart, is that you can see a steady decline in deforestation, and even fires, in most of the Brazilian states since 2004... despite scientist's remarks.

Total Fires, Deforestation, CO2 Emissions, GDP & Beef Exports (2004-2019 sorta...)



Conclusions

- Contrary to recent statements made by scientists, in context, overall deforestation and the amount of fires are not increasing at the dangerous rate that has been reported.
- Certain years take drastic swings, but overall there is a negative trend seen from 2004-2019.
- State summed fires and deforestation are not as correlated as one might assume.
- Although fire counts seem to go down since 2004, CO2 emissions seem to be rising at an alarming rate.
- GDP and beef exports are very correlated, but GDP and deforestation are not.

