

Predicting Elephant Poaching

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DATA 606 Capstone in Data Science



400,000

African elephants today¹

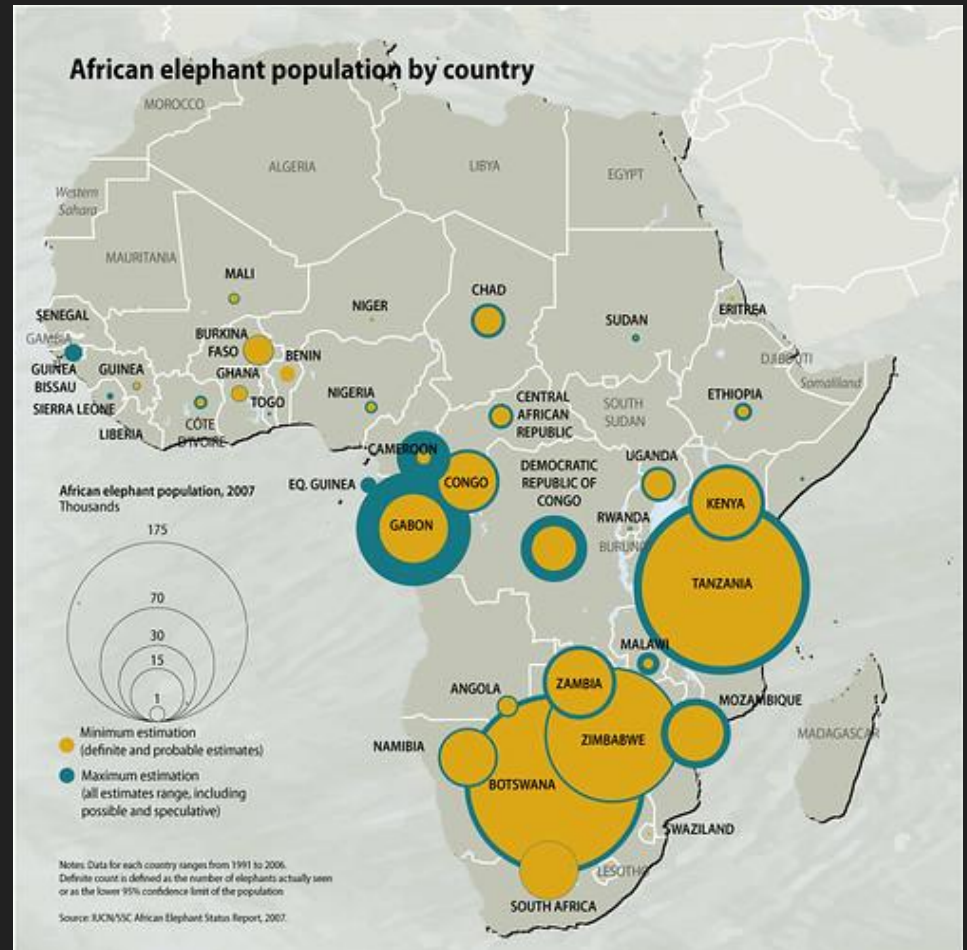
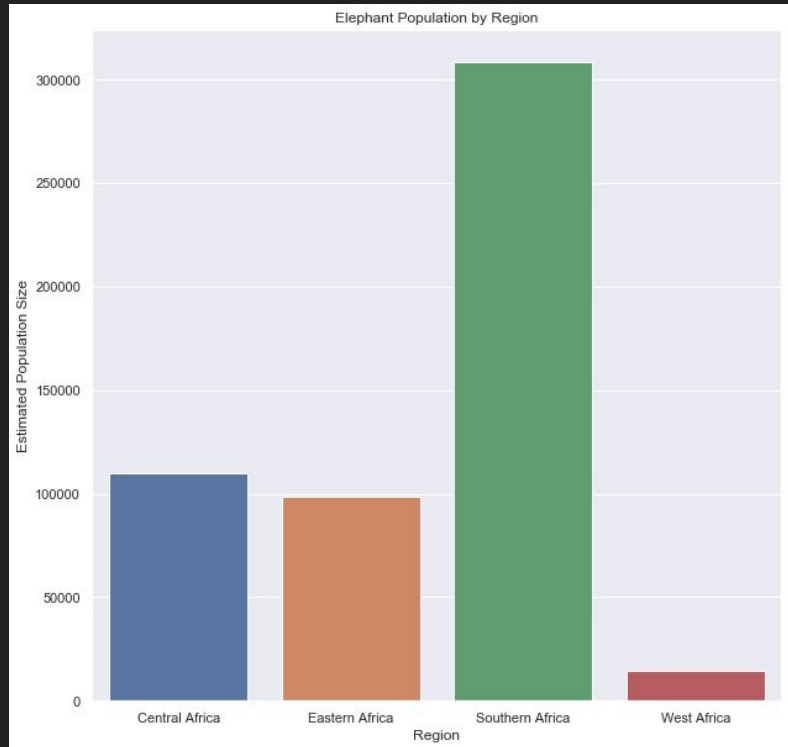


Image courtesy of Riccardo Pravettoni: <https://www.grida.no/resources/8029>

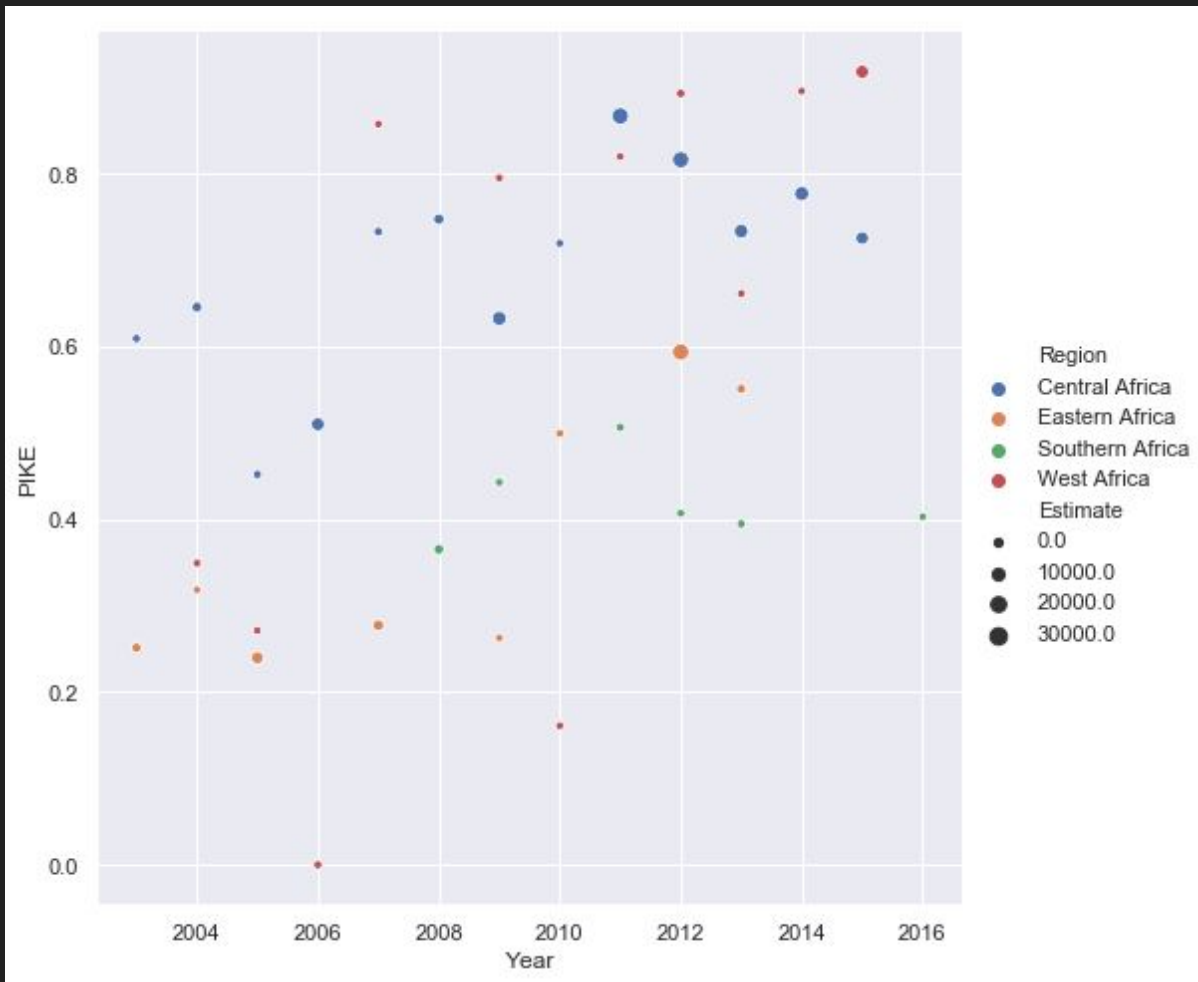
¹Thouless, Christopher, et al. "African elephant status report 2016." *Occasional Paper Series of the IUCN Species Survival Commission* 60 (2016).

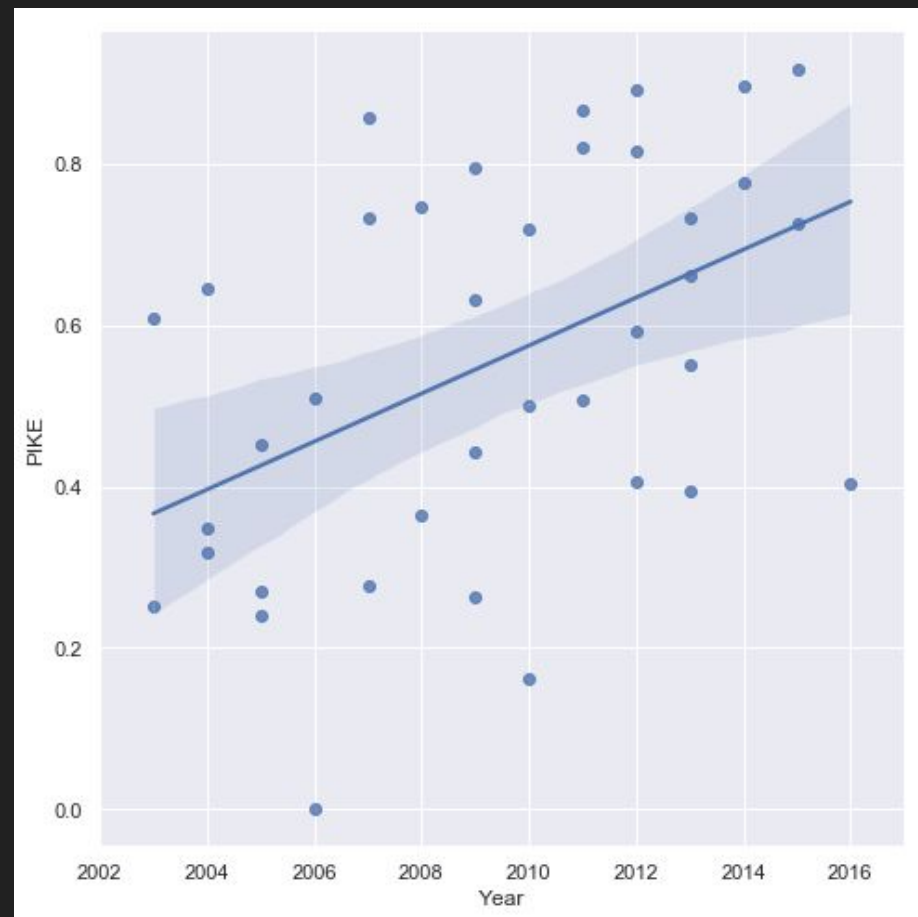
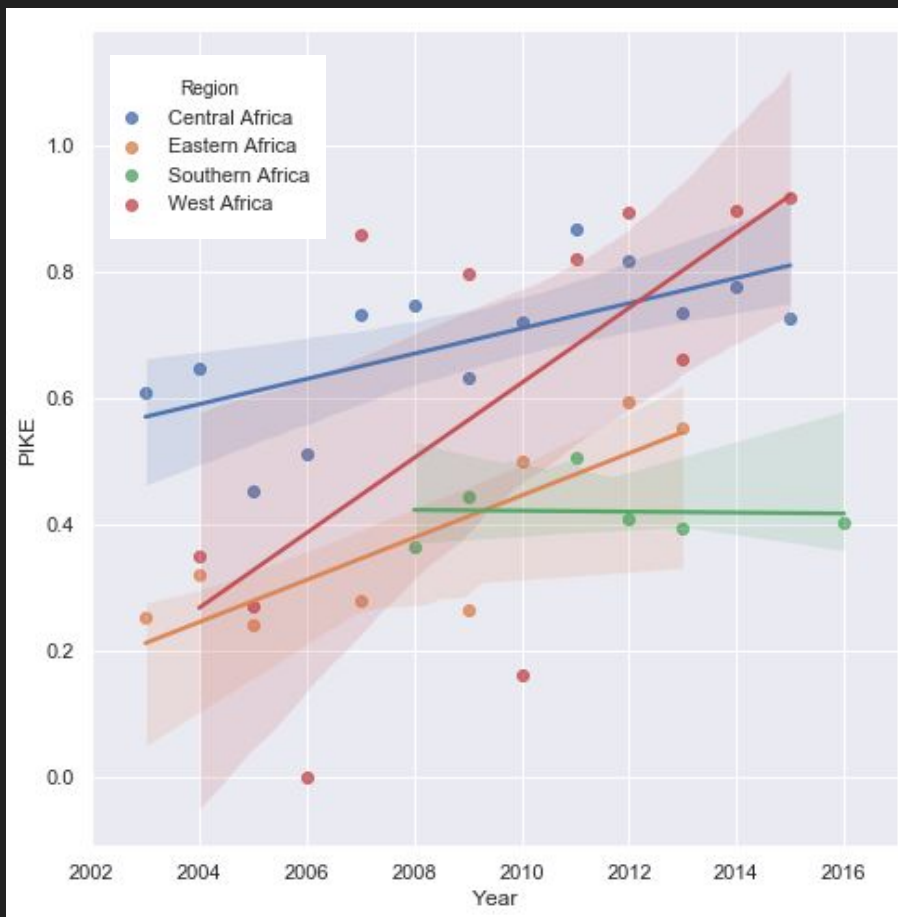
Measuring Poaching

Proportion of Illegally Killed Elephants (PIKE)²

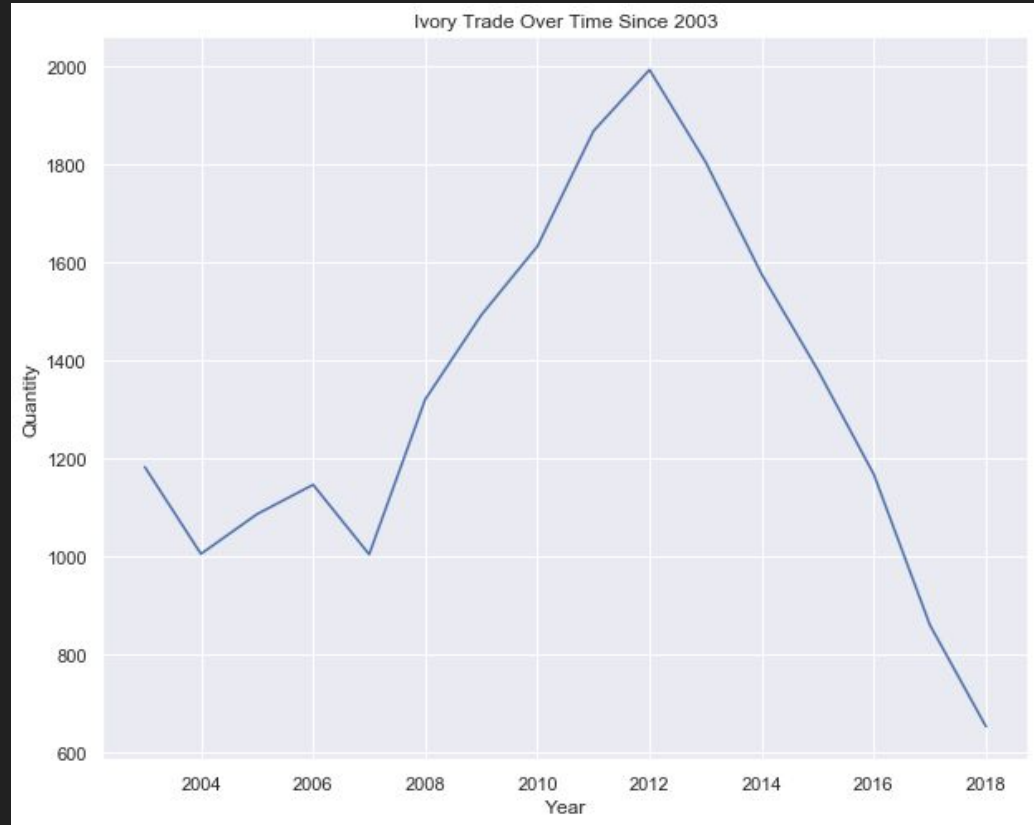
- Ratio of illegally killed elephants found to total carcasses found
- WHY?
 - Not influenced by population size
 - Standardized metric for all reporting sites

²Convention on International Trade in Endangered Species of Wild Fauna and Flora. "New report highlights continued threat to African elephants from poaching." *CITES Press Release*. 10 May 2019.





Ivory Trade

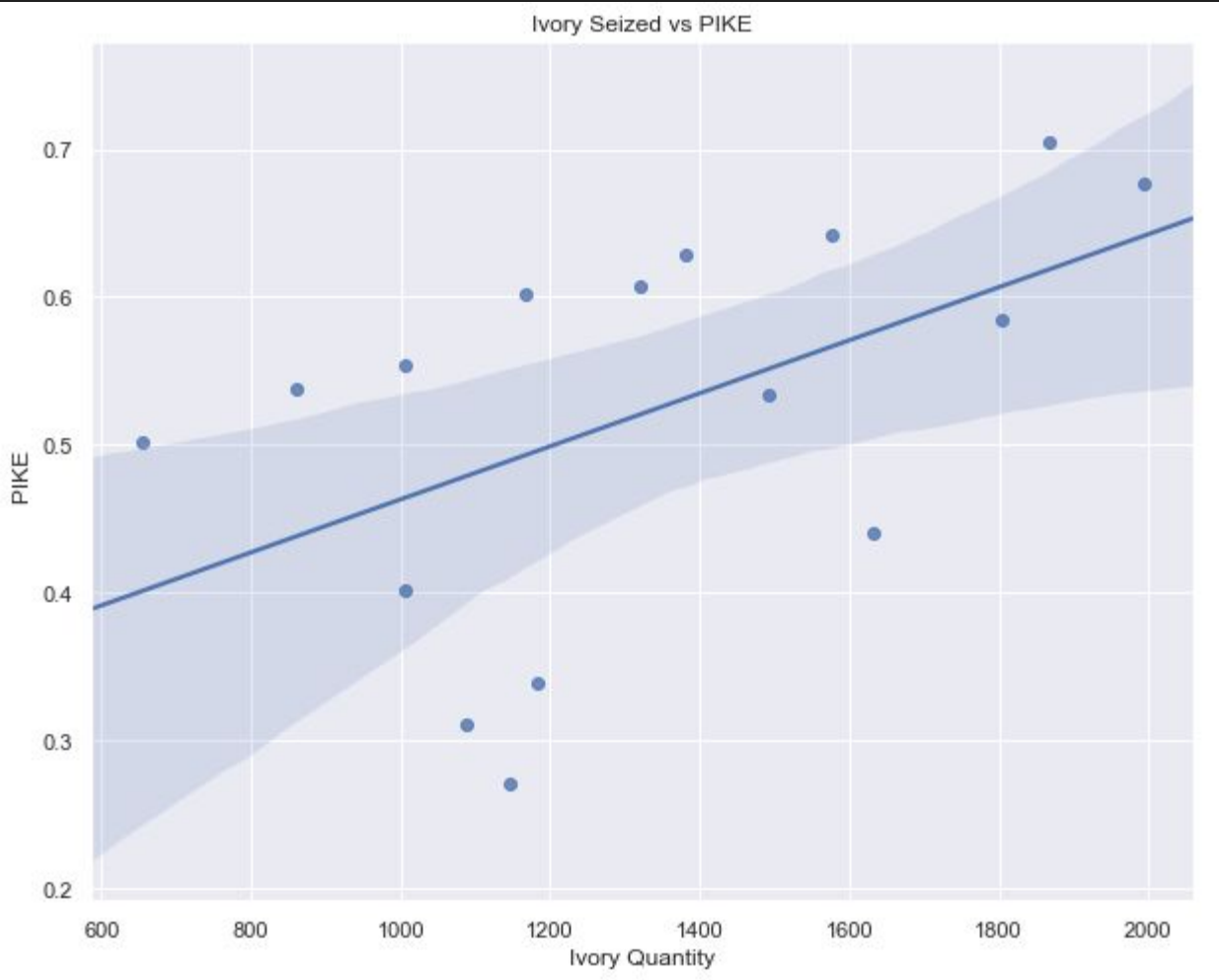


- Decreasing since 2012 due to large-scale law enforcement action preventing export/import
- Ivory burning in elephant-populous countries

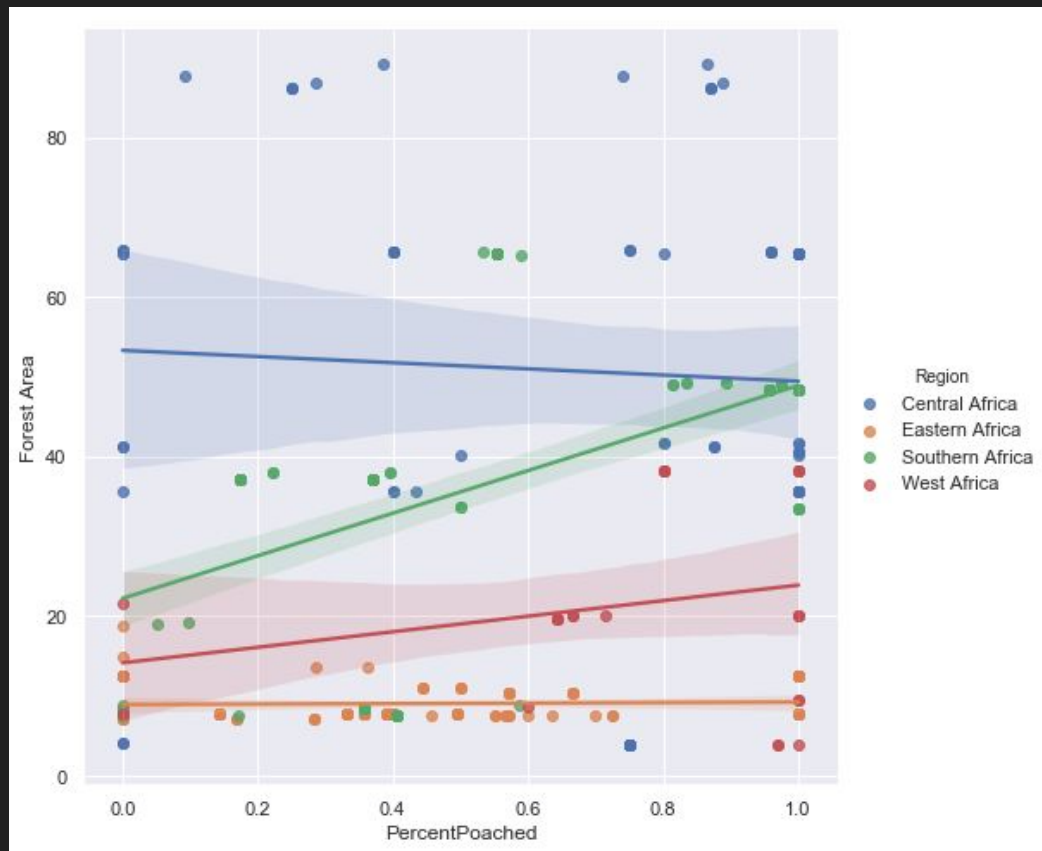
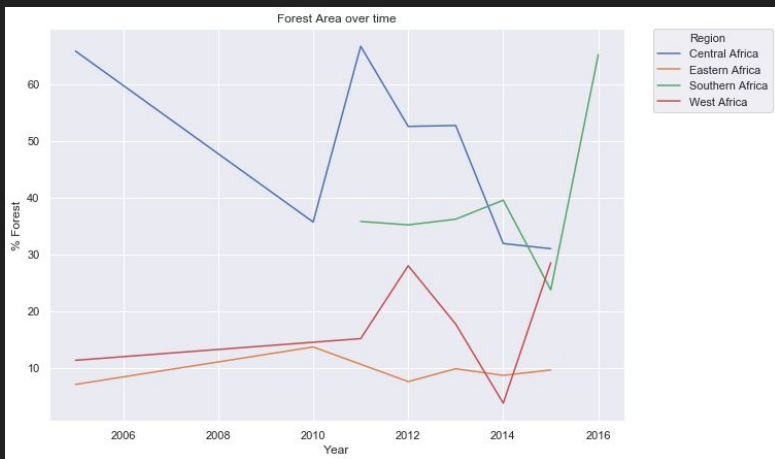


Apparent correlation between ivory seizure and PIKE

Validity of these data points needs to be examined

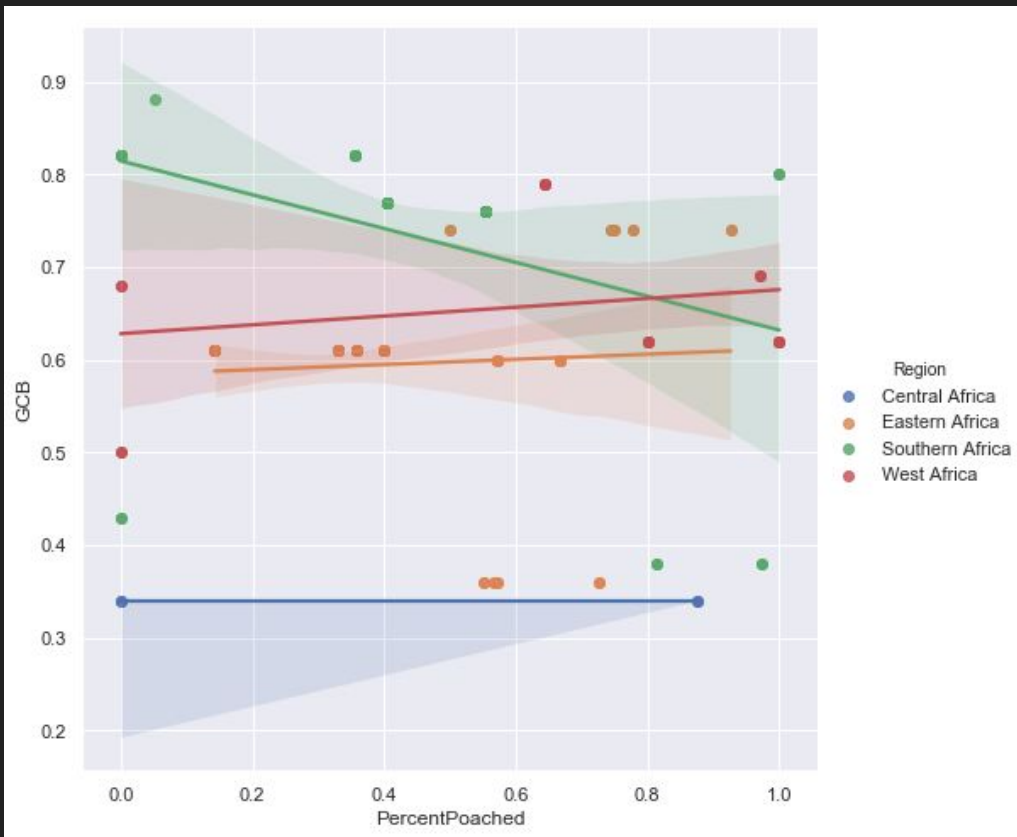
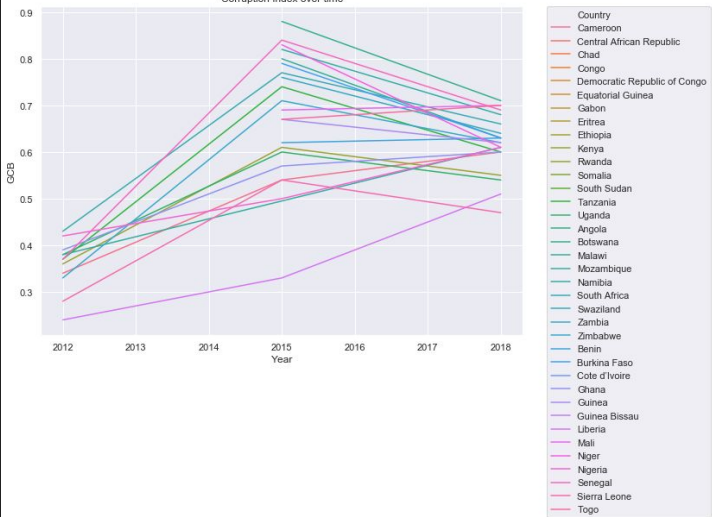


Forest Area

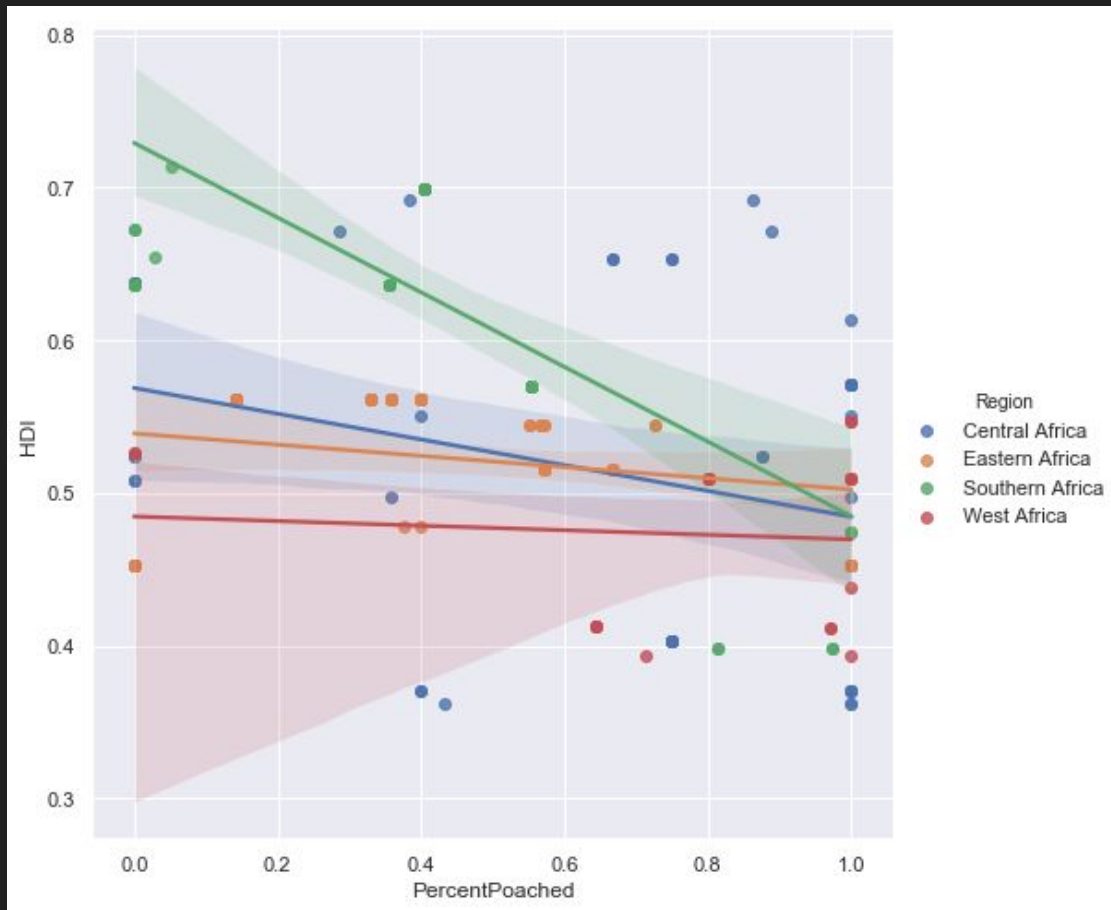
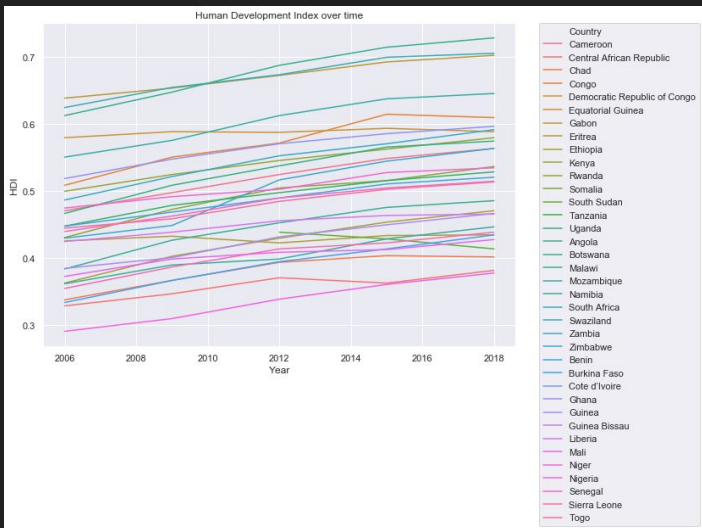


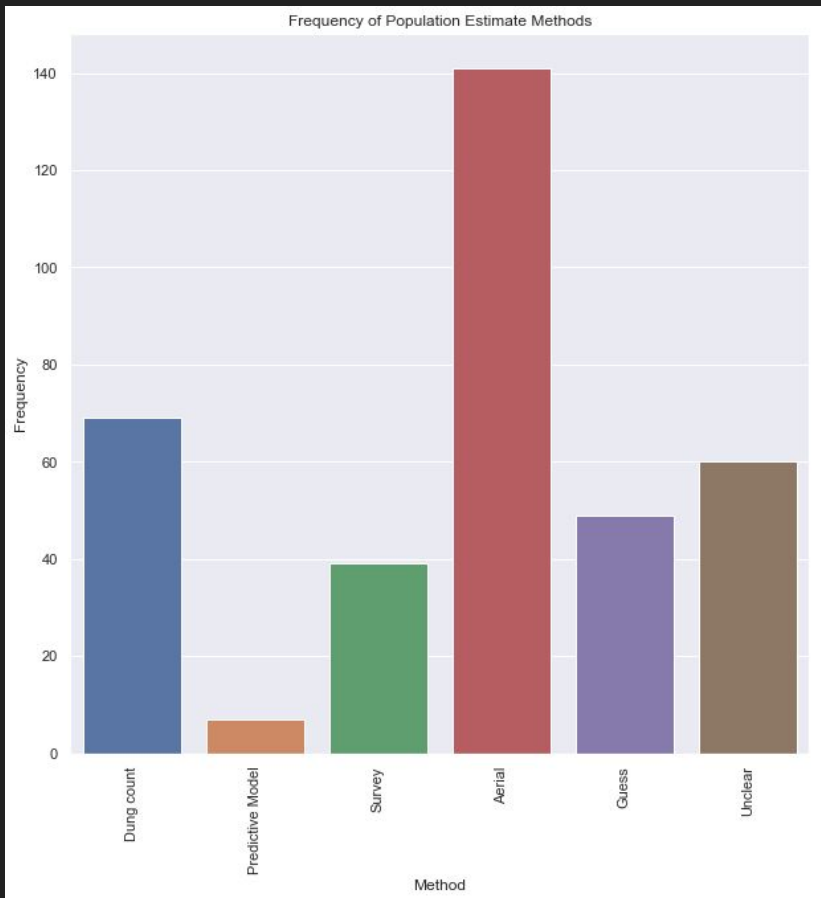
Corruption

Corruption index over time



Development





Next Steps

- Further exploration of possible indicators
- Bias in how the data is collected
 - Particularly in elephant population and PIKE
 - Accounting for this bias by working backwards

