

OCEAN DIAGNOSTICS

Diagnosing our Planet's Greatest Environmental Threats

Litter Free Eastern Mediterranean Forum September 21st, 2022 Ethan Edson, *Co-Founder and CTO*

WHO WE ARE

Innovators. Problem Solvers. Global Citizens.

Ocean Diagnostics (ODI) diagnoses and protects our planet from the threats of microplastic pollution and biodiversity loss through innovative technology, cutting-edge laboratory capabilities and collaborative partnerships.

We work with academia, government, industry, foundations and the public to collect and analyze the microplastic pollution data needed to influence informed decision making.





THE PROBLEM

Microplastics are small pieces of plastic (5mm or less in size) created from the breakdown of larger plastic litter, pre-production plastic nurdles, synthetic clothing fibers, car tire particles and more.

In the environment, microplastics are often mistaken for food and eaten by small creatures where they make their way through the food chain, potentially harming our ecosystems, food security, health and economy.

To address solutions, decision makers need more data on the status, sources, types and amounts of microplastics in the environment.





THE SOLUTION

- 1. Determine and record the current baseline levels of different types of microplastics in our environment to shed light on source, impact, transport, and fate
- 2. Using this data, enact changes and policy upstream to prevent plastic from getting into our waterways from these known sources
- 3. Monitor ecosystem changes long-term to determine the efficacy of these upstream interventions on downstream habitats





OUR STRATEGY

Innovation | Intelligence | Collaboration



TECHNOLOGY

We innovate and apply technologies to advance microplastics and environmental DNA (eDNA) sample collection, analysis, monitoring and data visualization



COLLABORATIONS

We partner with global stakeholders to change the paradigm of plastic pollution and address biodiversity threats



LABORATORY CAPABILITIES

We use cutting-edge laboratory techniques to quantify and characterize plastics, microplastics and fibers in diverse samples



COMMUNITY SCIENCE

We develop the tools needed for communities to play an active role in scientific data collection and analysis





ASCENSION

A portable depth sampling instrument for microplastics and eDNA applications

- Ascension is a tethered vertical profiling instrument designed to collect filtered microplastic samples throughout the water column down to 400m
- Light, portable and easily deployable from a small vessel, Ascension significantly increases sample collection capabilities and reduces/eliminates sample contamination by filtering samples directly *in situ*
- Use the instrument by controlling in real-time via a communication tether or flash an automated mission for time series sampling

SATURNA IMAGING SYSTEM

A machine learning-based imaging system for rapid physical analysis of microplastic particles

- Saturna is a portable, standardized imaging and illumination device that plugs in to your computer and syncs with Mariana, our web-based data analysis portal to rapidly characterize and quantify visible microplastic particles
- Use it to collect a robust set of size, colour and categorical metrics for visible microplastic samples (>400µm) like those collected from Manta trawls, neuston nets, beach quadrat samples and community science







MICROPLASTICS COMMUNITY SCIENCE TOOLKIT

OUR technology. YOUR power. WE create change.

- Community Scientists use science and technology to identify and address solutions for microplastic pollution on their local beaches while filling global data gaps for scientists and decision makers to influence change
- The Kit contains a digital educational resource, beach sampling protocol, data upload, analysis and evaluation guides, engagement and advocacy tools.
- It can be used to measure microplastics and contribute the data to a global database, monitor microplastics and inform local research and solutions, and for educational purposes

LABORATORY CAPABILITIES

Standardized methods, cutting-edge technology and expert advice

- Specialized in sampling, quantification, characterization and source identification of plastics in the environment and wildlife, our experts provide the knowledge, tools and analytical solutions to diagnose the microplastic challenge and take appropriate action to protect your company, environment, and the community
- We provide expert advice, project management, field technology, laboratory analysis, reporting and data analytics to help you discover the answers to your complex microplastics questions







Global action requires collaborative partnerships

Connect with us to get started!

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