

PROJECT
SPOT THE HOTSPOT 2022



WATERLAB

WWW.ONDERZOEKWATER.NL

MANUAL FOR CATCHING PLASTIC
WASTE



Hoogheemraadschap van
Delfland





Welcome to the WaterLab Research Team! From this moment on, you are one of our researchers. You will help spot and catch plastic hotspots for research in water.

You may sometimes see it yourself, plastic waste next to the trash, on the street, or floating in the water. Plastic waste from companies and consumers enters the river, ends up in the ocean and accumulates. At WaterLab we research these kind of problems. Where does the waste come from, where does it go and where does it accumulate? And on what do we need more information?

With different projects we take on projects on both water quality, - management and - safety. As a WaterLab Researcher you work together with companies, scientists, other WaterLab Researchers and other institutions.

Together we try to have less plastic in the nature, work towards greater environmental awareness and a healthy and safe future for water and nature in the Netherlands.

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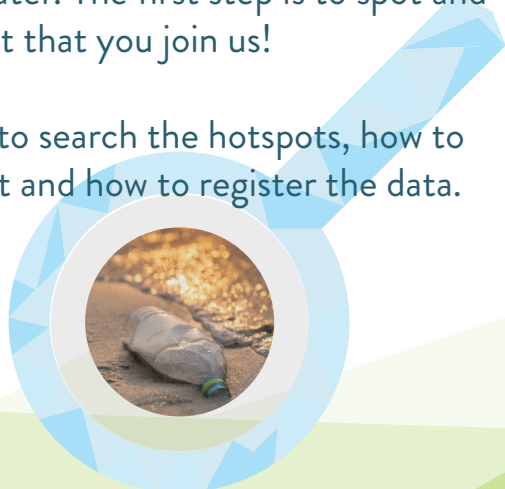
SPOT THE HOTSPOT

Plastic waste begins closer than you may think, namely along canals or rivers in your neighbourhood. And we can no longer ignore it, worldwide plastic waste is a danger to the environment and to the health of humans and animals.

This is because plastic never decomposes, but instead breaks down into smaller and smaller pieces. First into ‘microplastics’, plastic pieces smaller than 5 millimetres, and then into even much smaller ‘nanoplastics’, which cannot be seen by the human eye.

During the Spot the Hotspot project, we will look for locations where plastic accumulates. This will allow us to see if microplastics are also found at these hotspots. With this information, the Water board of Delfland (Hoogheemraadsschap van Delfland) will aim to reduce micro-pollutants in the water. The first step is to spot and map those hotspots. Great that you join us!

This manual explains how to search the hotspots, how to catch it, how to describe it and how to register the data.



INSTALLING SURVEY123 APP

1. To get started, install the Survey123 app on your phone. Do this before searching plastic hotspots. You can download the app by scanning the left QR code with your phone:



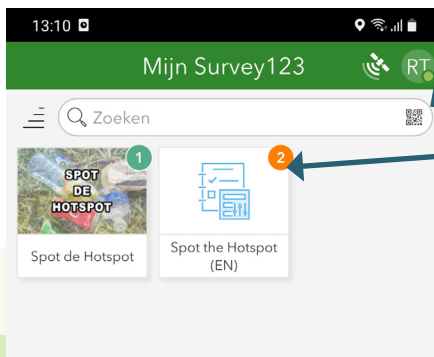
Survey123 App



Open the form

2. Now open the Survey123 app on your phone and click *“Continue without signing in”*.

3. In the Survey123 app you have a QR symbol in the top right of the search bar, click on it and scan the right QR code above. This opens the Spot the Hotspot data form in Survey123.



Click here to scan the QR code and open the form.

If you are going to search plastic again, open a new form. To do so you can either scan the QR code again or select the survey from the list.

SEARCHING FOR THE HOTSPOT

Now you start looking for the hotspots! To do this, go to a location where a lot of plastic accumulates in waterways, such as a ditch, canal or river.

You will need the following items:

- Phone with the Survey123 app
- Waste bag
- Optional: Gloves, gripper and scoop net

The hotspots are divided into the 5 situations where plastic waste is often found. You can also have multiple situations for one hotspot. The situations are shown below and on the next page.

a. An engineered obstruction such as a bridge, sluice or sharp turn.



b. A natural shore or a shore with sheet rock.



SEARCHING FOR THE HOTSPOT

c. Significant decrease in water flow speed.



d. A junction with another waterway.



e. Or maybe somewhere else, possibly you already know a place where there is a plastic hotspot.

CATCHING THE HOTSPOT

Once you have found a hotspot, first take a picture of it. You have to share this in the app later (see page 11). Also remember the location of the plastic hotspot or share the location in the survey app right away (see page 12)!

When you have done this, you will start cleaning up the waste and then sort it by item (see the next page). You can choose to sort the waste right at the hotspot location or take the waste home and sort it there.

SORTING OF FOUND WASTE

The plastic waste has been found and the next step is to sort the waste by category. Eight categories are created, namely:

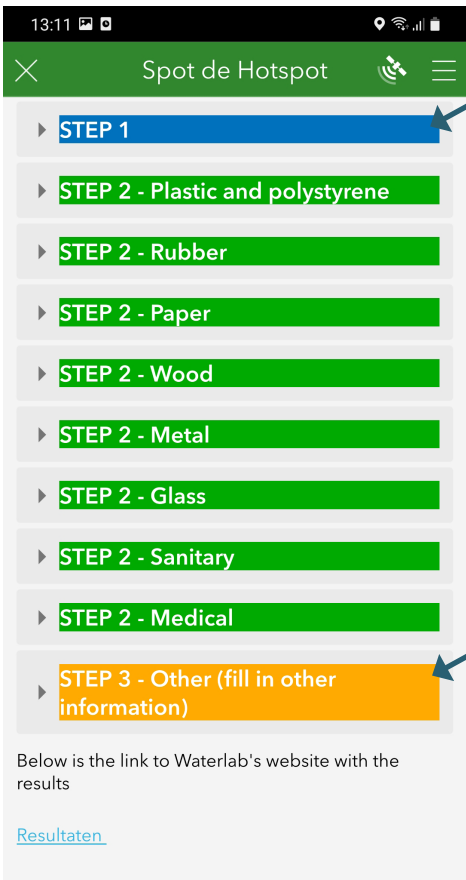
- | | |
|----------------------------|-------------|
| 1. Plastic and polystyrene | 5. Metal |
| 2. Rubber | 6. Glass |
| 3. Paper | 7. Sanitary |
| 4. Wood | 8. Medical |

There is a complete list about what waste falls under the different categories in the appendix (on page 18) and in the Survey123 app. Take the list and sort the waste by category and item.



FILLING IN THE SURVEY123 APP

After installing and opening the form (see page 6), you will probably have the form in front of you as shown in the image. Below are some instructions on how to fill in the form correctly.



The screenshot shows the Survey123 app interface. At the top, there is a green header bar with a close button (X), the title "Spot de Hotspot", a signal strength icon, and a menu icon (three horizontal lines). Below the header, there is a list of steps. The first step, "STEP 1", is highlighted in blue. The subsequent steps, "STEP 2 - Plastic and polystyrene", "STEP 2 - Rubber", "STEP 2 - Paper", "STEP 2 - Wood", "STEP 2 - Metal", "STEP 2 - Glass", "STEP 2 - Sanitary", and "STEP 2 - Medical", are all highlighted in green. The final step, "STEP 3 - Other (fill in other information)", is highlighted in orange. Below the list of steps, there is a link to Waterlab's website with the results, labeled "Resultaten".

a. At step 1, you will describe the hotspot. Click here to complete step 1.

b. At step 2, you will describe the waste. The waste is divided into eight categories. Click here to see the full list for each category. That way, you can find exactly what you have found.

c. At step 3, you will fill in the additional information. Click here to complete step 3.

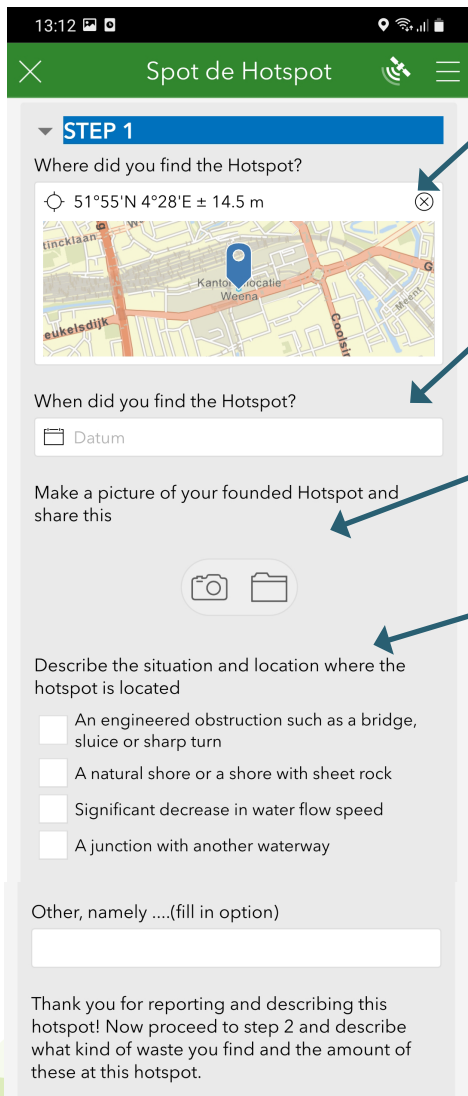
Below is the link to Waterlab's website with the results

[Resultaten](#)

FILLING IN THE SURVEY123 APP

Step 1

You will describe the hotspot. Here are some instructions on how to complete step 1.



13:12

Spot de Hotspot

STEP 1

Where did you find the Hotspot?

51°55'N 4°28'E ± 14.5 m

When did you find the Hotspot?

Datum

Make a picture of your founded Hotspot and share this

Describe the situation and location where the hotspot is located

- ☐ An engineered obstruction such as a bridge, sluice or sharp turn
- ☐ A natural shore or a shore with sheet rock
- ☐ Significant decrease in water flow speed
- ☐ A junction with another waterway

Other, namely(fill in option)

Thank you for reporting and describing this hotspot! Now proceed to step 2 and describe what kind of waste you find and the amount of these at this hotspot.

a. Fill in the location (see instruction on next page).

b. Enter the day of catching the hotspot here. **Note:** this is the day of searching and this is sometimes not the same day as reporting in the app.

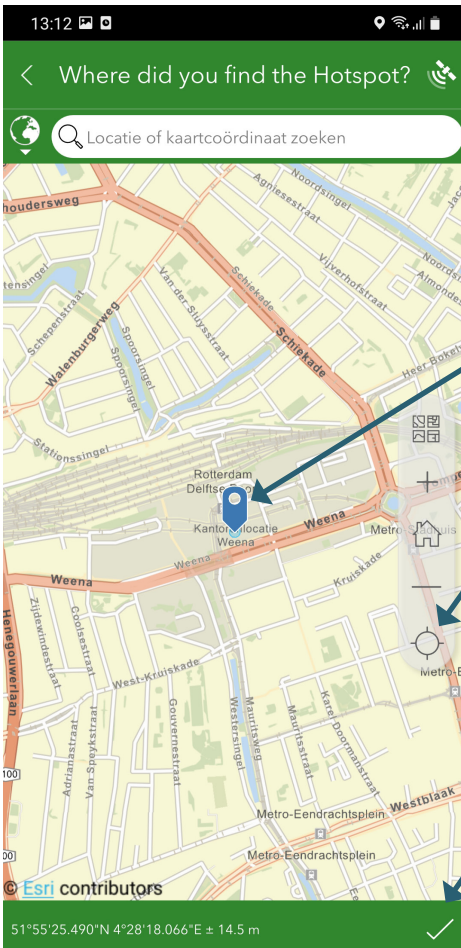
c. Make a picture of your plastic hotspot

d. Describe the situation and location where the hotspot is located. You can also select multiple options (see pages 7 & 8).

FILLING IN THE SURVEY123 APP

Registering your location

When registering your location it is important that you pass on the location of the plastic hotspot and not your current location or the place where you sorted the waste.



Drag this pin to manually select the location. Make sure you are very precise.

*You can also use the app to find your location by pressing this button. **Note:** your GPS should be enabled, the Survey123 App should have permission to assess your location and you should be standing directly next to the hotspot.*

Save the location by clicking the check mark.

FILLING IN THE SURVEY123 APP

Step 2 & 3

Now you are going to report the plastic waste. The waste is sorted by category. Below are some instructions on how to fill in the form correctly. The full list of waste types is shown in the appendix.

13:14

Spot de Hotspot

STEP 2 - Plastic and polystyrene

Caps and lids

☒ Founded

number found

0 25 25

Drink bottles < 1/2 liter

☒ Founded

number found

0 10 25

Other plastics (if identifiable, note description per item found in comments field)

STEP 2 - Rubber

STEP 2 - Paper

STEP 3 - Other (fill in other information)

Other information

255

Unfold the category.

Indicate whether you have found the item.

Indicate how many pieces per item you have found.

In case you found waste that is not on the list, describe the waste (if recognisable) here and also indicate how many pieces per item you have found.

Move on to next category and fill it in. Do this for all 8 categories.

Add any comments.

FILLING IN THE SURVEY123 APP

Great work! Thank you for spotting and reporting this plastic hotspot! The last step is to save the form. This can be done as draft and final.

Save form as draft

If you want to save the survey in the meantime, do so by pressing the cross in the top left corner. Then choose the option "Save to Drafts".

Save form as final

When you have completed the survey correctly and want to save it, do so by pressing the check mark at the bottom right. Then choose the option "Send".

Press the cross to save the form as draft.

The screenshot shows the Survey123 app interface. At the top, there is a green header bar with a white 'X' icon on the left, the text 'Spot de Hotspot' in the center, and a microphone icon and a menu icon on the right. Below the header, there is a list of steps: 'STEP 1' (blue bar), 'STEP 2 - Plastic and polystyrene' (green bar), 'STEP 2 - Rubber' (green bar), 'STEP 2 - Paper' (green bar), 'STEP 2 - Wood' (green bar), 'STEP 2 - Metal' (green bar), 'STEP 2 - Glass' (green bar), 'STEP 2 - Sanitary' (green bar), 'STEP 2 - Medical' (green bar), and 'STEP 3 - Other (fill in other information)' (orange bar). Below the list, there is a text box containing the text 'Below is the link to Waterlab's website with the results' and a blue link 'Resultaten'. At the bottom of the screen, there is a white bar with a green checkmark icon on the right.

Press the check mark to save the form as final.

VIEWING THE HOTSPOTS

Your hotspot is now automatically uploaded and visible on the Spot the Hotspot map (map 5) of the Waterlab. Here you can see which other hotspots are spotted. You can view the hotspots by scanning the QR code, opening the link or opening the link in the Survey123 app.



<https://www.tudelft.nl/scd/waterlab/doe-mee-aan-onderzoek/onderzoeksresultaten>

Spot the Hotspot map (map 5)

× Spot de Hotspot 📶 ☰

▶ STEP 1

▶ STEP 2 - Plastic and polystyrene

▶ STEP 2 - Rubber

▶ STEP 2 - Paper

▶ STEP 2 - Wood

▶ STEP 2 - Metal

▶ STEP 2 - Glass

▶ STEP 2 - Sanitary

▶ STEP 2 - Medical

▶ STEP 3 - Other (fill in other information)

Below is the link to Waterlab's website with the results

[Resultaten](#)

View the hotspots on the map by clicking on the link in the Survey123 form.

TIPS FOR EACH DAY

- Use your own bag when shopping and do not use plastic bags for fruits and vegetables.
- Use as many natural materials as possible in the things you buy, for example in clothes and shoes.
- Use as little disposable (single use) plastic as possible, such as bottles, sandwich bags, plastic plates, cups and cutlery, straws, balloons or cotton buds.
- Clean up 5 pieces of plastic every time you are outside. Every little bit helps!
- Never throw your waste or cigarettes on the ground.



WHAT ELSE CAN I DO?

With the 'Beat-the-Microbead'-app, you can see if there are microplastics in your products. Time for something more natural?



Go on a plastic diet! The 'My-Little-Plastic-Footprint' app helps you use less plastic. Great work!



Want to learn more about plastic pollution or help with research? Then go to: www.theoceanmovement.org

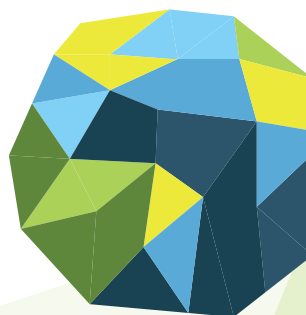


UPDATES? YES PLEASE

Of course it is fun and interesting to follow the developments of your research. If there are important updates, we will inform you as much as possible via the Spot the Hotspot newsletter or email, so that you do not miss anything.

You can find information about the project on the project page on our website. If you have questions that are not answered on the website, you can contact the WaterLab team via waterlab-sc@tudelft.nl.




You can find new updates and developments, as well as announcements for new projects on our social media. Do you want to participate in a new project? Then you can register via the website.




APPENDIX WITH TYPE OF WASTE

Here you see the complete list by category. So you can find exactly what you have found.

Plastic en polystyrene

 Spot de Hotspot  

 **STEP 2 - Plastic and polystyrene**

Caps and lids

☐ Founded

Drink bottles < 1/2 liter

☐ Founded

Drink bottles > 1/2 liter

☐ Founded

Industrial packaging materials (including plastic sheet, construction plastic, agricultural plastic)

☐ Founded

Small plastic bags

☐ Founded

Undefinable plastic pieces 0 - 2.5 cm (hard plastic)

☐ Founded

Undefinable plastic pieces 2,5 - 50 cm (hard plastic)

☐ Founded

Plastic pieces > 50cm (hard plastic)

☐ Founded

Undefinable polystyrene pieces 0 - 2,5 cm (schatting)

☐ Founded

Undefinable polystyrene pieces 2,5 cm - 50 cm

☐ Founded

Polystyrene > 50 cm

☐ Founded

Polystyrene food packaging (including take-away hamburger)

☐ Founded

Polystyrene cups or parts of them

☐ Founded

Plastic cups or parts of them

☐ Founded

Plastic foils or parts of them 0 - 2,5 cm (soft plastic)

☐ Founded

Plastic foils or parts of them 2,5 - 50cm (soft plastic)

☐ Founded

Plastic foils or parts of them > 50cm (soft plastic)

☐ Founded

Straws

☐ Founded

Stirrers

☐ Founded

Candy, snack and chips packaging

☐ Founded

Food packaging (including yoghurt, ketchup, butter, chip trays, etc.)

☐ Founded

Wraps from drinks bottles

☐ Founded

Cigarette filters

☐ Founded

Cigarette packaging or parts thereof (paper packaging included)

☐ Founded

Cleaning products (including washing-up liquid, all-purpose cleaner, etc.)

☐ Founded

6-pack of rings

☐ Founded

Lighters

☐ Founded

Automotive parts

☐ Founded

Cutlery

☐ Founded

Plates

☐ Founded

Biofilm/water filters

☐ Founded

Glow in the dark sticks

☐ Founded

Buckets or parts of them

☐ Founded

Flower/plant pots, plant trays or parts of them

☐ Founded

Rifle cartridges and shells

☐ Founded

Household gloves (soft plastic)

☐ Founded

Professional gloves (thicker plastic)

☐ Founded

Helmets

☐ Founded

Jerry cans

☐ Founded

Kits sprays

☐ Founded

Crates or parts of them

☐ Founded

Plastic band and tie-wrap

☐ Founded

Adhesive tape/ painter's duct tape or parts of them

☐ Founded

Lollipop sticks (note: with hole at the top)

☐ Founded

Motor oil packaging < 50 cm

☐ Founded

Motor oil packaging > 50 cm

☐ Founded

Mesh bags (e.g. for onions/fruit)

☐ Founded

Trash bags or parts of them

☐ Founded

Writing instruments (e.g. pens)

☐ Founded

Toys

☐ Founded

Sport fishing equipment (including floats, bait trays, packages of sport fishing products, fishing line)

☐ Founded

Bags

☐ Founded

Rope diameter > 1 cm

☐ Founded

Rope and cord diameter < 1 cm

☐ Founded

Fish fluff (plastic threads made of nylon)

☐ Founded

Firework or parts of it (only plastic or combined with carton)

☐ Founded

Other plastics (if identifiable, note description per item found in comments field)

Rubber

×
Spot de Hotspot
📶
☰

STEP 2 - Rubber

Balloons or parts of them (including ribbons)

☐ Founded

Tyres (e.g. car/bike)

☐ Founded

Other rubber (if identifiable, note description per item found in comments field)

☐ Founded

Clothes

☐ Founded

Shoes, boots and slippers

☐ Founded

Flooring

☐ Founded

Other textile (if identifiable, note description per item found in comments field). Geotextile/root cloth also turf here

Wood

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Spot de Hotspot
📶
☰

STEP 2 - Wood

Ice cream sticks

☐ Founded

Corks

☐ Founded

Paintbrushes

☐ Founded

Pallets

☐ Founded

Other wood < 50 cm (if identifiable, note description per item found in comments field)

Other wood > 50 cm (if identifiable, note description per item found in comments field)

Paper

×
Spot de Hotspot
📶
☰

STEP 2 - Paper

Beverage cartons (e.g. juice, milk, yoghurt drink)

☐ Founded

Indefinable parts of paper 0 > 50cm

☐ Founded

Carton (e.g. parts of packaging)

☐ Founded

Carton cups

☐ Founded

Newspapers/magazines

☐ Founded

Paper bags

☐ Founded

Other paper (if identifiable, note description per item found in comments field)

Glass

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Spot de Hotspot
📶
☰

STEP 2 - Glass

Bottles, jars or parts of them

☐ Founded

Lamps and fluorescent lamps



☐ Founded

Other glass (if identifiable, note description per item found in comments field)

Metal

×

Spot de Hotspot



▼

STEP 2 - Metal

Aluminium foils and packaging

☐ Founded

Capsules (e.g. coffee/chocomel)

☐ Founded

Drink cans

☐ Founded

Electricity wires

☐ Founded

Industrial scrap iron (e.g. cables, pipe etc.)

☐ Founded

Corks & metal caps (e.g. beer caps)

☐ Founded

Oil drums

☐ Founded

Fence wire, barbed wire

☐ Founded

Aerosols

☐ Founded

Paint cans

☐ Founded

Fishing sinker

☐ Founded

Food cans

☐ Founded

Disposable BBQs

☐ Founded



Other metal < 50 cm (if identifiable, note description per item found in comments field)

Other metal > 50 cm (if identifiable, note description per item found in comments field)

Sanitary

×

Spot de Hotspot



▼

STEP 2 - Sanitary

Cosmetics packaging (including shampoo, deodorant, sunscreen)

☐ Founded

Plastic cotton buds (note ribbing on both sides)

☐ Founded

Carton cotton buds

☐ Founded

sanitary/wet wipes

☐ Founded

Condoms

☐ Founded

Sanitary towels, panty liners or their packaging

☐ Founded

Plastic comb or brush

☐ Founded

Tampons, tampon applicator or their packaging

☐ Founded

Toiletpaper or parts of them

☐ Founded

Toilet refresher

☐ Founded

Other sanitary (if identifiable, note description per item found in comments field)

Medical

▼

STEP 2 - Medical

Packaging (e.g. of pills, lenses and liquids)

☐ Founded

Injection syringes

☐ Founded

Other medical (if identifiable, note description per item found in comments field). Face mask also turf here.

SPOT THE HOTSPOT IS A
COLLABORATION OF:



Hoogheemraadschap van
Delfland



PULSAQUA

Creating the impulsive force on water, together



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