

A VAST WILDERNESS

MORTALITY TRENDS ACROSS AMERICA'S
NATIONAL PARKS(A Data Visualization Project)

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March 2024



OBJECTIVES



Which Parks Are the Most Dangerous and Why?

DATA EXPLORATION

01

Compile a database to analyze the safety of U.S.'s 63 National Parks

02

Examine fatalities, causes of death, and locations of incidents

03

DATA VISUALIZATION

Create interactive maps, charts, and graphs to present findings

04

Utilize them to enable informed park visit decision-making

Questions Addressed

Implications for the future?



GEOGRAPHIC FACTORS

How do regional terrain, extreme weather, and natural disasters affect mortality rates?

POPULARITY & SIZE

Do parks with more visitors correlate with increase in deaths?

NUMBER OF DEATHS

Which parks have had the most annual deaths from 2007-2023?

CAUSES OF DEATHS

What are the most likely causes of deaths and in which parks?

METHODOLOGY & SOURCES



SQL DATABASE

National Park Service API
dataset (open call)

N.P.S. Mortality Data

N.P.S. Annual Recreational
Visits per Park (2007-2023)

LIBRARIES

Javascript (D3,
JSON)

Python
(Leaflet,
Pandas)

Chart.js,
jQuery

National Park Service Annual Visitation Reports



A background image showing the lower legs and feet of several people hiking on a forest trail. They are wearing blue jeans and various styles of hiking boots. The ground is covered in dry pine needles and twigs, with green evergreen branches visible on the sides.

National Parks Interactive

How did we visualize data and why?

Maps: Where is the data and what can we infer?

Pie charts: What is the breakdown across types of deaths?

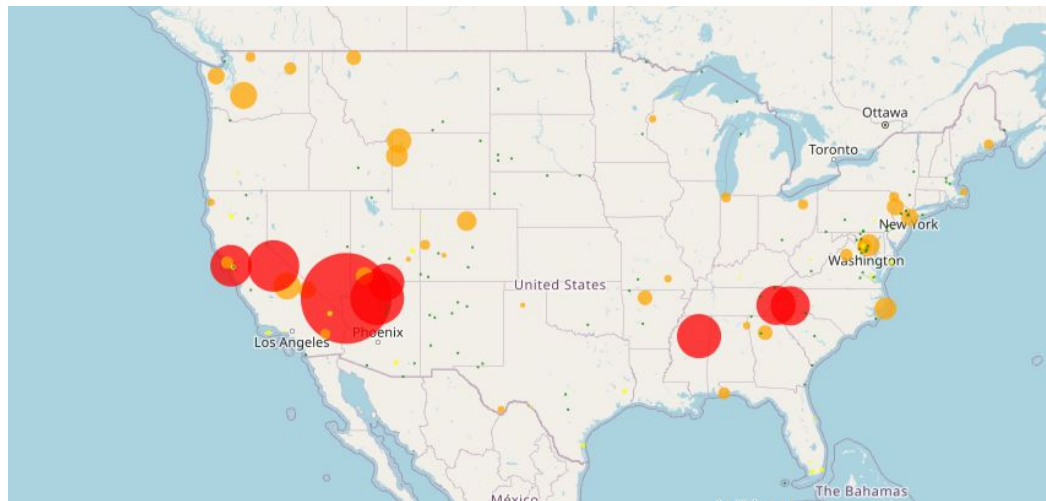
Line graphs: What are the trends in number of deaths across the years (2007-2023)?

2023 NATIONAL PARKS SYSTEM

The circles' radii are
calculated using the # of
deaths per million over our
time period (2007-2023)

Color Legend:

Red ≥ 100 deaths
Orange = 20-99 deaths
Yellow = 10-19 deaths
Green < 10 deaths

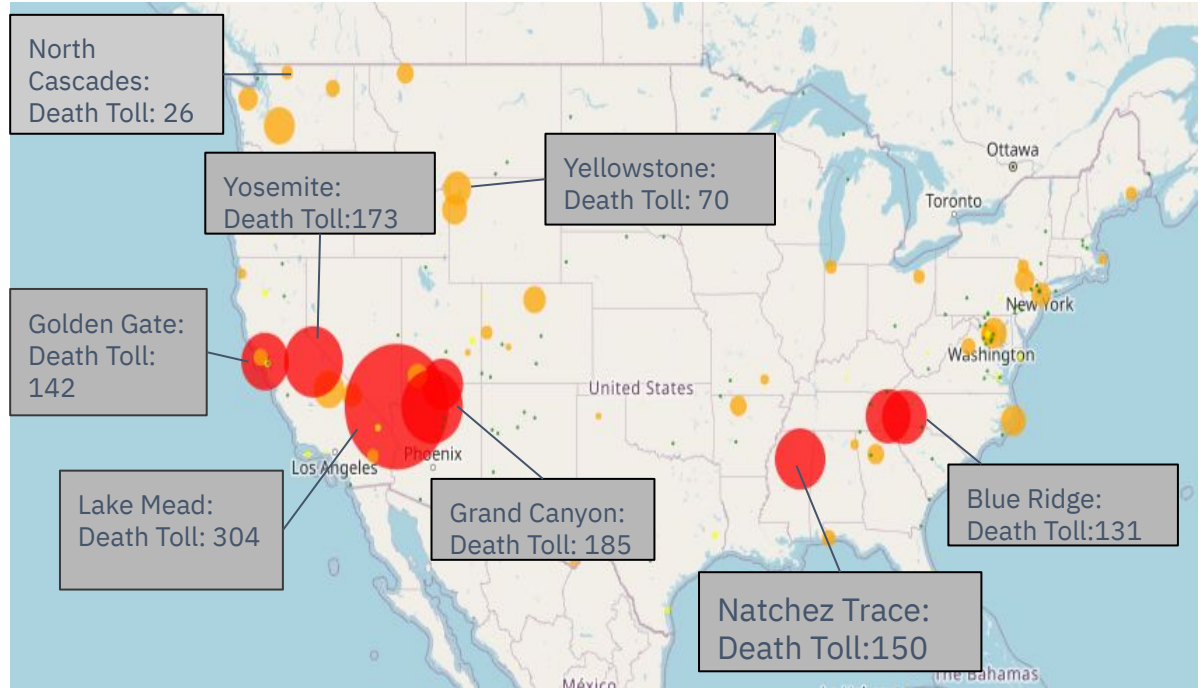


Determining the best parks to use based on an interactive map with parks & death tolls

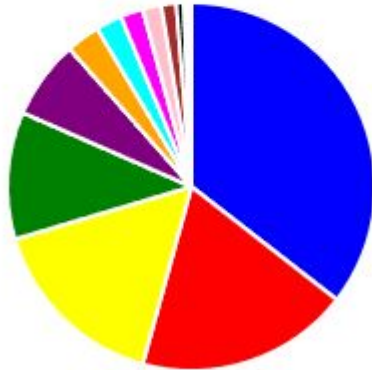
Location Trends

Regional Highlights in the SouthWest and SouthEast

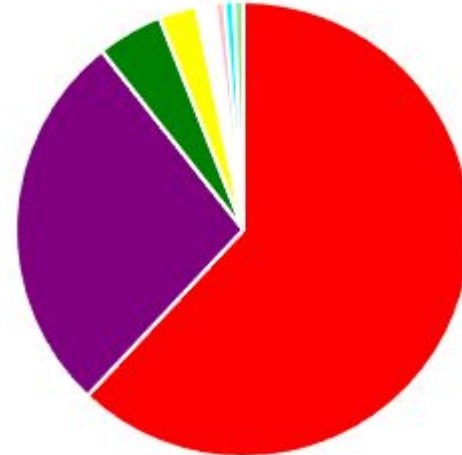
Inferences we can make from this visualization



Most Common Causes of Death

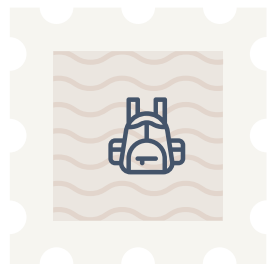


Lake Mead National Recreation Area ▼



Natchez Trace Parkway ▼

SOME OF THE MOST DANGEROUS PARKS



LAKE MEAD

Most cumulative
deaths



NORTH CASCADES

Highest deaths
per capita



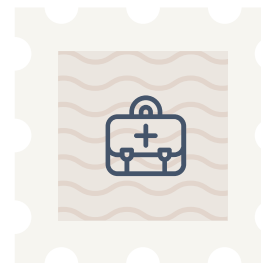
YELLOWSTONE

Oldest NP,
attracts 3mm
per year



BLUE RIDGE

Most Visited
Park in
America



YOSEMITE

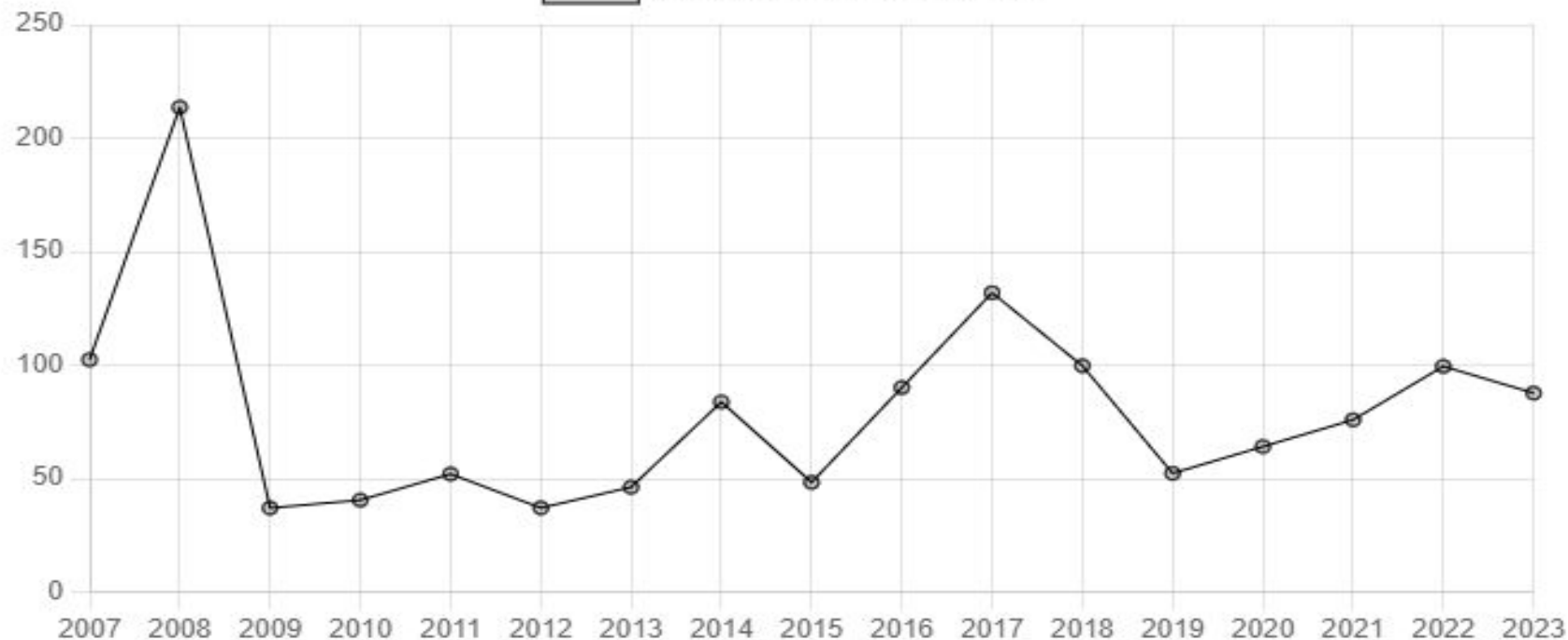
Our Hypothesized
Deadliest Park
(Extreme
Heat/Weather)

DEATHS PER MILLION ANNUALLY

Most Dangerous Parks

North Cascades National Park ▼

North Cascades National Park



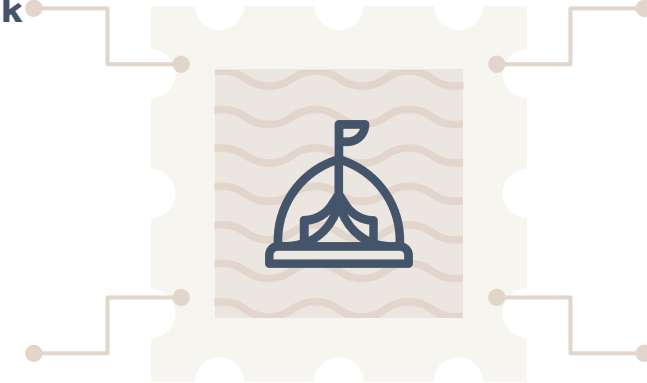
Key Takeaways...

Lake Mead National Recreation Center

Largest number of total deaths

Data Trends

- Highly variable
- Generally increased and then decreased over time
- Lower deaths in 2023 as opposed to 2007



North Cascades National Park

Most deaths at the park per capita of visitors

Top Three Causes of Death

- Drowning
- Motor vehicle
- Undetermined

For the Future... As extreme weather poses new threats, should NPS invest in increased safety measures for visitors across the U.S.



Other Considerations:

- Ethical Best Practices
- Limitations in Mortality Data Details

https://texasbearfan.github.io/Project_3_Data_Visualization/