

## First European expedition to study human impact on seas and coastal regions stops in Barcelona

- TREC is led by the European Molecular Biology Laboratory (EMBL), together with the Tara Ocean Foundation, and the European Marine Biology Resource Centre (EMBRC), with the support of the Institute of Marine Sciences (ICM-CSIC) in Barcelona.
- During two years, the TREC expedition will sample 120 sites in 21 European countries, including the Barcelona area in March.
- The Institute of Marine Sciences (ICM-CSIC) will be hosting EMBL Mobile Services and the *Tara* schooner will be docked for a few days in Barcelona.
- TREC and its partners will also offer a series of activities to the general public.

After eight months of sampling the European coastline along the Atlantic, Baltic, and North Sea throughout 2023, the 'Traversing European Coastlines' (TREC) expedition will explore the Mediterranean coastline in 2024.



**TREC is the first continent-wide project to study coastal ecosystems and their response to the environment.** Our seas and coasts host an extremely rich diversity of life and play critical roles in the stability and sustainability of wider ecosystems. However, anthropogenic interferences are leading to accelerated loss of species' genetic diversity and destruction of functional ecosystems. **The TREC expedition will provide a richer and deeper understanding of how ecosystems respond to natural and human-made challenges by sampling along the European coast.**

The TREC expedition is led by the European Molecular Biology Laboratory (EMBL), together with the Tara Ocean Foundation, the Tara OceanS consortium, and the European Marine Biology Resource Centre (EMBRC). It brings together more than **150 research teams from over 70 institutions in 21 European countries**. At each stop, they work together with **local partners**, such as the Institute of Marine Sciences (ICM-CSIC), with a leading role in the coordination of the expedition in Barcelona, and the collaboration of the Institute of Evolutionary Biology (IBE:CSIC-UPF), the Institute of Environmental Assessment and Water Research (IDAEA-CSIC) and the Blanes Center for Advanced Studies (CEAB-CSIC).

The expedition combines scientific activities on land and at sea at an unprecedented scale. In Barcelona, scientists travelling with **EMBL's mobile laboratories** and onboard the *Tara* schooner will collect water, soil, sediment, and aerosol samples in Barcelona's surrounding areas.

As part of EMBL's mobile laboratory, the **Advanced Mobile Laboratory** brings to selected sites, including Barcelona, cutting-edge technology directly to the field helping researchers process biological samples immediately after collecting them, using a variety of advanced methodologies.

Thanks to TREC infrastructure, ICM experts will research microbial communities to understand their role in marine ecosystems and track the impact of pollution and global warming.

A range of different activities for the media, schools, and the general public are offered during the expedition's stay.

### **Press visits and interviews**

#### **18 March: Welcoming TREC in Barcelona - official event at the ICM Visit EMBL mobile laboratories and the *Tara* schooner**

Join politicians, decision-makers, scientists, and local and international representatives in welcoming the TREC expedition in Barcelona.

You will be able to visit EMBL's mobile laboratories with their advanced scientific technologies, the *Tara* schooner, and exchange with scientists.

*To register, please register before 14 March: [media@embl.org](mailto:media@embl.org) (limited media spaces)*



#### **20 March: Visit a sampling site and EMBL mobile laboratories**

TREC teams will take samples of the land, sediments, and shallow waters at a sampling site north Barcelona. EMBL mobile fleet will be deployed at the sampling sites and parked at the ICM.

*If you would like to join the sampling activities and see EMBL mobile laboratories, please register before 14 March: [media@embl.org](mailto:media@embl.org) (limited media spaces)*

### **Activities for the general public**

#### **16-17 March & 26-30 March**

 **TREC in the City** - Always wanted to play around with a microscope? Check out our pop-up stand!  
 **Run, scientist, run!** - Come and play a giant Game of the Goose - the TREC edition!  
Both activities will be located at different places across the city, stay tuned to discover our daily location !

#### **Tuesday 26 March**

 **Visits to ICM, EMBL Advanced Mobile Lab, and the *Tara* schooner on the same day!**  
 Passeig Maritim de la Barceloneta, 37-49 (ICM) & Port Vel - Moll de Bosch i Alsina  
 [More information and registration here](#)



## 29-30 March



**Public visits of the Tara Schooner** - Discover a unique research vessel !



**Invisible worlds** - Always to see what you didn't know you could find in the sea? This is your chance !



Port Vell - Moll de Bosch i Alsina



[More information and registration here](#)

## And much more!

The full programme of activities (16 - 30 March) can be found at:

<https://www.icm.csic.es/en/trec-barcelona>

The TREC public engagement activities organised in Barcelona are part of **BIOcean 5D**, an interdisciplinary project co-funded by the European Union (Horizon Europe).

## The scientific expedition

The aim of the project is to study the biodiversity and ecosystems on land and at sea, as well as the interactions of organisms with each other and with the environment. The scientific teams collect information on factors such as the presence of pollutants, antibiotics, pesticides, or hormones, as well as temperature, salinity, and oxygen levels. At each point where the EMBL team and collaborators sample soil, sediments, and shallow water, the schooner *Tara* samples the associated marine ecosystems – on the same day and in the immediate vicinity.

Biological samples are fragile: as soon as a drop of water or crumb of soil is removed from its natural environment, the organisms within them begin to change. To maximise the integrity of organisms and to study them in the context of their natural environment, TREC is bringing the lab to the samples, instead of samples to the lab. In total, TREC will examine the biodiversity and molecular adaptability of life at the molecular scale at **120 coastal sampling sites across 21 European countries**.

The pan-European nature of this project means that samples will be taken in a standardised fashion. This will make it possible to compare and probe data across Europe instead of a regional or national system in a way that was not previously possible.

EMBL acknowledges the generous support of many institutions, donors and sponsors, in particular the Manfred Lautenschläger-Foundation, Eppendorf SE, Carl Zeiss Microscopy, and Friends of EMBL in helping make TREC possible.

## Further information

[TREC – Traversing European Coastlines](#)

[TREC – Media kit](#), incl. image and video library

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BIOcean5D

### About EMBL

The [European Molecular Biology Laboratory](#) (EMBL) is Europe's life sciences laboratory. We provide leadership and coordination for the life sciences across Europe, and our world-class fundamental research seeks collaborative and interdisciplinary solutions for some of society's biggest challenges. We provide training for students and scientists, drive the development of new technology and methods in the life sciences, and offer state-of-the-art research infrastructure for a wide range of experimental and data services.

EMBL is an intergovernmental organisation with 28 member states, one associate member, and one prospective member. At our six sites in Barcelona, Grenoble, Hamburg, Heidelberg, Hinxton near Cambridge, and Rome, we seek to better understand life in its natural context, from molecules to ecosystems. [www.embl.org](http://www.embl.org)

### About the Tara Ocean Foundation

The Tara Ocean Foundation is the first public interest foundation in France dedicated to the Ocean. Its 2 main missions are to explore the Ocean to better understand it and share the relating scientific knowledge to raise citizen and collective awareness. For 20 years, the Foundation has developed a high-level Ocean science in collaboration with international research laboratories of excellence, to explore, understand and anticipate the upheavals related to climate and environmental risks, as well as the impacts of pollution. In order to make the Ocean a common responsibility and to preserve it, the Tara Ocean Foundation also works towards raising public awareness about ocean science and educating the younger generations. By studying and protecting the Ocean, we take care of our planet's global system. <https://fondationtaraocean.org/>

### About EMBRC

The European Marine Biological Resource Centre (EMBRC-ERIC) is a research infrastructure which aims at advancing marine biodiversity knowledge. EMBRC mobilises scientists, industries, policymakers and international organisations towards open science. Gathering more 70 marine sites in 9 countries across Europe, EMBRC gives access to state-of-art research facilities and expertise in marine biology and ecology to promote the blue sustainable economy and meet today's societal challenges. Through EMO BON (European Marine Omics Biodiversity Observation Network), its biodiversity observatory, EMBRC produces genomic data to support the global ocean observation system and contribute to the UN Ocean Decade of Ocean Science for Sustainable Development. Actively supporting education, EMBRC promotes training opportunities in marine sciences for future generations. In the face of global environmental challenges, EMBRC contributes to the European efforts in understanding marine biodiversity and to the global science-based decision-making process. EMBRC was granted the status of European Research Infrastructure Consortium (ERIC) by the European Commission in 2018. Follow us on [embrc.eu](http://embrc.eu), [Twitter](#), [LinkedIn](#) and [Youtube](#).

### About ICM

The Institute of Marine Sciences (ICM) of Barcelona is the largest marine research center of the Higher Council for Scientific Research (CSIC). With the aim of understanding the ocean for planetary health, ICM researchers carry out cutting-edge research to enhance knowledge transfer in relation to ocean and climate interactions, conservation and sustainable use of marine life and ecosystems, and mitigating the impacts of natural risks and anthropogenic activity. In 2020, the ICM was awarded the Severo Ochoa accreditation for Excellence, a distinction that proves the institution's leadership in the field of marine research in Spain and highlights its commitment to generating social impact.

### About BIOcean5D

BIOcean5D is a major interdisciplinary project designed to better understand the impact of human activity on Europe's seas and coastlines. The overarching goal of BIOcean5D is to generate the data, knowledge, theory, monitoring and modelling tools necessary to sustainably measure, understand, value, and predict marine biodiversity across the five dimensions (5D) of space, time, and human environmental pressures, enabling ecosystem-based management and long-term preservation. BIOcean5D unites major European centres in molecular and cell biology; marine biology; and sequencing, together with 31 partners from 11 countries, to build a unique suite of technologies, protocols, and models allowing holistic re-exploration of marine biodiversity, from viruses to mammals, from genomes to holobionts, across multiple spatial and temporal scales, stretching from pre-industrial history to today. <https://www.biocean5d.org/>