Bird Extinction – Are we the Cause?

By:

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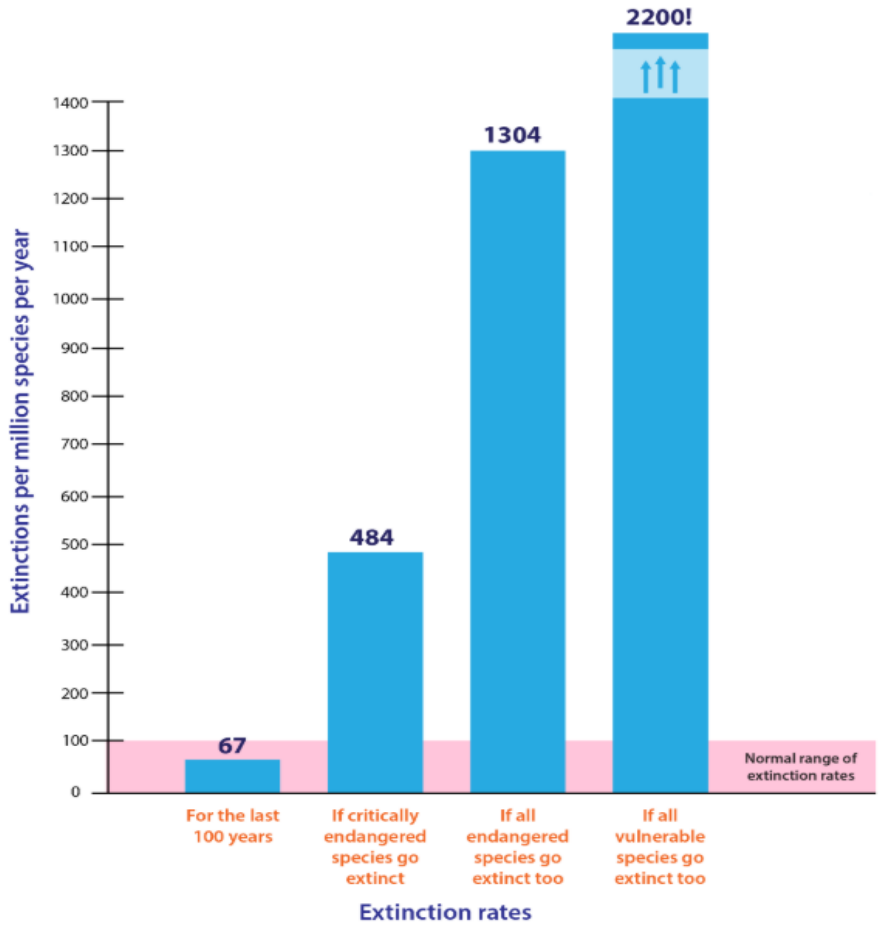
Bird – Extinction Facts

- ~ 9975 documented species of birds
- Current bird extinction rate ~ 1.3% i.e. **154 species** of birds has "**disappeared**"
- Nearly **3 Billion birds lost** in US and Canada alone since 1970

Source: https://www.scientificamerican.com/article/bird-extinction-estimates/
https://www.birds.cornell.edu/home/bring-birds-back

Birds – Extinction Rate



Source: https://evolution.berkeley.edu/evolibrary/article/0_0_0/massextinct_10

Birds – Extinction Factors

Climate Change

- Global Temperature **Increase 1.9 Degree Fahrenheit**
- Arctic Ice **Decrease 12.8% per Decade**
- Sea Level **Increase 3.3mm per Year**
- CO2 **Increase 412 PPM**

Fact Source: https://climate.nasa.gov/

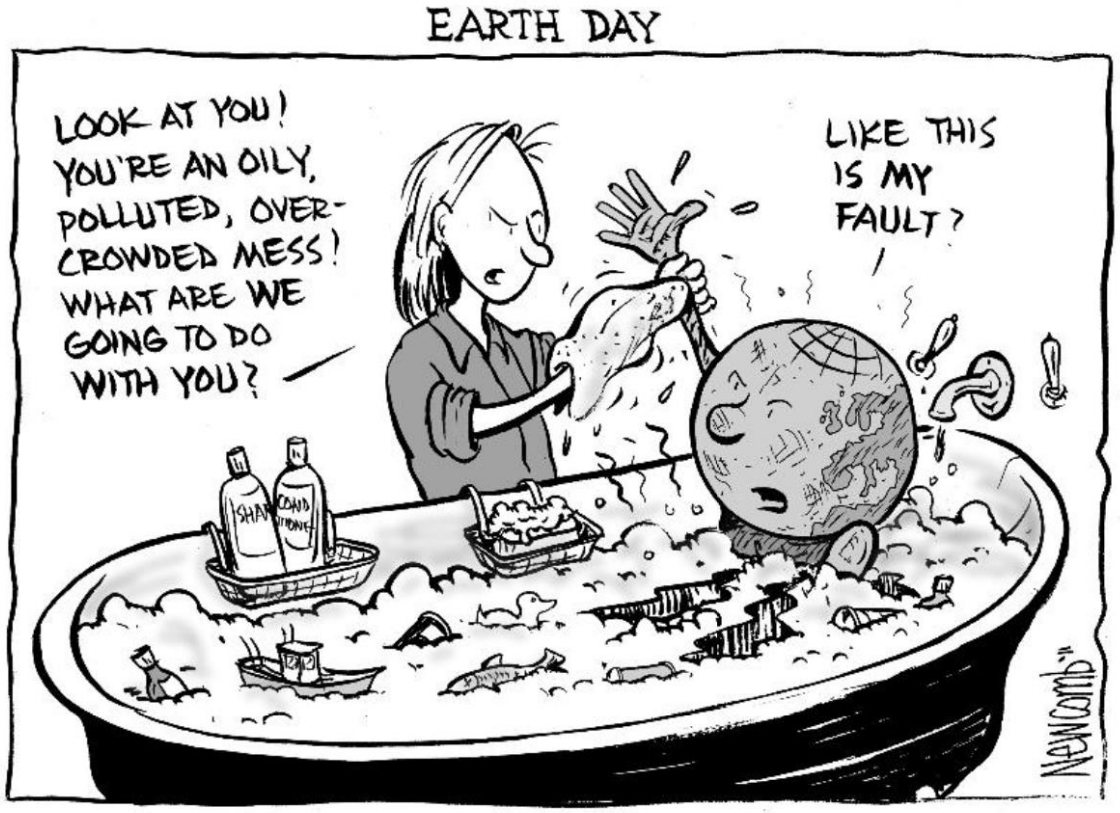
Source: shutterstock.com

Birds – Extinction Factors

Pollution

- CO2 major greenhouse gas resulting in Global warming

- Globally CO2 Level raised from 2 Billion Tonnes to **36 Billon Tones**



Fact Source: https://www.co2.earth/global-co2-emissions
https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions

Source: populationmedia.org

Birds – Extinction Factors

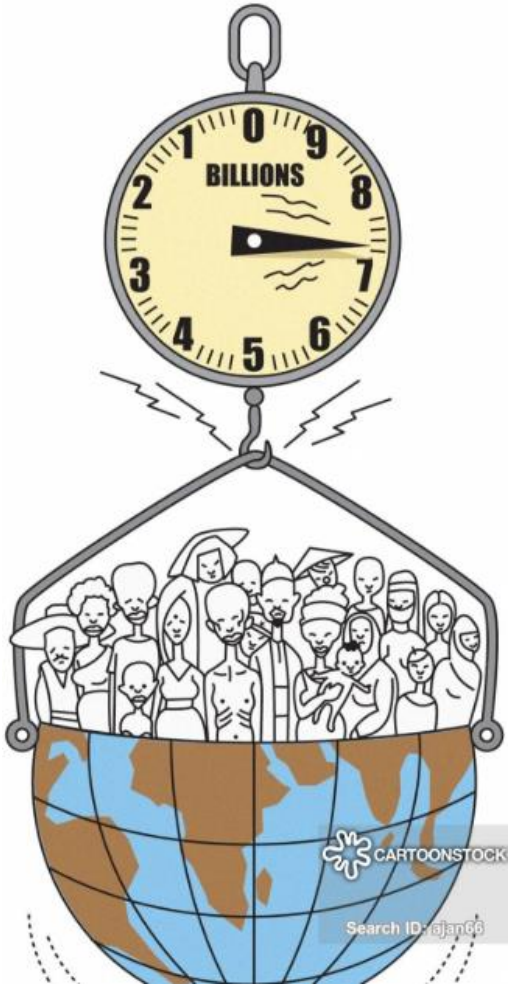
Population

- Current population growth rate is

1.1 % annually

- **68% of population** globally living

in Urban regions



Source: cartoonstock.com

Fact Source: https://www.un.org/en/sections/issues-depth/population/
https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html

Project Bird: Datasets

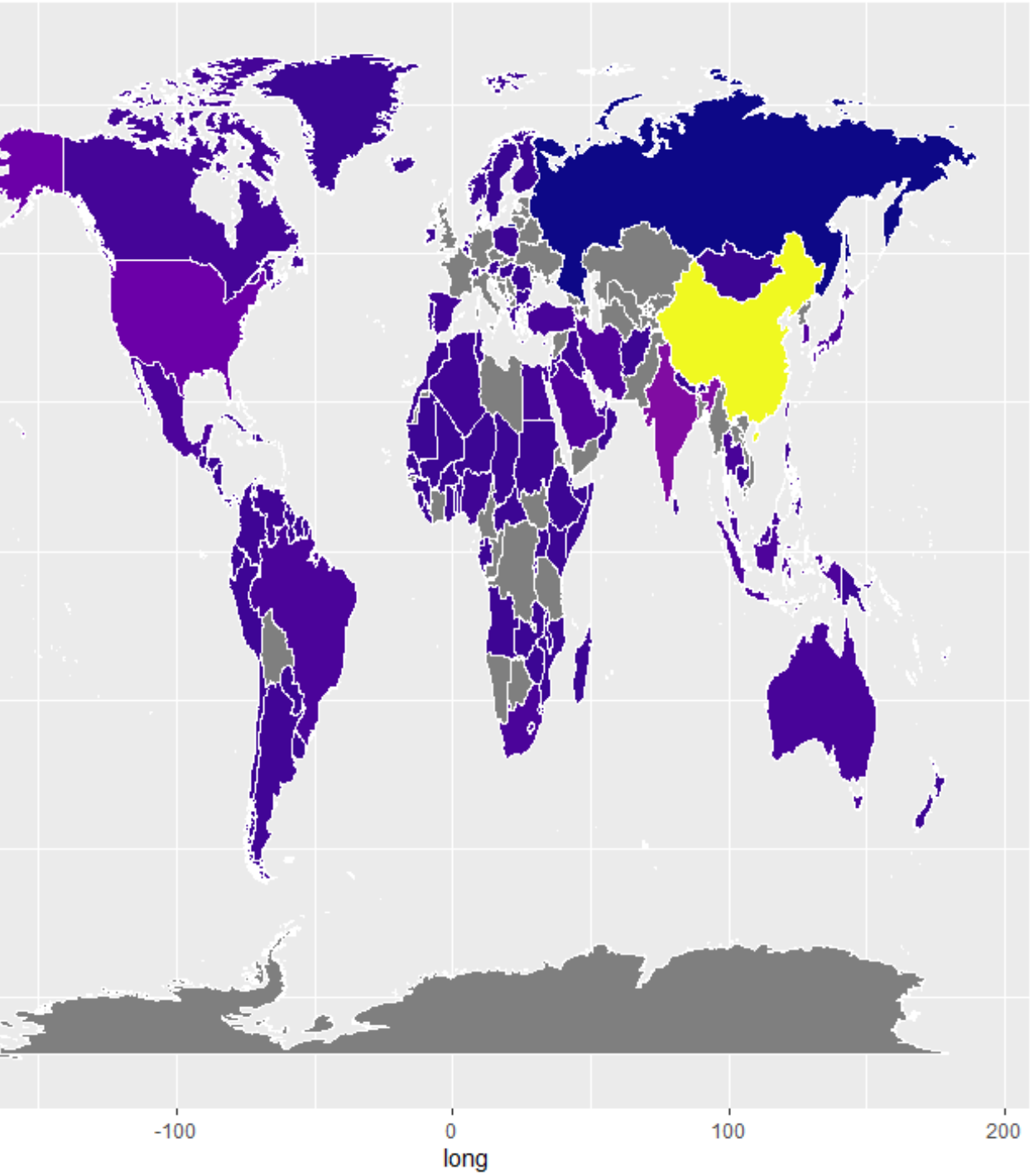
- **Bird Count By Species Over the Year**

Web scrapped from ebirds.org CornellLab of Ornithology

Web scraped Species and its Count – from 1800 till Date

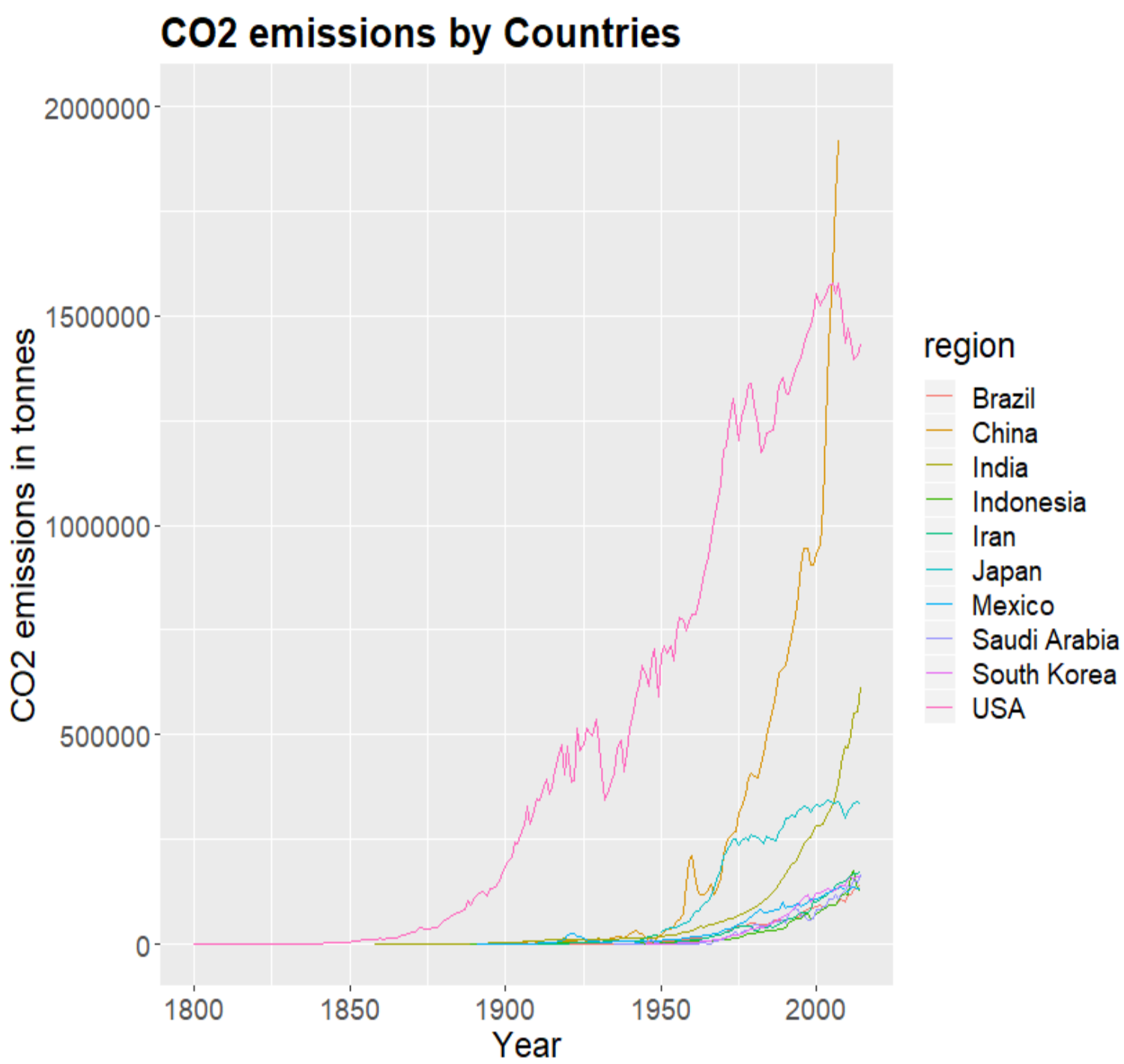
- **Carbon Emission** Dataset – 1940 till 2014
- **World Temperature** Dataset – 1880 till Date
- **Population** Dataset with Urbanized Region– 1960 till 2018

- ISO 3166 Country and State Code
- Latitude and Longitude Data



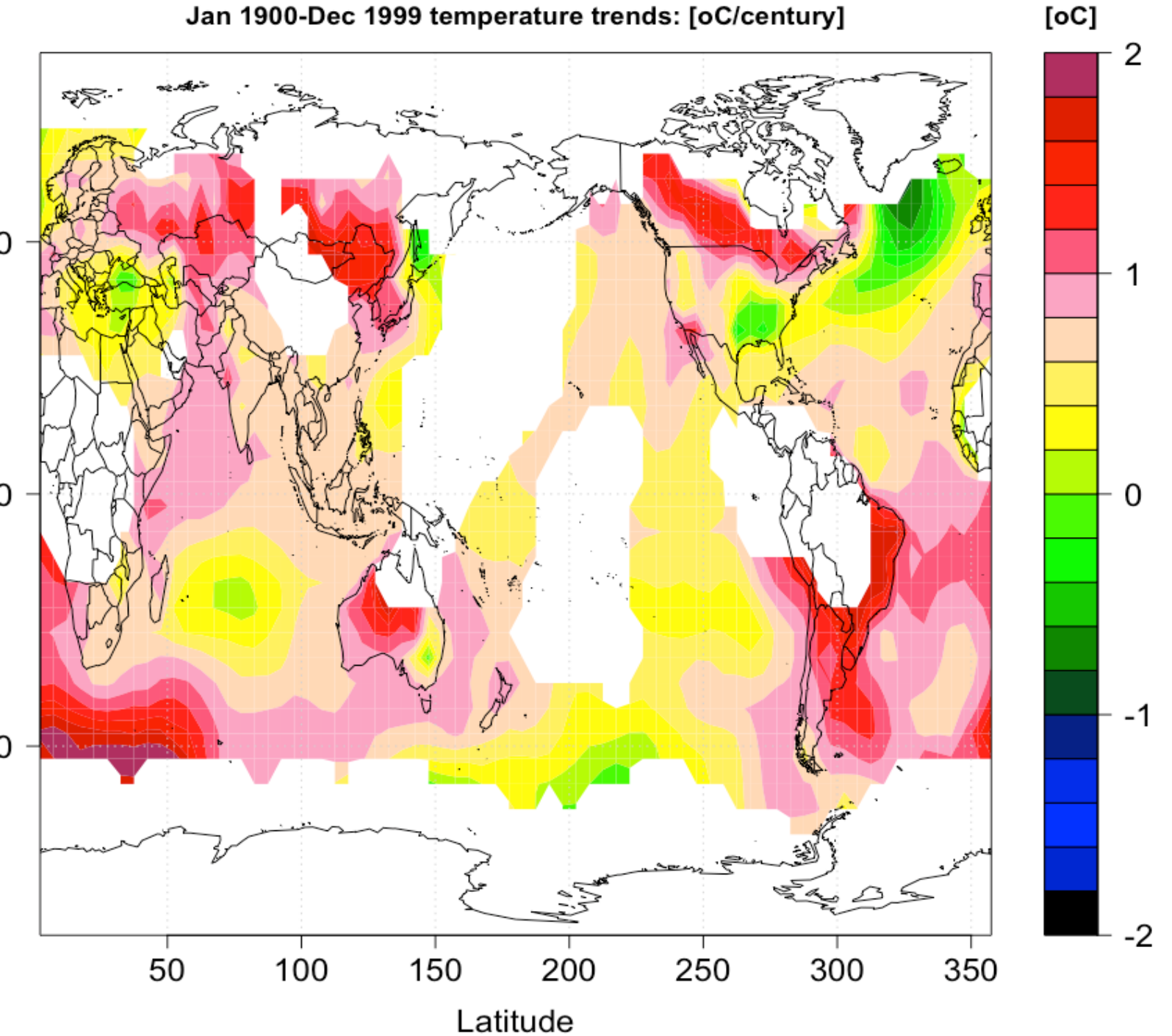
Pollution Data

Countries with C02 emission index across the globe



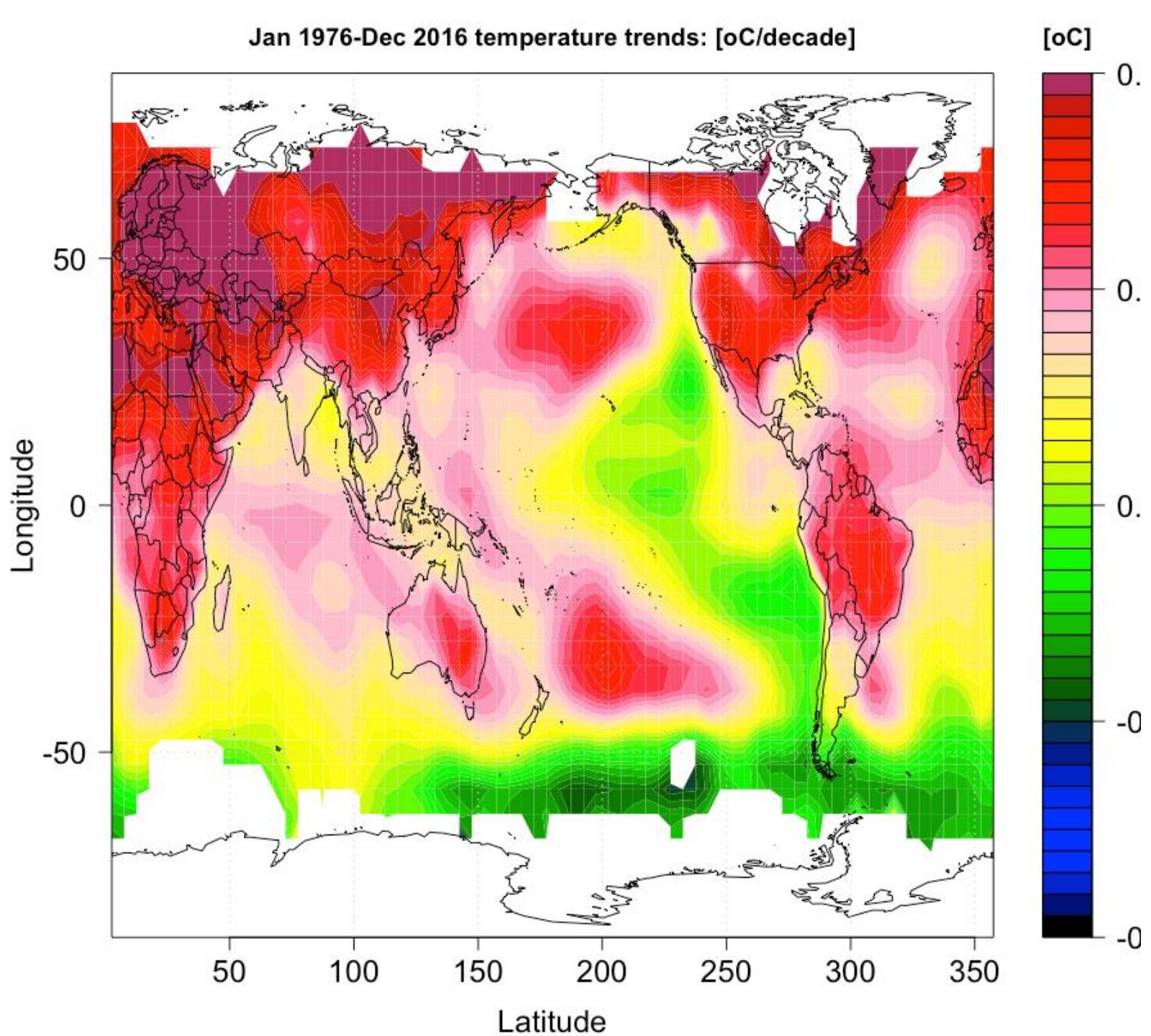
Pollution Data

Top 10 Countries with CO2 Emission



World Temperature Trends(1990-1999)

- Temperature Variation Across the Globe

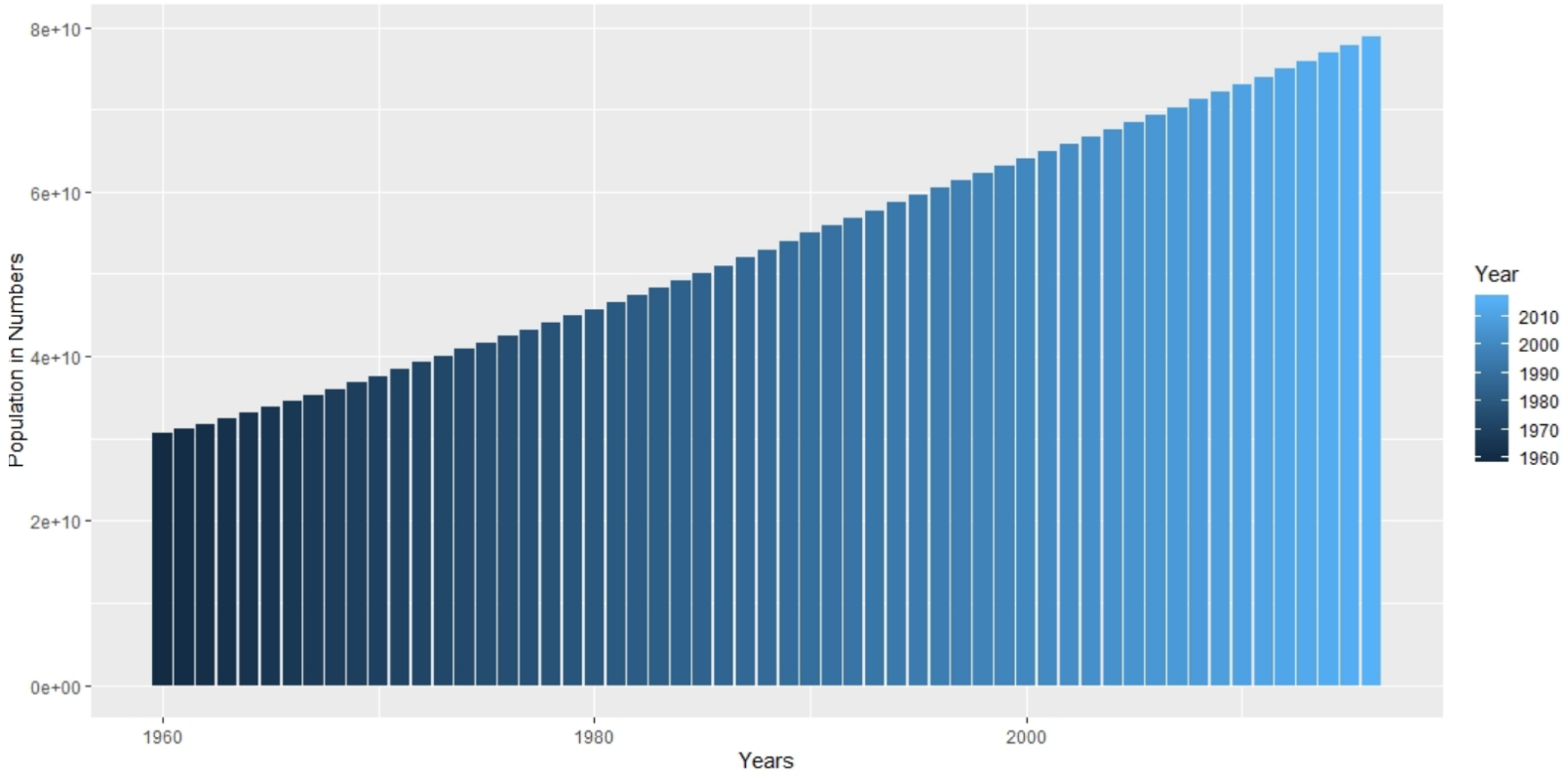


World Temperature Trends(1976-2016)

- Temperature Variation Across the Globe

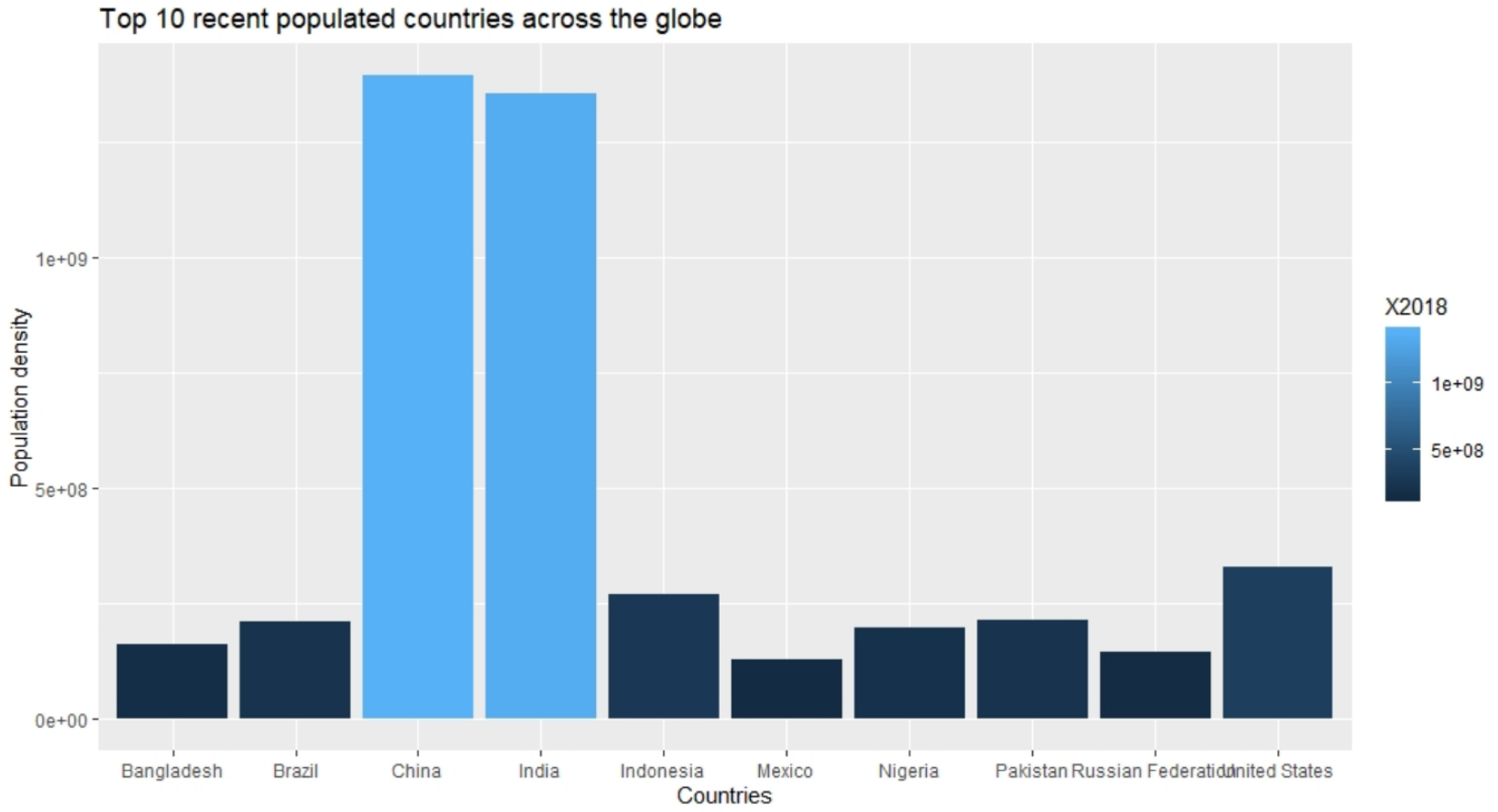
Population Data

Population Over the Years



Population Data

Most Populated Countries List

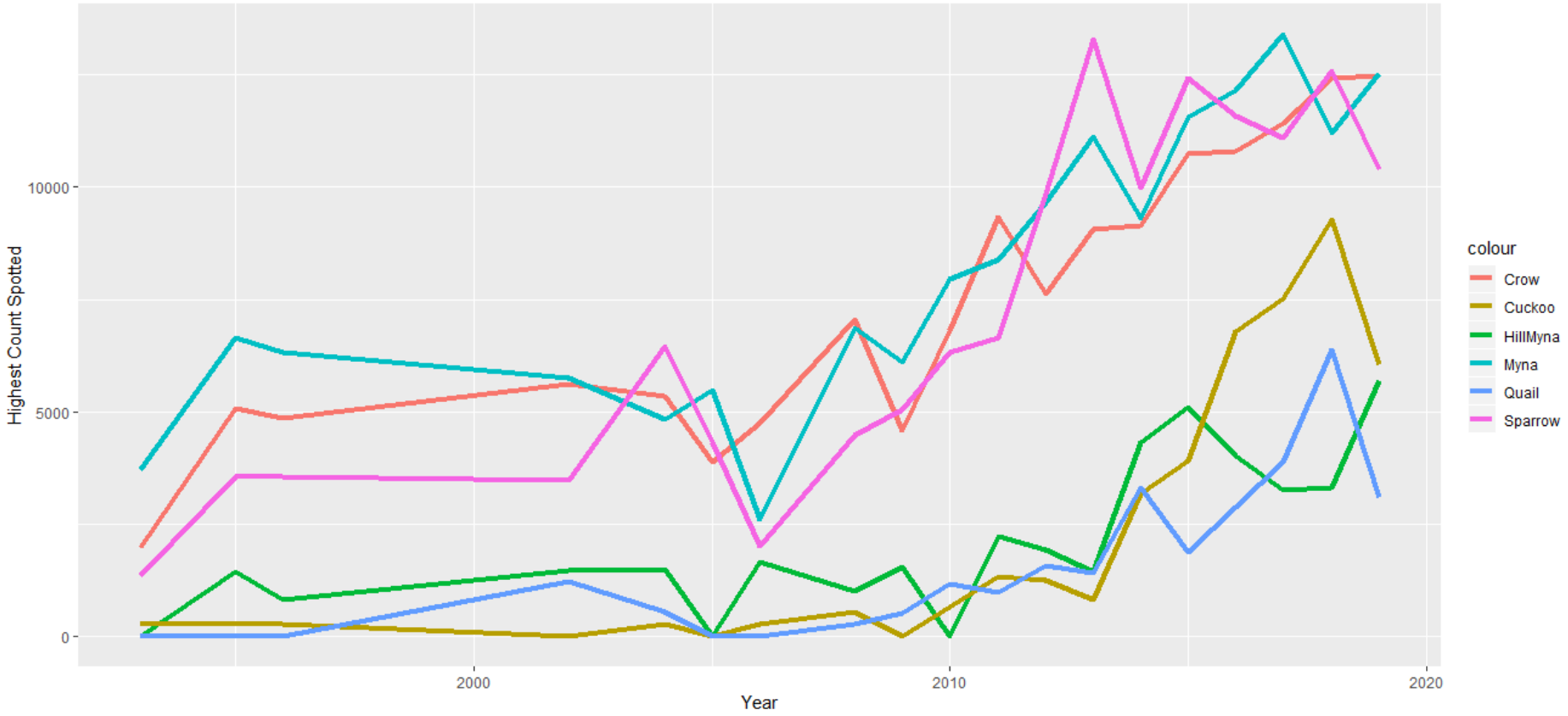


Case Study – India

- Among the Top 10 Countries in CO_2 Emission Level
- Equatorial Country with considerable variations in Temperature over the years
- Second most Populous Country
- Birds in India – Native Birds and Migratory Birds

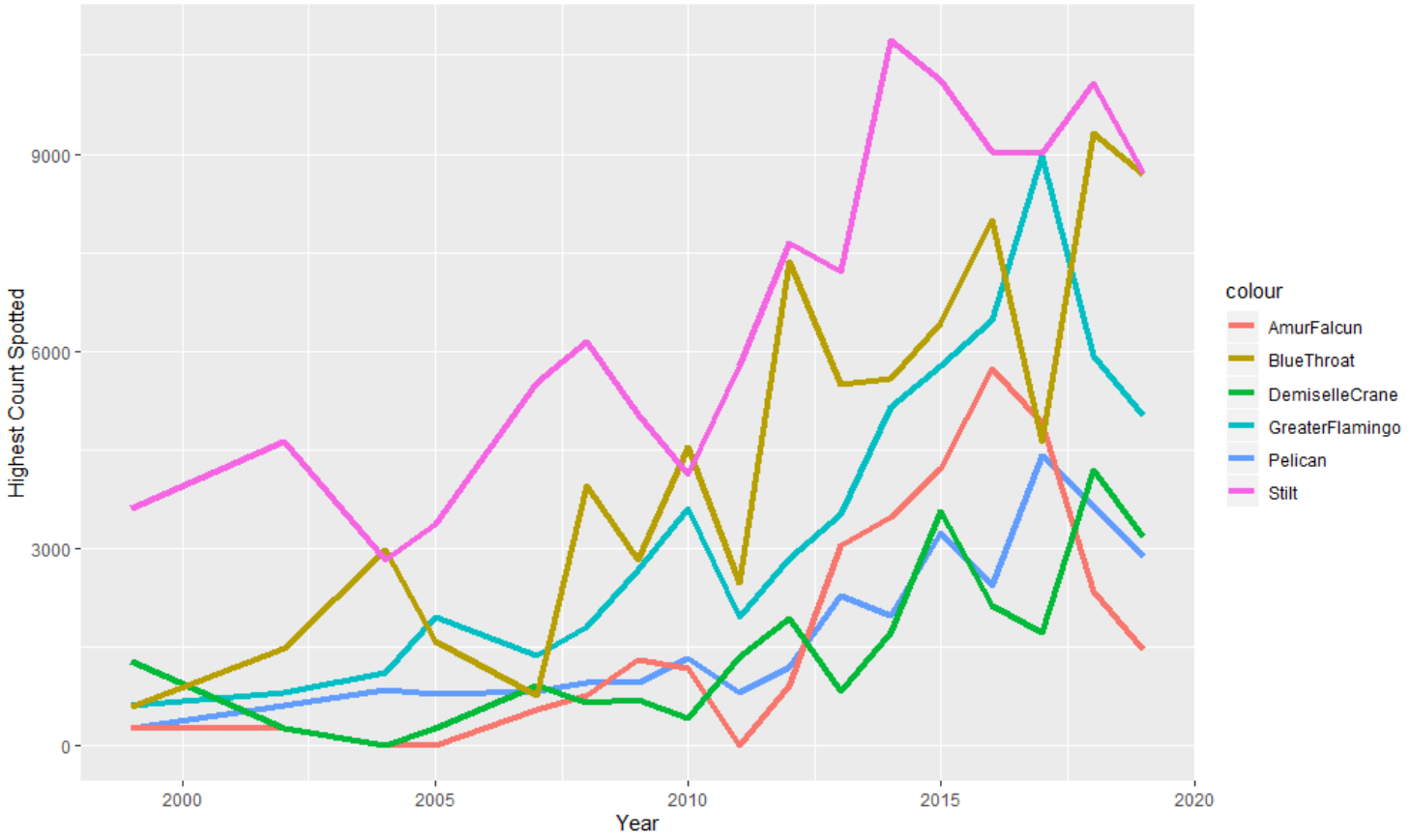
Case Study – Indian Bird Sighting

Native Bird Species



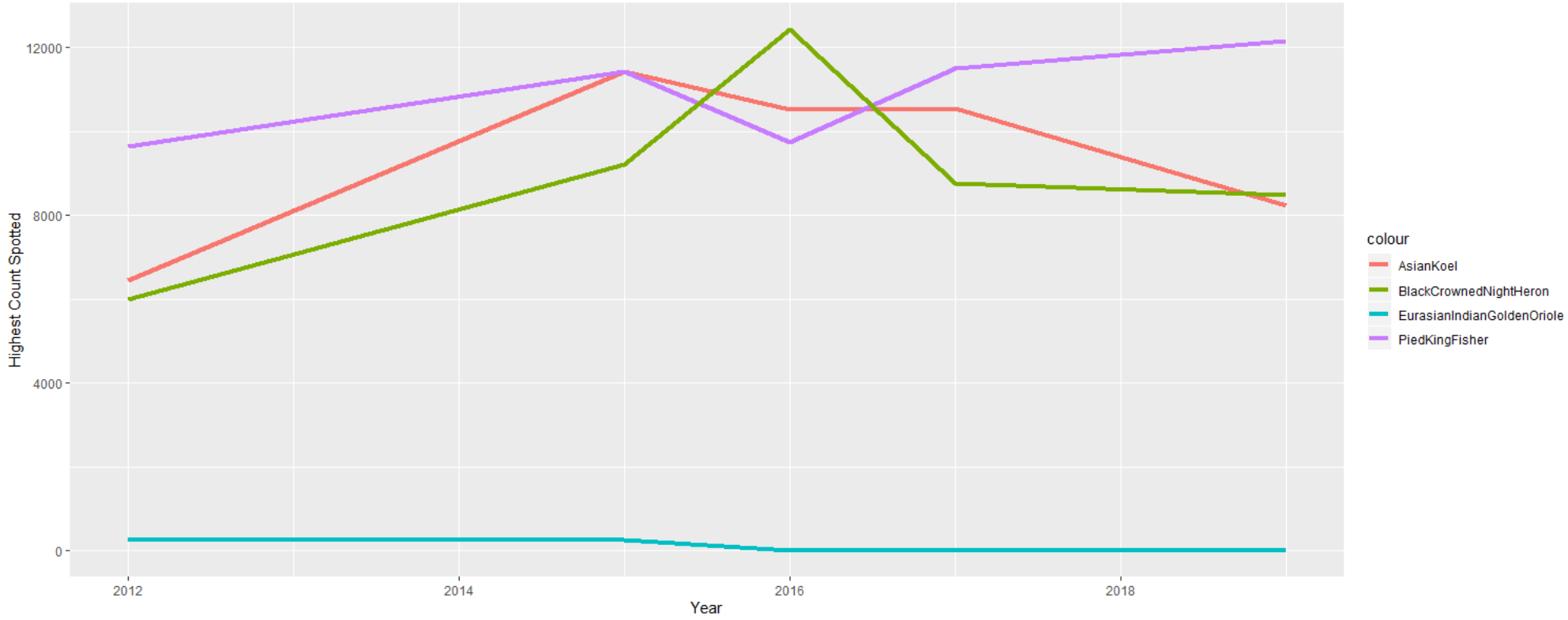
Case Study – Indian Bird Sighting

Winter Migratory Birds



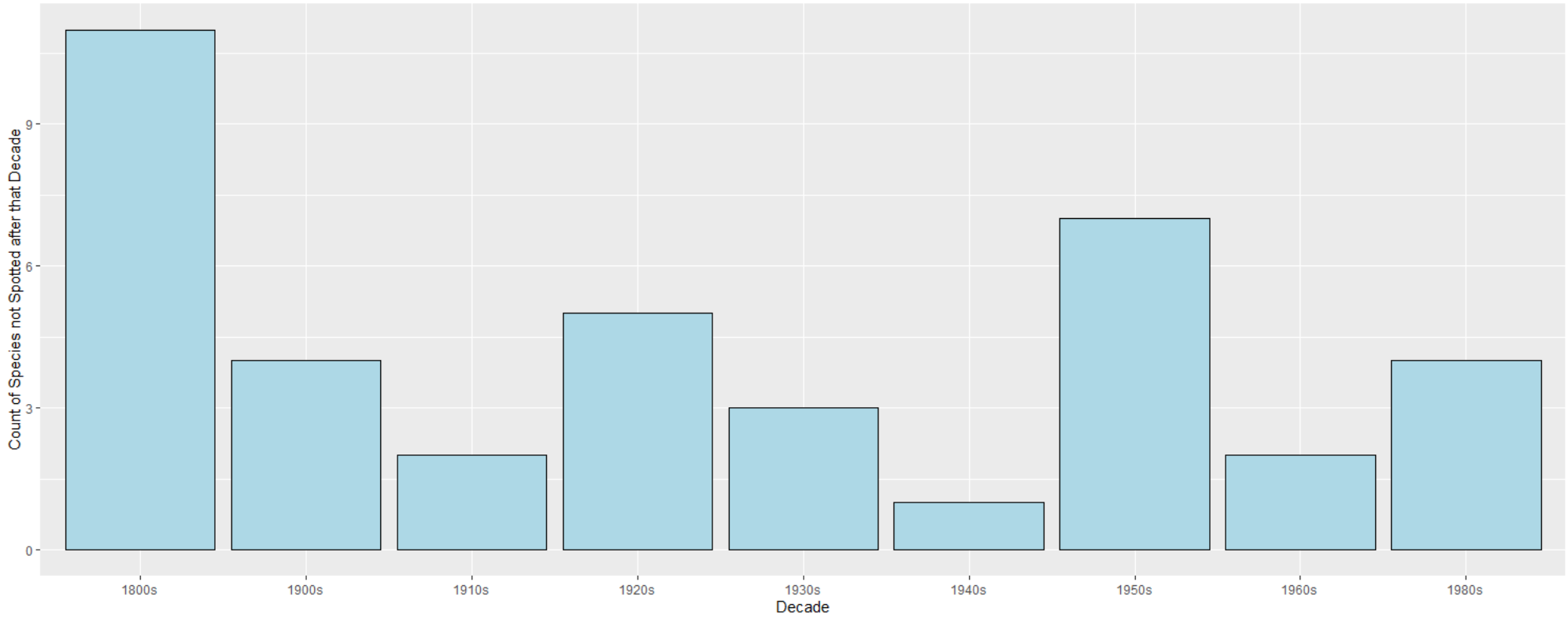
Case Study – Indian Bird Sighting

Summer Migratory Birds



Case Study – Indian Bird Sighting

Last Spotted Bird Species



Dataset Generated

- First Spotted Bird per Species per Country
- Last Spotted Year Bird per Species per Country
- Highest Count Per Year for Bird Species per Country
- Bird Count per Country with Temperature, Population, CO2 Levels

Possible Studies Based on Our Dataset

From the dataset wrangled possible research :

- Influence/significance of Population rate, Pollution rate, Temperature changes in the bird count
- Establish migratory bird patterns over the year across country
- Variation in migratory patterns over the years due to above factors
- Regional bird count variations in case of indigenous

Conclusion

- Summer migratory birds variation is comparatively less than winter migratory birds
- Certain migratory birds have not been spotted over the last few decades