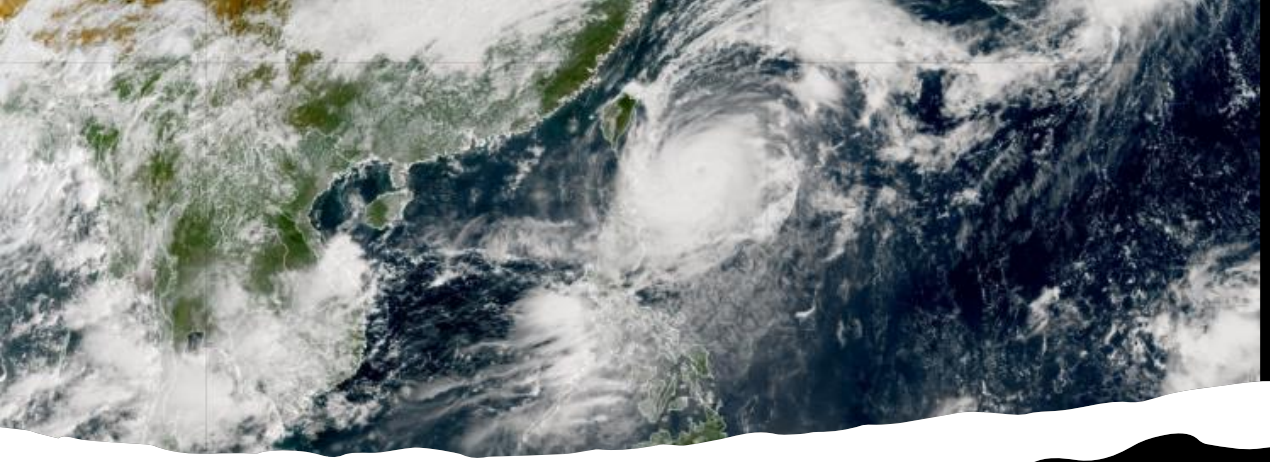
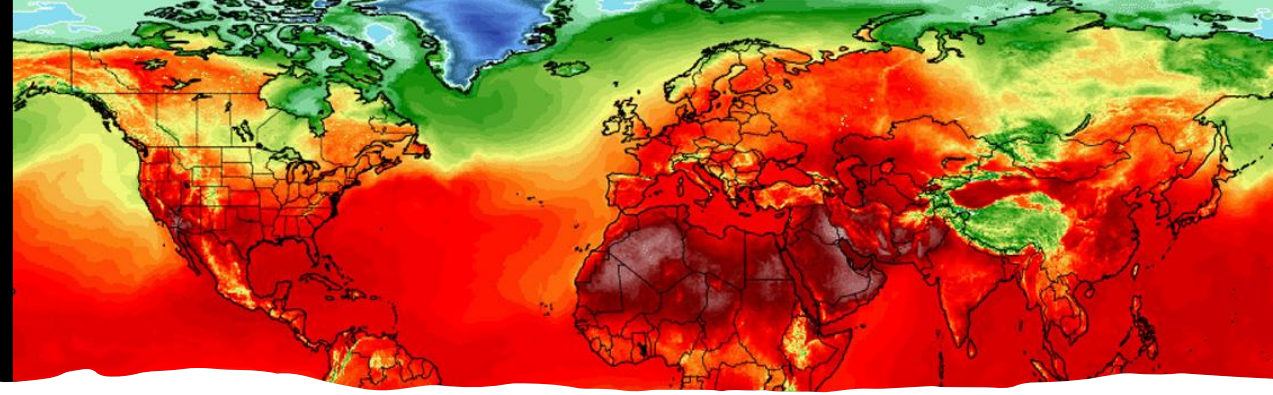
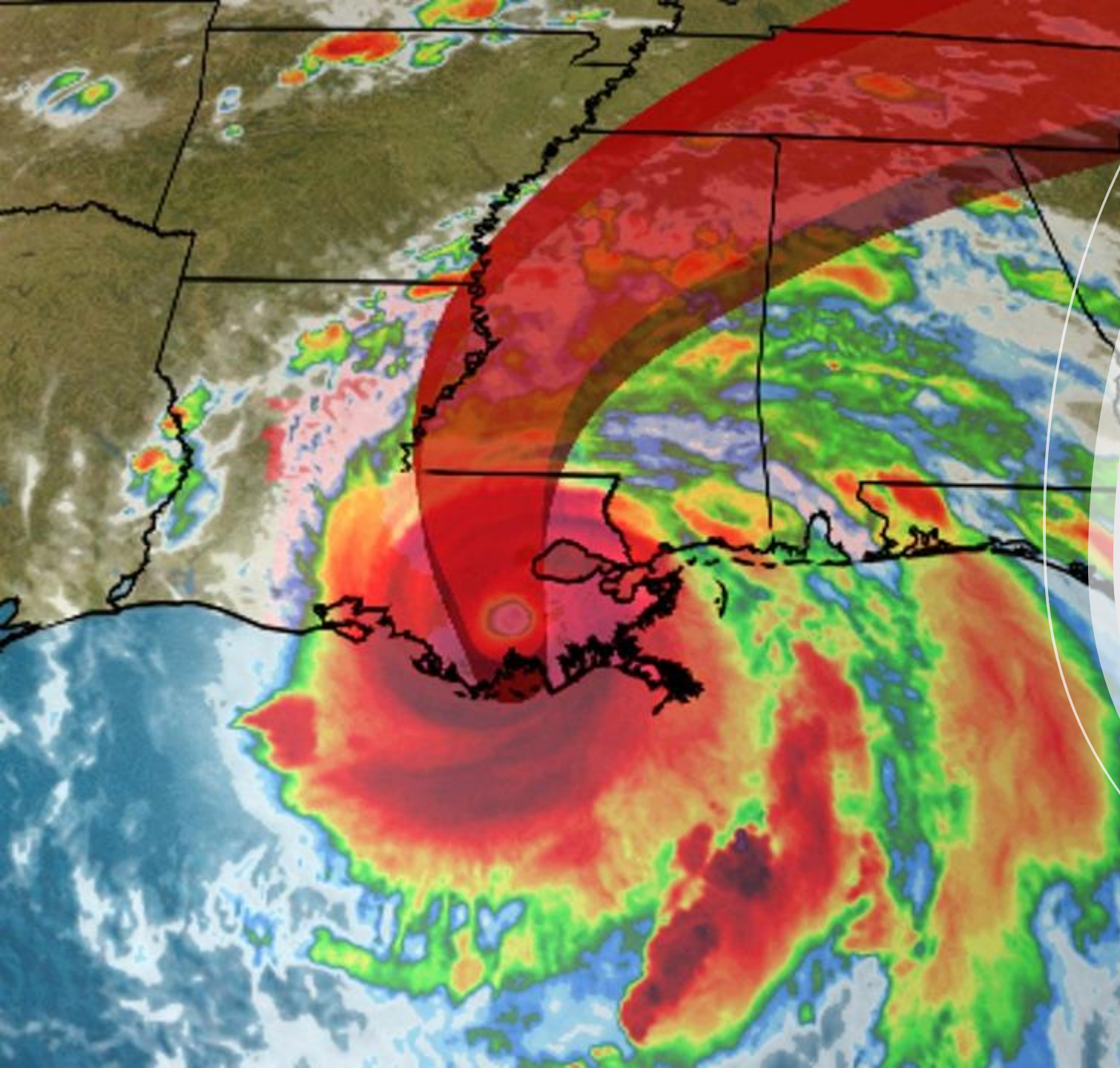




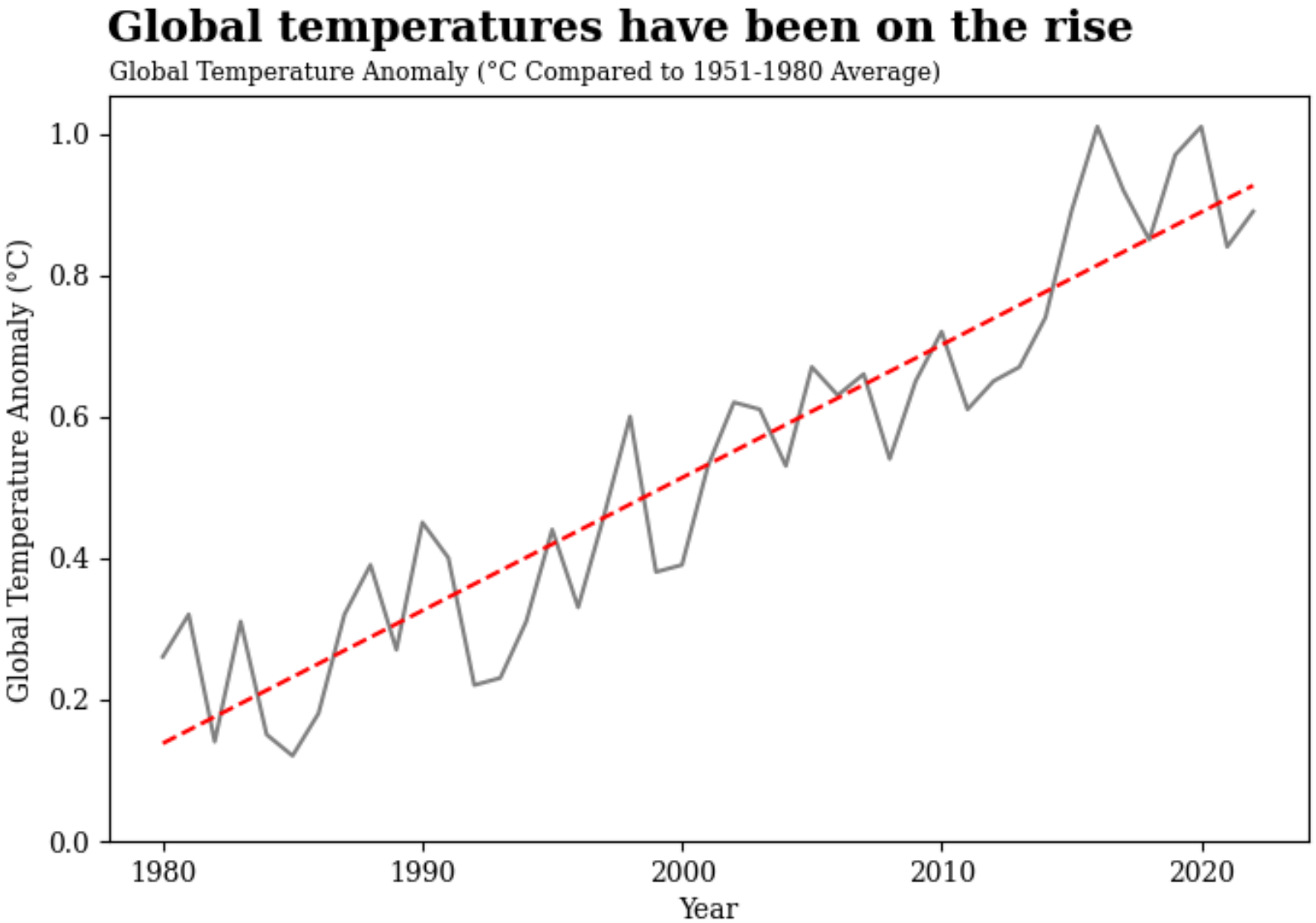
Global Warming and Cyclonic Storms

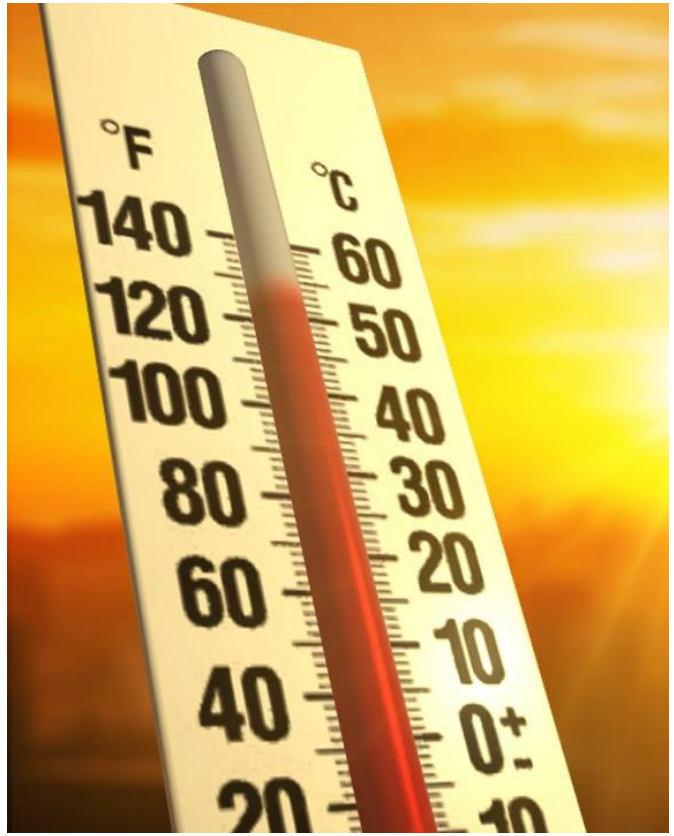
Shoshana Farber



Objective:

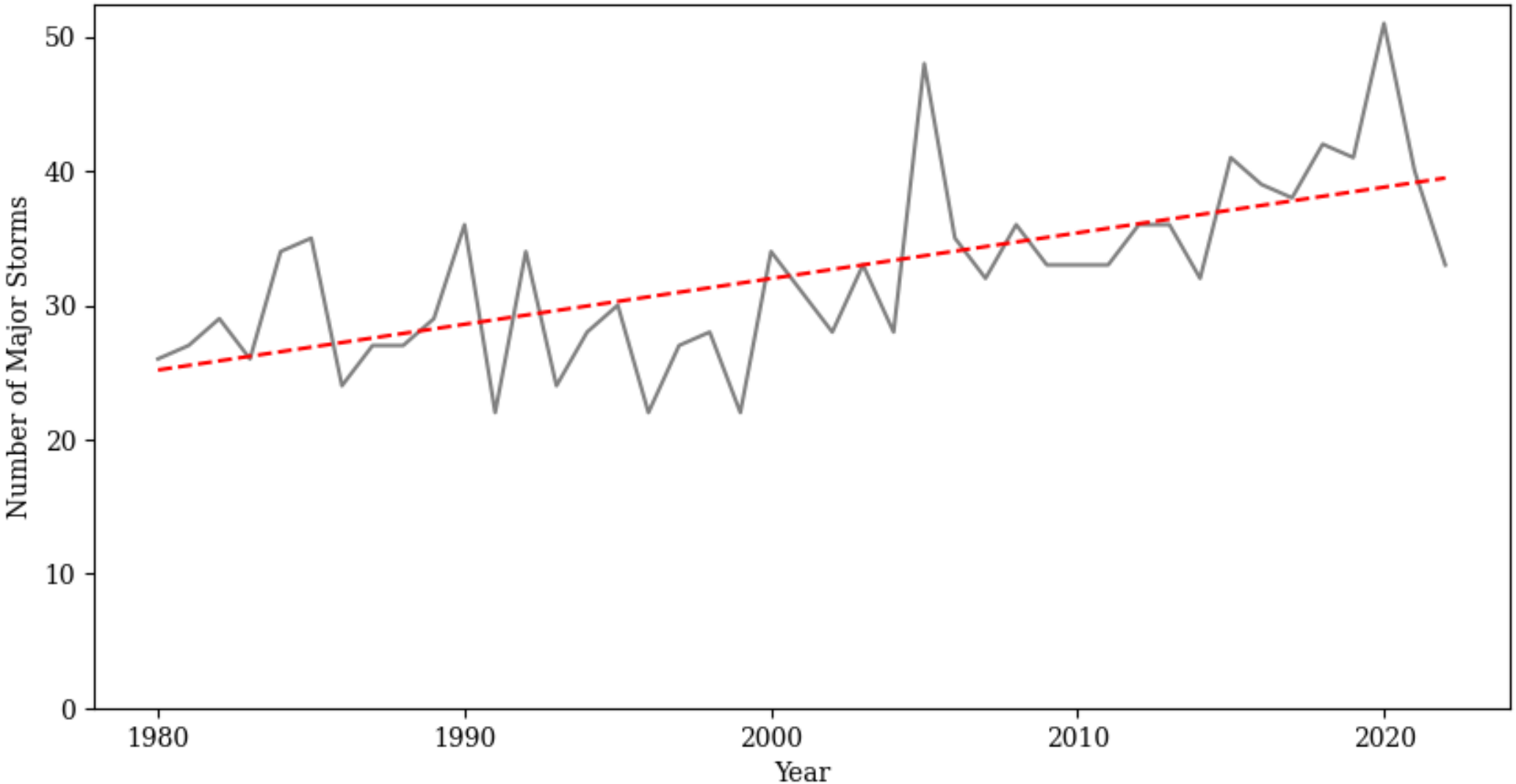
- Historic data indicates that the occurrence and intensity of cyclonic storms (Hurricanes, Typhoons and Tornados) increases with the increased earth temperature.
- In this presentation, we will aim to answer the following question: **What is the effect of global earth temperature on cyclonic storms?**


Global temperatures have been on the rise
Global Temperature Anomaly (°C Compared to 1951-1980 Average)
Global Temperature Anomaly (°C)
1.0
0.8
0.6
0.4
0.2
0.0
1980
1990
2000
2010
2020
Year


°F
°C
140
120
100
80
60
40
20
60
50
40
30
20
10
0
10

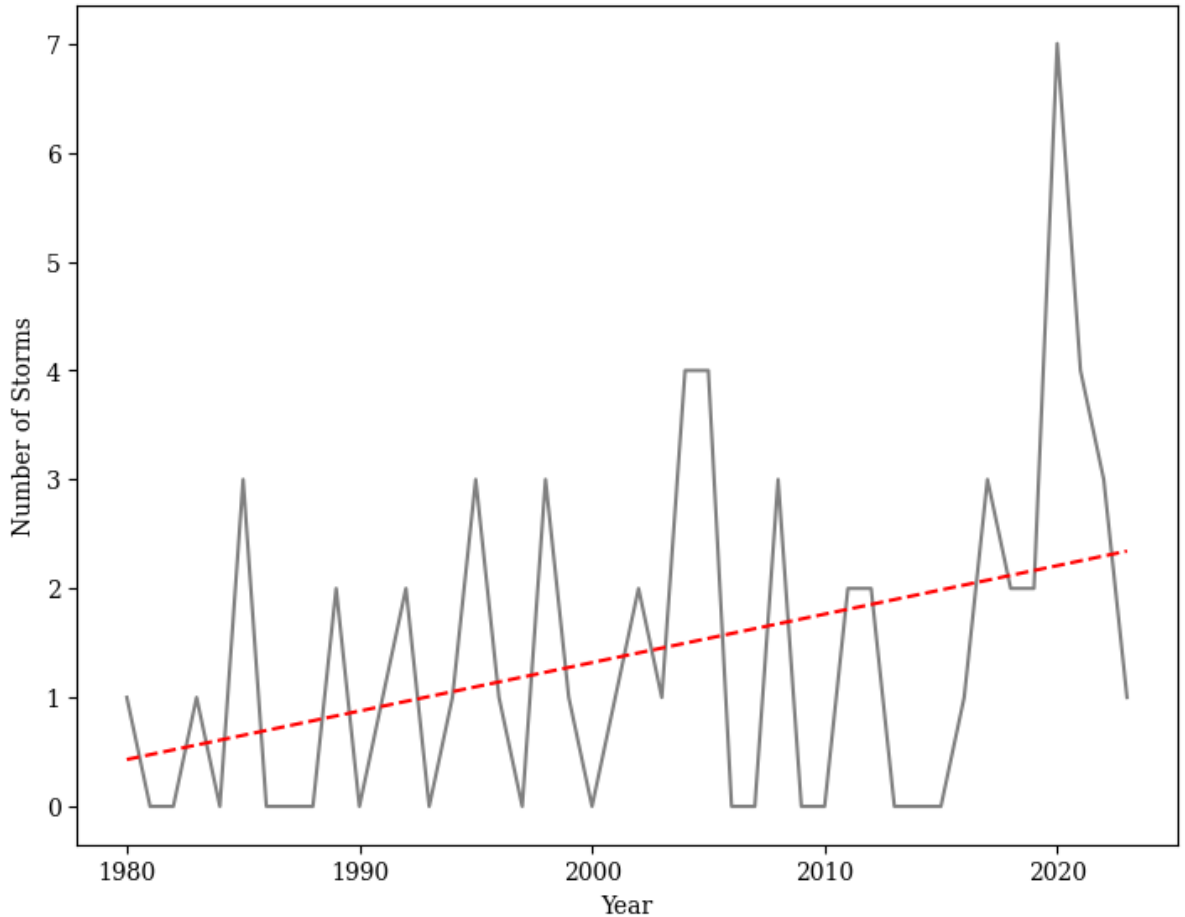
The number of major storms has also increased

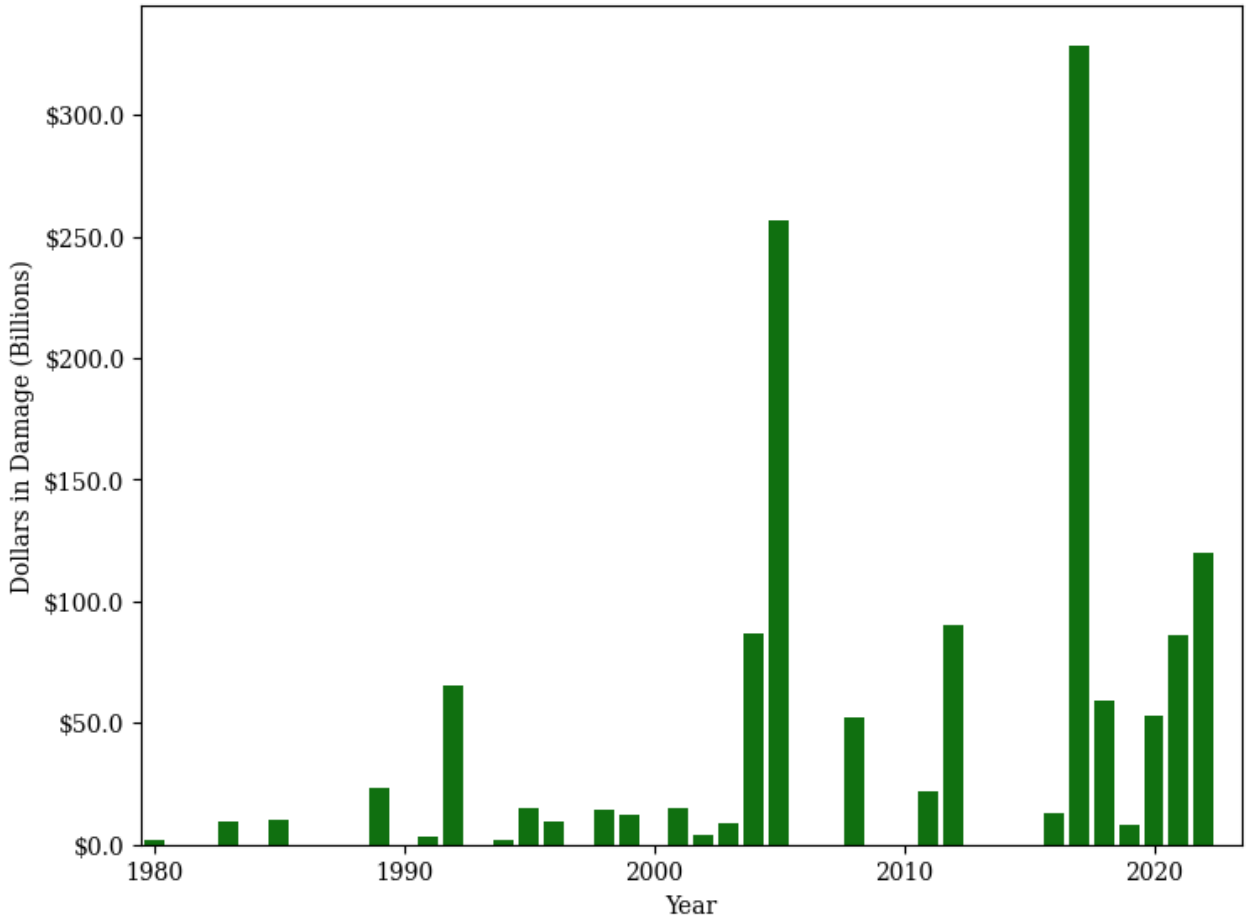
Storms reaching more than 34 knots

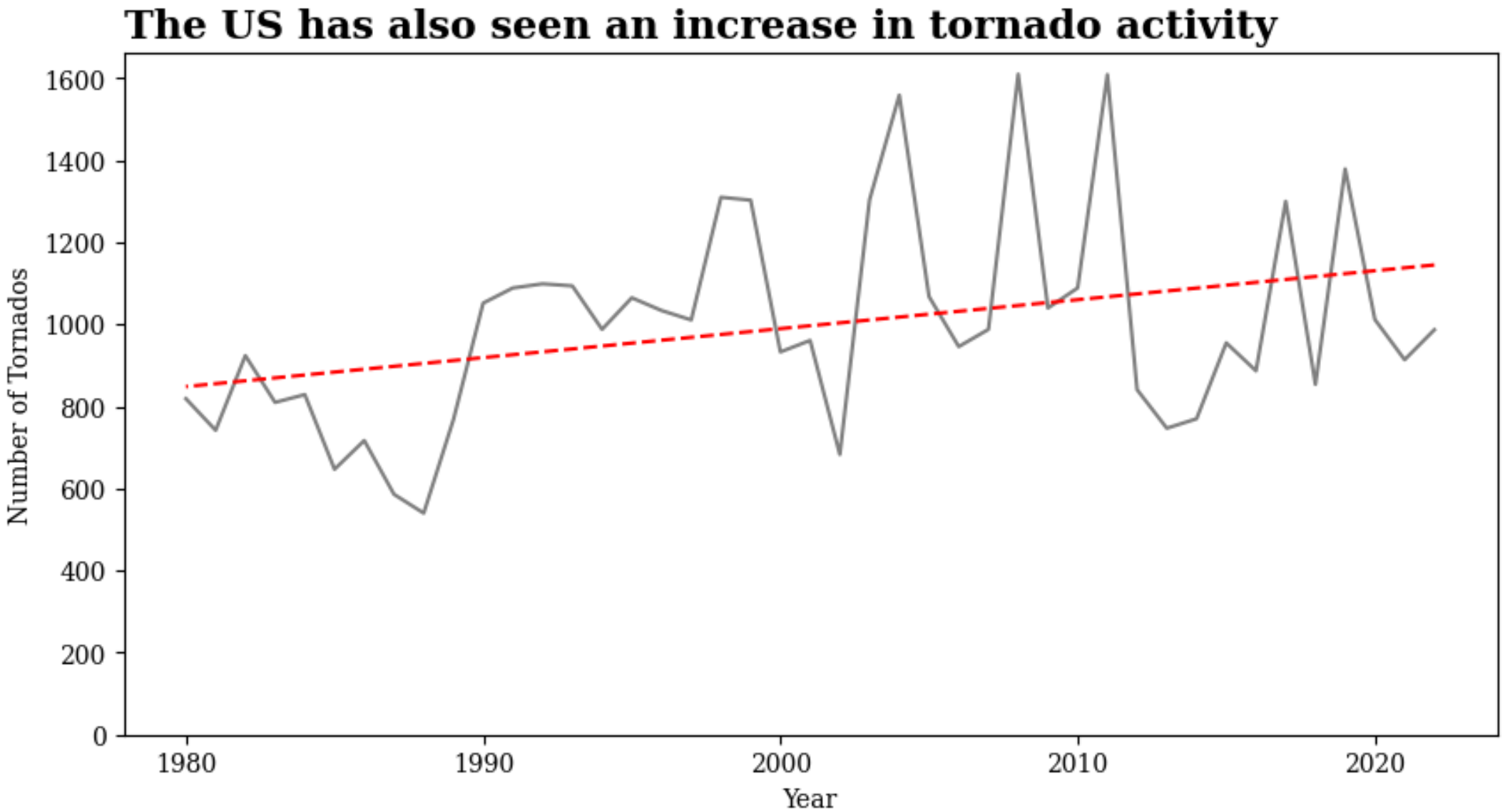


In the US, the number of extremely damaging storms has increased, causing billions of dollars in damages

Storms causing more than a billion dollars in damages






The US has also seen an increase in tornado activity
Number of Tornados
0
200
400
600
800
1000
1200
1400
1600
1980
1990
2000
2010
2020
Year

Conclusions:

- As the Earth's temperature rises, there is an increase in the amount and intensity of cyclonic storms
- From 1980-2022:
  - There has been an increase in the number of global major storms
  - There has been an increase in the number of extremely damaging and costly US storms
  - There has been an increase in the number of US tornados

Data Sources

- Global Temperature Anomalies: https://climate.nasa.gov/vital-signs/global-temperature/
- Hurricanes and Typhoons (Atlantic and Pacific Hurricanes): https://www.nhc.noaa.gov/data/#hurdat
- US Hurricane Damages: https://www.ncei.noaa.gov/access/billions/time-series
- US Tornados: https://www.ncei.noaa.gov/access/monitoring/tornadoes/