



Citizen Science Microplastics Factsheet

What are Microplastics?

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

* μm = 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 μm / 0.001 mm)!

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

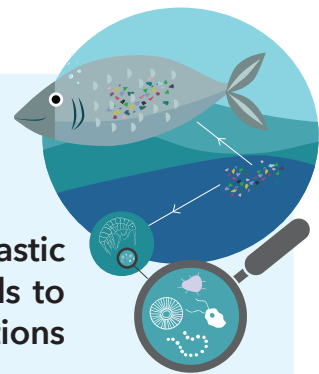
Microplastic particles can now be found across all **ocean basins, ecosystems, habitats, and food webs on earth**.

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!**

ocean.mt/2023/03/02/andromeda

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:

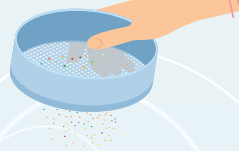
- 0.5 mm sieve
- Trowel
- 0.5 m x 0.5 m quadrat and a ruler
- A microplastics photo template (see www.ocean.mt/2023/03/02/andromeda)
- Glass Collection Jar



Ruler, Trowel, Quadrat, Collection Jar, 0.5 mm Sieve

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