

## Citizen Science Microplastics Factsheet

### What are Microplastics?

**Microplastics** are **synthetic particles** between **1  $\mu\text{m}$  - 5000  $\mu\text{m}$ \*** in diameter (0.001 mm - 5 mm) which **originate from a variety of sources** and typically **end up in the ocean or on beaches**.

\* $\mu\text{m}$  = micrometre

Microplastics **enter the marine food chain by being eaten by microscopic organisms such as plankton**, which are **then eaten by fish**. They can also be **ingested directly by fish**, and by **molluscs** such as **mussels** and **oysters**.

**Nanoplastics** are **even smaller plastic particles** - less than **one micrometre** or one thousandth of a millimetre (1  $\mu\text{m}$  / 0.001 mm)!

The presence of **microplastics** in our **oceans** is one of the **leading environmental concerns** of our time.

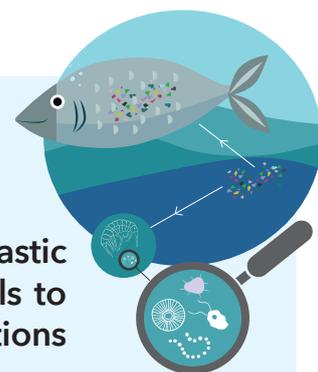
**Microplastic particles** can now be found across all **ocean basins, ecosystems, habitats, and food webs on earth**.

### ANDROMEDA Project

**ANDROMEDA**, a JPI Oceans-funded research project, brings together **15 international partners** dedicated to **research on microplastic and nanoplastic collection, analysis, identification, and monitoring**.

The project **aims to improve current methods of collecting microplastic samples from marine environments, and develop new methods and tools to analyse microplastics** found in order to better understand the **source, locations and characteristics** of these plastic particles.

Researchers also want to **better understand how these microplastics degrade and breakdown** in our oceans and seas.



### Anyone can become a citizen scientist...

You can become part of the **ANDROMEDA citizen science campaign** by **participating in, or organising, a local beach microplastics sampling exercise!**

**Help scientists in addressing this global environmental problem!**

[www.andromedaproject.net](http://www.andromedaproject.net)

### Plastic pollution is everyone's business!

By downloading the **new ANDROMEDA smart phone app**, you can **increase your awareness** of the microplastic problem, while **helping scientists to collect valuable information** on microplastics from different beaches. You will also be helping researchers to build a **European-wide microplastics database**.

The app uses **artificial intelligence** to **analyse photos of microplastics** taken by the app user, and **learns to identify** these over time. Currently this work is **done by hand, in labs, by scientists**. The app will greatly **speed up the process** for scientists and **facilitate research** - and therefore **solutions** - at a **much larger scale!**

Turn the page to get started!





## Citizen Science Microplastics Factsheet

### What do I need?

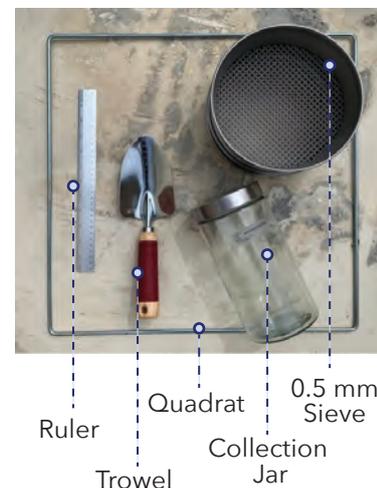


**Download** the ANDROMEDA app to your phone using the QR code.

- Ensure you have your phone location switched 'on'
- Do not conduct the beach exercise in windy weather

**To participate** you will need the following:

- 0.5 mm sieve
- Trowel
- 0.5 m x 0.5 m quadrat and a ruler
- A microplastics photo template, which you can [download here](#)
- Glass Collection Jar



### Step-by-step...

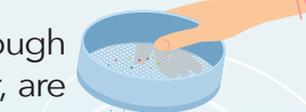
**1.** Place the **quadrat** provided onto the surface of the sand (using a quadrat ensures that the same volume of sand is being sieved each time.)

**2.** Use the **trowel** to scoop out all the sand inside the quadrat to a maximum depth of **15 cm** (use the ruler to check the depth). **Place this sand into the sieve.**

**3.** **Shake the sieve** from side to side so that small sand particles will pass through and larger particles, such as the microplastic particles we are looking for, are retained.

**4.** Carefully place the small particles left on the sieve onto the **ANDROMEDA photo template** (right). Make sure the particles are **not touching each other** and that the **QR code is not covered** in any way.

**5.** Take a **photo of the collected microplastics** and collect the particles for proper disposal in your glass jar or nearest bin. **Do not discard the microplastics onto the beach!**



**Watch the microplastic beach sampling exercise on YouTube!**



**ANDROMEDA is funded by JPI Oceans through support by the following national funding agencies:** **Belgium:** the Belgian Federal Science Policy Office (BELSPO), **France:** The National Research Agency (ANR), **Estonia:** Ministry of the Environment of the Estonia Republic (MoE) and the Estonian Research Council (ETAg); **Germany:** Federal Ministry of Education and Research (BMBF), **Ireland:** Marine Institute, and the Dept of Housing, Planning, and Local Government (DHPLG); **Malta:** Malta Council for Science and Technology (MCST); **Norway:** The Research Council of Norway (RCN); **Spain:** Spanish State Research Agency (AEI); **Sweden:** the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS). **Project Coordinator:** richard.sempere@mio.osupytheas.fr