texaslitter.org

# The Texas Litter Database:
## Supporting Cleaner Waterways and Coastlines

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# Texas Litter Database History

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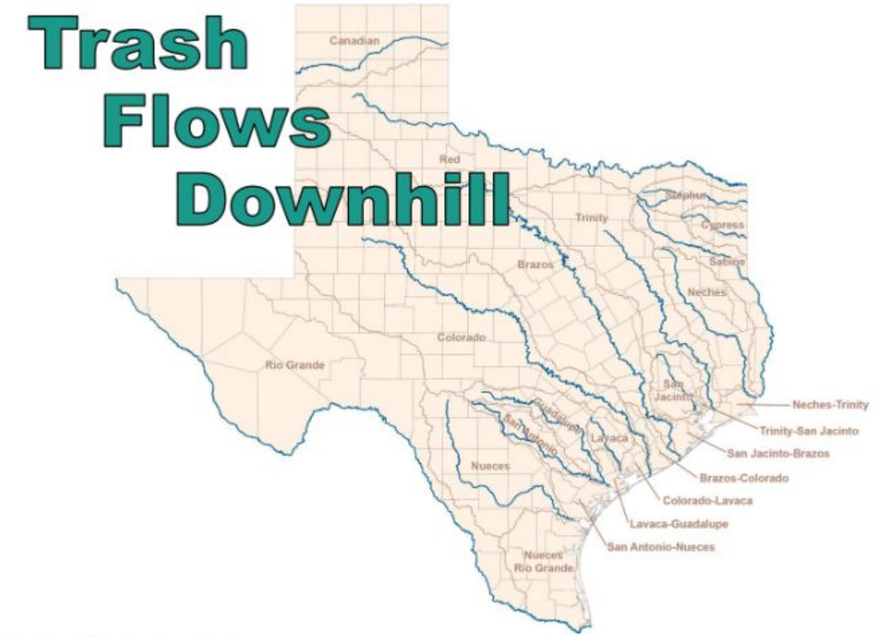
The Texas Litter Database was created in partnership by Keep Texas Beautiful, HARC, and Black Cat GIS with funding from the Garver Black Hilyard Family Foundation.

**It is the first statewide litter database of its kind.**

Public data source that can be leveraged by communities in addition to provide evidence for policy and research.




Map: Texas Water Development Board

THE GARVER • BLACK • HILYARD FAMILY FOUNDATION

HARC

black cat GIS & Biological Services

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# Litter In Our Waterways

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- **5.7 million pounds** of identifiable litter from 3,448 individual cleanups have been collected and reported to the Texas Litter Database in the last four years (February 2020 - June 2024 - **186,739** pieces of litter catalogued)
- Texas contains a vast array of waterways that all have the potential to carry litter to the 367 miles of coastline along the Gulf of Mexico
- Texas has more marine debris and litter along its waterfront than any other state in the nation
- **72%** of reported Texas litter is composed of plastic

# Economic Impact of Litter

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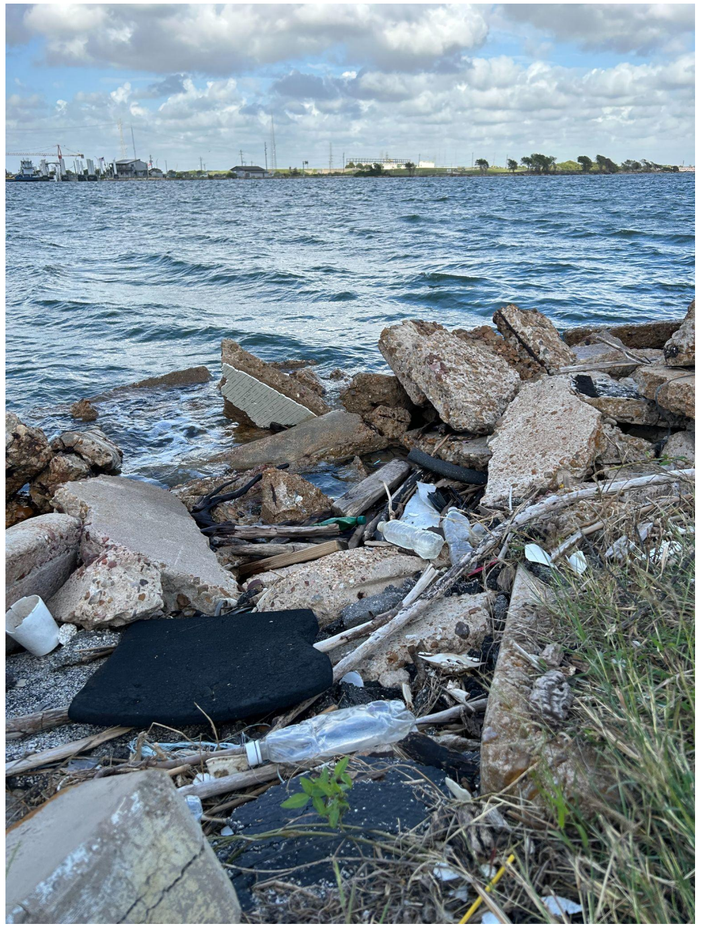
**Cost of Litter Cleanups**
Litter removal can be labor intensive and costly

**Damage to Infrastructure**
Block drainage, increase flooding risk, damage pipes and culverts

**Reduction in Tourism and Recreation**
Less attractive destination, impacting local businesses



# Economic Impact of Litter

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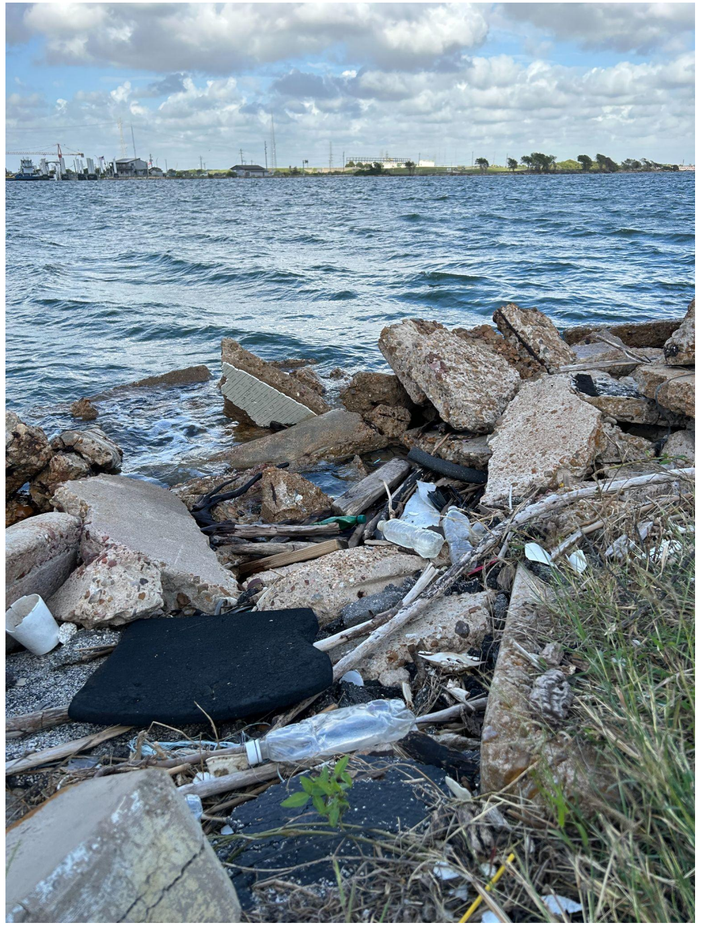
**Impact on Industry**
Agriculture, commercial fishing, etc relies on clean water

**Public Health**
Contamination in our water is a public health risk



# Why Data Collection Matters

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**Provides concrete, actionable evidence that helps us identify problems and potential solutions**

- Track litter hot spots in your community
- Conduct litter audits to determine the composition of the litter in that area (and compare to standardized statewide totals)
- Track trends over time, including measuring efficacy of any given solution

# The New Texas Litter Database

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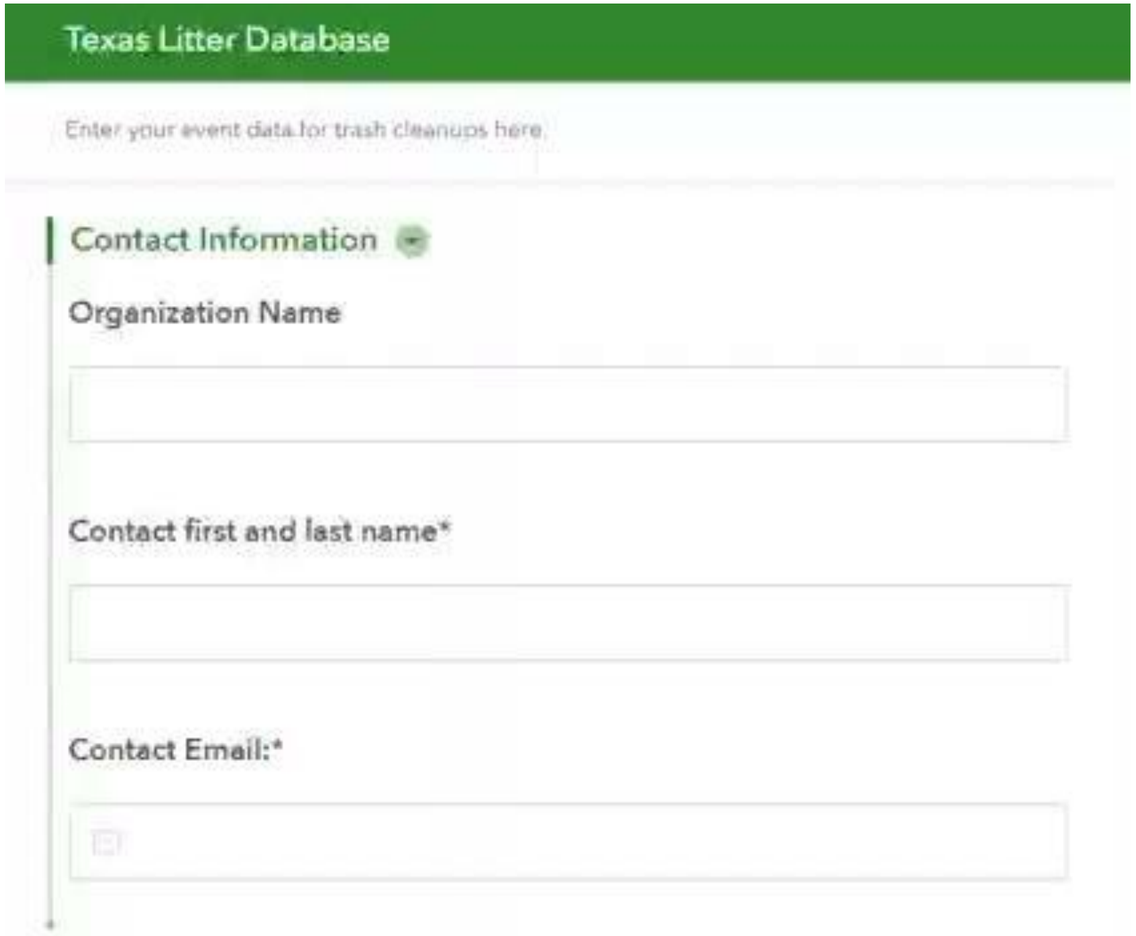
1. Conduct a cleanup in your area
2. Use **Survey123** to share your data
3. View data from other cleanups in the **Charts** and **Maps**
4. See success stories in **Story Maps**
5. Use those data points to implement solutions

# Survey123: Trash Reports

Enter information about your cleanup: who conducted the cleanup, location and weight of trash, and notes about the site

Survey123 is a simple web form with no account or log in that is optimized for mobile use, simple and easy to use (even in the field!)

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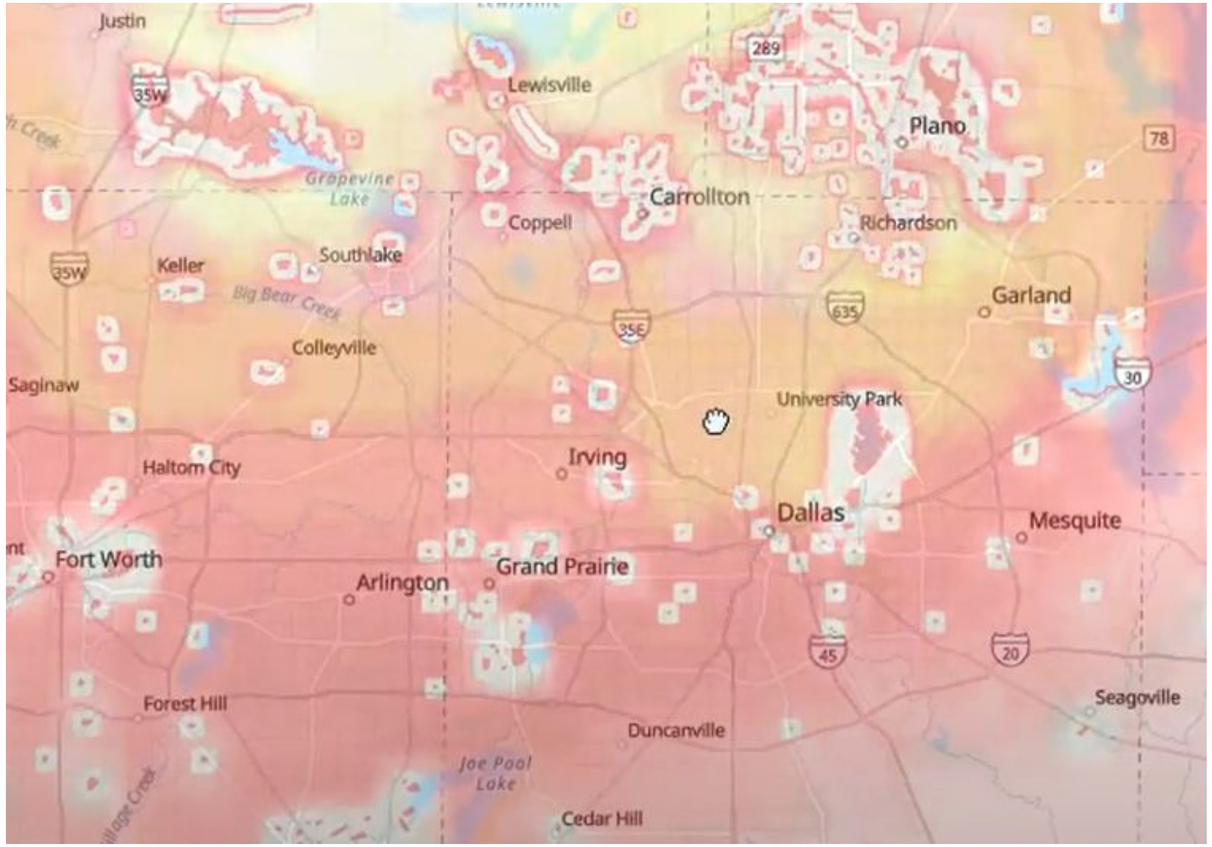
baylor marina
Brazos River
Fudge Football Center
Bill Daniel Historic Village
Jay and Jeanie Allison Indoor Practice Facility
Mayborn Museum Complex
S University Parks Dr
Simpson Athletic and Academic Complex
Beauchamp Athletic Nutrition Center
Betty Lou Mays Soccer Field
Mays Soccer Field
Baylor Ballpark
Baylor Indoor Batting Cages
Crew Storage
Williams Family Soccer Center
Wiethorn Undergraduate Building
Baylor Ave
Hurd Tennis Center
Hooper Schaefer Fine Arts Center
Maxar | TxDOT ENV Affairs Division GIS: ENV_GIS@txdot.gov | © OpenStreetMap contributors | Esri Community Maps Contributors, Baylor University, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, SafeGra...
Powered by Esri
No geometry captured yet.

# Dashboard: Cleanup Maps

Now, anyone in the state of Texas can see exact details and data on where your cleanup took place

You can use this tool to track your cleanups, include data submitted by other groups in your county, and compare with what's being found in any region in the state at any time

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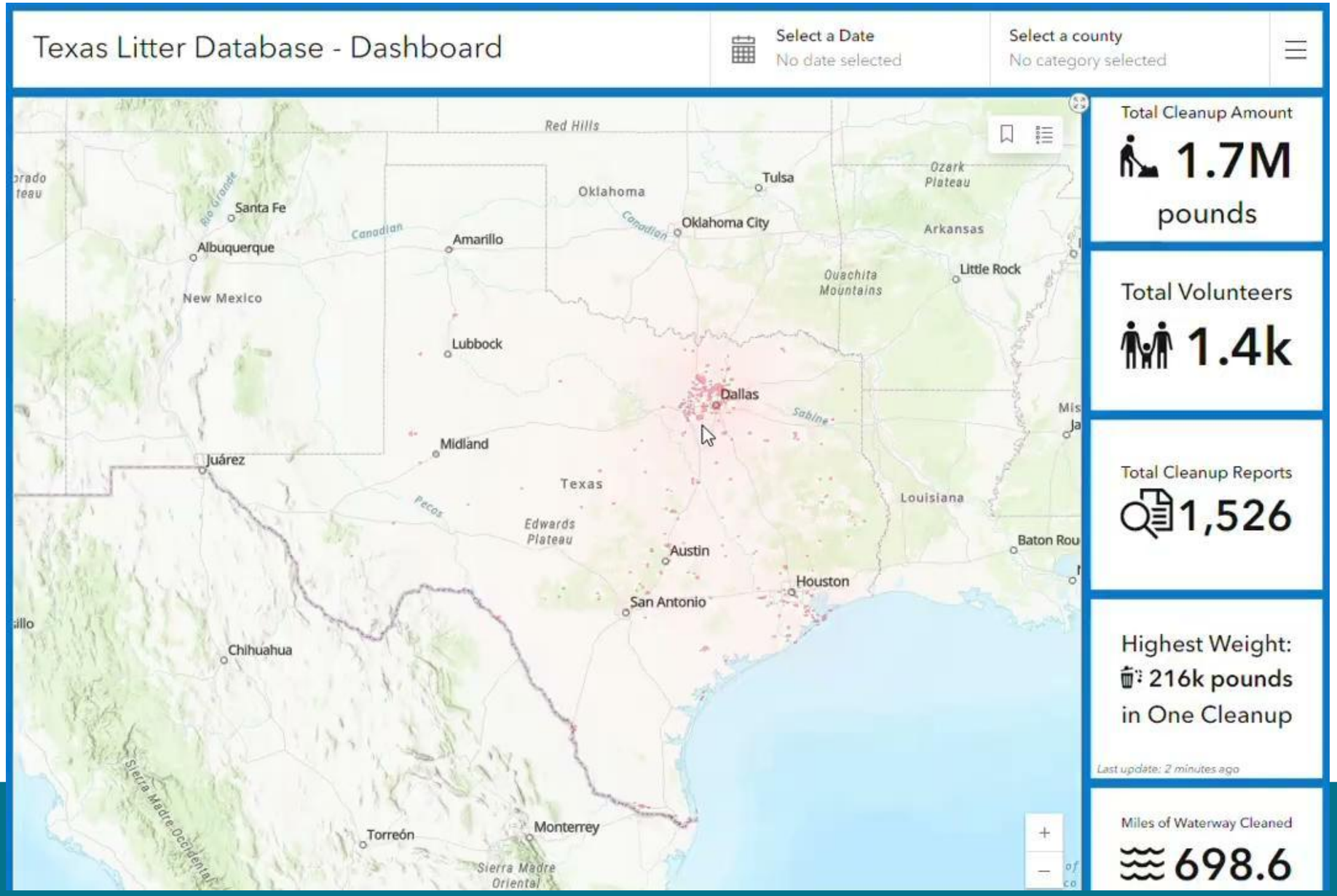
Texas Litter Database - Dashboard
Select a Date
No date selected
Select a county
No category selected
Red Hills
Oklahoma
Tulsa
Ozark Plateau
Oklahoma City
Arkansas
Santa Fe
Albuquerque
Amarillo
Canadian
Rio Grande
Little Rock
Ouachita Mountains
New Mexico
Lubbock
Dallas
Sabine
Midland
Juárez
Texas
Louisiana
Pecos
Edwards Plateau
Austin
Houston
San Antonio
Chihuahua
Monterrey
Torreón
Sierra Madre Occidental
Sierra Madre Oriental
Total Cleanup Amount
1.7M
pounds
Total Volunteers
1.4k
Total Cleanup Reports
1,526
Highest Weight:
216k pounds
in One Cleanup
Last update: 2 minutes ago
Miles of Waterway Cleaned
698.6

# STOP Audits

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**STOP (Study, Track, remOve, and Prevent) Audits provide the best quality data**

**Measure a sample cleanup area, pick up every piece of trash in sight, take a detailed inventory of what you find**

1. Categories include hard and solid plastics, polystyrene, rubber, glass, metal etc

2. Audits can be carried out in any size sample area

3. Results from litter audits across Texas have been standardized to show expected trash types in 500 sq meters

*Examples: any "hard" plastic that is not styrofoam or plastic film*

**Hard and Solid Plastic**

| Item | Tally | Total # |
|---|---|---|
| 6 pack rings | | |
| Beverage Bottles/ Containers | | |
| Bottle/ Container Caps | | |
| Buoys and Floats | | |
| Cigar plastic tips | | |
| Cigarette butts | | |
| Disposable lighters | | |
| Fishing Lures and Line | | |
| Food Containers | | |
| Fragments | | |
| Non-Food Containers | | |
| Personal care products | | |
| Plastic Cups/ Plates | | |
| Plastic Rope/net pieces | | |
| Plastic Toys | | |
| Plastic Utensils | | |
| Shotgun Shell Casings | | |
| Straws | | |
| Other: | | |

# STOP Audits

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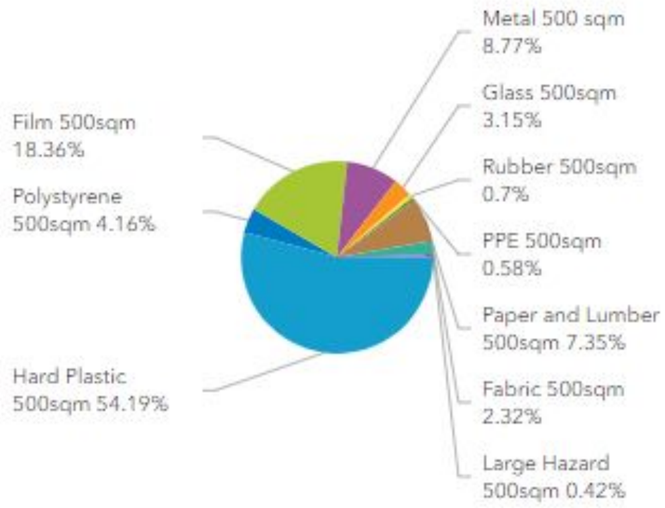
## Expected Trash Items per 500 Square Meters

Select a date range
All data shown

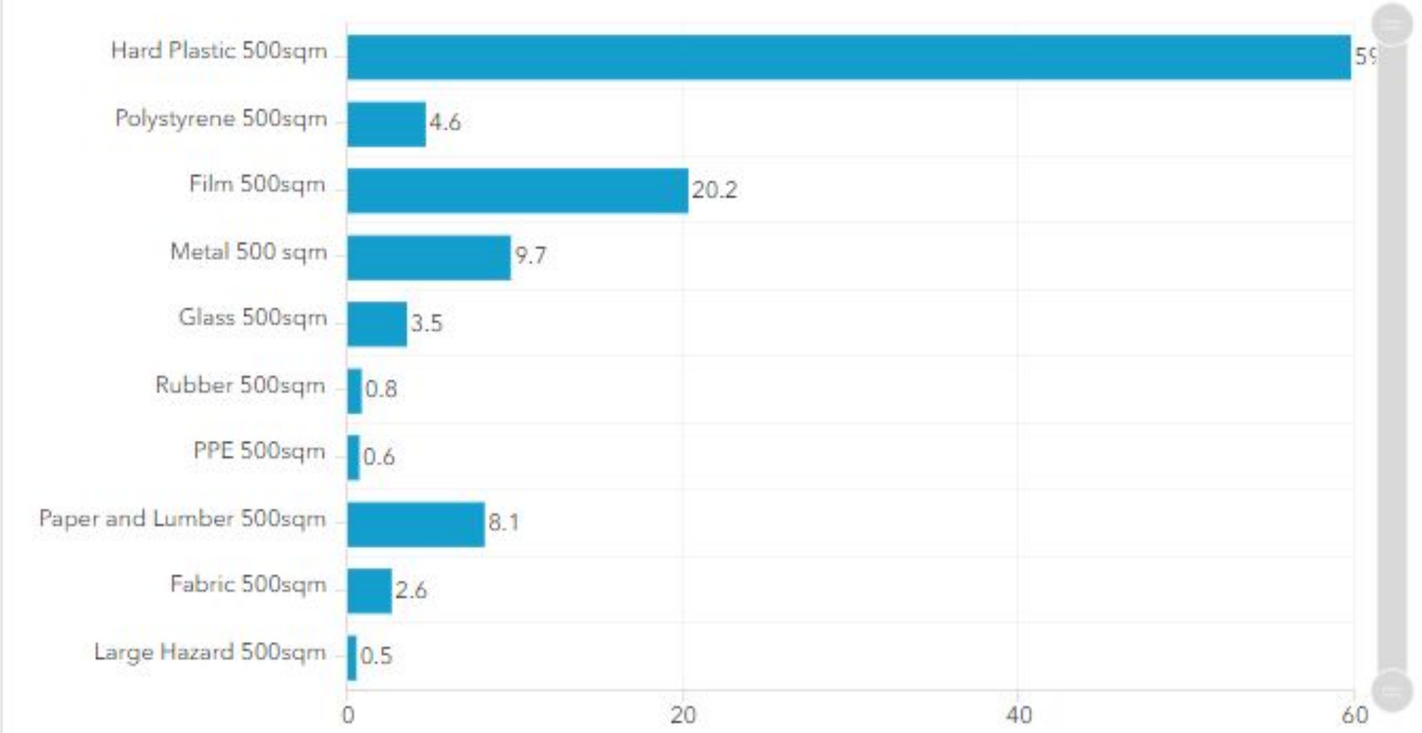
Select a county
No category selected

**These numbers are calculated by dividing reported counts on surveys by the total area surveyed and then multiplying by 500.**
Items on detailed surveys are divided into major




Major litter category percentages of trash collected on detailed surveys averaged by 500 square meters.

*Last update: 4 minutes ago*



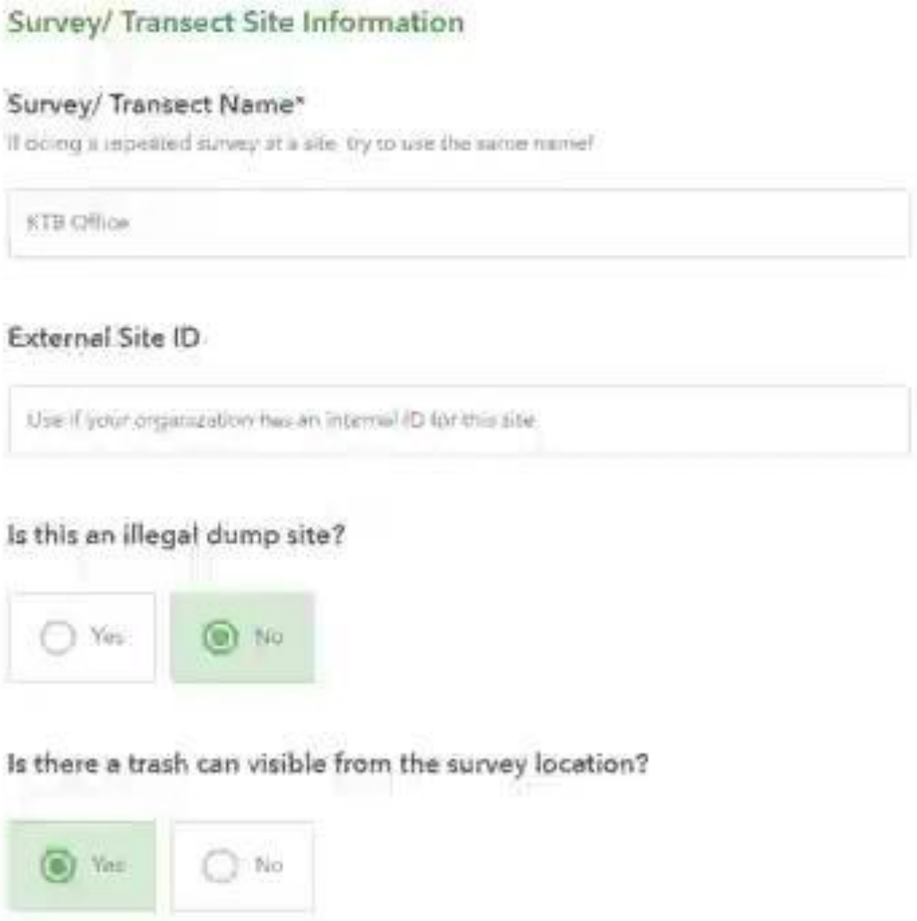

*Last update: 4 minutes ago*

Serial chart | Map

# Survey123: STOP Audit

Use the information from your STOP Audit form to upload details about your litter audit

You'll submit location data, weight of trash collected, and share estimated fragments and individual counts of trash types found in your sample area

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# Problem → Solution

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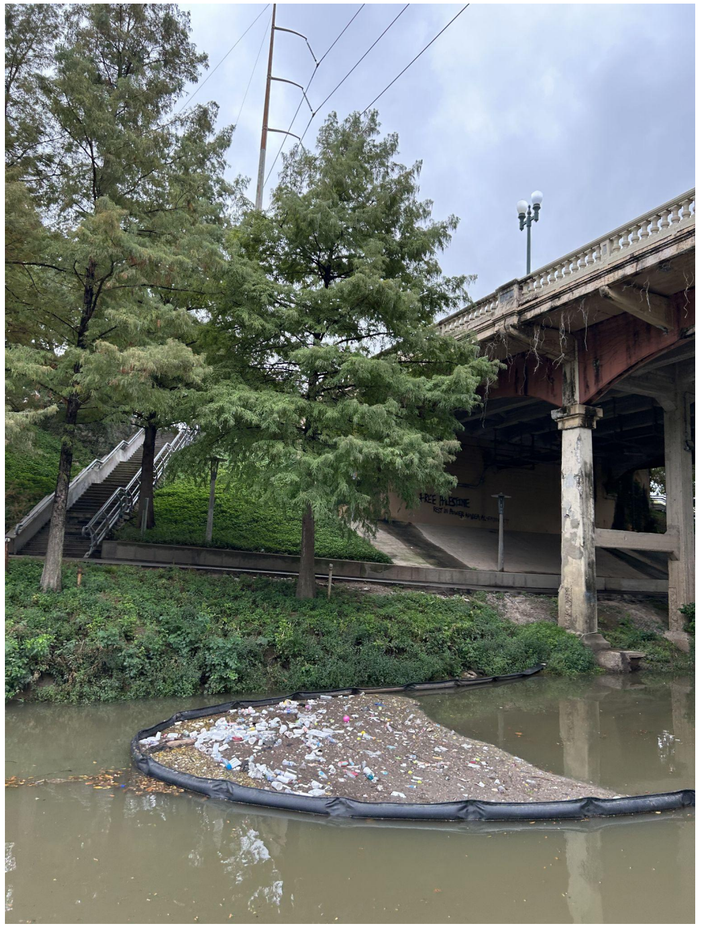
**Impact from Local → State Level**

1. Targeted Educational Campaigns
2. Resource Allocation for Infrastructure
3. Engage Businesses
4. Data Points for Research and Legislative Support
5. Replicable Model



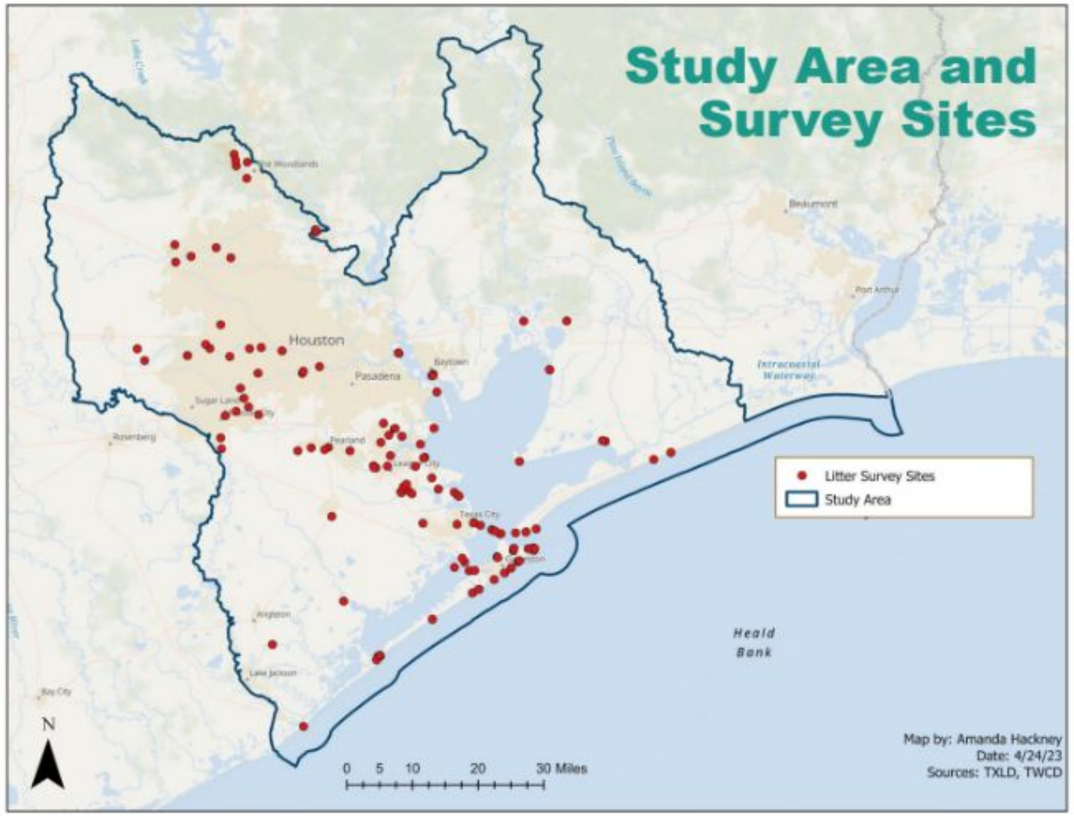
# Story Maps

## Highlighting Research

Study by **Amanda Hackney** in Justice 40 Communities

OLS Model showed:

- Aspect (ESE to SSE)
- Sinuosity (curvier waterways catch more trash)
- Distance to wastewater outfall
- Distance to Justice 40 tract
- Marine Debris Hotspot Estimations in Lower Galveston Bay Watershed

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# Tool for Civic Engagement

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## Volunteerism & Litter Cleanups

1. Identify groups in your community interested in litter cleanups, or that are already conducting cleanups to team up (KTB Affiliates, Master Naturalists, corporations, etc)

2. Send them to KTB for support, education, and guidance (free cleanup supplies also available in exchange for data)

3. Value of volunteer time: $33.49 an hour (2024)

4. Engage youth via TEKS-aligned lesson plans, Scout group opportunities, and more

# Questions!

Link to Recording: [Using the New Texas Litter Database]

Contact Kirsten (kirsten@ktb.org) for more information, or to request a meeting

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