



JPI
OCEANS



Annual Activities 2022





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ANNUAL ACTIVITIES

2022

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1.0

Photo & Art Awards

1.1 CELEBRATING 10 YEARS OF JPI OCEANS

On occasion of its 10th anniversary, JPI Oceans launched a photo and art competition honouring our marine environment and the scientists working tirelessly to understand it.



Illustration
© S. Kröger,
projects
competition

Art and photography are vital to close the emotional gap between society and our marine environment. With the Art & Photo Awards, JPI Oceans wishes to bolster the role of both media in tackling the challenge of communicating about the environment that covers most of our planet. We therefore welcomed entries addressing the three interconnected priority areas of JPI Oceans: Ocean Health, Ocean Productivity, and Ocean Stewardship & Governance.

The competition was organized in two categories: the open competition and the JPI Oceans projects competition. For each category, the top three were selected by an independent jury, and the winner awarded a prize of €1000. The

two runner-ups were awarded €500 each. The competition was open to all forms of photography and art, and participants could utilise any form of visual art or photography (e.g. microscopic) and other tools (such as Photoshop or paint and brush) to enhance their image to successfully convey their views.

The awarded artworks also received a prominent place in the JPI Oceans office, were communicated through all JPI Oceans communication media and are being used at external events. In collaboration with [ECO Magazine](#), the winning entries were included in the Spring 2022 issue of the magazine, and in an extended feature on the [ECO website](#).

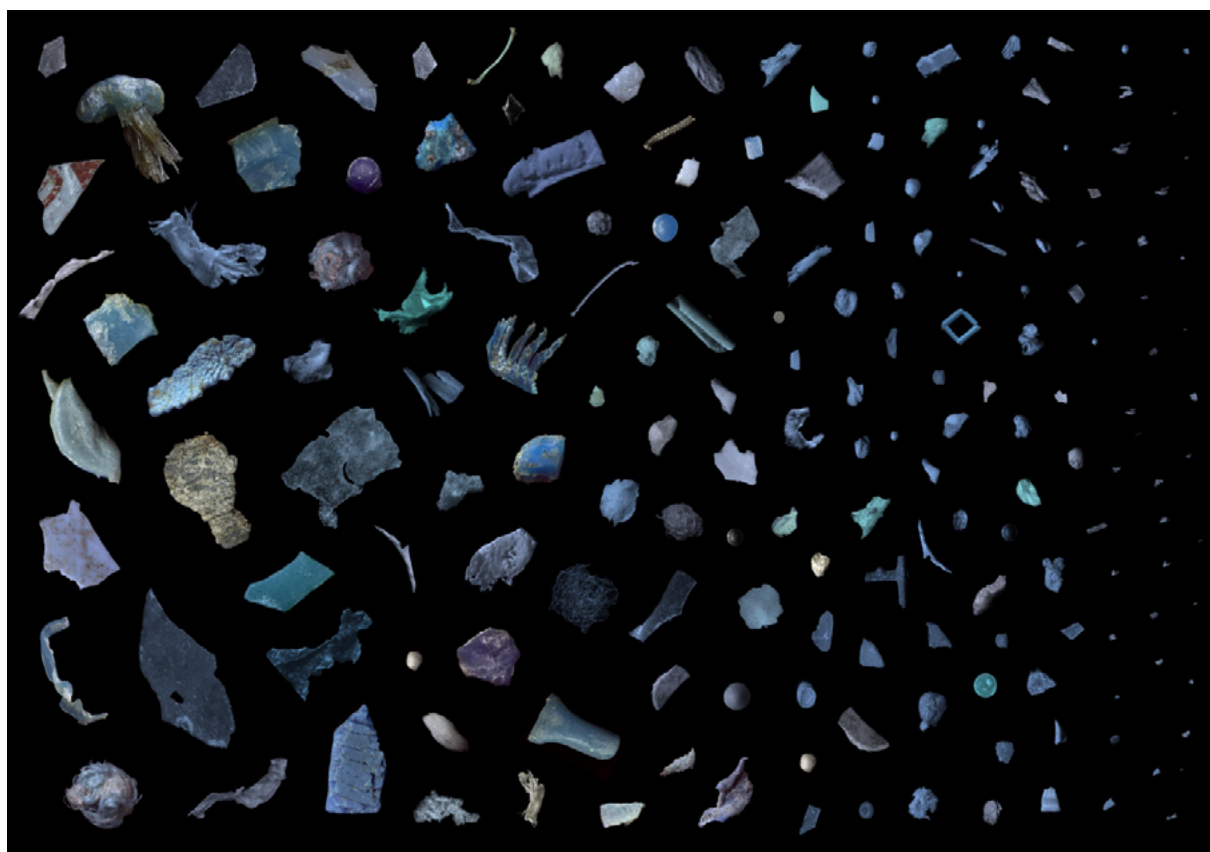
Awardees

PHOTO & ART AWARDS

Celebrating 10 years of JPI Oceans

WINNER
Projects
competition

"Looking closer,
rather than life you
discover it is trash,
uniting the beauty
and repulsion."
- Awards jury



NEW SHADES OF BLUE

by Filipa Bessa
I-PLASTIC project



WHERE IS OUR FUTURE

by Masoud Soheili

WINNER
Open
competition

MEET THE JURY

The Photo and Art Awards entries were evaluated by a panel of three independent jury members based on the following criteria: creativity and originality, technical quality, aesthetics and artistic realization, relevance and potential impact. The jury hailed **Where is our Future** as a very strong call to action, exposing the enormous challenge of marine pollution while also capturing the perspective of the youth looking at the legacy the last decades have left.



Anja Witt
Painter
Atelier Anja Witt



Eloïse Savineau
All-Atlantic Ocean
Youth Ambassador



Ivan Conesa Alcolea
Policy Officer
European Commission

Awardees

1st Runner up



Project competition

DEEP SEA NODULE EXTRACTION AND NODULE EPIFAUNA

by Autun Purser, MININGIMPACT 2 project



Open competition

WALKING ON THIN ICE

by Mario Hoppmann

Awardees

2nd Runner up



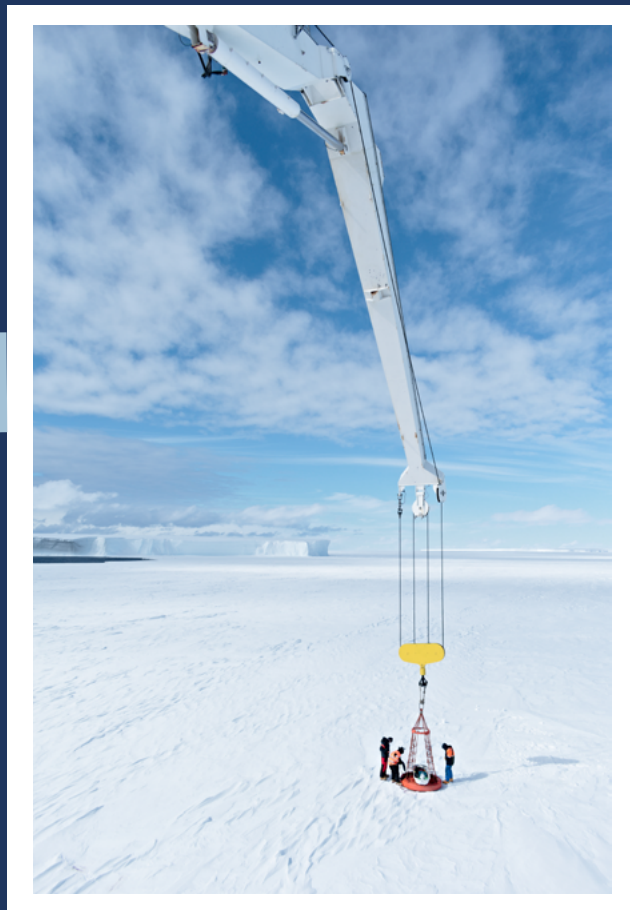
Project competition

SCIENTISTS AT SEA

by Sarah-Marie Kröger

HOTMIC project

1 of 8 artworks, for full series click [here](#).



Open competition

BAY ICE BRIGANDS

by Hermann Luyt



2.0

Scoping Actions

Blue Carbon

2.1 SCOPING A JOINT ACTION ON BLUE CARBON FOR NATURE BASED CLIMATE MITIGATION

Pan-European experts nominated from 15 of our member countries are assessing the scope, feasibility, relevance, and design of a potential new JPI Oceans Joint Action addressing Blue Carbon as a nature-based climate mitigation ecosystem service in the broader context of negative emissions technologies.

ABOUT THIS JOINT ACTION:

JPI Oceans began the scoping process on Blue Carbon following a proposal by Ireland and the formal endorsement by the Management Board in February 2022. The Scoping Action is led by Ireland and co-led by France. Scientific experts from 15 pan-European countries have contributed to the scoping process in 2022.

WHY IS IT IMPORTANT?

Oceans and coastal marine systems play a significant role in the global carbon cycle, representing the largest long-term sink of carbon. Appropriate management of coastal and oceanic systems is therefore of high importance in contributing to climate mitigation through enhanced carbon capture. The emergence of blue carbon as a concept for the integration of coastal carbon dynamics into policy and management frameworks has been highly important as a nature-based solution with co-benefits.

A scoping process that combines policy dialogue and scientific discourse will help determine which aspects of Blue Carbon could be the focus of a possible Joint Action and which instruments would be best suited to address the topic.

Policymakers from the participating countries and the European Commission took part in a [policy dialogue](#) on 2 September 2022. The dialogue helped identify policymakers' needs related to policy synergies, land ownership, management intervention, co-benefits, and local community benefits.

During a [workshop](#) on 26-27 September 2022, scientific experts discussed topics including the definition of Blue Carbon, the lack of consolidated databases, and the potential scope for a Joint Action.

The scoping process will result in a concept paper to be presented to the Management Board in spring 2023.



Marine Lightscares

2.2 CONSIDERING THE IMPACTS OF CHANGING MARINE LIGHTSCAPES

A pan-European group of experts has been working to establish the scope and design of a potential JPI Oceans Joint Action enhancing knowledge and understanding of the impacts of lightening and darkening of the ocean.

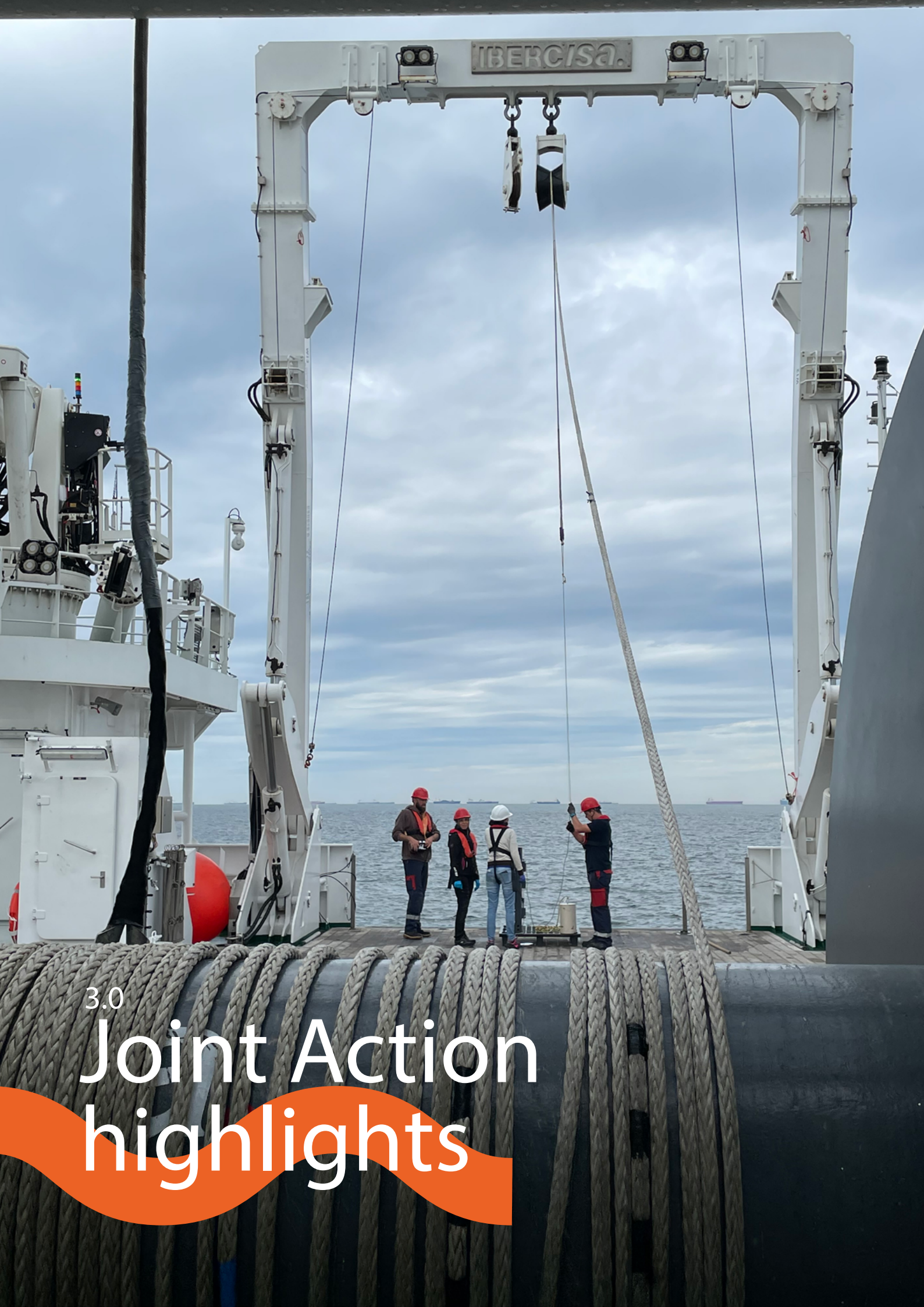
In September 2022, more than 25 scientific experts met at the JPI Oceans premises in Brussels, drawing on the expertise from across member countries and disciplines. They started preparing their scientific input on how a future JPI Oceans Joint Action could address the challenges posed by changing lightscares.

JPI Oceans began the scoping process on [Marine Lightscares](#) following two proposals by Germany and Norway on light pollution and on darkening by turbidity, respectively. The Management formally endorsed the scoping in February 2022. Scientific experts from 10 European countries have contributed to the scoping process in 2022, coordinated by Prof. Oliver Zielinski and Dr. Helene Frigstad.



WHY IS IT IMPORTANT?

The dual light-related subjects concern sustainable ocean health and ocean productivity across a wide field of potential applications, from regional through national and international perspectives. Our understanding of the detailed impacts of the observed changes in lightening and darkening of the oceans are too limited for effective policy action. As a pan-European platform and facilitator of cooperation, JPI Oceans is considering a Joint Action that can shed light on the topic.



3.0

Joint Action highlights

Aquatic Pollutants ERA-NET Cofund

3.1 INVESTING IN KNOWLEDGE TRANSFER OF WATER POLLUTION TO TARGET GROUPS

The presence of pollutants and pathogens in water resources is a major threat to environmental and human health. In 2022, the [AquaticPollutants ERANET Cofund](#) put its focus on creating a platform for PhD students and in ensuring knowledge transfer about recent research findings.

The [TransNet project](#) of the Aquatic Pollutants ERA-Net Cofund, dedicated to knowledge transfer, carried out over 50 stakeholder interviews and generated an overview of the knowledge gaps and demands of different stakeholder groups from Germany, Sweden, France, and the European Union. A review of 100+ national and international regulatory documents contributed to the overview of knowledge demands.

A [PhD Forum](#) was created to connect PhD students and post-docs in the field of water pollution. The PhD Forum consists of a series of activities for the early career scientists of the co-funded projects, such as webinars, networking meetings and social network activities. It has potential to improve their research quality and their career development.

ABOUT THIS JOINT ACTION: The AquaticPollutants ERA-Net Cofund encompasses 18 funded projects on risks posed to human health and the environment by pollutants and pathogens present in water resources. The AquaticPollutants Transnet project supports the transfer of research and the uptake of results into the public and administrative sector, policy, industry or economy.

WHY IS IT IMPORTANT? The occurrence of pathogens and pollutants in water resources is one of the most serious risks to our environment. To reduce or avoid the input of pollutants into the environment, a holistic catchment approach to better understand the ecological and human health effects is necessary. Therefore, the JPI on Antimicrobial Resistance ([JPI AMR](#)), the [Water JPI](#), JPI Oceans and the European Commission have jointly developed the AquaticPollutants ERA-Net Cofund to support and connect their research communities to address these challenges and transfer knowledge to respective target groups.



Blue Bioeconomy ERA-NET Cofund

3.2 36 PROJECTS, 1 NEW CALL AND ELABORATE FORESIGHTING

Activity in **BlueBio** peaked in 2022. All three cohorts of funded projects reached central milestones, stakeholders were engaged in three foresight workshops and three events facilitated synergies between the projects.



Important milestones were reached for all three cohorts of funded projects, 36 in total. The co-funded call projects completed their mid-term evaluation, the [1st Additional Call](#) projects had their kick-off, and seven projects were selected for funding under the [2nd Additional Call](#). In November, the [3rd Additional Call](#) was announced, as the final call of the BlueBio ERA-NET.

In addition to funding and supporting projects, BlueBio worked on developing the blue bioeconomy. A newly appointed Advisory Board strengthened strategic stakeholder engagement.

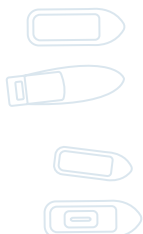
The thematic events have been extremely effective to create synergies between projects and build capacity, and were continued in 2022 with events on Human Capacity Building and on [Commercialisation support](#).

Through the year, experts from the European Fisheries and Aquaculture Research Organisation ([EFARO](#)) facilitated a foresight process with stakeholders from the quadruple helix, with three workshops. The resulting Strategic Knowledge and Innovation Agenda will be published in early 2023.



ABOUT THE JOINT ACTION: The Horizon 2020 BlueBio ERA-NET Cofund consists of 30 partners from 17 countries and aims to strengthen Europe's position in the blue bioeconomy.

WHY IS IT IMPORTANT? Developing a blue bioeconomy in Europe has the potential to create jobs, promote economic growth, and contribute to a healthier and more sustainable world. Increasing circularity in the blue bioeconomy is essential to reach the UN Sustainable Development Goals 2 End world hunger and 14 Life below water.



Climate science for oceans

3.3 PROJECTS MEET FOR HALF-TIME TALK ON CLIMATE-OCEAN INTERFACE

The four projects funded under the joint JPI Oceans-JPI Climate call "[Next Generation Climate Science in Europe for Oceans](#)", met at the BELSPO headquarters in Brussels in September 2022. They took stock of their progress during the first half of their projects and discussed the game plan for the second half.

ABOUT THE JOINT ACTION:

The Joint Action was launched as a joint venture with [JPI Climate](#) in February 2019. It aims to fund research on ocean-climate interactions, to improve climate models and inform climate change adaptation policies in Europe.

WHY IS IT IMPORTANT?

Europe already makes substantial contributions at a national level to the IPCC and the World Climate Research Programme. However, addressing the grand challenges of climate science requires stronger and immediate transnational action to strengthen climate knowledge and enable informed societal transformation to mitigate and adapt to climate change.

At the [meeting](#), the coordinators outlined the achievements, impact and next steps in their projects. The scientific outcomes of the projects are all related to how small-scale observations could be used to improve climate models, provide coastal or ecosystem services and identify gaps to overcome in climate science.

Participants had a chance to explore synergies and similarities in their research, discuss shared challenges, and potential for future collaboration through thematic roundtables. Themes identified for collaboration centred on extreme event detection such as marine heatwaves, mixed-layer variability and mixed layer depth. Projects were asked to assess their societal and policy impact, the main obstacles encountered in project implementation, and how JPI Climate and JPI Oceans can support the achievement of their goals going forward.

Cumulative effects of human activities

3.4 EXPERTS DEVISE HANDBOOK TO ASSESS CUMULATIVE EFFECTS

In 2022, a dedicated expert group mapped the Cumulative Effects Assessment landscape. This laid the groundwork of a handbook, anticipated to be published in late 2023.

The expert group of the [Knowledge Hub on Cumulative Effects of Human Activities](#), consisting of members from 7 countries, focused in 2022 on mapping of existing work, knowledge status, definitions, spatial boundaries of drivers, activities, pressures and effects, and data. The research was compiled into an early-draft handbook. Experts represent both researchers and public servants, to ensure a balance between scientific accuracy and practical usefulness.

ABOUT THE KNOWLEDGE HUB:

In the Cumulative Effects of Human Activities Knowledge Hub the experts will develop guidelines and common principles for decision makers on how to assess cumulative effects of human activities.

WHY IS IT IMPORTANT? Cumulative Effects Assessment (CEA) is a systematic procedure to identify and evaluate the effect of multiple natural and non-natural pressures on single or multiple receptors. A research-based handbook on how to implement CEA will aid users in carrying out such complex assessments and thus competently inform management options.



Ecological aspects of deep-sea mining

3.5 MINING IMPACT 2 WRAPS UP

In February 2022, the **MiningImpact2** project presented and discussed its project results with all relevant stakeholder groups.

Among broader project outcomes, scientists shared preliminary results of a **6-week expedition** to the Clarion-Clipperton Fracture Zone (CCZ) in the Pacific. The expedition was unique in carrying out the first independent scientific monitoring of a pre-prototype manganese nodule collector robot which was tested in parallel from a second vessel by the Belgian company Global Sea Mineral Resources (GSR). Their place of study, the CCZ, is an area of five million square kilometers, where manganese nodules are highly abundant on the seafloor at water depths of more than 4,000 meters. Concentrated in these nodules are metals of economic interest for high-tech products used for energy transformation, mobility and telecommunication, such as copper, cobalt, and nickel.

In summer 2022, the European culture TV channel **ARTE** aired a documentary which highlighted the unique scientific work by the JPI Oceans MiningImpact 2 project. Following the MiningImpact 2 scientists on their expedition to the Clarion Clipperton zone in the Pacific ocean, the documentary explored the impact of potential deep-sea mining activities and the overall exploitation of ocean resources.

WHY IS IT IMPORTANT? The last decade has seen a steady increase of interest in deep-sea mining to secure mankind's future demands in raw materials. Several European countries, i.e. Belgium, France, Germany, as well as the United Kingdom, Russia, and a consortium of former Soviet Union countries, have registered claims with the International Seabed Authority to explore mineral resources in the abyss. The **ISA** is currently developing its international regulatory framework governing the exploitation of mineral seabed resources in areas beyond national jurisdiction, the "Mining Code".

Deep-sea mining inevitably causes direct and indirect disturbances to abyssal ecosystems, as mineral deposits in focus cover extended areas of the inhabited seafloor. It is therefore important that international legislation is based on the best available knowledge. JPI Oceans aimed to contribute to the development of the Mining Code by filling knowledge gaps in the field.



Ecological aspects of microplastics

3.6 AMPLIFYING MICROPLASTICS SCIENCE VOICES

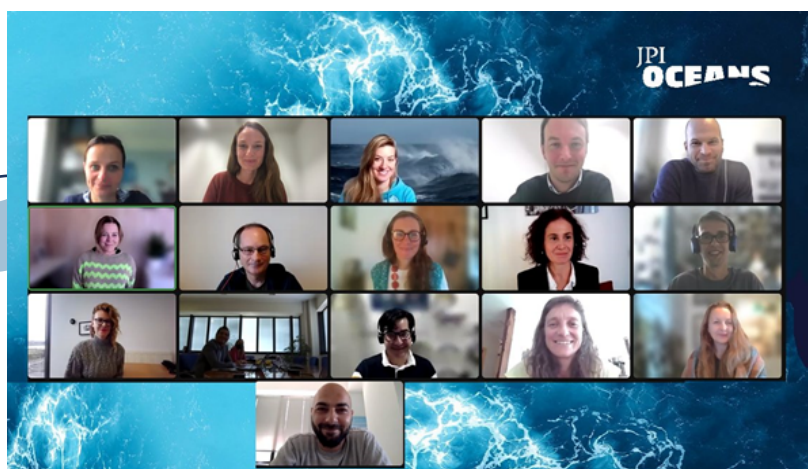
A newly formed group of project coordinators and science communication experts of the **Microplastics Joint Action** developed an array of ideas for communication activities for good visibility and strong impact.

During the mid-term meeting in April 2022, coordinators of all six projects discussed their first results, common issues and challenges. The mid-term evaluation revealed that several collaborative activities among project partners and a great number of dissemination activities were already taking place, driven by science communication experts in each project consortium.

The coordinators and science communication experts agree on developing further joint activities in 2022/2023: a joint publication in a special issue and a fact sheet on the Microplastics Joint Action, a joint sampling campaign on beaches as citizen science approach, a joint session at a conference and a potential meeting with policymakers.

ABOUT THE KNOWLEDGE HUB: The main expected outcomes of the six funded projects are to create knowledge about the relevant sources of microplastics, analytical methods for identifying smaller micro- and nano-plastics, monitoring their distribution and abundance in marine systems and their effects thereon as well as concepts to reduce inputs of plastics into the environment.

WHY IS IT IMPORTANT? Microplastics are persistent, ubiquitous and have a high potential to cause physical and toxicological harm. Therefore, microplastics research needs to advance our knowledge about the identification, weathering and ecotoxicological effects of microplastics in the marine environment. Results provide a basis for recommendations to regulatory policies on European level.



MarTERA ERA-NET Cofund

3.7 SUPPORTING MARTERA'S LEGACY

The ERA-NET Maritime and Marine technologies for a new ERA (**MarTERA**), was initiated in 2017 and had its last call for proposals in 2021. As many of the funded projects are still ongoing, JPI Oceans members have decided to support the project portfolio and legacy of the ERA-NET.

In 2022, the coordination phase of MarTERA was finalized, and JPI Oceans took over responsibility for following-up ongoing projects.

JPI Oceans played a key role in developing the MarTERA Co-fund from the beginning, and is well positioned to follow up the project portfolio for the remaining duration of the projects. By hosting project meetings and providing communications and web assistance for the projects, JPI Oceans seeks to contribute to taking the legacy of MarTERA towards the next generation of European Partnerships, such as Zero Emission Waterborne Transport and the Sustainable Blue Economy Partnership.



Photo credit:
© A. Armyagov

ABOUT THE JOINT ACTION: MarTERA is an ERA-NET Cofund initiated under the Horizon2020 program with an overall goal to strengthen the European Research Area in maritime and marine technologies as well as Blue Growth. The MarTERA consortium, consisting of funding partners from 16 countries and coordinated by the German Research Centre Jülich, arranged its first joint international call in 2017, co-funded by the European Commission. Three additional calls followed in 2019, 2020 and 2021. In total MarTERA has funded 48 international R&I projects in areas such as environmentally friendly maritime technologies, innovative ship and offshore structures, automation, sensors, monitoring and observations, advanced manufacturing, and safety and security.

WHY IS IT IMPORTANT? Sectors such as waterborne transport, shipbuilding & ship repair, offshore and sub-sea activities, monitoring and observations, are essential for supporting sustainable growth and untapping the potential of Europe's oceans, seas and coasts. Beyond calls for new proposals investments in R&I require additional support and follow up efforts to ensure connectivity, exploit synergies and maximise the outputs of the investments.

Munition in the sea

3.8 KNOWLEDGE HUB DEVELOPS WEB PORTAL FOR END-USERS

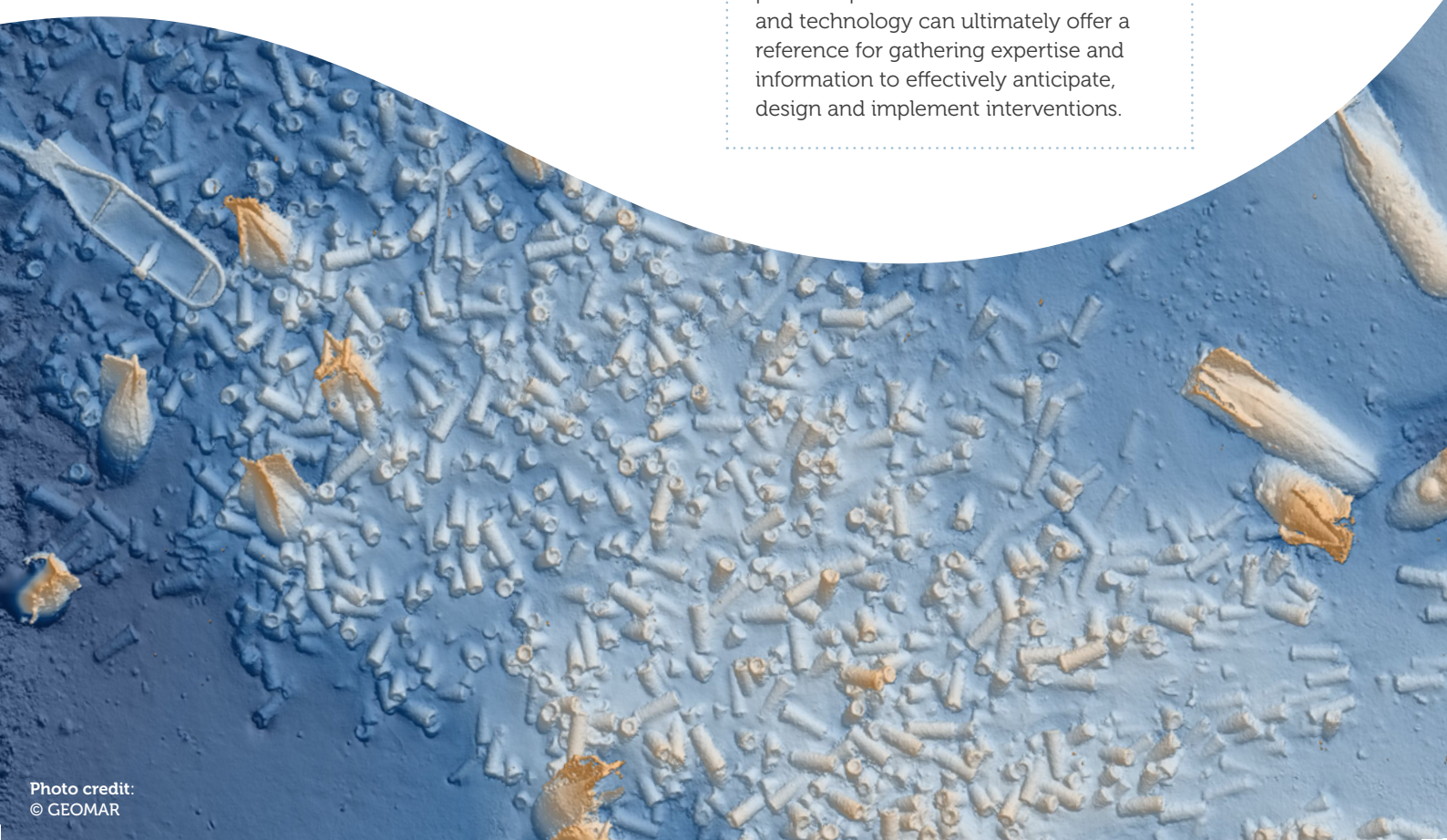
The **Knowledge Hub Munition in the Sea** prepared a web portal to provide information on technologies, publications, methodologies for the management, monitoring and remediation of munitions in the sea. The online portal is hosted by the Fraunhofer Institute for Chemical Technology and will be launched in 2023.

Experts from the Knowledge Hub discussed the design and content of a web portal to share information on technologies, publications, and methodologies that inform the tackling of the challenges of munitions in the sea. Four main lines of information were agreed on: management, mapping and evaluation, environment and toxicity, remediation methods. The idea builds on five years of interaction between the JPI Oceans Knowledge Hub experts from its twelve participating countries. The portal intends to provide end-users with access to integrated knowledge from different sources, taking advantage of.

ABOUT THE KNOWLEDGE HUB:

The Joint Action was initiated in 2015 with different lines of activity related to technology, science and information sharing. In 2020 it was shaped into a multi-national experts Knowledge Hub, set up to harness knowledge and experience for the Munitions in the Sea Joint Action.

WHY IS IT IMPORTANT? The challenge of Munitions in the Sea has been usually approached at national level and often low-ranked, unless emergencies occur. A structured pan-European framework on research and technology can ultimately offer a reference for gathering expertise and information to effectively anticipate, design and implement interventions.





Ocean carbon capacities

3.9 FROM ACTION IDEA TO PRIORITY THREAD

The **Knowledge Hub Ocean Carbon Capacities** sets out to assess the capacities of our ocean waters to take up carbon and to strengthen the value chain of ocean carbon information.

The expert group and participating countries from the Knowledge Hub drafted an Action Plan, which includes different action areas and levels of engagement. At a hybrid meeting in Brussels in December 2022, they boiled those down to a set of actionable activities around key challenges. The group will develop a set of actions for the Knowledge Hub that integrates all regional sea and ocean areas and builds on the national initiatives and capacities in the participating countries.

ABOUT THE KNOWLEDGE HUB: The Knowledge Hub consists of 12 JPI Oceans member countries lead by Norway and co-lead by Denmark and Germany. The expert group consists of 27 experts from those countries, scientifically lead by Richard Sanders from NORCE in Norway.

WHY IS IT IMPORTANT? The future evolution of the ocean carbon sink will regulate the costs associated with the transition to a net zero economy, and the timing of the interventions required. The costs associated with accelerating planned emission reductions and adaptation and mitigation measures in response to a reduced sink (or conversely the savings associated with delaying them) are large.

Science for good environmental status

3.10 FIELD TESTING AN INTEGRATED APPROACH TO ASSESS OCEAN INTEGRITY

Eleven institutions agreed to invest in testing an integrative approach to assess how far marine waters and ecosystems achieve Good Environmental Status, as demanded by the [Marine Strategy Framework Directive](#) (MSFD). An observational campaign took place on board the Research Vessel Belgica in July 2022 in the Southern Bight of the North Sea. Data and sample analysis is in progress to develop a new methodology with the aim to simplify the evaluation of the complex marine environment.

The experts from the participating countries developed a plan for activities for implementation before the end of 2023. They formed a Knowledge Hub with four working groups on the areas of biodiversity, trophic web, contaminants, and physical dynamics. Eleven participating institutions signed an agreement to jointly commit approximately EUR 700,000 in to support of experiments and analysis associated with the RV Belgica expedition.

As part of a [social media campaign](#) led by JPI Oceans, [Photo&Art Awards](#) runner up artist Sarah-Marie Kröger joined and illustrated the cruise.

At a post-cruise workshop in Venice in October 2022, experts discussed preliminary results and the process for the integration of the different observations. The activities have been included in the global efforts framed within the [UN Ocean Decade](#).

Credit:
© S. Kröger

WHY IS IT IMPORTANT? The overall objective of the MSFD is to maintain and restore a Good Environmental Status of European marine waters and their resources. Initial assessments of the environmental status show the necessity to significantly improve assessment quality and coherence. To that effect, the [S4GES JPI Oceans Joint Action](#) will contribute with transnational coordination of capacities and expertise to test new methodologies and approaches that will provide a knowledge-based support for the Good Environmental Status assessments.



Sea level rise

3.11 EXPERTS SCOPE PRIORITIES FOR ASSESSMENT REPORT

In its first three-year phase (2021-2023), the [Knowledge Hub on Sea Level Rise](#) conducted an extensive stakeholder consultation process, to identify needs and priorities at basin-level for effective adaptation policymaking. Findings will inform the Knowledge Hub's first Assessment Report.

The two-year scoping process included the setting up of the Knowledge Hub's [website](#), a pan-European stakeholder [survey](#), four basin-specific online scoping [workshops](#) and a pan-European and UN Ocean Decade-endorsed [Sea Level Rise Conference 2022](#) held in Venice in October 2022, gathering over 200 experts, policymakers, and stakeholders from across Europe and beyond. Based on the findings from these activities, the Knowledge Hub on Sea Level Rise will work on producing its first assessment report in 2023.

The envisioned long-term ambition of the Knowledge Hub beyond this first three-year phase is to establish a cycle of regularly updated periodic assessments of knowledge on regional-to-local sea level rise that complements global and European assessments by providing additional geographical and contextual detail, tailored to regional, national and European policy development and implementation.

ABOUT THE JOINT ACTION:

The Knowledge Hub on Sea Level Rise is a joint effort by JPI Climate and JPI Oceans, aiming to support the development and implementation of local, national and European policies on regional-to-local sea level changes across Europe.

WHY IS IT IMPORTANT? Sea level rise is expected to be among the most costly and irreversible consequences of climate change. At local to regional scale, uncertainties about changes and associated risks and management options vary even more due to factors such as isostatic adjustments, land subsidence, changes ocean circulation and coastal adaptation measures.



Transdisciplinary research for ocean sustainability

3.12 STRENGTHENING TRANS-DISCIPLINARITY IN OCEAN RESEARCH

In May 2022, the Collaborative Research Action (CRA) on **Transdisciplinary Research for Ocean Sustainability** organized a workshop on Meeting the Challenges of Transdisciplinary Sustainability Research.



Photo credit:
© Belmont Forum

The workshop, endorsed as a UN Ocean Decade activity, was designed and facilitated by Esther Turnhout and Josie Chambers, both well credentialed cutting-edge sustainability transdisciplinary scholars. A key focus of the session was to engage in a reflective discussion around the different archetypal roles we adopt when conducting transdisciplinary research, and how these roles have implications for power relations, researcher control and inclusivity of research participants, as well as – ultimately – research outcomes and impact. A summary report is available [here](#).

The CRA also took part in the Ocean Sciences Meeting in February 2022, with projects convening one session on oceans of conflict and climate change and another session on transdisciplinary and transnational research and collaborations for ocean sustainability.

The CRA organized an “Impact Meeting” for all 13 projects in June 2022. It included general reporting, but also sessions on impact, on cooperation and engagement, and on “trouble shooting”. Finally, with the projects reaching a level of maturity, a concept for a synthesis article was developed to prepare delivery of a product that cuts across Oceans CRA projects.

ABOUT THE JOINT ACTION:

The Belmont Forum, JPI Oceans and Future Earth have joined forces for this CRA on Transdisciplinary Research for Ocean Sustainability.

Underwater noise in the marine environment

3.13 TURNING UP THE VOLUME: FIVE NEW PROJECTS FUNDED

The innovative projects are coming in the wake of a JPI Oceans call establishing a unique collaboration between Belgium, Germany, Ireland, Italy, Norway, Poland, Romania and Spain together with BANOS, BlueMed, NOAA and the UN Ocean Decade.

The joint call, launched in December 2021, was the [first UN Ocean Decade focused contribution](#) and implementing activity by JPI Oceans in its role as Decade Implementing Partner for Europe. In the first round of selection, thirteen project proposals involving partners from all eight participating countries were received. The proposals were evaluated by independent, international peer reviewers and ranked by an evaluation panel.

ABOUT THE JOINT ACTION: The Joint Action was initiated with two scoping workshops organized in Brussels in 2019 and in Rome in 2020. The main output of the workshops was the identification of priorities, research gaps and needs on the state of impacts, technology, sound propagation, and measurements. Formally adopted in 2020, the Joint Action launched a joint call for proposals in December 2021.

On this basis, the Call Steering Committee selected five projects for funding in 2022:

- [DeuteroNoise](#) | Characterization of maritime noise in different European basins and its impact on ecological relevant deuterostome invertebrates | Coordinator: Lucia Manni, University of Padua (Italy)
- [DIAPHONIA](#) | Diagnostic framework to Assess and Predict the impact Of underwater Noise on marine species | Coordinator: Sandro Mazzariol, University of Padua (Italy)
- [ORCHESTRA](#) | eCOsystem Responses to Constant offshore Sound spectra | Coordinator: Maarten Boersma, Alfred Wegener Institute for Polar and Marine Research (Germany)
- [PURE WIND](#) | Impact of sound on marine ecosystems from offshore wind energy generation | Coordinator: Ana Širović, Norwegian University of Science and Technology, (Norway)
- [SONORA](#) | Filling the gap: Thresholds assessment and impact beyond acoustic pressure level linked to emerging blue-growth activities | Coordinator: Jaime Ramis Soriano, Universidad de Alicante (Spain)

The ocean has always been governed by natural and biological sounds until climate change and man-made noise have dramatically affected its biodiversity. Monitoring biological activity in fragile habitats through bioacoustics represents a unique approach to establish conservation dynamic trends and implement long-term mitigation actions

- Michel André
Director of the Laboratory of Applied Bioacoustics (LAB)
BarcelonaTech (UPC)





4.0

Strategic engagements

All-Atlantic Ocean Research and Innovation Alliance

4.1 ALL-ATLANTIC YOUTH TAKE SUMMER SCHOOL AND FORUM BY STORM

The [All-Atlantic Ocean Youth Ambassadors](#) (AAOYA) finally met in person in July 2022, to unfold their collective verve, traveling from all around the Atlantic to Washington DC to attend the 2nd AAOYA Summer School. The event was co-organized by JPI Oceans and the German Alliance for Marine Research (KDM) in scope of the AANCHOR CSA project and All-Atlantic Ocean Research and Innovation Alliance, back-to-back with the [5th All-Atlantic Ocean Research Forum Ministerial Event](#).

Together with the Forum, the week-long Summer School offered the Youth Ambassadors a unique opportunity to meet and interact with key ocean actors from around the world, engage in high-level sessions with policymakers and government officials, enhance their expertise through educational and training activities, and enjoy a private view into the workings of international relations, as well as breath-taking spaces in and around the US capitol city.

Hosted by the National Oceanic and Atmospheric Administration and as part of the [All-Atlantic Ocean Research and Innovation Alliance](#), the Forum also provided unparalleled personal and professional experiences and opportunity for growth in the ocean sphere to this enthusiastic group of early-career ocean experts. These two events marked an important milestone in the cohort's ambassadorship, being the first time the AAOYA met and worked together in person after over 18 months of remote collaboration due to the COVID-19 pandemic.

ABOUT: The AAOYA initiative aims to equip the next generation with the skills and knowledge to act as effective ocean ambassadors and to empower them to drive positive change and sustainable development along and across the Atlantic Ocean. Since 2020, JPI Oceans is coordinating the initiative with KDM under the framework of the AANCHOR CSA.



European Ocean Observing System

4.2 ADVANCING THE FRAMEWORK FOR EUROPEAN OCEAN OBSERVING

Creating a collaborative network and structuring European ocean observing were the foci of the European Ocean Observing System (EOOS) in its initiation stage from 2018 to 2022. Preparation of a new five-year strategy and the second meeting of the EOOS Resource Forum heralded the transition towards more concerted implementation activities.

EOOS is an bottom-up alliance of voluntary partners. With the new [EOOS Strategy 2023-2027](#), and its accompanying Roadmap for Implementation, EOOS combines, coordinates and develops ocean observing capabilities at all levels across Europe. EOOS maintains ocean observing infrastructures, while fostering collaboration and innovation at the same time. Its vision is that EOOS is sustained and meets the specific needs of users.

During the second [EOOS Resource Forum](#) in December 2022 participants shared ideas for actions. One is to promote that further countries collaborate with the OECD on value chain studies. Another idea is to compile and share national overviews of the organisational, governance and financing structures underlying ocean observation to consolidate the ground for coordinated resourcing considerations. Furthermore, participants considered EOOS support for timely up-scaling of innovative techniques as conducive to EOOS' objectives.

ABOUT: The European Ocean Observing System (EOOS) is a coordinating framework for European in-situ ocean observing. EOOS brings together Europe's diverse ocean observing communities to promote collaboration, strengthen coordination and integration, and promote sustainability in ocean observing in Europe. JPI Oceans chairs the EOOS framework's Resource Forum.

WHY IS IT IMPORTANT? High-quality, continuous ocean observation data provide the basis for advancing scientific understanding and attracting maritime innovation and development. In Europe, ocean observation is essential for the knowledge base for the implementation of the Green Deal. EOOS will strengthen coordination and integration of ocean observing to advance scientific understanding about our ocean, attract maritime innovation and development, and promote collaboration among relevant stakeholders.

EU Mission: Restore our Ocean and Waters

4.3 ENGAGING STAKEHOLDERS FOR EU MISSION CHARTER

JPI Oceans is a partner in [PREP4BLUE](#), a Coordination and Support Action (CSA) to support the roll-out of the [EU Mission Restore our Ocean and Waters](#).

The Mission Ocean seeks to protect and restore marine and freshwater ecosystems and biodiversity, prevent and eliminate pollution of our ocean, seas, and waters, and make the Blue Economy sustainable, carbon neutral, and circular. The PREP4BLUE CSA is developing co-creation and co-implementation R&I modalities required to achieve the Mission objectives and preparing the ground for inspiring and engaging citizens and stakeholders.

JPI Oceans is engaged in two aspects of the project. One task is about elaborating public and private funding opportunities for continuous Mission roll-out. A second task is to create synergies with European initiatives and organisations. After the start of the project in June 2022, JPI Oceans' responsibilities were reshaped to reflect the needs following the launch of the [Mission Charter](#). Defining the needs and roles was among the issues addressed at the project's kick off meeting in Brussels 14-15 September. Subsequently, one of the main tasks for JPI Oceans in 2022 was to prepare a communication campaign to promote the Mission Charter.

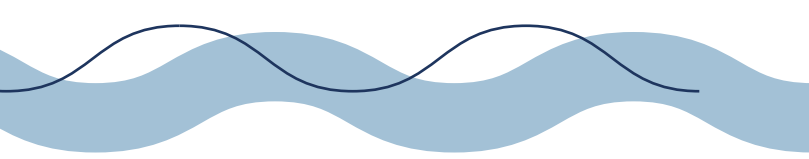
WHY IS IT IMPORTANT? Five EU Missions seek to enable solutions to some of the greatest challenges facing our world. One of them refers to ocean integrity. PREP4BLUE's objective is to facilitate a successful first phase of the Mission Restore our Ocean and Waters.



Metrology for Integrated Marine Management and Knowledge-Transfer Network

4.4 EUROPEAN METROLOGISTS COLLABORATE IN HORIZON INFRASTRUCTURE PROJECT

MINKE is an infrastructure community project funded by Horizon 2020 that aims to establish a European scale network and community of infrastructures for marine metrology research. JPI Oceans is one of the partners in the project.



The main objectives of MINKE (Metrology for Integrated Marine Management and Knowledge-Transfer Network) are to integrate key European marine metrology research infrastructures, to coordinate their use, and develop an innovative framework of quality of oceanographic data for the European actors in charge of monitoring and managing marine ecosystems. The project builds on a JPI Oceans Joint Action "[Marine Sensors Calibration Network](#)", which ran from 2016 to 2021. JPI Oceans' engagement in this area is continued as one of the partners in MINKE. In 2022, JPI Oceans contributed by enhancing the communication of activities, supporting network building and connecting with other relevant JPI Oceans activities.

WHY IS IT IMPORTANT?

Integrating key European marine metrology research infrastructures will give researchers improved access to necessary research infrastructures that can measure ocean parameters at high quality. Society needs to get the most out of its investment in research and innovation. Better integration and access to infrastructure and knowledge-based resources is key to an improved management of the continuous flow of ocean data. This makes for better science and increases the ability of research to contribute to major societal challenges.

Sustainable Blue Economy Partnership

4.5 MAKING THE PARTNERSHIP SEEN AND HEARD

JPI Oceans jump-starts its new role leading the external communication activities of the [Sustainable Blue Economy Partnership](#).



Since the start of the Sustainable Blue Economy Partnership in September 2022, JPI Oceans formally leads the work package dealing with all external communication aspects of the Partnership. This immediately involved developing a visual identity, logo, website, newsletter and social media presence for the Partnership.

The communication work package is furthermore responsible for ocean literacy activities within the Partnership. JPI Oceans developed ideas for realisation in the coming years, together with work package partners.

ABOUT: The Sustainable Blue Economy Partnership is a Horizon Europe co-funded partnership pooling research and innovation investments and aligning national programmes at pan-European scale. It constitutes a network of 60 Partner institutions from 25 countries and the European Commission that enables an unprecedented effort to pool research and innovation investments and align national programmes at pan-European scale, taking into consideration the sea-basin (Mediterranean, Black Sea, Baltic and North Sea) and Atlantic Ocean dimension.



Partnership on Safe and Sustainable Food Systems for People, Planet and Climate

4.5 PROJECT KICKS OFF FOOD SYSTEMS TRANSFORMATION

FoodPaths, a Coordination and Support Action (CSA) in support of a new Horizon Europe [Partnership on Safe and Sustainable Food Systems for People, Planet and Climate](#) was kicked off in June 2022.



Important milestones were reached in the work on the Partnership on Safe and Sustainable Food Systems for People, Planet and Climate in 2022. JPI Oceans contributed to the drafting process that was concluded in 2022.

In the latter part of the year, JPI Oceans answered the open consultation on the Strategic Research and Innovation Agenda (SRIA) of the partnership. This was done both to involve more of our stakeholders in the process, and to highlight the central role of aquatic foods in the transformation of the food system.



**2021
2030** United Nations Decade
of Ocean Science
for Sustainable Development

4.5 JPI OCEANS BEGINS WORK AS IMPLEMENTING PARTNER

After earning the status of **UN Ocean Decade Implementing Partner** in 2021, JPI Oceans focused in 2022 on aligning its activities with the UN Ocean Decade and drive its implementation in Europe, alongside the other European Partners.

JPI Oceans contributed to the UN Ocean Decade with 1 contribution, 2 activities and 6 endorsed projects.

JPI Oceans also joined frequent meetings with the other European Decade Implementing Partners and IOC UNESCO to align activities and discuss collaboration.

1

CONTRIBUTION

CO-BRANDED CALL ON UNDERWATER NOISE: The call offered a concrete opportunity to systematically approach ocean challenges, support policy and governance, and carry out experimental research activities on the emerging issue of the acoustic pollution of ocean and seas.

6

ENDORSED PROJECTS

KNOWLEDGE HUB ON SEA LEVEL RISE: The Knowledge Hub was endorsed as an associated project to the UN Ocean Decade's [CoastPredict](#) programme.

UNDERWATER NOISE PROJECTS: The projects selected under the co-branded call were also endorsed as UN Ocean Decade projects.

2

ENDORSED ACTIVITIES

S4GES OCEANOGRAPHIC CRUISE (July 2022): The Joint Action Science for Good Environmental Status enters operational activities in July 2022 with a one-week long [research cruise](#) endorsed by the UN Ocean Decade.

SEA LEVEL RISE CONFERENCE (October 2022): The 2022 edition took place at the Scuola Grande San Giovanni Evangelista of Venice, a centuries-old institution at the heart of one of Europe's foremost coastal cities challenged by sea level rise. The Conference was organized by the Knowledge Hub on Sea Level Rise, a joint effort between JPI Climate and JPI Oceans, in collaboration with its Italian partners, as a UN Decade endorsed event. Watch the highlights video [here](#).

ABOUT: Proclaimed in 2017 by the United Nations General Assembly, the UN Decade of Ocean Science for Sustainable Development, "The Ocean Decade", seeks to stimulate ocean science and knowledge generation to reverse the decline of the state of the ocean system and catalyse new opportunities for sustainable development of this vast marine ecosystem.

5.1 MANAGEMENT BOARD REUNITED IN MALTA

For the first time since the COVID-19 pandemic, in October 2022, the JPI Oceans **Management Board** gathered in person for the 28th Management Board meeting, hosted by the Malta Council for Science and Technology at Villa Brighi in Kalkara, Malta.



5.0

Our people

Internal Advisory Committee

5.3 IAC WELCOMES TWO NEW MEMBERS



On 6 October 2022, at the 13th [AISBL](#) General Assembly meeting, the AISBL member countries voted two new members to the [Internal Advisory Committee](#) of JPI Oceans. [Katarina Viik](#) from Estonia and [Maria Azzopardi](#) from Malta were unanimously elected with 12 votes each.

As new members of IAC, Katarina (pictured right) and Maria (pictured left) join Chair Niall McDonough (Ireland) and Vice Chairs Angelo Camerlenghi (Italy) and Benjamin Kürten (Germany), alongside Kristin Elisabeth Thorud (Norway), Fatima Abrantes (Portugal) and Gilles Lericolais (France). The Internal Advisory Committee members are elected among the Management Board representatives in a personal capacity by the Management Board.



Secretariat

5.2 WILLEM DE MOOR MADE DEPUTY DIRECTOR



With a decade of experience at the Secretariat, [Willem](#) plays a key role in moving forward the implementation of our Strategy Framework and our value adding role in pan-European Research and Innovation. Willem is seconded to the JPI Oceans Secretariat by the Flanders Marine Institute (VLIZ).

It has been a privilege being part of JPI Oceans from the moment it was launched. I am excited to take up this new role and to further drive our collective efforts in increasing the impact of research and innovation for a sustainable ocean.

Willem De Moor, Deputy Director, JPI Oceans Secretariat



Annexes

A. JOINT ACTIONS



B. MANAGEMENT BOARD

The **Management Board** is the decision-making body of JPI Oceans. Members have appointed at least one representative, up to a maximum of four, who are authorised to act and vote on behalf of the member state. The Management Board has established an Internal Advisory Committee (IAC) of eight members; the Chair* and Vice Chairs** of the Management Board, and five additional members***, elected among the Management Board representatives in a personal capacity by the Management Board. The 26th, 27th and 28th Management Board meetings occurred in February (online), May (Belgium) and October (Malta). The 26th meeting was dedicated to the scoping of new Joint Actions.

COUNTRY	ORGANISATION	REPRESENTATIVES
BELGIUM	Belgian Federal Science Policy Office (BELSPO)	Frank Monteny Koen Lefever
	Flemish Government, Department Economy Science and Innovation (EWI)	Johan Hanssens Gert Verreet
CROATIA	Institute of Oceanography and Fisheries Ministry of Science and Education	Ivica Vilibić Doris Josić
	Ruder Bošković Institute	Sandi Orlić
DENMARK	Innovation Fund Denmark	Martin Kyvsgaard
	Technical University of Denmark	Dennis Ljsbjerg
ESTONIA	Ministry of Agriculture	Eve Külmallik Helena Pärenson Rene Reisner
	Ministry of the Environment of the Estonian Republic	Katarina Viik*** Tuuli Levandi
FRANCE	French National Research Agency (ANR)	Maurice Héral
	French Research Institute for Exploitation of the Sea (IFREMER)	Gilles Lericolais***
	Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation	Alain Lagrange

COUNTRY	ORGANISATION	REPRESENTATIVES
GERMANY	German Federal Ministry of Education and Research (BMBF)	Peter Grönwoldt
	German Federal Ministry of Food and Agriculture (BMEL)	Hartmut Stalb
	Research Centre Jülich (JÜLICH)	Benjamin Kürten**
GREECE	Hellenic Centre for Marine Research (HCMR)	George Petihakis Aris Karageorgis
	Ministry of Development; General Secretariat for Research and Technology	Argyro Karahaliou
ICELAND	The Icelandic Marine and Freshwater Research Institute	Christophe Pampoulie Þorsteinn Sigurðsson
IRELAND	Marine Institute Ireland (MI)	Niall McDonough* Veronica Cunningham Fiona Grant
ITALY	National Institute of Oceanography and Experimental Geophysics (OGS)	Angelo Camerlenghi**
	Italian Consortium for Managing research Activities Venice Lagoon (CORILA)	Pierpaolo Campostrini
	National Research Council of Italy, Marine Technology Research	Emilio F. Campana
MALTA	Malta Council for Science and Technology (MCST)	Maria Azzopardi*** Glorianne Camilleri
NETHERLANDS	Ministry of Agriculture, Nature and Food Quality	Rosanne Metaal
	Netherlands Organisation for Scientific Research (NWO)	Daan Blok
	Ministry of Infrastructure and Water Management	Lisette Enserink
NORWAY	Norwegian Ministry of Trade, Industries and Fisheries	Eivind Lorentzen
	Research Council of Norway (RCN)	Hanna Lee Behrens Kristin Elisabeth Thorud***

COUNTRY	ORGANISATION	REPRESENTATIVES
POLAND	Ministry of Science and Higher Education	Robert Napora
	Polish Academy of Sciences; Institute of Hydroengineering (IBW PAN)	Grzegorz Różyński
PORTUGAL	Portuguese Institute of Ocean and Atmosphere (IPMA)	Fatima Abrantes*** Miguel J. M. Caetan
	Portuguese National Funding Agency for Science, Research and Technology (FCT)	Sofia Cordeiro Teresa Courinha
ROMANIA	Executive Unit for Higher Education, Research, Development and Innovation Funding	Dominica Cotet Cristina Cotet
	National Authority for Scientific Research, Directorate for European Integration and International Cooperation	Viorel Vulturescu
	University of Bucharest, Faculty of Geology and Geophysics	Viorel Gh. Ungureanu
SPAIN	Spanish Ministry of Economy and Competiveness (MINECO)	Estrella Fernandez Garcia Esther Chacón Abraham Trujillo Quintela
SWEDEN	Swedish Agency for Marine and Water Management (HaV)	Bengt Fjällborg Thomas Klein Floor ten Hoopen
	Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS)	Osman Tikansak
UNITED KINGDOM	Department for Environment, Food and Rural Affairs (DEFRA)	Sylvia Blake
	National Oceanography Centre (SOTON-NOCS)	Ed Hill
	Natural Environment Research Council (NERC)	Mike Webb
	Centre for Environment, Fisheries and Aquaculture Science (CEFAS)	Brian Harley
	UK Hydrographic Office	Rhodri Baines

C. SECRETARIAT

NAME	POSITION
Yekaterina Astafyeva	Science-Policy Adviser, Part-time (since September 2022)
Willem De Moor	Deputy Director, Full-time
Jon Øygarden Flæten	Science-Policy Adviser, Full-time
Frode Dal Fjeldavli	Science-Policy Adviser, Full-time (since January 2022)
Jella Kandziora	Science-Policy Adviser, Part-time (since July 2022)
Thorsten Kiefer	Executive Director, Full-time
Ingeborg Korme	Science-Policy Adviser, Full-time
Pier Francesco Moretti	Science Officer, Part-time
Lavinia Giulia Pomarico	Science-Policy Adviser, Full-time
Theresa Steins	Office Manager, Part-time



Photo credit:
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D. FINANCES

JPI Oceans AISBL was formally established by Royal Decree and has been legally and financially operational since March 2018. As a legal entity under Belgian law, the Management Board is responsible for approving annual accounts and discharge of liability of the Director. At the current level of annual turnover, external auditing is not formally required under Belgian law.

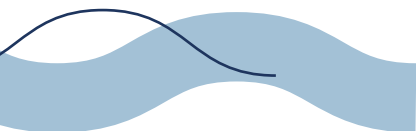
Annual fees from members and associate partners are the main revenue for JPI Oceans. The annual fees are calculated as a share of the overall agreed budget, based on a weighted GDP. In addition, countries are requested to provide additional voluntary contributions. Several of such contributions were received in 2022 to ensure that the legal entity could maintain a positive cash flow. JPI Oceans AISBL is also a partner in the All-Atlantic Ocean Research Alliance project (AANChOR CSA) and the EU Mission Ocean, Seas and Waters project PREP4BLUE CSA, with provision for travel and staff time.

In the accounting year of 2022, a total cash amount of EUR 447,684.88 was received from fees, donations and grants, with 179,890.88 cumulatively received from the two Coordination and Support Actions where JPI Oceans acts as partner, the All-Atlantic Ocean Research Alliance project (AANChOR CSA) and the EU Mission Ocean Waters project (Prep4Blue CSA).

The total expenditure amounted to EUR 541,230.05. Expenditure consisted of secretariat employment costs, office fixed costs, running expenses, bank charges and other costs. The reserves at the end of 2022 amounted to EUR 794,155.58.

The Research Council of Norway (RCN), the Government of Flanders via the Flanders Marine Institute (VLIZ), the German Federal Ministry of Education and Research (BMBF) via the GEOMAR Helmholtz Centre for Ocean Research Kiel and the University of Kiel, and the National Research Council of Italy (CNR) kindly provided in-kind contributions through staff secondments. This is not further quantified in the finances of the JPI Oceans AISBL.

Ensuring that countries meet their financial obligations remains of major importance to ensure the sustainability and viability of JPI Oceans going forward.



E. STATISTICS



WEBSITE ANALYTICS

YEAR	VISITS	UNIQUE VISITORS	PAGEVIEWS	VISIT DURATION
2013	16,882	9,615	55,914	03:07
2014*	36,139	18,076	155,318	03:01
2015	79,829	48,669	350,926	04:25
2016	88,718	60,009	374,294	05:11
2017	233,145	180,833	611,917	05:05
2018**	42,033	27,754	106,789	02:42
2019 **	55,085	36,292	126,096	02:24
2020**	53,431	38,285	113,273	02:05
2021**	47,145	47,142	165,272	02:17
2022**	50,135	89,407	108,529	02:04

* 2014 figures are partly based on Google Analytics in combination with in-house analytics from September 2014 onwards.

** 2018-2022 figures are based on the Matomo web analytics platform



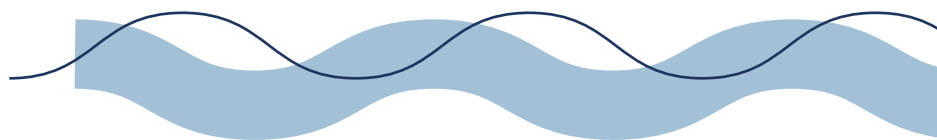
WEBSITE CONTENT & NEWSLETTERS

YEAR	NEWS ITEMS	NEWSLETTERS	SUBSCRIBERS
2013	32	5	545
2014	37	7	641
2015	25	6	955
2016	26	4	1204
2017	24	9	1430
2018	24	5	1463
2019	27	6	1858
2020	30	14	2011
2021	24	10	2161
2022	25	12	2338



SOCIAL MEDIA

YEAR	LINKEDIN GROUP MEMBERS	TWITTER FOLLOWERS	FACEBOOK LIKES	INSTAGRAM FOLLOWERS
2013	356	457	54	
2014	478	707	74	
2015	624	1102	200	
2016	787	1733	408	
2017	908	2392	634	
2018	963	3152	847	
2019	998	3832	1002	
2020	1126	4310	1262	294
2021	1192	4619	1335	456
2022	1235	4985	1550	622



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