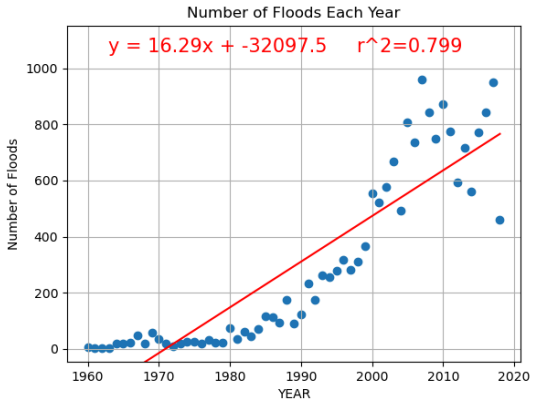
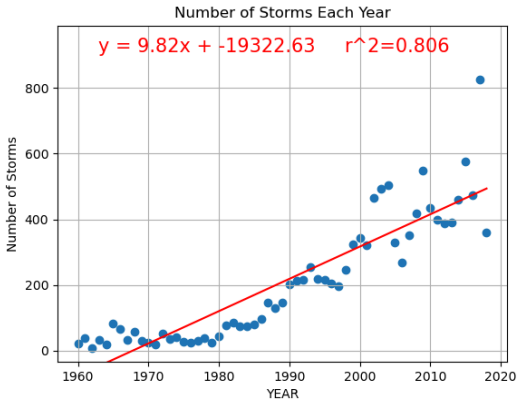
Summary

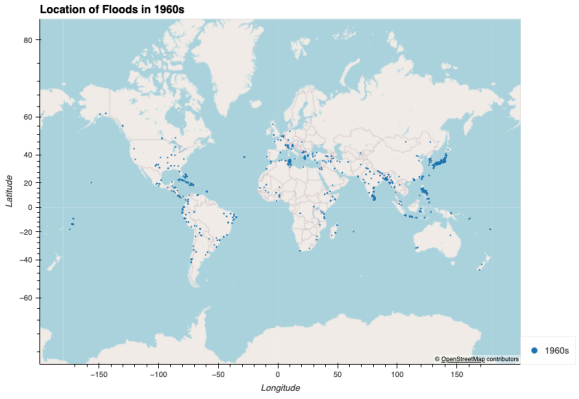
Our team conducted a data analysis on natural disasters using two datasets. The first dataset contained nearly 40,000 locations impacted by nearly 10,000 natural disasters, categorized by disaster type. The second dataset consists of 398 natural disaster events with disaster impacts such as economic cost and death tolls.

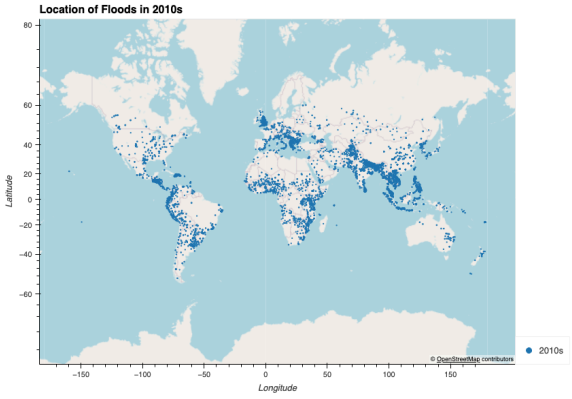
Key Questions and Findings:

- **Do natural disasters increase over time?**
  Our analysis reveals a clear increase in the frequency of natural disasters over time, with floods and storms having the highest correlation between instances and time. This trend suggests possible links to climate change as well as advancements in disaster tracking and reporting.

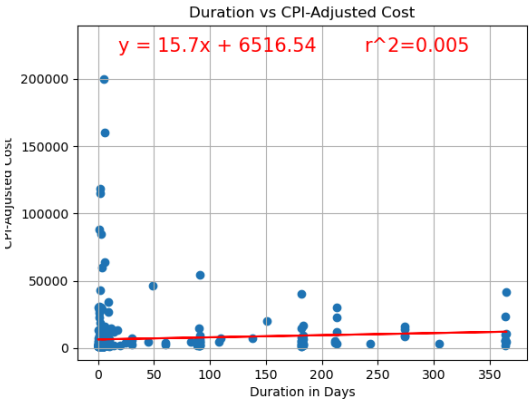


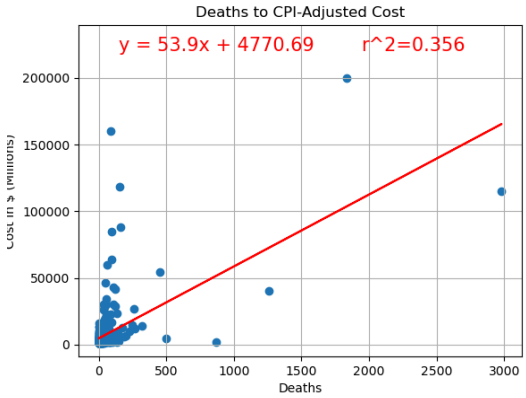




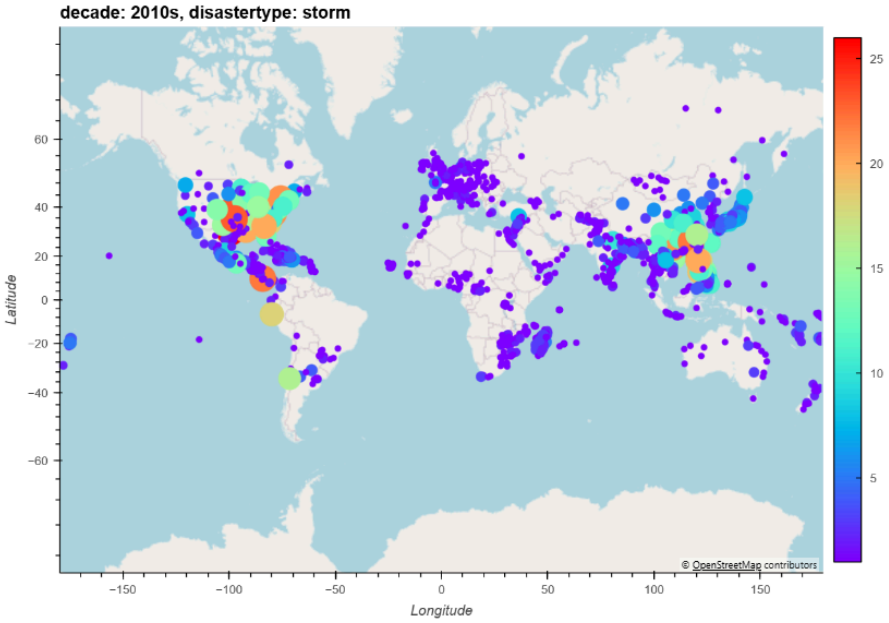


- **Is there a relationship between disaster duration and economic impact?**
  We found no correlation between the duration of a disaster and its CPI-adjusted cost, indicating that other factors, such as storm intensity, may drive economic losses.



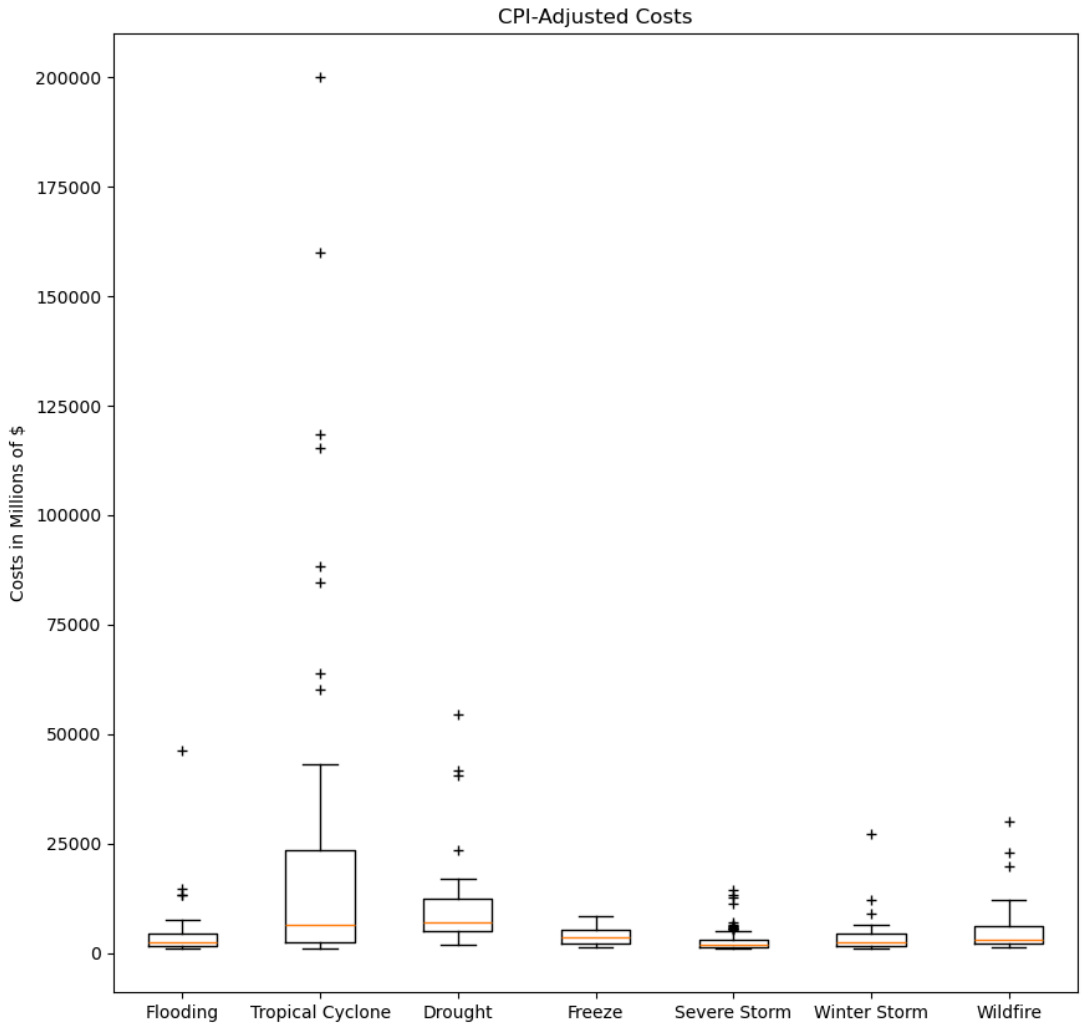


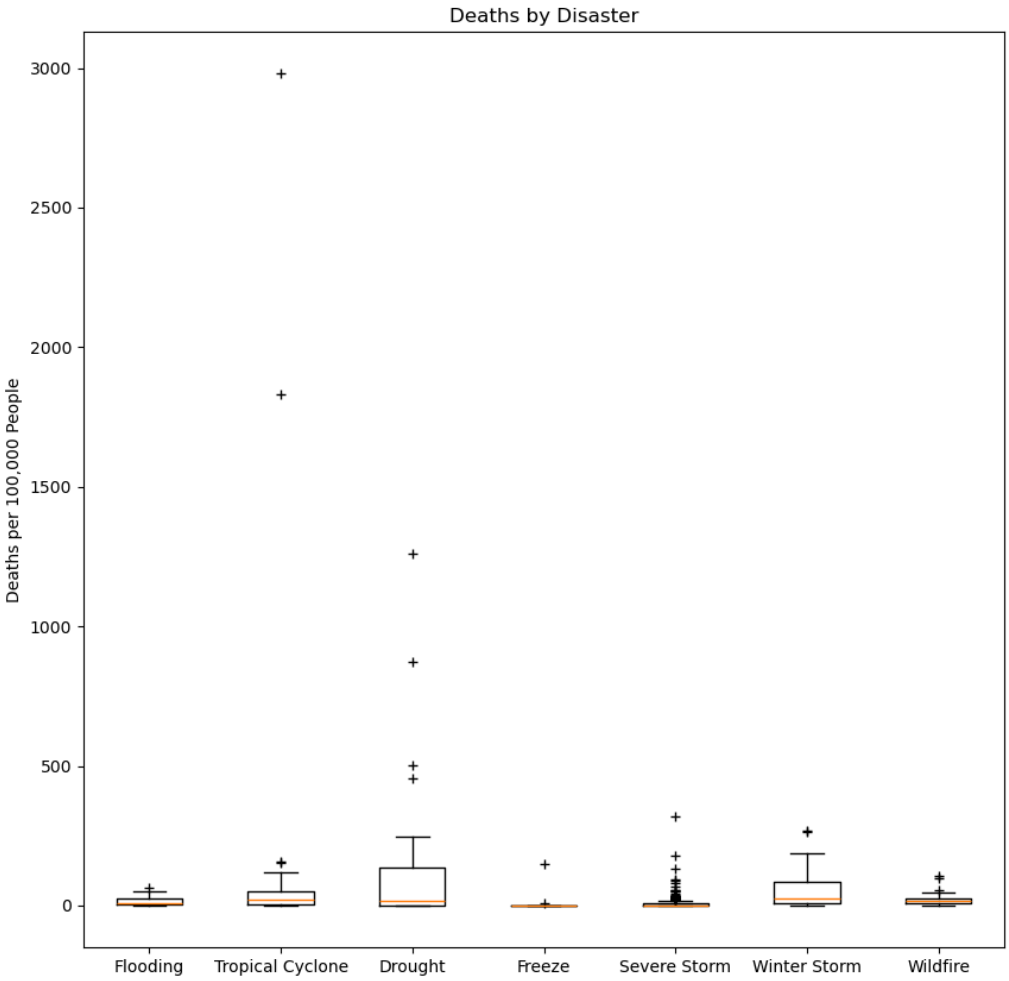
- **Which areas are most affected by natural disasters?**
  Brady, Texas, was identified as the city with the most natural disasters between 1960 and 2018.



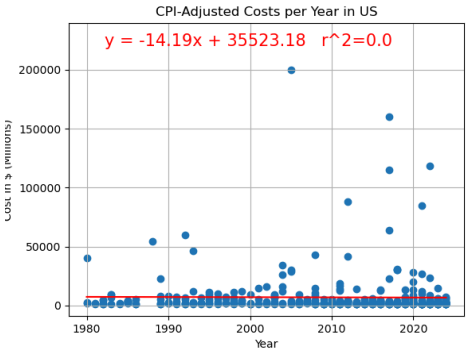
- **What are the financial and human impacts of major disasters?**
  High-impact events vary significantly in human and financial tolls. Hurricane Katrina had the highest CPI-adjusted cost at approximately $200 billion, while Hurricane Maria had the highest death toll at 2,981. Overall, there is a weak correlation between financial cost and death toll.

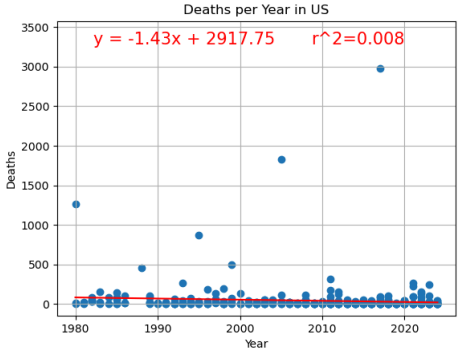
1	Name	Disaster	Begin Date	End Date	CPI-Adjusted Cost	Unadjusted Cost	Deaths	YEAR	Duration
255	Hurricane Maria (September 2017)	Tropical Cyclone	2017-09-19	2017-09-21	115200.0	90000.0	2981.0	2017	2
119	Hurricane Katrina (August 2005)	Tropical Cyclone	2005-08-25	2005-08-30	200047.3	125029.5	1833.0	2005	5
2	Central/Eastern Drought/Heat Wave (Summer-Fall...	Drought	1980-06-01	1980-11-30	40480.8	10020.0	1260.0	1980	182
64	Central, Southern and Northeast Drought/Heat W...	Drought	1995-07-01	1995-09-30	2017.6	984.0	872.0	1995	91
88	Eastern Drought/Heat Wave (Summer 1999)	Drought	1999-06-01	1999-08-31	4772.8	2498.9	502.0	1999	91





The extreme outliers seen in the above charts are found with increasing severity over time:





- **Data Limitations**
  The second dataset lacks data on storm intensity, which limits our ability to analyze potential correlations between storm strength and economic or human costs. We assume that storm intensity would influence costs and fatalities, and this data gap highlights the need for more comprehensive datasets in future analyses.

  The two datasets do not reflect the same period of time, nor do they look at the same geographic area. The first dataset looks at worldwide data, while the second looks at the US only. The first dataset looks at disasters from 1960-2018, while the second looks at 1980-2024. Ideally, these sets would have a more similar scope of time and location.