Sharks
&
Shore
Harmony

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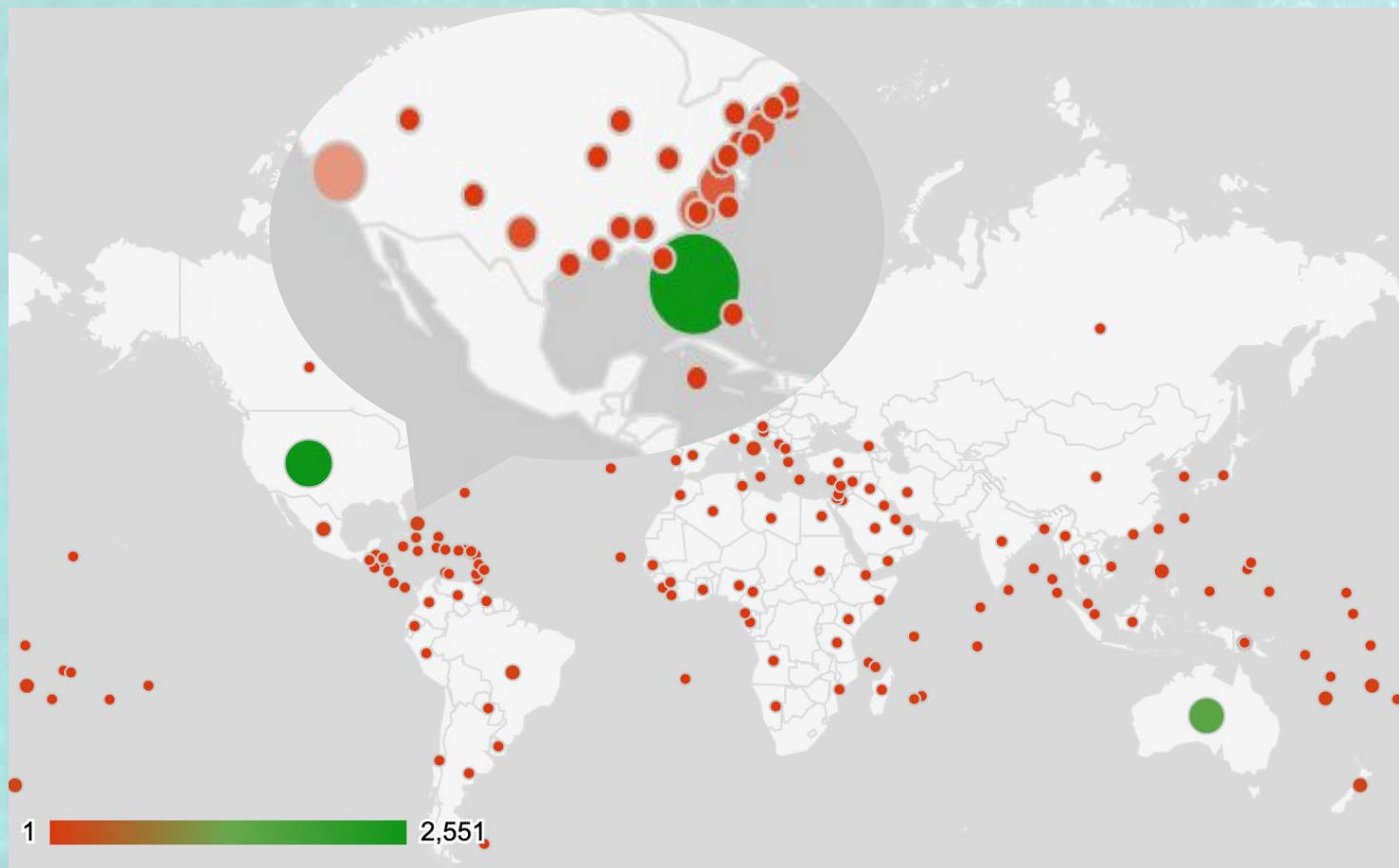Disclaimer DAFT2024 - Do not do attempt to ride sharks

Project Overview

The Global Shark Attack File dataset includes geographic and time-based data, amongst others. The Sharks & Shore Harmony(SSH) team is focused on identifying a specific dataset with a robust sample size to effectively support the following aim. It shows a skew towards the US and we used that.

Florida has one of the highest rates of shark attacks in the USA each year. We're on a mission to create a programme that enables sharks and people to coexist safely and sustainably via the data.

Our Vision:

- **Protect Lives**: Implement data-driven strategies that enhance <u>safety </u>for beachgoers.
- **Raise Awareness**: Educate the public about <u>when </u>are most shark encounters
- **Empower Local Businesses**: Drive tourism, insurance companies or shark repellent sellers, linking sellers to <u>where</u> people encounter sharks

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Hypothesis - Find the Patterns

In Florida, **shark encounters can happen at any time of year**, but they tend to spike in mid-spring as the waters warm up and more beachgoers head to the coast. Our project is about identifying the **seasonal and location patterns of shark activity** near Florida.

By understanding **when and where** these encounters are most likely to occur, we can better equip communities, local businesses, and tourists with the knowledge they need to enjoy Florida's beautiful beaches while coexisting safely with its marine wildlife.

Data Wrangling and Cleaning

- Cleaning date(s)
  - Format of yyyy-mm-dd and hh:mm
  - Implement regular expressions

- Cleaning location(s)
  - General dataset - Removed general locales "sea", "ocean", continents, etc.
  - Country (USA) – checked spelling and removed irrelevant values
  - State (Florida) - checked spelling and forced both
  - Location (in Florida) - removed duplicates
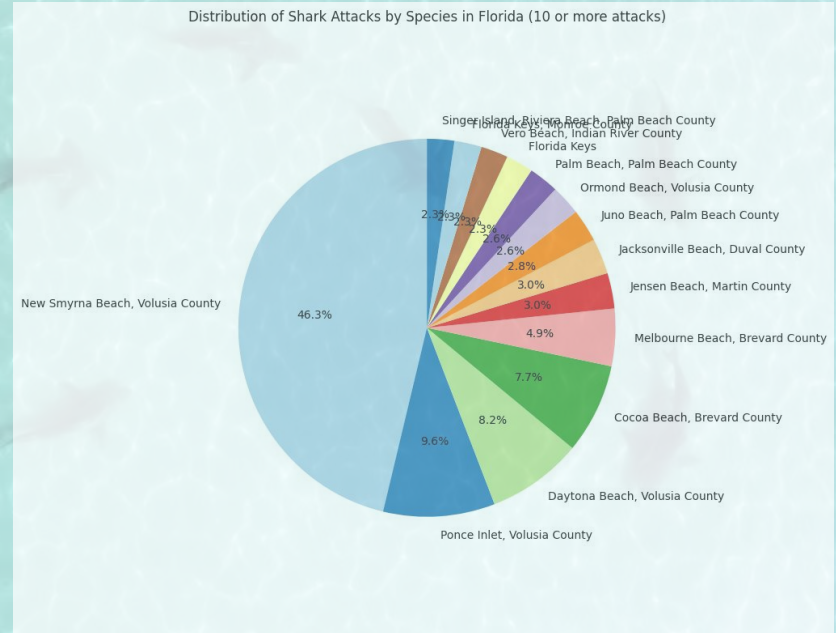 - Lowercasing everything for readability

Challenges

- Using GitHub together
- Data cleaning:
  - checking for misspellings manually in location names
  - formatting dates
- Time management, despite careful project outline

Exploratory Analysis

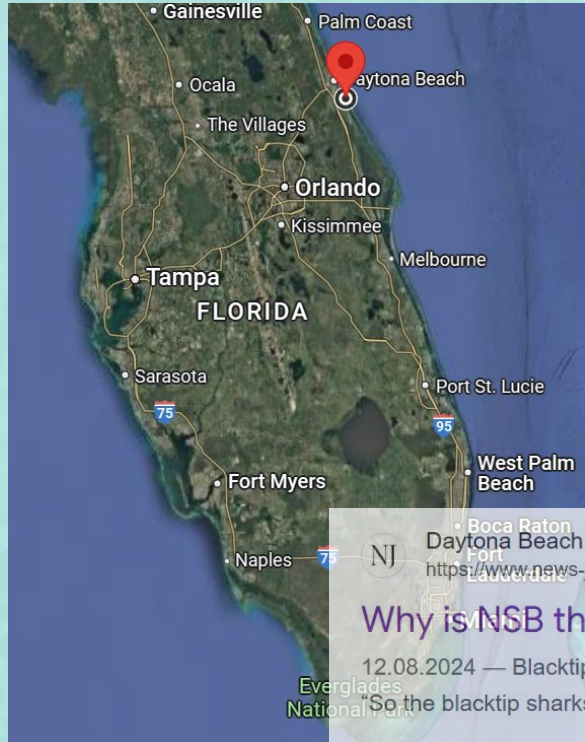In the original database, there were over 1000 shark encounters in Florida.

Within Florida, New Smyrna Beach in Florida has one of the highest rates of shark encounters in the USA each year.

Within this subset that the SSH team analysed the months in Florida whereby shark encounters happened and we found most of the attacks occurred in the month of May.

Distribution of Shark Attacks by Species in Florida (10 or more attacks)

New Smyrna Beach, Florida

Daytona Beach News-Journal
https://www.news-journalonline.com › 2024/08/12 › ne...

Why is NSB the "Shark Bite Capital of the World?"

12.08.2024 — Blacktip sharks are the species behind most of the bites in the ar...
So the blacktip sharks go to that little patch of water, ...

Exploratory Analysis

Florida is the champion for most shark attacks because of its coastline and how its **waters stay warmer longer** than other states. This is also why shark activity is at its peak in Florida waters April through October, according to the Florida Fish and Wildlife Conservation

https://www.tampabay.com/news/environment/2024/07/19/shark-attacks-experts-florida-new-smyrna-beach-ponce-inlet-key-west

"Inevitably when people are recreating in the water and sharks are living in feeding in the water, sometimes there are these interactions, and the interactions are seemingly more frequent, and that really is exactly what's happening. We are seeing some species of sharks on the increase, absolutely," executive director of Ocean First Institute, Dr. Mikki McComb-Kobza.

https://www.wfla.com/news/florida/are-shark-attacks-in-florida-occurring-more-frequently-than-usual/

Conclusions

- Potential implications for raising data-driven awareness in the locale
- Lack of data sources and a bigger, robust sample size
- The information in the current database is not enough to draw conclusions -> Merge it with a more complete database.

Thank you! سپاسگزارم Gracias Merci Danke

by
Team Sharks & Shore Harmony

Problem Statement

Florida has one of the highest rates of shark attacks in the country each year. We're on a mission to create solutions that enable sharks and people to coexist safely and sustainably.

Our Vision:

- **Protect Lives**: Implement strategies that enhance safety for beachgoers.
- **Raise Awareness**: Educate the public about shark conservation and safe practices.
- **Empower Local Businesses**: Drive tourism and support communities.