

Data from Litter Cleanups: Leading to Solutions



Are plastic bags a big litter problem in Virginia?

Is litter from bottles and cans a big deal in our state?

Do certain types of litter accumulate on our beaches?

Thanks to data collected by volunteers during the annual International Coastal Cleanup in Virginia, we have answers to all these questions.



How does Clean Virginia Waterways use the data?

Data help us find hotspots.

Volunteer-collected data helped Clean Virginia Waterways understand that balloons and plastic ribbons are frequently found on Virginia's remote beaches. Beaches are a "hot spot" for this type of litter.

In a 2014 beach cleanup at Chincoteague National Wildlife Refuge in Virginia, volunteers found 904 balloons in three hours. This led CVW to look at all the balloon litter data over a five-year period. CVW found that Virginia International Coastal Cleanup volunteers reported 4,916 pieces of balloon litter — and 63.5% were found on ocean beaches! In fact, the more remote beaches had significantly more balloon litter compared to public beaches. This discovery led to further research.

Hotspots of litter accumulation in your community can also be located by collecting and looking at data.



Photo courtesy of NOAA

The **International Coastal Cleanup (ICC)** is an annual, worldwide litter cleanup initiative to help keep water bodies beautiful. With millions of volunteers around the globe, 341 million pounds of trash have been picked up during the ICC over the last 36 years. Clean Virginia Waterways, which organizes the ICC in Virginia, asks volunteers to not only remove trash and litter from our environment, but to take one further step, and track the types and amounts of items they are finding. Volunteers can use either a paper data form or an app on their smartphone called [Clean Swell](#). People of all ages can [track data](#) during any cleanup year-round.

Data help to tell a story.

Data give us a baseline and allow us to see trends over time.

Plastic pollution is a relatively new problem as it started in the 1950s when single-use plastic items became popular.

Data helps us identify the most common litter.

There are many questions about where litter comes from, how it travels through watersheds, and where it ends up. Approaching the litter problem can be overwhelming, but data can help us understand what the most abundant sources of litter are in your local community, in Virginia, in the United States, and in the entire world. We can also prioritize prevention strategies through collecting and analyzing data.

Data allow us to rank the top ten most common types of litter per year, which helps to identify the biggest litter problem areas, compare them to other communities, and shape future actions.

2021 Top Ten Debris Items International Coastal Cleanup in Virginia

Rank	Item
1	Cigarette Butts
2	Bottle Caps and Lids
3	Food Wrappers
4	Beverage Bottles (plastic)
5	Beverage Cans
6	Grocery Bags
7	Cups and Plates (plastic + foam)
8	Beverage Bottles (glass)
9	Straws and Stirrers
10	Take-out Containers

Litter from food and beverage items dominate the Top Ten list in 2021. Data collected by volunteers during the International Coastal Cleanup in Virginia, coordinated by Clean Virginia Waterways of Longwood University.

CASE STUDY: Balloon Litter

The Virginia Aquarium and CVW (funded by the National Oceanic and Atmospheric Administration (NOAA) through the Virginia Coastal Zone



Management (CZM) Program) monitored debris on four beaches once a month for more than four years. Researchers found balloons were the most frequently recorded type of litter at Chincoteague National Wildlife Refuge and the third most frequently recorded litter type on Fisherman Island National Wildlife Refuge.

During another study (partly funded by the Virginia CZM Program), researchers Christina Trapani and Kathy O'Hara recorded 11,441 balloon-related litter items over the course of their surveys on remote beaches of Virginia. In fact, on Fisherman Island, 212 pieces of balloon-related litter were found in 1/2 mile in a November 2020 count.

Putting these data to work. CVW, Virginia CZM, and their partners conducted extensive research to better understand why people purchase and release balloons. Interviews and surveys revealed that many people believe environmentally friendly released balloons exist, but this is not the case.

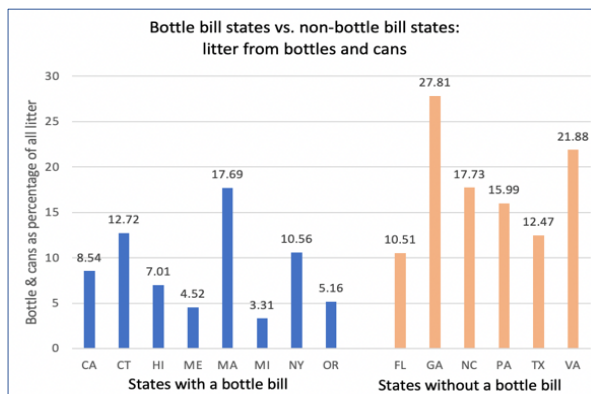
The partners used this research to inform campaigns and create websites (PreventBalloonLitter.org and JoyfulSendoff.org) to encourage litter-free alternatives to balloon releases at celebrations and memorial events. For example, families and friends can plant a native tree, start a garden, or blow bubbles. They can keep balloons securely tied and inside, to help keep wildlife safer and the ocean cleaner. Organizations across Virginia, the Mid-Atlantic, and around the world are signing on as partners on these websites to spread the word about ways to celebrate, or memorialize loved ones, without harming wildlife.

Data can drive policy change.

We put the data to work to find answers and solutions. Data collected by volunteers during the ICC are examined by organizations as they develop educational campaigns as well as policies and laws.

ICC data in Virginia is summarized in reports, which are shared with policy makers. For example, data about balloon-related litter was summarized in a report instrumental in updating Virginia law about releasing helium-filled balloons into the environment. Read the report, [“Deadly Litter: Balloons & Plastic Ribbons on Virginia’s Coastal Beaches”](#)

Beverage-related litter



CVW published a report comparing data from Virginia (which does not have a bottle bill) with states that do have bottle bills. Bottle bills are laws which require deposits on certain beverages, providing an incentive for people to return bottles and cans for recycling. The CVW found that plastic bottles, glass bottles, and aluminum cans are approximately two and half times more frequently littered in Virginia than in states with bottle bills. Reports like these help to drive policy decisions and laws that will reduce litter from single-use items.

Data collection engages people of all ages as “citizen scientists.”



Litter is everywhere, and everywhere there is a person willing to pick it up, there is an opportunity for people from all walks of lives to be part of the solution by becoming more aware of the issue and helping to collect data. Collecting data is not only helpful, it also can inspire personal behavior change through heightened awareness about the amount of litter in our environment.

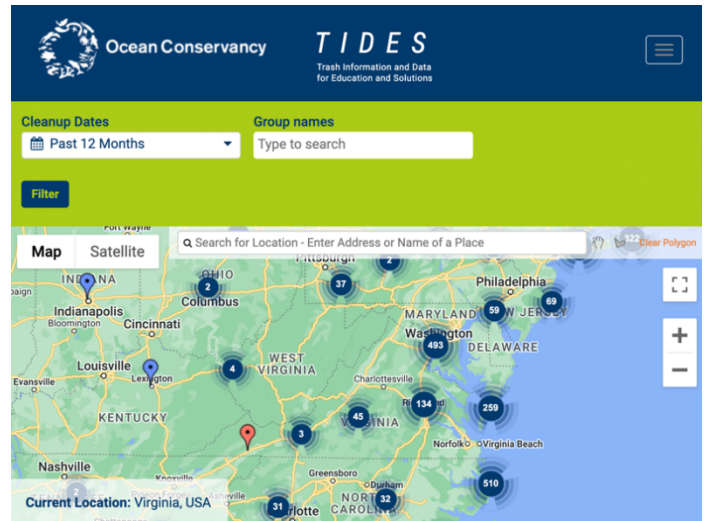
How can you help collect data?

Prior to ANY litter cleanup, ANY time of year, you can download a paper Data Card. All you need is the Data Card, plus a pencil, and you can get started! Cards can be sent to CVW via mail or scans, and will be entered into the Ocean Conservancy’s online open-access database. You can also conveniently collect data through the Ocean Conservancy’s easy-to-use Clean Swell app for smart phones. If you are doing a cleanup with a group of people, one person can be the data recorder by simply tapping the icons on the screen to keep a running tally of the amount of trash found. Clean Swell utilizes the GPS abilities in smart phones to track the route so you will know the exact distance you cleaned. Before submitting data on the app, there are opportunities to type in how many people and how many pounds of litter were collected during your cleanup event.

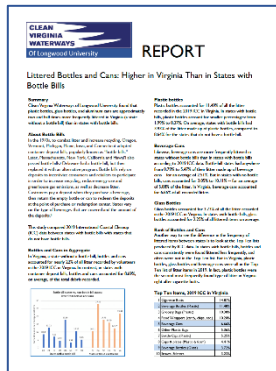
Whether you are cleaning up on your property by yourself, or joining a large group, we hope you will consider collecting data and contributing to the solution.

How can you download data?

Anyone can access the Ocean Conservancy's online database, and generate free reports about the litter and marine debris found in their neighborhood, community, state or country. To create a free account, and start downloading data, go to the TIDES database <https://www.coastalcleanupdata.org/>.



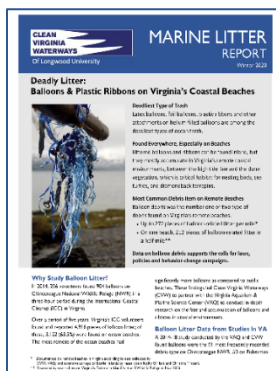
Publications & research based on data from cleanup events:



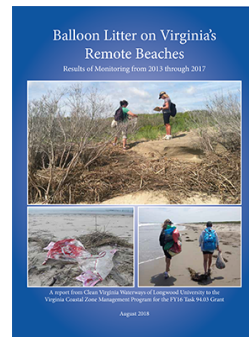
Register, K., 2022. *Littered Bottles and Cans: Higher in Virginia Than in States with Bottle Bills*. Clean Virginia Waterways. Longwood University.



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Trapani, C., O'Hara, K., & Register K., 2018. *Balloon Litter on Virginia's Remote Beaches: Results of Monitoring 2013-2017*. Clean Virginia Waterways, Longwood University.

A sincere thank you to the International Coastal Cleanup and Trash Free Seas® Program at the Ocean Conservancy for assistance in preparing this report.



Founded in 1995, Clean Virginia Waterways of Longwood University is dedicated to decreasing plastic pollution, litter and marine debris through research, cleanup events, and building collaborations. CVW is housed on the Longwood University campus in Farmville, VA and is affiliated with the Ocean Conservancy in Washington D.C. CVW is funded through grants, gifts, sponsorships, and workshop fees.

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