

European Marine Biological Resource Centre (EMBRC)

Support and services for marine biological
research and innovation



EMBRC
EUROPEAN
MARINE
BIOLOGICAL
RESOURCE
CENTRE

Who we are

The European Marine Biological Resource Centre (EMBRC) is a 'research infrastructure' (see box) that enables researchers to better understand the ocean's biodiversity. We facilitate access to marine organisms and their ecosystems, while providing the necessary services, facilities and other resources to support cutting-edge marine biology research.

We work across a wide range of areas and with diverse stakeholders (academia, industry, tech, education).



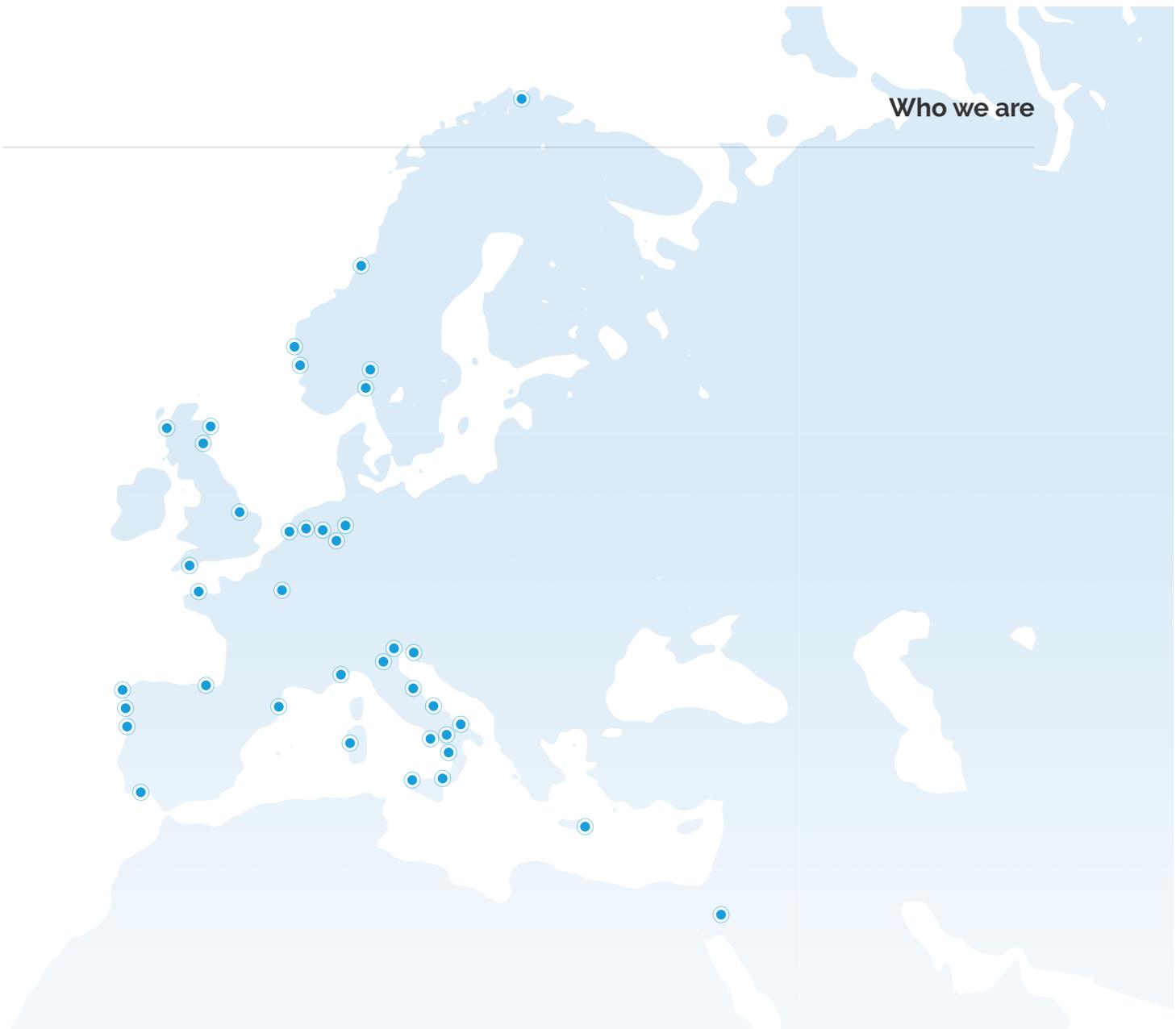
Why EMBRC ?

The seas and oceans are the heart and lungs of our planet. They provide most of the oxygen we breathe and are an important source of food and medicine.

The marine environment is a rich and largely unexplored reservoir of biodiversity with great potential for food and energy, human health, and industrial production.

EMBRC supports cutting-edge research to better understand the marine environment. This knowledge is key to develop innovative solutions to address societal issues (eg global warming, food shortages) and develop novel products, drugs and treatments.

@Hugh Brown
UK National Facility for Scientific Diving



EMBRC members

EMBRC has nine member countries encompassing 46 marine stations and institutions. Headquartered in Paris, our members include: Belgium, France, Greece, Israel, Italy, Norway, Portugal, Spain, and the United Kingdom.

A wealth of marine biological resources

Our member countries offer a wealth of marine biological laboratories and stations dedicated to the investigation of marine organisms and ecosystems. By making their services and resources available to European and international research/innovation communities, we hope to push the frontiers of marine biological science and promote marine solutions to tackle today's major challenges.

What's a research infrastructure (RI)?

RIs are defined by the European Commission as 'facilities that provide resources and services for research communities to conduct research and foster innovation.' There are several RIs in Europe working across different scientific areas. EMBRC is part of the life science RI community and the ENVRI community of environmental RIs.

www.lifescience-ri.eu
www.envri.eu

Mission & vision

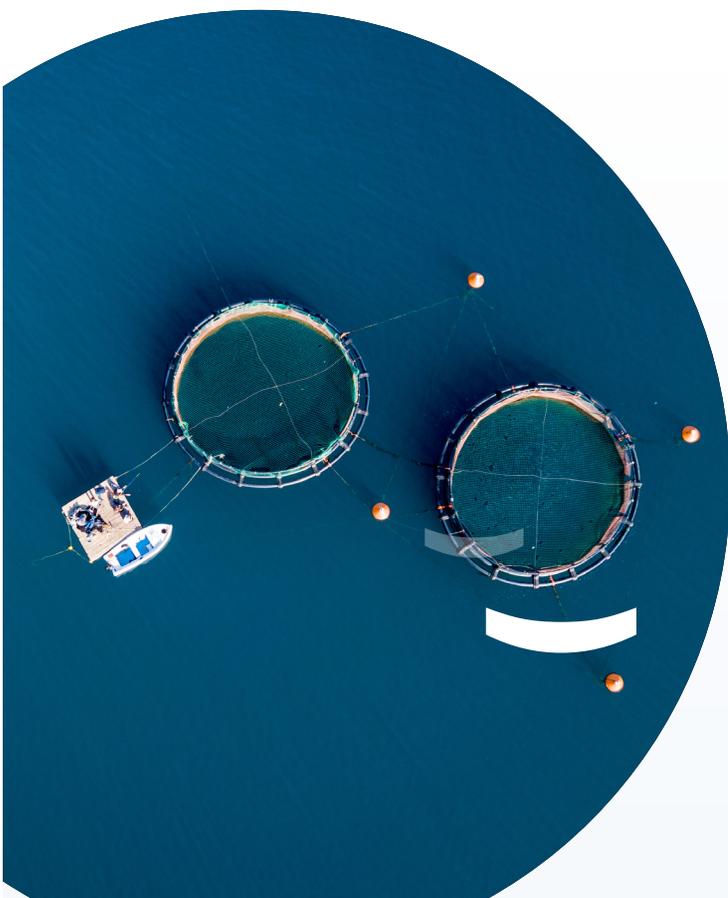


Our mission is to...

- Deepen fundamental knowledge on marine organisms and their role in the environment, pushing the frontiers of science
- Provide access to marine biological organisms and their habitats for experimental purposes and applied research
- Promote the use of marine experimental models in mainstream science
- Explore marine biodiversity for new products, inspiration, and innovation
- Promote the sustainable use of marine resources

Our vision is to...

Advance the understanding of life in the oceans and to sustainably harness its potential for the benefit of humankind.





Our legacy: from the 19th century to today

European marine stations date back to the 1870s. They were created to enable marine scientists to study marine life close to its habitat, and to conduct experiments on-site. Marine scientists traveled from one station to another, creating a vibrant European marine biology community.

EMBRC builds on the legacy of a European marine biology community, facilitating access for researchers to the organisms, services and facilities offered by today's marine stations.

How EMBRC fits into a new marine research landscape

Marine biology is becoming increasingly sophisticated through the use, for example, of genomic tools for the study of marine organisms.

Marine model organisms are in turn becoming increasingly important. They can play an instrumental role in furthering our understanding of life's processes and enable humankind to sustainably harness the potential of our oceans.

Key dates: history of EMBRC

2000-2004



The concept

The concept for EMBRC originated in the Sixth Framework Programme (FP6) 'Marine Genomics Europe' (MGE) project. MGE aimed to establish a network of experts to enable the exchange of scientific expertise and technological resources in marine biology.

2008



The European Strategy Forum on Research Infrastructures

EMBRC became part of the European Strategy Forum on Research Infrastructures (ESFRI) roadmap (ie a European instrument for the optimal use and development of RIs).

2009-2014



The FP7 project

The FP7 project, 'Assembly of European Marine Biological Laboratories' (ASSEMBLE), was the next step towards developing EMBRC. Implemented from 2009 to 2014, The project aimed to create a network of key marine biological research stations around the European coastline.

2013



A memorandum of understanding

A memorandum of understanding to establish a legal structure to operate EMBRC entered into force in December 2013 and was signed by seven EU member states (Belgium, France, Greece, Italy, Portugal, Spain and UK) and two associated countries (Israel and Norway). France was selected to host EMBRC, with headquarters in Paris.

PREPARATION

¹ Landmarks are research infrastructures now considered 'pan-European hubs of scientific excellence, generating new ideas and pushing the boundaries of science and technology'.

2014-2017

EMBRC headquarters

EMBRC headquarters were established in Paris (September 2015), with an Executive Director and Secretariat. From 2016-17, the first host and member country contributions were made. A second preparatory phase contract, under the 8th European Framework Programme for Research and Development (H2020), supported the development of an EMBRC business plan and the application for the legal status of a European Research Infrastructure Consortium (ERIC) (final application submitted in February 2017).

2018

Awards

The EU Commission awarded EMBRC ERIC status on 20 February 2018. Formal operations started in the summer of 2018. EMBRC was also designated an 'ESFRI Landmark' on the 2018 ESFRI Roadmap.¹

2019-beyond

Serving users

Since 2019, EMBRC continues to provide users across Europe (and internationally) with services to support, marine biology research.

IMPLEMENTATION

OPERATIONS

What we do: services



EMBRC provides high-quality services

EMBRC services offer researchers extensive possibilities to enhance their marine biology and ecology research. To find out which services are available at EMBRC marine stations, please explore our service catalogue and contact us to see how we can meet your research needs.

www.embrc.eu/services/service-catalogue
access@embrc.eu

Research areas

We support both fundamental and applied research. Fundamental research areas include: environmental science, conservation, taxonomy, ecology, physiology, evolution and development, microplastics, climate change impact, and microbiome.

Applied research areas include husbandry, culturing of commercially important species, algae biomass production, aquaculture, biomedical research, pharmaceutical research, cosmetics, nutraceutical research, agronomy, and biotechnology.

Our service categories include:



Ecosystem access



Biological resources



Experimental facilities



Technology platforms



E-services



Training & library services



Accommodation & catering



What we do

What we offer

- Single access point to marine organisms and their ecosystems
- High-quality standards and a user-centred approach
- Saved time, resources, and efficiency by using our equipment and working with veteran technicians
- Broad geographic coverage (Arctic to Antarctic) and a wide variety of marine habitats. Ability to study marine organisms *in situ* and *ex situ* using our experimental facilities
- Ability to keep intellectual property (IP) when using EMBRC services

EMO BON: A long-term omics observatory of marine biodiversity

Launched in summer 2021, the European Marine Omics Biodiversity Observation Network (EMO BON), developed and implemented by EMBRC, aims to enhance the European contribution to global genomic observation efforts.

EMO BON fills current gaps in biological observation, while offering insights into the genetic composition of marine biodiversity. The goal is to ensure steady, continuous generation of 'baseline' data on biodiversity at EMBRC sites following FAIR (Findable, Accessible, Interoperable, and Reusable) data principles.

EMO BON will ultimately provide Europe with a means to monitor and understand its marine biodiversity. This in turn will facilitate the development of new products and services for society.

Participating stations and sampling

EMO BON collects samples from the water column, soft substrates, and hard substrates, aiming to allow researchers to deeply explore marine diversity in different habitats. It is based around a network of 16 sites from Northern Norway to the tropical Red Sea in Israel (see map of EMO BON operational observatory stations).

Learn more: www.embrc.eu/emo-bon



ABS

In order to help its users access and use marine biological resources, EMBRC works to ensure that all organisms obtained through its stations and culture collections are compliant with access and benefit-sharing (ABS) rules and accompanied by the appropriate documentation.

EMBRC incorporates the **ABS EU regulation n°511/2014** in its activities and identifies resources related to European ABS regulation.

To find out more about ABS and how exactly EMBRC supports its users with compliance, see here:

www.embrc.eu/services/access-and-benefit-sharing

Using EMBRC services

EMBRC can provide services and facilities, on-site or remotely, or can be involved as a project partner, supporting your national or European research grant.

Eligibility & costs

- EMBRC is open to all researchers and companies worldwide
- Service requests are accepted based on eligibility and feasibility
- Users must come with their own funding: we can help you to adequately cost the needed services
- Not-for-profit rates apply to academic research
- Full economic costs apply to industry users

How to apply

- Consult our online catalogue, find the services you would like to use, and apply through the online platform
- If you can't find what you're looking for, have technical questions or a complex or long term project, please contact us at: access@embrc.eu

The application process



Access request

Are you a researcher, team/organisation in need of a facility or biological resource(s)? If so, you can submit a request to EMBRC (see our service catalogue).

www.embrc.eu/services/service-catalogue



Eligibility & ethical check

Your request is checked for compliance with our mission and ethics policy.



Feasibility check

Your project is checked for feasibility by our local 'access officers' (at site level).



Experiment preparation

We discuss the project with you in detail. If needed, you modify the experimental design.



Service provision

The service is delivered to you at the site of your choice or remotely.

Training:

Supporting the next generation of marine biologists

EMBRC facilitates access to marine-related research opportunities and supports the education of the next generation of marine biologists. This is achieved through two initiatives:

1. Marine Training

Marine Training is a web-based platform developed by EMBRC to offer an overview of current marine and maritime education opportunities, while providing a supporting framework to foster new training initiatives and exchange best practices. It aims to train the next generation of 'blue workers' and re-train the current generation, and provide answers to trainees in search of training and trainers looking for support (eg on how to organise training initiatives).

www.marinetraining.eu

2. IMBRSea

The International Master in Marine Biological Resources (IMBRSea), is a joint master's degree programme organised by eight leading European universities in the field of marine sciences; Ghent University (BE), Sorbonne University (FR), University of the Algarve (PT), University of Oviedo (ES), Galway-Mayo Institute of Technology (IE), University of the Basque Country (ES), Polytechnic University of Marche (IT), and University of Bergen (NO), University of Western Brittany - UBO (FR) and University of Gothenburg - UGOT (SE), supported by 14 EMBRC operators.

www.imbrsea.eu

What we do

AtlantECO

ERIC
FORUM

DOORS

ASSEMBLE

EOSC-Life

RI-VIS

Projects

In addition to providing various services, EMBRC contributes to European and international projects. Diverse in scope and country involvement, these projects aim to enhance EMBRC activities and/or services, strengthen collaboration with similar European organisations ('research infrastructures', RIs), structure the research community, provide services to support research, and support innovative science through Trans-national Access (TA) programmes.

These projects provide an opportunity to develop joint services, tools and activities, as well as to enhance knowledge-sharing in view of optimising research in Europe and beyond.

For a full list of current and past projects, please see:

www.embrc.eu/projects

EMBRC guides & handbooks



European Marine Omics Biodiversity Observation Network (EMO BON) handbook

(JUNE 2021)

This document includes EMO BON sampling protocols for three marine habitats: water column, soft substrates, and hard substrates. The protocols focus on collecting samples for genomics biodiversity analyses of different biological communities, such as nano- and pico-plankton, sediment microorganisms, macro- and meio-benthos. The document has been produced through the collaborative work of 13 scientists from 8 institutes in the EMBRC network.

This handbook is available on the Ocean Best Practices System repository, and will be updated regularly to include more guidelines and protocols as EMO BON evolves.



ABS guides

(MARCH 2021)

'The EMBRC guide to ABS compliance: Recommendations to marine biological resources collections' and users' institutions'

'The EMBRC guide to ABS compliance' aims to ease the burden of compliance with EU ABS regulation by clearly explaining its scope and application to the use of genetic resources. It is primarily intended for collections and user institutions (next update: 2022).

'Seek, keep & transfer: A step-by-step guide to ABS compliance when utilizing marine genetic resources'

'Seek, keep & transfer', as its name implies, is a practical to-do list/guide to help individual scientists (academia, private sector) conducting research on marine genetic resources to comply with ABS.

Both of these documents were developed through the EMBRC-coordinated European Blue Biobank (EBB) project.



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