Photo by Julie Silverman, CLF Lake Champlain Lake Keeper

# FIELD GUIDE
## TO FOAM MARINE DEBRIS
### In the Lake Champlain Basin

*Written by the Lake Champlain Basin Marine Debris Coalition*

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# INTRODUCTION


Photo by Julie Silverman, CLF Lake Champlain Lake Keeper

Walking the shoreline of Lake Champlain and Lake George, you might find sand, pebbles and rocks, driftwood, and all sorts of natural objects. These contribute to the beauty of our region. They are also important to the many animals and plants that call our region home. You might also find objects far less pleasing to the eyes, such as polystyrene foam – also known as Styrofoam® - pieces coming from a broken dock float, a discarded takeout food container, or other type of foam items.

Marine debris is any human-made solid material that ends up in our waterways, polluting the environment. Despite its name, marine debris is not restricted to oceans. It is also found in freshwater bodies like Lake Champlain, Lake George, and the rivers and streams that flow into them.

Plastic foam is one of the several types of marine debris found in the Lake Champlain Basin. Plastic foam does not degrade naturally. Once in the environment, it's here to stay.

Plastic foam from dock floats, food service, and packaging makes up a large percentage of marine debris in the Lake Champlain Basin. Since 2012, tens of thousands of foam pieces were collected along Lake Champlain.

Made of tiny air pockets, plastic foam is light, breaks apart easily, and spreads quickly across the water and shorelines. Plastic foam is also harmful to fish and other animals that eat pieces of it. This exposes them to the toxic chemicals used in the manufacturing of foam.

Recent policies in both New York and Vermont are helping keep foam out of the water, but continued efforts are needed to promote education, sponsor cleanups, and target the root causes of foam and plastic pollution. This guide divides foam into categories to assist you with the identification and documentation of foam debris items found on beaches, shorelines, and waterbodies in Lake Champlain Basin.

# HOW TO USE THIS GUIDE

This field guide is a tool to help you identify and accurately classify foam debris—a common and difficult to identify form of shoreline pollution—while participating in the broader marine debris clean-up effort throughout the Lake Champlain Basin.

**Note:** This guide focuses specifically on how to identify different types of foam debris, which can often be difficult to categorize due to its broken or degraded form.

## Collecting and Sorting Debris

Begin by walking your chosen shoreline location and collect any debris. Make sure you use gloves and a collection container or bag. Focus on the wrack line, vegetation edges, rocky patches, and any areas where litter may accumulate. Wear gloves and use a container or bag to collect all debris types, being careful not to disturb wildlife or plant life.

Once collected, lay the debris out on a clean surface to assess and sort. You should separate items by material (plastic, metal, glass, foam, etc.) and then further sort foam using this guide.

If you aren't sure about what you have, try the pinch test: if a plastic fragment or bead squishes or dents between your fingers, it's likely foam. Refer to pages five through nine to match foam pieces to specific categories. If you cannot determine the source of a foam item, use the size classification system on page nine: microfoam (<5 mm), small foam (5–30 mm), or large foam (>30 mm). Items that are clearly fragments of a single source—such as a broken cooler or foam plate—can be recorded as one object. If you are unsure whether pieces belong together, record them individually by size. Unrelated fragments should be categorized individually.

## Documenting Debris Types

Use the paper data card provided at the end of this guide (see pages 15-16) or the Debris Tracker app (see page 11) to log what you find. Be sure to catalog all debris, not just foam. For foam debris specifically, use this guide to record the correct category and quantity. You may add notes or take photos if you are unsure about an item. Photos and questions can be sent to the Lake Champlain Basin Marine Debris Coalition at lcbmdc@uvm.edu. Paper data cards can be emailed to lcbmdc@uvm.edu or returned by mail to:

Rozalia Project
P.O. Box 3075
Burlington, Vermont 05408

# CONSUMER FOAM PRODUCTS

## Foam Cups or Plates

Whole cups or smaller identifiable pieces of foam cups.


Photo by Center for Coastal Studies


Photo by Center for Coastal Studies


Photo by Nova Scotia Beach Garbage Awareness

## Foam Take Away Containers

Takeout containers, food trays, egg cartons, etc.

Photo by Nova Scotia Beach Garbage Awareness


Photo by Center for Coastal Studies

## Foam Toys

Foam darts, airplane toys, craft foam, etc.


Photo by Lake Champlain Sea Grant


Photo by Freepik.com


Photo by Lake Champlain Sea Grant

# CONSUMER FOAM PRODUCTS

## Water/Pool Foam Toys

Toys that float in water such as noodles, water blasters and mats.

Photo by Lake Champlain Sea Grant

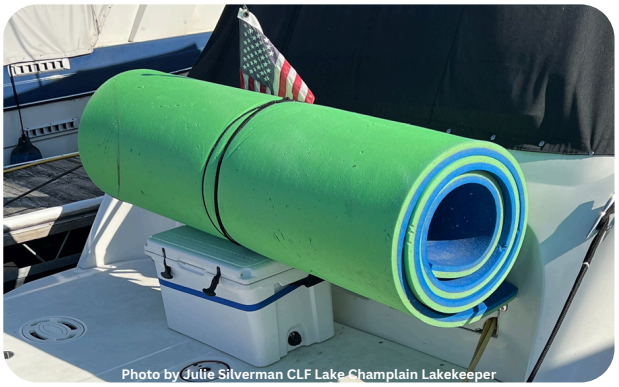


Photo by Julie Silverman CLF Lake Champlain Lakekeeper

## Foam Shipping/Packaging

Protection used for the shipping and storage of fragile items, such as packing peanuts, foam sheets, etc.


Photo by Lake Champlain Sea Grant


Photo by Lake Champlain Sea Grant


Photo by Lake Champlain Sea Grant

## Foam Coolers

Containers used to keep content cool including food, beverages, and fishing bait.

Photo by Julie Silverman CLF Lake Champlain Lakekeeper

Photo by Julie Silverman CLF Lake Champlain Lakekeeper


Photo by Julie Silverman CLF Lake Champlain Lakekeeper

# BOATING DEBRIS

## Foam Bouys

Whole buoys, identifiable chunks and buoy sticks, in all sizes and colors.


Photo by Center for Coastal Studies


Photo by Nova Svotia Beach Garbage Awareness


Photo by Center for Coastal Studies

## Foam Dock Floats

Whole or identifiable chunks of dock floats. Typical colors are blue and white.


Photo by Julie Silverman CLF Lake Champlain Lakekeeper


Photo by Julie Silverman CLF Lake Champlain Lakekeeper


Photo by Julie Silverman CLF Lake Champlain Lakekeeper

# CONSTRUCTION, HOME & GARDEN FOAM

## Construction Foam

Sprayed or rigid foam used for insulation or in construction. Color may vary (e.g., blue, pink). Construction foam may also be associated with foil.


Photo by Julie Silverman CLF Lake Champlain Lakekeeper


Photo by Center for Coastal Studies


Photo by Center for Coastal Studies

## Home and Garden Foam

Foam used around the house or for gardening purposes such as foam cushions, foam kneeling pads, floral foam blocks.


Photo by Lake Champlain Sea Grant


Photo by Lake Champlain Sea Grant

Photo by Lake Champlain Sea Grant

# NON-IDENTIFIABLE SOURCES

## Micro-foam
## < 5 mm

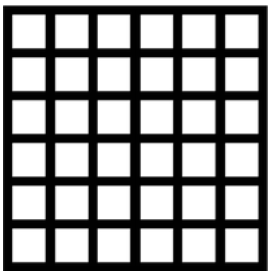

*About the width of a pencil eraser or smaller*

## Small foam
## 5 - 30 mm


## Large foam
## > 30 mm


*Larger than a US quarter*

*Use the grid below to determine the size of marine debris – each small box is 5 mm x 5 mm. The larger box is 30 mm x 30 mm.*



# RECORDING AND REPORTING DEBRIS DATA

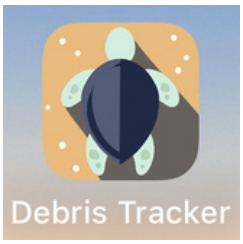
The Lake Champlain Basin Marine Debris Coalition created a data card to record commonly found marine debris. It includes a detailed section on foam to help identify the major sources of foam debris in Lake Champlain basin. The data card is available in two versions that you can choose from:

- A paper version provided at the end of this guide (see pages 15-16) that can be printed. If you do not have a printer, copies of the data card are available upon request to the Coalition at lcbmdc@uvm.edu. Completed data cards should be returned to the email above or mailed to: Rozalia Project, P.O. Box 3075, Burlington, Vermont 05408
- An electronic version that can be accessed through the Debris Tracker app (see next page).

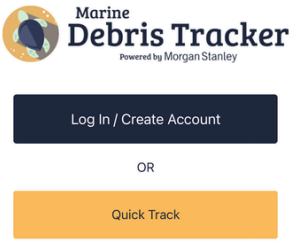
Reporting your data is extremely important! The information you provide about marine debris, especially foam, assists the Coalition with understanding the issue of marine debris in the Lake Champlain Basin and may support regional management decisions.

# HOW TO USE THE TRACKER APP

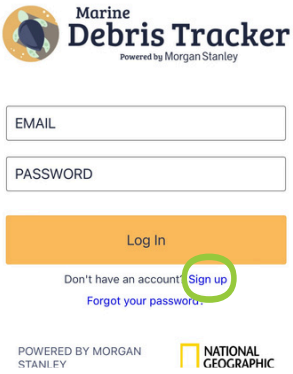
## Setting up the App




Download the app called the “Debris Tracker” off of your mobile device’s app store. Once downloaded, swipe through the six slides until you see a yellow “Continue” box. Tap on that box. You will be asked to share your location, please press, “Allow while using app”, so the app can precisely track your location when collecting debris. If you ever want to change your location settings, you can always go to your phone’s “Settings” app and change the restrictions.



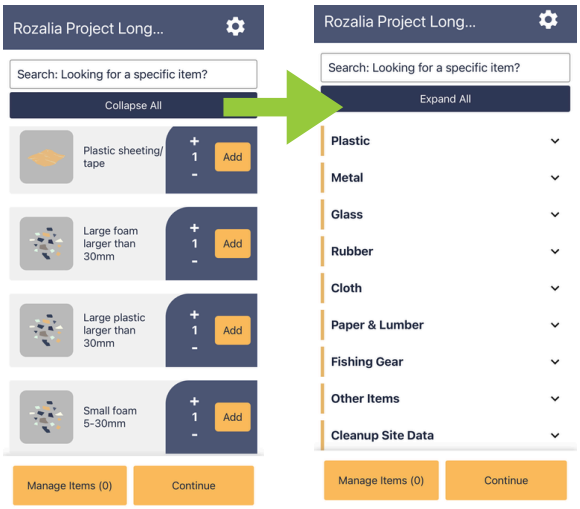

Next, if you have an account with Debris Tracker, go ahead and login. If this is your first time using the app, click “Log In / Create Account”, then “Sign up” located below the “Log In” button. Fill in your name, username, email, and create a password - be aware that your username will be seen by others, so don’t use anything personal! When finished go back to this Login page and tap “Log in”




Once you are in the app, at the bottom of your screen, click the “Select an Organization” button. In the search bar, look up “**Rozalia Project LONG List**” and click “Continue” to choose this organization. If you accidentally click the wrong organization, press the gear icon on the top right of the screen, click “Change Organization”, then “Continue”, and search up the correct organization.

## Learning How to Use the App

Once you are on the Rozalia Project Long List mobile data card, your screen will have a search bar at the top and a long list of debris below. If you click “Collapse All” at the top, the list will condense into marine debris materials: “Plastic”, “Metal”, “Glass”, etc. (Tip: If your screen says “Expand All” at the top then you are already looking at this feature) This function makes the list much easier to understand and track with.



# HOW TO USE THE TRACKER APP

The categories are in rows, organized by material, and within each category are common objects that you might find. For example, if you click on the arrow on the right side of the screen within the “Glass” category, you will see “Glass pieces” and “Glass bottles”. On the right side of each of the objects are “+” and “-” buttons that allow you to change the number of glass bottles - or whichever object it is that you’ve found - for you to add to your list.

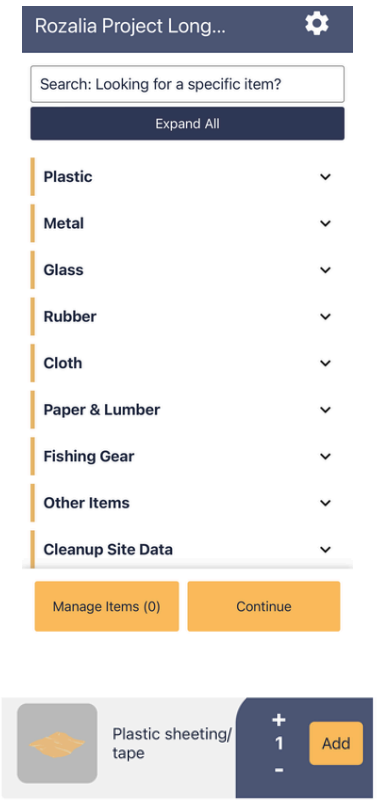
Larger categories like “Plastic” and “Foam” have options that allow you to record debris as fragments such as "Small foam (5-30mm)” and “Micro-foam up to 5 mm”. See page 9 for a grid to help you with the measurements. We encourage you to familiarize yourself with the objects within each material category.


Now, you are ready to track!

## Tracking your Findings

The photo on the right is what your screen should look like to begin tracking.

After you find and identify debris, scroll on your mobile data card until you’ve found the accurate category: “Plastic”, “Cloth”, etc. Click on the arrow on the right of your category and look for the object name that best fits the description. If you’ve only found 1 of that object, then simply click the yellow box “Add” on the right side of the screen. If you’ve found more than 1, then toggle the “+” and “-” buttons until you have the correct number on the screen, then click “Add”.

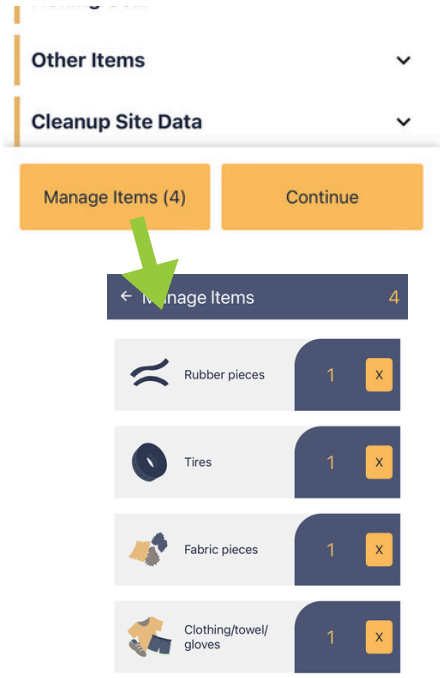


# HOW TO USE THE TRACKER APP

## Managing your Findings

As you enter data, they will be recorded in the "Manage Items" section, at the bottom left of your screen.

If you accidentally added an incorrect amount of objects, go to "Manage Items". Your most recent find will be at the bottom of the list, so scroll until you see what you most recently added. Press the "X" next to that item or group of items that you want to delete. To go back to the mobile data card, click the left-facing arrow on the top left of the screen. Once returned to the data card screen, add the correct amount of objects.




## Submitting your Findings

When you are finished with your tracking session, click "Continue" on the bottom right of your mobile data card. You will be brought to a screen displaying your location, distance walked, time spent, and a pie chart of the items you collected. If at the moment you have a reliable network connection, choose "Upload Session" to submit your findings. If not, click "Upload Later" and upload your session once you return home.

If you ever have any questions about what you've found or where to categorize it, take a picture of it and send it to the Coalition at lcbmdc@uvm.edu. If you don't have cell service, then simply take a picture and send it when you are home - don't worry about adding it to the final list, we will account for it.

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Here are some helpful You Tube videos you can watch to learn more about the Debris Tracker app and how to use it:

- https://www.youtube.com/watch?v=LzobdbAckws
- https://www.youtube.com/watch?v=lhGvFLLp6dA

# FREQUENTLY ASKED QUESTIONS

### How do I report several foam fragments found close to each other?

If you are confident the fragments are from the same item, count all these fragments individually as one and enter "1" in the appropriate category in the data card. For example, if you find three fragments that come from the breakdown of a single foam cup, you enter "1" in the foam cup/plate category.

If you are not sure whether these fragments are from the same item, tally each fragment as microfoam (<5mm, about the width of a pencil eraser or smaller), small foam (5-30mm, up to just larger than a US quarter), or large foam (>30mm) depending on size.

### How do I report a foam debris that I cannot identify?

If you cannot identify foam debris, enter the debris as micro foam (<5mm, about the width of a pencil eraser or smaller), small foam (5-30mm, up to just larger than a US quarter), or large foam (>30mm) depending on its size. You are also welcome to take photos of any foam pieces you are unsure about, make a note on your data card, and email the photos to the Coalition at lcbmdc@uvm.edu.

### How can I use the Marine Debris tracker app if I do not have cell service or Wi–Fi at my sampling site?

Download the app before leaving to go to your field site and select the Rozalia Project's Long List data card. Once you get to your field site, you can log and track as many items as you want as long as you have a GPS signal, and then save them by pressing "Save Session" on the submission screen. You can then submit to the online database when you are back in Wi-Fi or cell signal.

If you prefer not to use the app, are not sure you will have a consistent GPS signal, or if it is otherwise not practical for you, you are welcome to use the data card provided on pages 15-16 of this guide. Completed data cards should be returned to the Coalition (lcbmdc@uvm.edu) or mailed to Rozalia Project, P.O. Box 3075, Burlington Vermont, 05408.

# Lake Champlain Basin Marine Debris Coalition Data Card

Date: _____ Start Time: _____ End Time: _____ Weather: _____

Location: _____ Type of cleanup: underwater/shoreline/surface Area Cleaned ($m^2$): _____

Total Weight: _____ Total Pieces: _____ #of Bags Filled: _____

| | Type of Debris | Tally (use tick marks) 𝍸 | | | | Total |
|---|---|---|---|---|---|---|
| PLASTIC | Plastic Drink Bottles | | | | | |
| | Food Wrappers | | | | | |
| | Plastic Grocery Bags | | | Bags (zip-loc,etc) | | |
| | Straws/Stirrers | | | Utensils | | |
| | Plastic Cups/Plates | | | Lids (coffee, jars, etc) | | |
| | Take-away Containers | | | | | |
| | Plastic Bottle Caps | | | | | |
| | Cigarettes | | | | | |
| | Vaping Cartridge/Pods | | | Cigar Tips | | |
| | Personal Hygiene | | | Dental Floss/picks | | |
| | Tampons/applicators | | | Wipes | | |
| | Toys | | | Balloons | | |
| | Lighters | | | Shotgun Shells/wadding | | |
| | Strapping bands | | | Zip-ties | | |
| | Shipping/packaging | | | Plastic Sheeting/tape | | |
| | Oil/Lube Bottles | | | Bleach/Cleaner Bottles | | |
| PPE | Masks:reusable/fabric | | | Masks: disposable | | |
| | Disposable Gloves | | | Hand Sanitizer | | |
| METAL | Cans | | | Metal Caps/Lids | | |
| | Batteries | | | Metal Pieces | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| GLASS/ RUBBER | Glass Bottles | | | Glass Pieces | | |
| | Tires | | | Rubber Pieces | | |
| PAPER/CLOTH | Shoes | | | Fabric Pieces | | |
| | Clothing/towels/gloves | | | Paper Straws | | |
| | Paper Bags | | | Paper Cups/Plates | | |
| | Paper/tissues/napkins | | | Shipping/packaging | | |
| FISHINGDEBRIS | Bait Containers/crates | | | Lobster Claw Bands | | |
| | Fishing Nets | | | Lures/light sticks | | |
| | Derelict traps | | | | | |
| | Buoys/Floats | | | | | |
| | Rope | | | | | |
| MICROPLASTICS &FIBERS | Microplastic <5mm | | | Micro line/fiber <5mm | | |
| | Small Plastic 5-30mm | | | Small Line/fiber 5-30mm | | |
| | Large Plastic >30mm | | | Large Line/fiber >30mm | | |
| | Resin Pellets | | | BBs/Beads | | |
| FOAM | Foam Cups/Plates | | | Pink Construction Foam | | |
| | Foam Take-away Containers | | | Blue Construction Foam | | |
| | Foam Toys | | | Construction Foam w foil | | |
| | Foam Toys (water/pool) | | | Microfoam <5mm | | |
| | Foam Shipping/packaging | | | Small Foam 5-30mm | | |
| | Foam Buoys | | | Large Foam >30mm | | |
| | Foam Coolers | | | Foam Meat Trays | | |
| | Foam Dock Floats | | | | | |
| | Home & Garden | | | | | |
| | Other | | | | | |

Photo by Julie Silverman, CLF Lake Champlain Lake Keeper

# FOR MORE INFORMATION

uvm.edu/seagrant/lake-champlain-basin-marine-debris-coalition
Contact Us: lcbmdc@uvm.edu

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*Collaborators include:*

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Sea Grant Lake Champlain
rozalia project
LGA Lake George Association — We Protect Lake George, Together.
Vermont Boat & Marine Association
NOAA

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