Team Number: DC20075
Dataset: Ocean Cleanup

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https://github.com/privat33r/dc20075-ocean

TIDES
Trash Information and Data
for Education and Solutions

Ocean Conservancy

Assumptions About Dataset

1. Each piece of garbage collected was a whole piece
2. Each person in a group does equal amount of work
3. Each person only participated in one event
4. Each person walks and picks up trash at same pace (distance = k . time)

Data Preparation

- Dataset is input by any person who has the app, so there is a greater chance for error
- Went through and eliminated all outlier data, such as a single person picking up a single piece of trash weighing 10,000 pounds
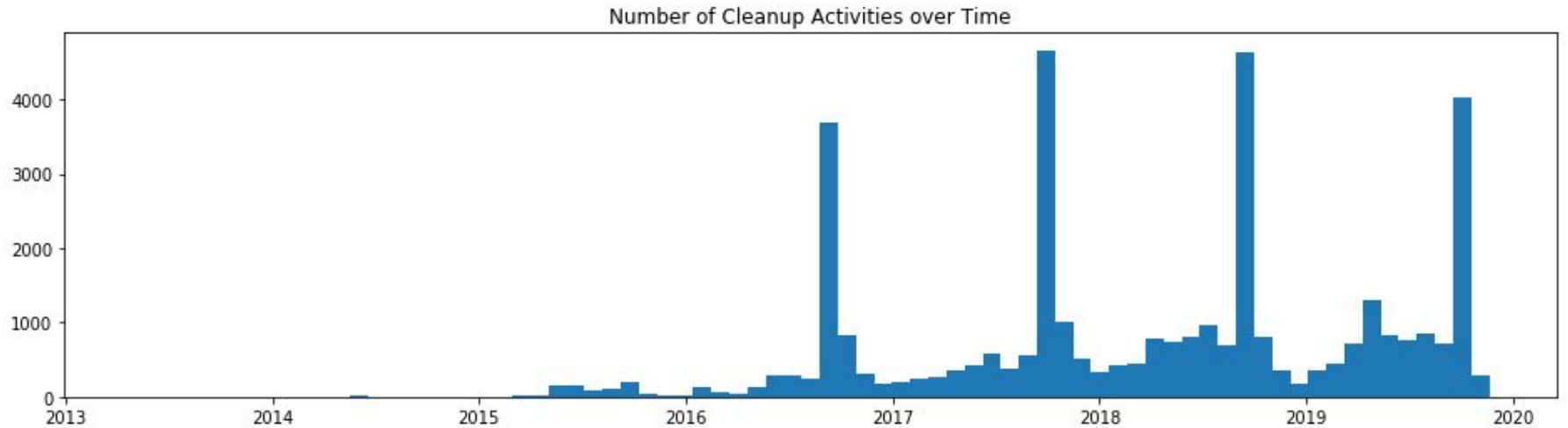- Gathered 2019 U.S. population estimates from the U.S. Census Bureau

Locations of Trash Cleanups

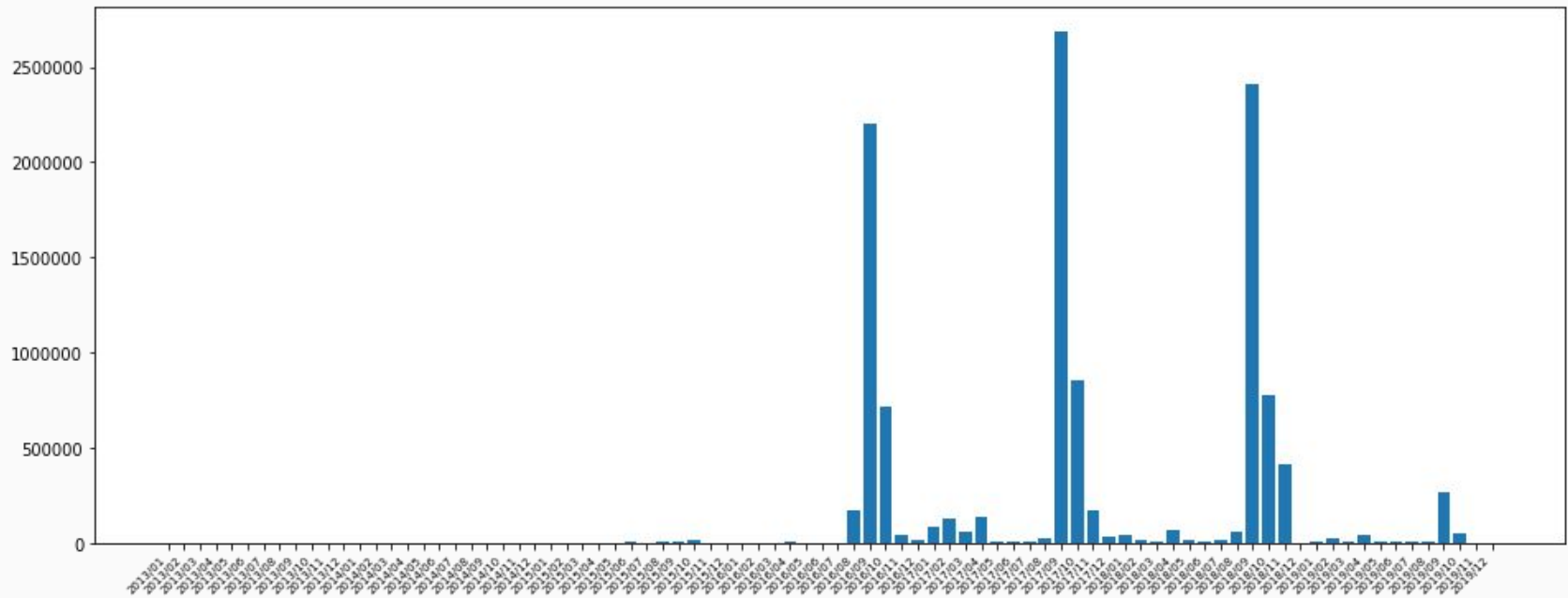# Concentration of Trash by Pounds Collected
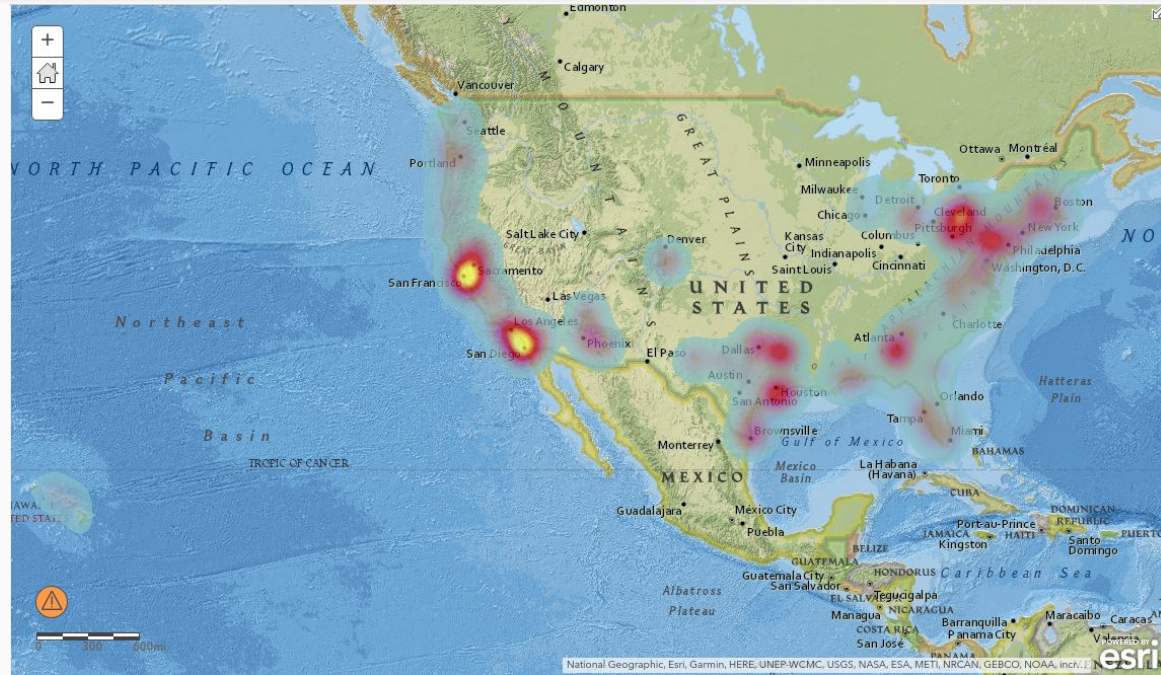
Number of Events by Month

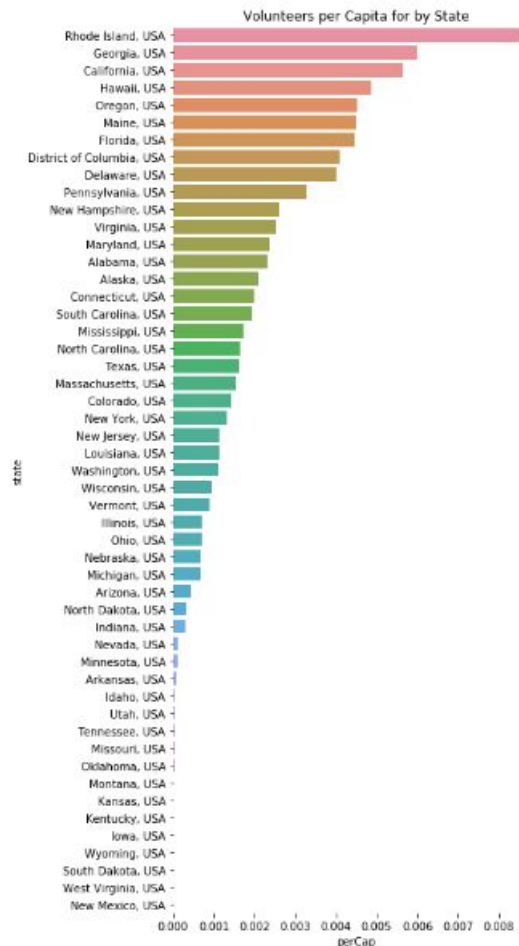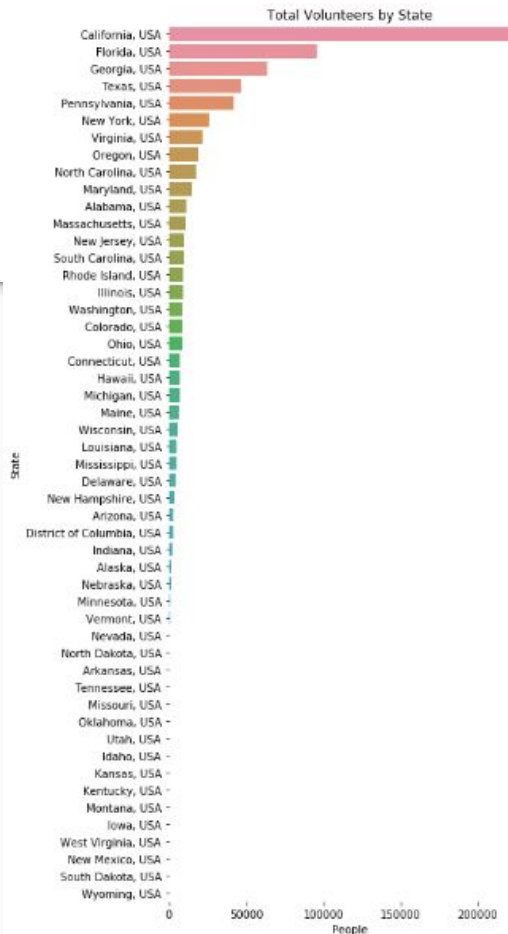Number of Cleanup Activities over Time

Pounds Per Month
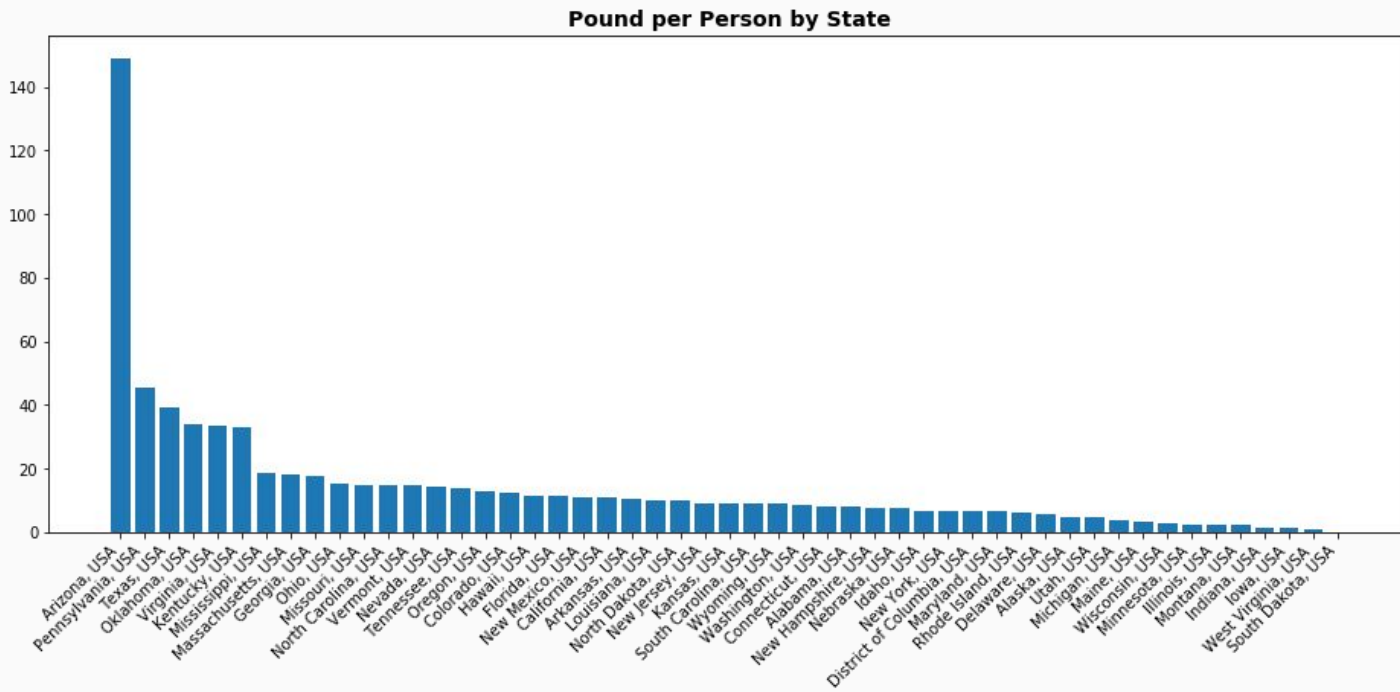

Cleanup Pounds by Months from 2013-2019

Volunteers by State

State Population taken from
2019 Population Estimates
by U.S. Census Bureau

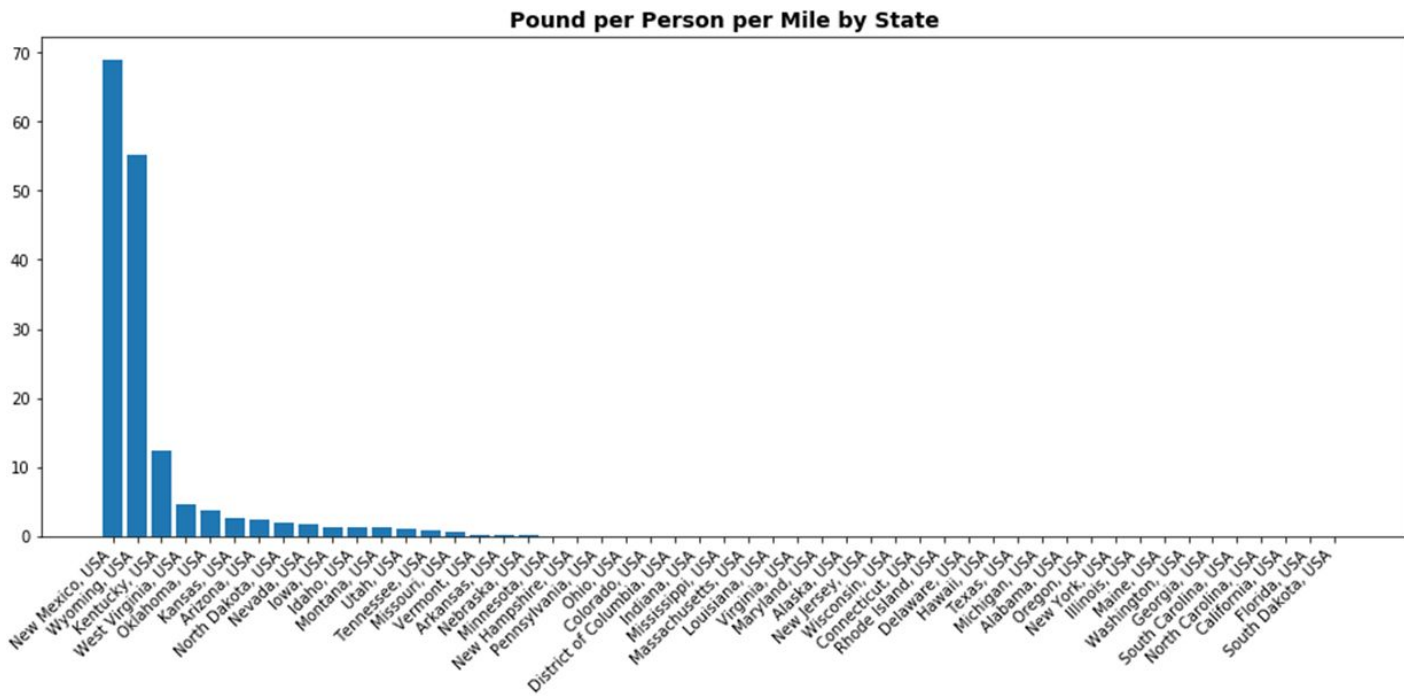# Pounds Per Person for Each State

1. Arizona
2. Pennsylvania
3. Texas
4. Oklahoma
5. Virginia

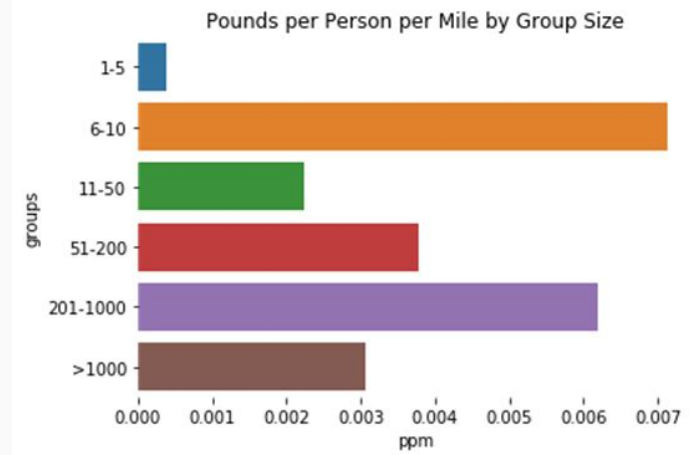Pound per Person by State

Pounds Per Person Per Mile for Each State

1. New Mexico
2. Wyoming
3. Kentucky
4. West Virginia
5. Oklahoma

Pound per Person per Mile by State

Effective Group Sizes/Cleanup Types

Effectiveness measured by pound per person and pound per person per mile
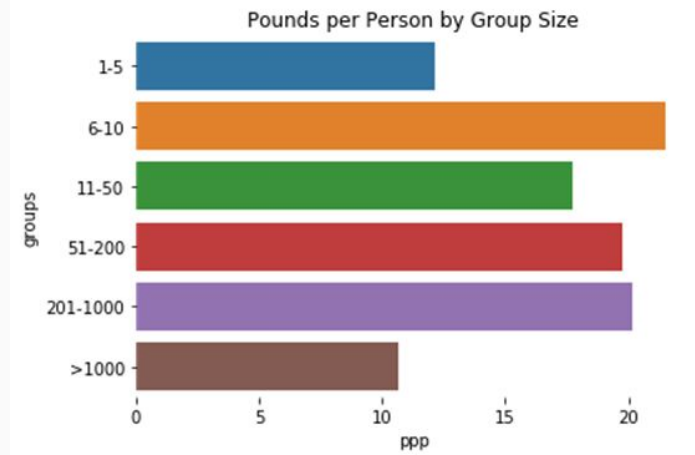
Effective Group Sizes/Cleanup Types

Effectiveness measured by pound per person and pound per person per mile
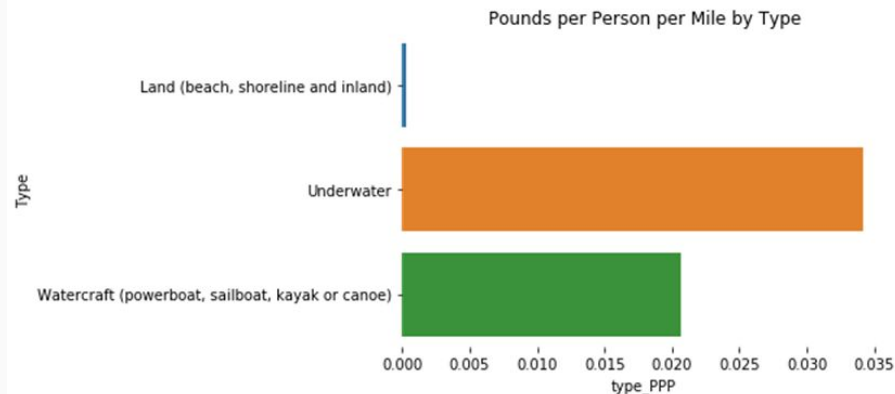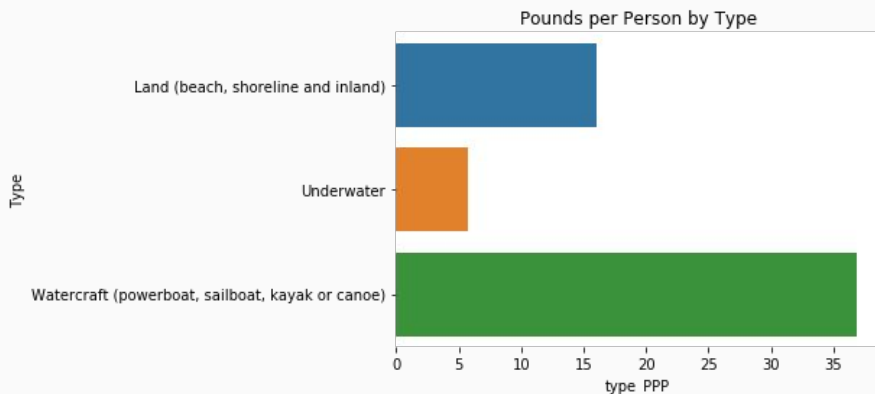
Volume of Garbage Collected by State

Sum Pounds
- > 1,694,954 – 1,977,447
- > 1,127,144 – 1,694,954
- > 543,797 – 1,127,144
- > 187,857 – 543,797
- > 79,097 – 187,857
- > 9,887 – 79,097
- 0 – 9,887

Garbage Volume Collected Per Capita
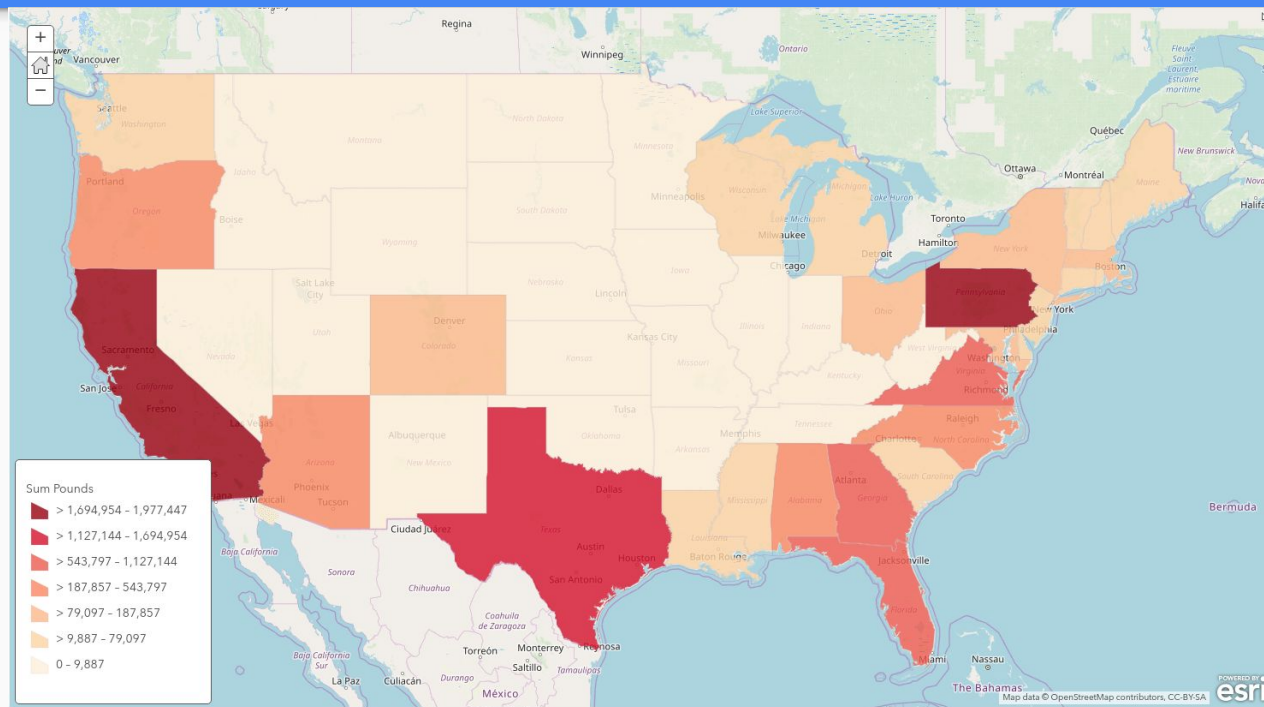
Sum Pounds divided by Population (2017)

- > 0.131 – 0.162
- > 0.079 – 0.131
- > 0.0437 – 0.079
- > 0.021 – 0.0437
- > 0.0137 – 0.021
- > 0.0064 – 0.0137
- 0 – 0.0064

Most Common Trash Item for each State

Legend

Crash_Da_Server

Predominant category
- Sum Cigarette_Butts
- Sum Plastic_Pieces
- Sum Foam_Pieces
- Sum Beverage_Bottles__Plastic_
- Sum Beverage_Cans
- Sum Food_Wrappers__candy__chips__et
- Sum Beverage_Bottles__Glass_
- Sum Bottle_Caps__Plastic_
- Sum Glass_Pieces
- Sum Straws__Stirrers

Strength of predominance
- > 16
- < 5

About   Content   Legend

Trust Center   Contact Esri   Report Abuse   Contact Us

Related Items (K-means clustering)
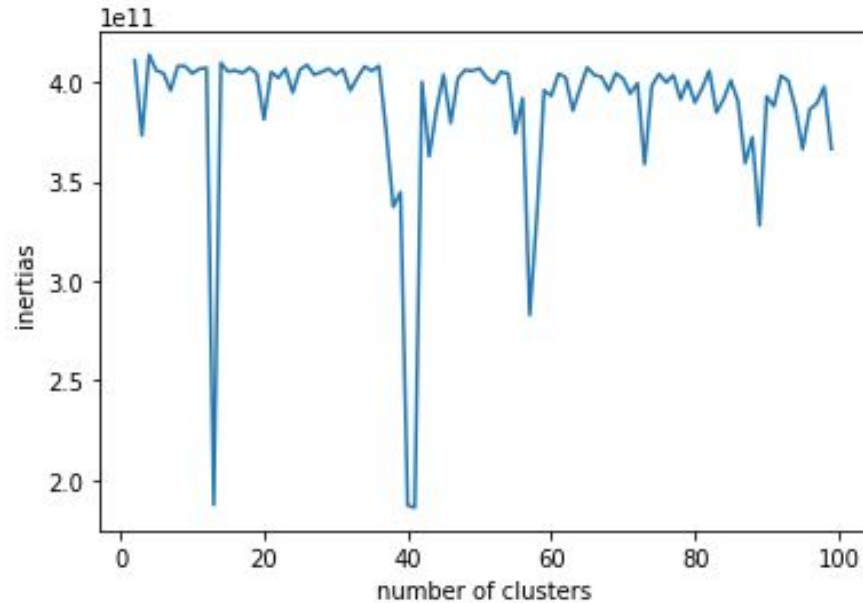
Related Items (K-nearest Neighbors)

Cigarette Butts:

Food Wrappers (candy, chips, etc.)
Bottle Caps (Plastic)
Beverage Bottles (Plastic)
Glass Pieces
Straws, Stirrers
Bottle Caps (Metal)
Beverage Bottles (Glass)

Take Out/Away Containers (Foam):

Cups, Plates (Foam)
Cups, Plates (Plastic)
Cups, Plates (Paper)
Tobacco Packaging/Wrap
Paper Bags
Construction Materials
Forks, Knives, Spoons

Fishing Net & Pieces:

Fishing Buoys, Pots & Traps
Cigarette Lighters
Condoms
Appliances (refrigerators, washers, etc.)
Syringes
Diapers
Personal Hygiene (Clean Swell)

Tampons/Tampon Applicators:

Syringes
Condoms
Appliances (refrigerators, washers, etc.)
Cigarette Lighters
Diapers
Personal Hygiene (Clean Swell)
Toys

Sustainability

- The success and improvement of ocean and waterway cleanups depends on continued involvement of volunteers and outreach to communities
- Garbage pickup in waterways improves quality of life for wildlife and the serenity of the area, as well as improving water quality over time
- Outreach to communities near waterways, watersheds, and beach communities can improve the number of volunteers and the success of cleanup operations
- Volunteer operations prevent the need for major government intervention and can greatly improve health and use of major bodies of water

Potential for Future Growth

- Coastal cities were major source of garbage cleanup
  - Areas such as the Allegheny River were major clusters of cleanup due to annual outreach and events, along with dedicated volunteers
- Interior waterways, especially major rivers and estuaries and rivers, represent an area of growth that is not utilized
  - Mississippi, Ohio, and Missouri river show few cleanup efforts, but represent a large volume of water flow into the Atlantic and Gulf of Mexico
  - Water flow can bring garbage to oceans and river deltas
- Locations for outreach focus can be major metropolitan areas in the Midwest, such as St. Louis, Chicago, Memphis

Education/Outreach

- Outreach to children allows for better long-term involvement and influence in cleanups
- Maine, Rhode Island, Oregon, Hawaii, Delaware, Alaska and New Hampshire are the leading states in getting children involved in cleanups

Child Volunteers per Capita by State