

Annual Report

**2022**







**23 MARINE RESEARCH INSTITUTIONS,  
ONE GOAL: WE STRENGTHEN THE  
SUSTAINABLE MANAGEMENT OF COASTS,  
SEAS AND OCEANS.**

Funded by the federal government and the Northern German states.  
Networking with politics, industry and civil society.



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## WELCOMING WORD FROM THE EXECUTIVE BOARD



Dr. Joachim Harms  
Chairperson of the DAM Executive Board



Prof. Dr. Michael Schulz  
Deputy Chairperson of the DAM Executive Board



Prof. Dr. Katja Matthes  
Member of the DAM Executive Board



Prof. Dr. Ulrich Bathmann  
Member of the DAM Executive Board

Dear Ladies and Gentlemen

Dear friends of coastal, marine and polar research,

The ocean is vital to our survival: it regulates our climate, provides us with food and energy and is a source of recreation and inspiration. However, man-made climate change, pollution and overexploitation are endangering this system and its functions. Yet we have the means to shape our future on this planet. A sustainable management of the ocean in terms of its protection and use plays a key role in this.

The German Marine Research Alliance (DAM) was founded in 2019 by the federal government and the northern German states to provide scientific findings on the sustainable use of the coasts, seas and oceans as a basis for informed decisions in politics, business and civil society.

The first steps have been taken: In recent years, the DAM has brought together leading German marine research institutions, pooling their expertise and skills and linking them with stakeholders from politics, business and civil society. Now is the time to take action to preserve the basis of our existence for future generations. This annual report comes at a time when the world's oceans are experiencing the highest water temperatures since recording.

Sustainable management of the oceans is a huge task that requires all levels of society to work together. Marine research is needed to provide knowledge and practical options for the protection and sustainable use of coasts and the ocean. The DAM has achieved a lot in 2022 by conducting research missions, developing concepts for joint data management, creating utilization concepts for the necessary research infrastructure, providing information and facilitating the exchange of ideas.

However, we still have a long way to go to achieve a sustainable approach to the sea. We would like to thank everyone who has joined us on this journey: Funders, members, partners from science, politics, business and civil society. Last but not least, the staff at the DAM office, who provide the necessary support for our efforts.

Details of the DAM's diverse activities in 2022 can be found in this report. We, the Executive Board, hope that you find the read inspiring and look forward to your questions, suggestions and exchanges.

With best regards



Joachim Harms  
Chairman of the DAM Executive Board



Michael Schulz  
Deputy Chairman of the DAM Executive Board



Katja Matthes  
Member of the DAM Executive Board



Ulrich Bathmann  
Member of the DAM Executive Board



The German Marine Research Alliance:

## **KNOWLEDGE FROM RESEARCH – FOR A SUSTAINABLE MANAGEMENT OF COASTS, SEAS AND OCEANS**

Seas and oceans cover around 70 percent of the Earth's surface. Connected by currents, they form the largest interconnected ecosystem in the world: a habitat for millions of species that is the basis of life for a growing world population. By storing heat and CO<sub>2</sub> and producing oxygen, the seas and oceans also have a significant influence on the climate. The oceans are vital for survival – but they are under threat: Man-made climate change, overuse and pollution are threatening the oceans, their climate-regulating effects and many other functions that are important for our existence on this planet.

In order not only to protect our coasts, seas and oceans, but also to use them sustainably, we need to better understand their complexity. German marine research, which is at the forefront of international marine research, is making a decisive contribution to this.

In 2019, the federal government, represented by the Federal Ministry of Education and Research (BMBF), and the northern German states founded the German Marine Research Alliance, which brings together leading marine research institutions. With its activities in the core areas of research, data management and digitalization, coordination of infrastructures as well as transfer, the DAM develops solution-oriented knowledge and science-based decision making options for politics, business and civil society – as a basis for a necessary change towards more sustainability and protection of the oceans.

As a platform for the coordination and strategic development of German marine research, the DAM complements existing structures in the scientific system.

It facilitates the networking of universities, non-university research and departmental research institutions as well as the efficient transfer of current research results. This is accomplished in exchange with politics, industry and civil society – even beyond the national framework. The DAM works in close coordination with the → *German Marine Research Consortium (KDM)* and participates as a network partner in the UN Decade of Ocean Science for Sustainable Development (2021 to 2030): a global campaign that aims to jointly shape the ocean we need for the future. Research is a key part of this.

NETWORK PARTNER  
UN OCEAN DECADE

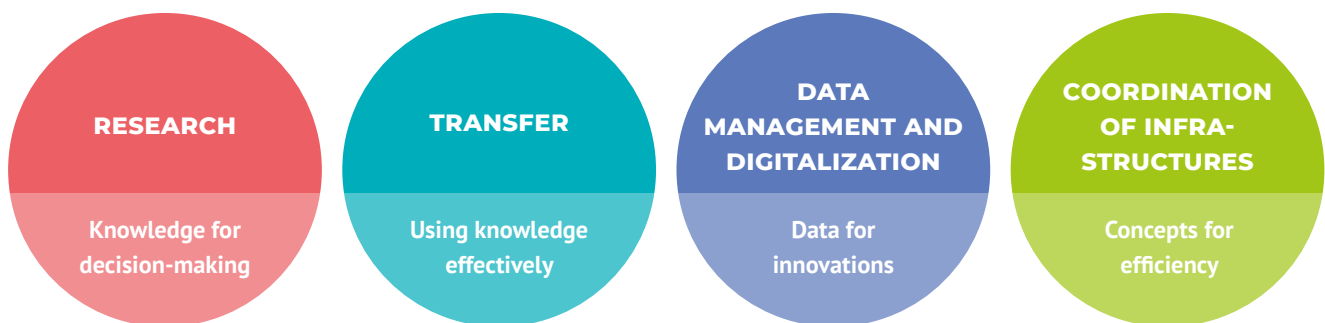


2021  
2030 United Nations Decade  
of Ocean Science  
for Sustainable Development

# ACTIVITIES OF THE DAM 2022



To achieve its goals, the DAM is active in four core areas:




The DAM made significant progress in all core areas in the reporting year. With 23 members at the end of 2022, it has brought together the leading German marine research institutions under one roof, linked them together and created platforms for regular exchange. Two inter- and transdisciplinary research missions are running and a third is on its way. Together with data experts from the DAM member institutions, a joint concept was developed to make better use of research data in the future. Transfer and communication have brought scientific background information to politics, business and civil society and have interconnected stakeholders. After a two-year break due to the pandemic, the DAM was finally able to engage in face-to-face dialogue with policy makers and other stakeholders from business and civil society in 2022.

Details of the DAM's diverse activities in the reporting year are summarized on the following pages.



# **CORE AREA RESEARCH**

Addressing socially relevant topics –  
for research that benefits everyone.



**S**eas and oceans play a key role in global climate processes. They are among the most important ecosystems on Earth and influence the lives of millions of people. Yet despite their enormous impact on our lives, we still know far too little about the blue world. The members of the DAM are researching the seas and oceans to generate the knowledge needed for a sustainable future. In order to combine the skills and expertise of its members and other stakeholders, the DAM has initiated research missions funded by the BMBF and the northern German states. The inter- and transdisciplinary DAM research missions focus on current relevant societal challenges in marine research and develop science-based decision-making options for politics, business and civil society. A special feature of these missions is the joint research work of non-university research institutions, universities, business and other stakeholders that creates and utilizes synergies in the field of marine research and interlinks existing activities. The federal government's → *MARE:N* research program serves as a guideline. It defines key topics such as "Global change and climate change", "Dealing with natural hazards" and "Sustainable use of resources".

The first two research missions were launched in 2021 and gained significant momentum during the reporting year. "Marine Carbon Sinks in Decarbonisation Pathways", → *CDRmare* for short, was launched in August. "Protection and Sustainable Use of Marine Areas", → *sustainMare* for short, started in December 2021. *CDRmare* brings together around 200 researchers from more than 20 institutions in six interdisciplinary collaborative projects, while *sustainMare* involves around 250 researchers from around 30 institutions in a total of seven research networks. In 2022, the DAM has initiated a third mission, *mareXtreme*, entitled "Pathways to improved risk management in the field of marine extreme events and natural hazards". Details on the three missions can be found on the following pages.

The DAM research missions are the heart of the research core area. In order to ensure a continuous exchange, to provide the networking opportunities and to inform about activities in this and other core areas, the DAM regularly offers information events for scientists. In the reporting year, these events took place online in May and September and were well attended, with around 80 to 100 participants per meeting. In order to inform about the activities in the DAM research missions and to promote exchange and discourse, representatives of the missions also regularly attend meetings of the DAM General Assembly and the Stakeholder Forum.

## ACTIVITIES IN THE CORE AREA RESEARCH 2022

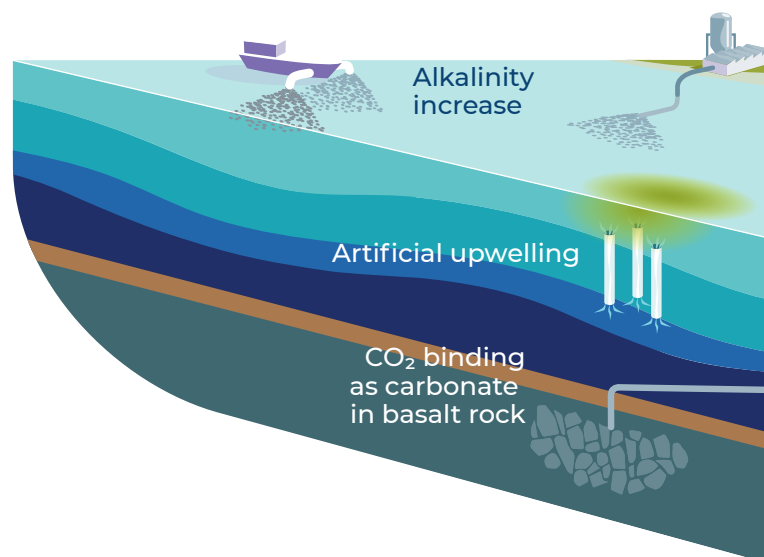
### FIRST DAM RESEARCH MISSION:

#### CDRMARE – MARINE CARBON SINKS IN DECARBONIZATION PATHWAYS



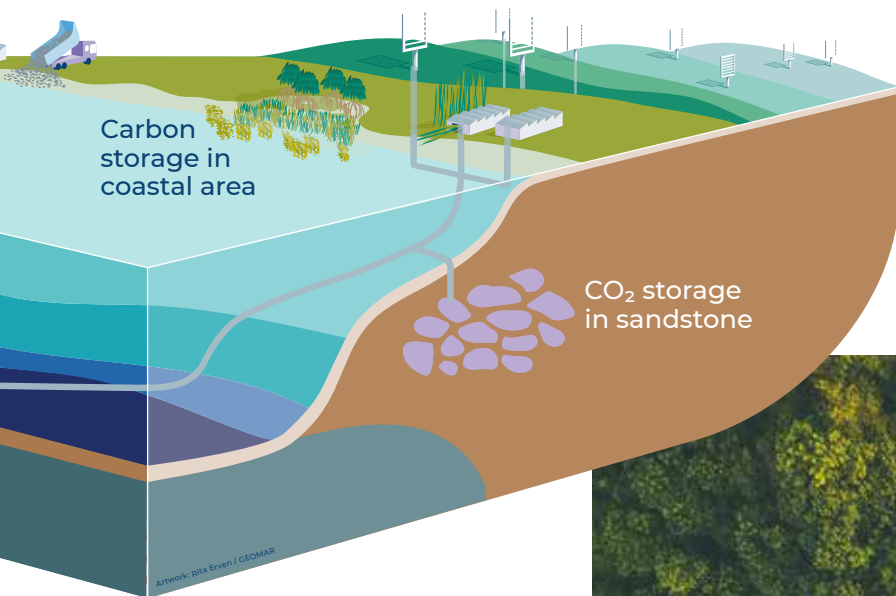
In order to mitigate the increasingly drastic consequences of man-made climate change and to achieve the climate targets set out in the Paris Agreement, it will also be necessary to remove carbon dioxide from the atmosphere in addition to massive reductions in carbon dioxide emissions. The → *CDRmare* (CDR: Carbon Dioxide Removal) research mission is investigating whether and to what extent the ocean can play a role in removing and storing of carbon dioxide from the atmosphere. The interactions with and the effects on the marine environment, the Earth system and society are closely examined, and approaches for monitoring, attributing and accounting for marine carbon storage in a changing environment are considered.

The CDRmare kick-off meeting took place in Lüneburg in March 2022. Researchers from more than 20 institutions, agencies and companies discussed in detail the objectives and agenda of the respective working groups. The mission's → *Scientific Advisory Board*, a sub-panel of the DAM's International Advisory Board, also met for the first time at this meeting (see *page 44*). To provide background information and initial findings of the research mission, the CDRmare team produced several → *fact sheets* during the year that are published on the research mission website. These briefing papers provide information on various socially relevant topics including the Earth's natural carbon cycle, a deep-sea experiment on carbon dioxide storage in the oceanic crust, and infographics on increasing ocean alkalinity.

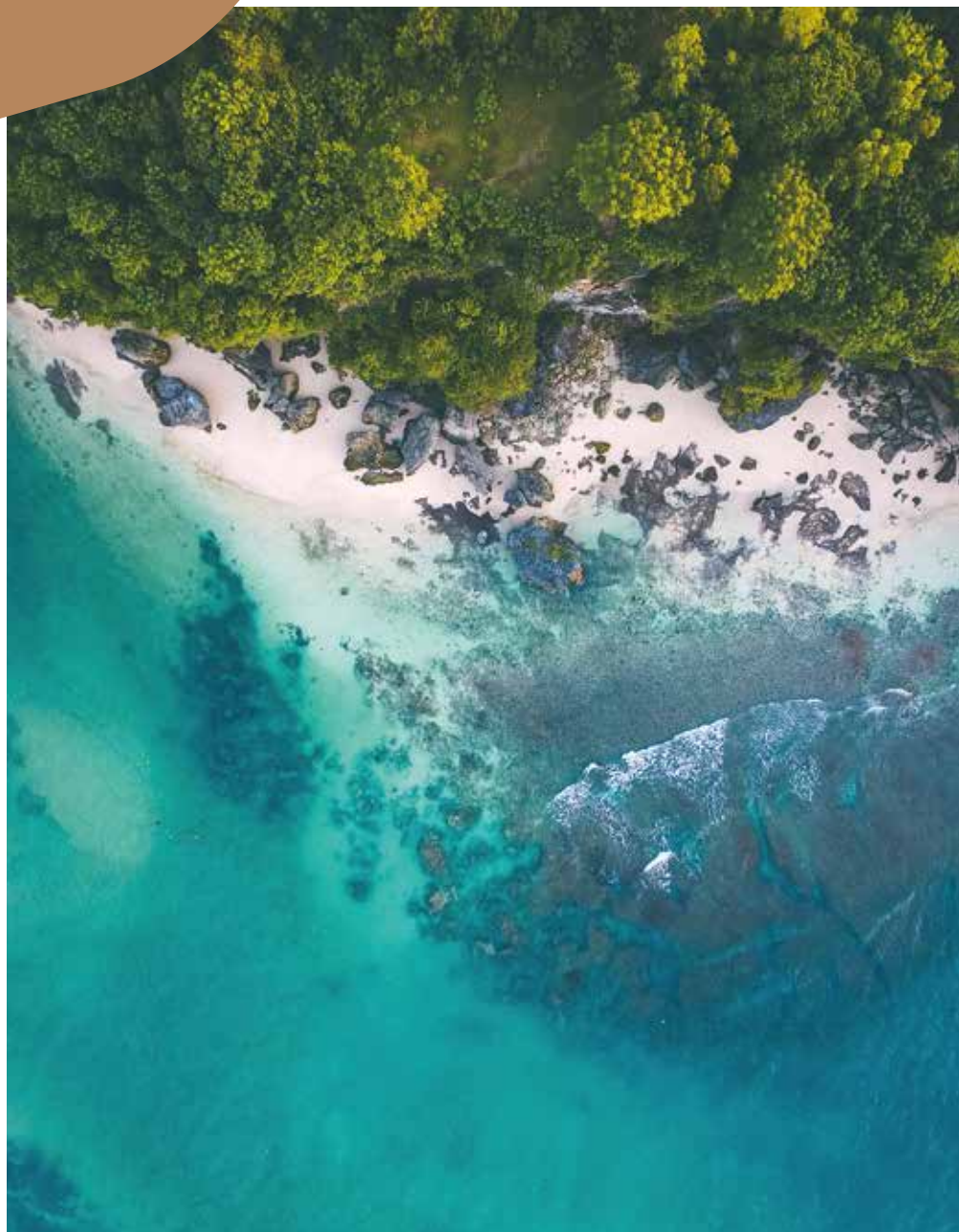


The CDRmare team organized two events during the reporting year to engage in a dialogue with politics and actively transfer knowledge from the research mission. At the end of September, a → *parliamentary breakfast* was held in Berlin under the patronage of the Parliamentary State Secretary of the BMBF, Mario Brandenburg, with around 40 stakeholders from politics, society and industry. About a month later, on October 25, the mission, together with the Horizon 2020 project OceansNETs, hosted a → *science and politics* discussion with EU parliamentarians and interested stakeholders. The aim of both events was to inform about of marine CDR that can help achieve the Paris climate targets.

To deepen the ongoing exchange with external experts and stakeholders, CDRmare has also established the “CDRmare Expert Forum” in 2022, which met for the first time on September 29. Members of this forum – a sub-panel of the DAM Stakeholder Forum (see *page 45*) – discuss and comment on the mission's scientific findings, relevant socio-political developments, concerns of external experts, external activities and reactions in the socio-political sphere.



The first DAM research mission CDRmare investigates different possibilities of CO<sub>2</sub> removal and storage at coasts and in the oceans.



## SECOND DAM RESEARCH MISSION:

### SUSTAINMARE – PROTECTION AND SUSTAINABLE USE OF MARINE AREAS



Pressure on the oceans is growing. More and more people want to live or spend their holidays by the sea. Maritime transport is the number one mode of transportation. Natural resources such as fish and shellfish, also sand, oil and gas are increasingly used. As part of the energy transition, vast areas are needed for offshore wind farms. All of these uses have impacts on the sea and coasts, such as underwater noise, pollution, damage to the seabed and changes to natural currents. In addition, there is man-made climate change with rising temperatures and increasingly extreme weather conditions. How will these pressures evolve and

interact? And how will the ocean response? The DAM research mission → *sustainMare* aims to find answers to these questions and to identify possible courses of action.

In mid-February 2022, scientists from over 30 research institutions, public authorities and national associations met online to launch the mission. Discussions focused on the impacts of the various uses and burdens on different marine regions in order to develop options for a sustainable use of marine resources and ecosystems in the German North Sea and Baltic Sea.

To advise the mission on relevant issues of scientific progress and management, it was decided to set up a Scientific Advisory Board as a sub-panel of the DAM's International Advisory Board (see *page 44*). Preparations began in fall 2022.



Satellite image of the coastline of the North and Baltic Seas, the research area of the second DAM research mission *sustainMare*.

In October, the DAM published a scientific factsheet on the topic of munitions in the sea, co-authored by members of the sustainMare project → *CONMAR* (see page 34). The → *paper* provides sound knowledge for current political decision-making processes on dealing with munitions in the sea. The factsheet was initiated by a request from policy makers to the DAM.

An important decision in 2022 was the follow-up funding of the two → *pilot missions* “Exclusion of bottom trawling in protected areas of the North Sea and Baltic Sea” (MGF\* North Sea and MGF Baltic Sea), which were launched in March 2020 – 1.5 years before the start of the mission (hence the name pilot mission) – as part of the DAM research mission sustainMare. The first phase will end in March 2023. After both the DAM General Assembly and the DAM International Advisory Board gave positive recommendations for a second phase, the Administrative Council and funders decided in August to provide follow-up funding, thus paving the way for the application. The BMBF project funding procedure for a follow-up funding of both projects began in fall 2022. The aim of the MGF-North Sea and Baltic Sea projects is to comprehensively describe the status of protected areas in the North Sea and Baltic Sea before and after the exclusion of mobile bottom-trawling fisheries in order to develop scientifically sound scenarios and management plans for marine protected areas. In order to achieve the objectives and successfully support the administrative and political work in marine conservation, follow-up funding is needed in the proposed second phase.

\* MGF = Mobile, grundberührende Fischerei/mobile bottom trawling

### THIRD DAM RESEARCH MISSION:

#### MAREEXTREME – PATHWAYS TO IMPROVED RISK MANAGEMENT IN THE FIELD OF MARINE EXTREME MARINE EVENTS AND NATURAL HAZARDS

Following a process to identify topics for a new DAM research mission last year, two topics for a future third research mission were identified in 2022 with the involvement of the DAM bodies and forums: “Marine extreme events and natural hazards” and “Necessity, narratives, benefits and side effects of marine energy”. After a detailed discussion of both mission proposals, the DAM International Advisory Board recommended favoring the topic “Marine Extreme Events and Natural Hazards”. Following the decisions of the Administrative Board and the funders at the beginning of March 2022, the BMBF published the funding announcement for the third DAM research mission entitled “Pathways to improved risk management in the field of marine extreme events and natural hazards” in the → *Bundesanzeiger* on July 1. Project proposals could be submitted until November 1, 2022, and there was great interest from the scientific community in participating in this mission. The aim of mareExtreme is to improve the ability to predict extreme marine events and natural hazards, thereby supporting the sustainable development of coastal communities and strengthening the resilience of coastal societies.

The start of the third DAM research mission is scheduled for January 1, 2024.



Launch 2024: The third DAM research mission mareExtreme will investigate the interactions between extreme marine events and natural hazards and their long-term effects on marine ecosystems and coastal human life.



# **CORE AREA DATA MANAGEMENT AND DIGITALIZATION**

Collecting, pooling and sharing data – for research  
that benefits everyone.



arine research generates very large amounts of data every year: Long-term observation devices collect a wealth of information on and below the surface.

Underwater robots, observatories and research vessels measure and store various parameters. A huge treasure trove of data – which is very valuable, as data collection in marine research is extremely lavish. However, as access to the collected research data is often difficult and not clearly regulated, this treasure is currently not being used to its full potential.

The DAM has set a goal of developing standards and processes in its core area of data management and digitalization that facilitate open and uniform access and use of decentralized data sets – in order to promote transparent science (open science) and innovation. It is based on the FAIR principles:

#### Scientific data should be

- ~ **F = findable** with common research tools,
- ~ **A = accessible**, so that data and metadata can be analyzed,
- ~ **I = interoperable**, so that comparable data can be analyzed and integrated using a common vocabulary and common formats,
- ~ **R = reusable** for other researchers or the public.

Existing data collections of the DAM member institutions and joint services are to be integrated and consolidated. There are further plans to improve the connection of data and data products to national and international platforms.

The DAM office coordinates the BMBF-funded project “Underway” research data and heads the working group “Data Management and Digitalization”, in which all DAM members are represented by at least one person responsible for data management. The working group comprised a total of 34 people in the reporting year. The task of the WG members is to jointly develop ideas and concepts for pooling and sharing research data and to act as a “sounding board” for ongoing activities.

## ACTIVITIES IN THE CORE AREA DATA MANAGEMENT AND DIGITALIZATION 2022

The DAM is committed to the coordinated management of research data in the field of marine research in order to make it more easily accessible to science. To ensure a complete and comprehensible documentation of diverse research data in the future, scientists need specific support by experts in data management. So far, this has been done by the DAM member institutions in various ways and with heterogeneous personnel and technical possibilities. The aim of the DAM's activities is to balance out the existing heterogeneity.

In 2022, the Data Management and Digitalization WG developed the → *Research Data Management Concept for German Marine Research*, which was published in November, in order to map out a path towards a uniform handling of research data. The result is a joint concept for a collaborative data ecosystem for German marine research: a shared, distributed, efficient and continuously operated infrastructure for research data to secure information and knowledge and make research data freely accessible to interested parties from science, public authorities, industry and the general public. Institutional sovereignty in dealing with research data is retained and at the same time processes and minimum standards are unified. The aim is to optimize conditions for the publication of datasets that are based on the FAIR principles and are in line with the objectives of the National Research Data Infrastructure (NFDI).

### PROJECT “UNDERWAY” RESEARCH DATA

Since 2019, the DAM has been networking the data management activities of its member institutions that regularly go on expeditions in the → *project “Underway” research data*. Permanently installed sensors on board the research vessels collect valuable data on the way to their research area. Those were previously not systematically monitored for quality and made available on a sustainable basis. In the project “Underway” research data, workflows were developed and established within the community to ensure the provision of quality-controlled research data from the vessels. The aim of the project is to exploit the full potential of German research vessels as mobile data

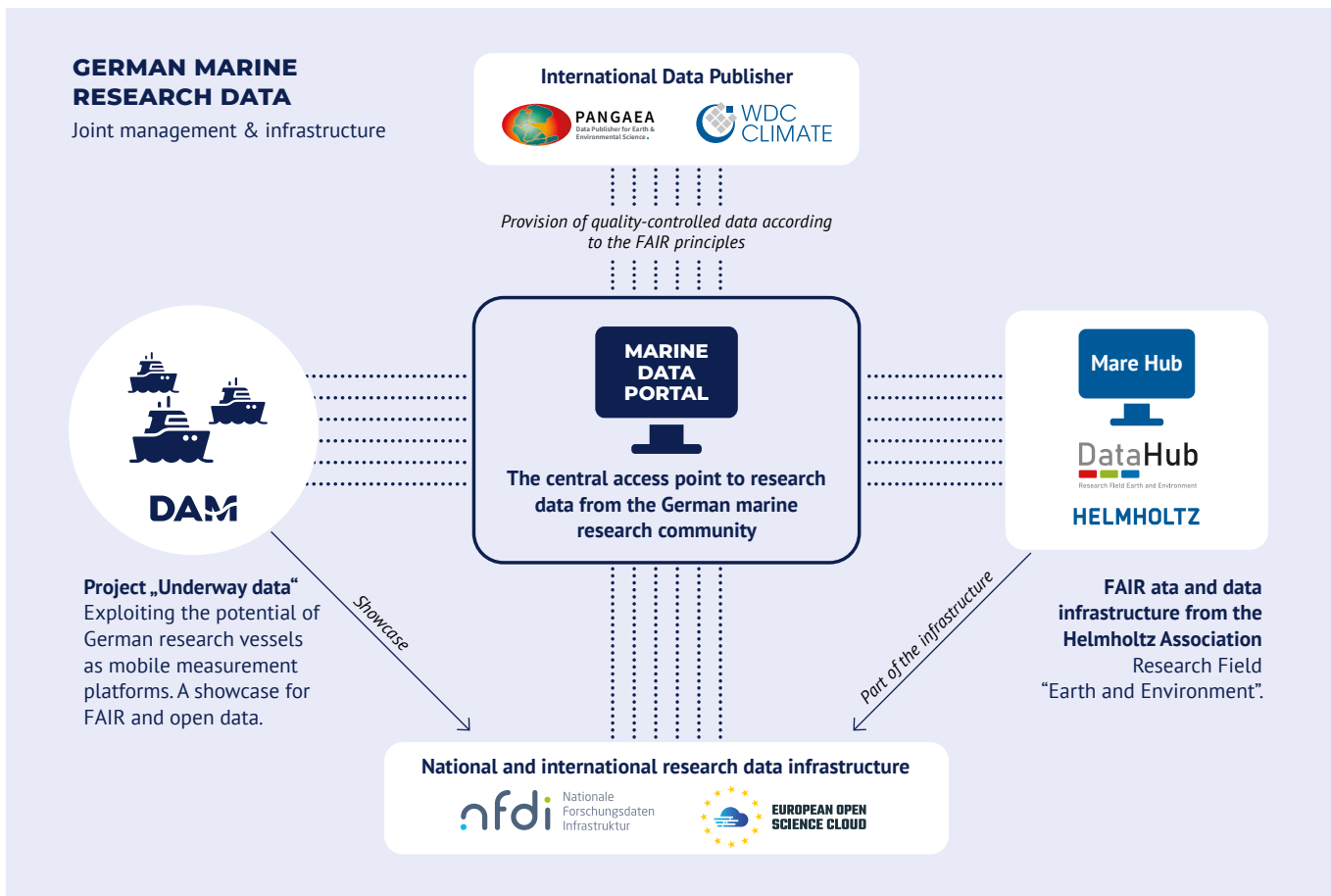
platforms and to make this data accessible in accordance with the FAIR principles.

The project was concluded for the large research vessels Maria S. Merian, Meteor, Polarstern, Sonne and the sailing ship Eugen Seibold in the reporting year. The data flows were successfully harmonized and quality-controlled “Underway” research data was made accessible in a user-friendly manner via the → *German Marine Data Portal*, which is becoming the central access point for marine research data of the national marine research community.

At the same time, the DAM prepared a renewal proposal for the “Underway” research data project and submitted it to the Federal Ministry of Education and Research (BMBF) in the reporting year. The plan is to continue operating the already harmonized data flows of large research vessels and to include the medium-sized vessels Alkor, Atair, Elisabeth-Mann-Borgese and Heincke in the activities. In November 2022, the BMBF approved the continuation and expansion of the project “Underway” research data from January 1, 2023.

### SUPPORTING THE DATA MANAGEMENT OF THE DAM RESEARCH MISSIONS

The Marine Data Portal enables users to visualize, search and retrieve scientific data from interdisciplinary research collaborations and individual research initiatives. In addition to integrating individual data sets, it promotes the aggregation and visualization of curated data products and standardized web-based data services for reuse via so-called thematic viewers. The “Thematic Viewer” technology is generic in the sense that additional thematic viewers can be implemented on demand and in close collaboration with a scientific community wishing to visualize data on a specific topic in web map services. Together with the joint project CONMAR of the DAM research mission sustainMare, a → *“featured viewer” on “Munitions in the sea”* was created in the Marine Data Portal in the reporting year. This viewer visualizes almost all publicly accessible data and metadata on munitions in the sea and is therefore unique on the “market” of publicly accessible viewers on this topic.



## NFDI4EARTH ACADEMY

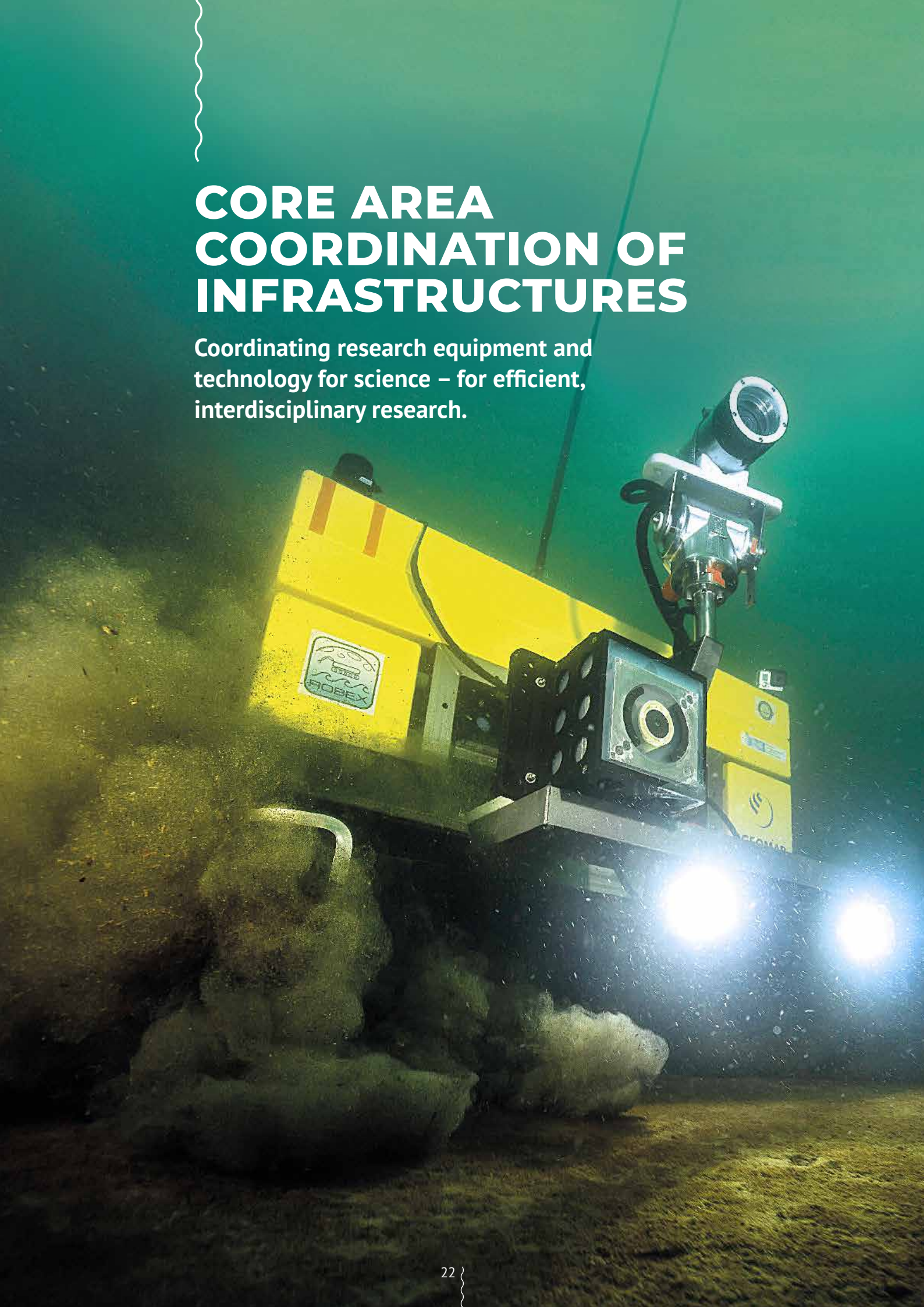
The first round of the → *NFDI4Earth Academy* got underway in the reporting year: since the end of November 2022, 39 young scientists in earth system and data sciences have been completing the two-year training program on “Data Science”. The participants were selected from a total of 79 applications in a science-led process. Six successful applicants belong to a DAM member institution: AWI, BGR, GEOMAR, ICBM, MARUM and ZMT (see page 40).

The Academy program includes training courses such as workshops, seminars and summer schools, which are defined and designed together with the Fellows in order to tailor the content as closely as possible to their needs. Fellows also benefit from networking opportunities and events to promote interdisciplinary research and projects. The NFDI4Earth Academy offers an open and interdisciplinary scientific and learning environment. Academy Fellows can advance their current research projects by exploring and integrating new methods and exchanging ideas with like-minded scientists.

The NFDI4Earth Academy is part of the → *NFDI4Earth program*, which aims to constructively use the digital transformation in the Earth system sciences. It builds on the established structures of three research networks: DAM, GEO.X – The Research Network for Geosciences in Berlin and Potsdam and the Geoverbund ABC/J.

# CORE AREA COORDINATION OF INFRASTRUCTURES

Coordinating research equipment and technology for science – for efficient, interdisciplinary research.



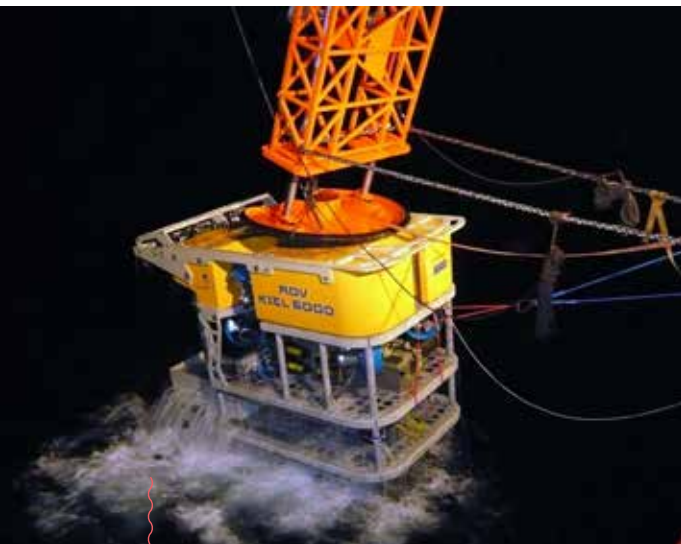


With its research stations, ships, underwater vehicles, observatories and aircraft, German marine research has a unique and costly research infrastructure. It is thus all the more important that these infrastructures are used and operated efficiently. The focus of the DAM core area of infrastructure coordination is on developing a utilization and operating concept for large-scale seagoing equipment (with the exception of research vessels) in order to achieve efficient usage of large-scale seagoing equipment and optimize benefits for all DAM member institutions.

## ACTIVITIES IN THE CORE AREA COORDINATION OF INFRASTRUCTURES 2022

In 2022, the focus in the core area of infrastructure coordination was on finalizing the utilization and operating concept for large-scale equipment and supporting the German Council of Science (Wissenschaftsrat). In 2022, the BMBF asked the Council of Science to update its recommendations on the development and overall concept for the German marine research fleet from 2010. The Council of Science set up a working group entitled "Recommendation on the further development of the German marine research fleet", which is also to reassess the former recommendation for joint management and deployment of large-scale marine research vessels.

In the reporting year, the DAM provided important input for these recommendations of the Council of Science. From November 16 to 18, 2022, a site visit for the Council of Science and its working group took place at GEOMAR in Kiel. DAM member organizations provided insights into their work and research on medium-sized research vessels and answered key questions about expeditions and the operation of research vessels. As these are essential components of marine research, experts from the working group were able to gain an impression of the conditions on board during an on-site visit to the research vessels Alkor and Elisabeth-Mann-Borgese. Creating a utilization and operating concept for large-scale sea-going equipment is one of the DAM's tasks in the core area coordination of infrastructures. Following the site visit, the DAM drew up a draft concept, which was submitted to the DAM Administrative Board for information at the end of December 2022. This concept outlines a way for marine researchers to obtain standardized, convenient and institution-independent access to large-scale marine equipment. Furthermore, planning security is to be improved for all parties involved and the existing equipment is to be further developed and operated as part of a national infrastructure. The Council of Science's recommendation, which is expected in fall 2023, will be groundbreaking for further development of medium-sized research vessels and thus for important future issues of the entire German marine research.



Special systems for scientific operations in the deep sea: GEOMAR's underwater robot ROV KIEL 6000, remotely controlled via fiber optic cable



A large wave crashes over the side of a research vessel: at sea, scientists work up close with the elements.



A submersible is lowered into the water from the research vessel Meteor, which is primarily used for marine basic research.



# CORE AREA TRANSFER

Making scientific knowledge effective –  
for decision-making in politics, industry,  
and society.



he → *transfer* of scientific topics and findings is a strategic core element and cross-sectional task of the DAM: It pools the expertise of German marine

research and ensures a purpose- and demand-oriented exchange of knowledge with decision-makers in politics and society to promote robust decisions and concepts for the protection and sustainable use of coasts, seas, and oceans. The path to a sustainable management of the oceans goes further than this: it is based on the understanding and willingness of everyone to participate in transformation processes and put them into practice. Understanding the issues at stake is the prerequisite. In addition to a tangible knowledge exchange with stakeholders from politics, business, and civil society, the DAM therefore promotes a broad dialog with society that provides motivation and opportunities for participation and education.

To this end, the Transfer core area collaborates with science, civil society, and cultural institutions to develop formats that provide access to and an overview of socially relevant marine issues, provide food for thought on sustainable action, and create opportunities for dialog and participation. Four projects were either carried out or initiated in the reporting year: The “Ocean Future Lab”, as part of which the “Future Box Oceans” was developed, the “Interactive World Ocean” and the “Digital Information Portal”. In addition, a scientific factsheet on “Munitions in the sea” was produced in close cooperation with CONMAR, a sub-project of the DAM research mission sustainMare. Details on these transfer projects can be found on the following pages.

To promote communication within the DAM, coordinate activities, and develop joint ideas, the transfer coordinators of the DAM member institutions meet regularly in the working group Knowledge Transfer. In the reporting year, the meetings of this working group took place in May and November. One focus was on integrating the DAM member institutions into the transfer activities of the DAM office at a professional level. In consultation with the DAM General Assembly, a procedure was developed to coordinate the referral of experts and the compilation of demand-oriented information (e.g., factsheets) from German marine research in response to requests from policymakers. The Knowledge Transfer Working Group acts as a key interface, intending to provide a useful complement and synergy to the existing advisory services of DAM members. The basis for this is the framework for knowledge exchange and policy advice, which was developed in a project group of the Knowledge Transfer Working Group. The DAM transfer projects are also accompanied by the Knowledge Transfer Working Group.

## ACTIVITIES IN THE CORE AREA TRANSFER 2022

### NETWORKING WITH THE LEIBNIZ RESEARCH MUSEUMS

The “Network Oceans and People” has been established based on the joint initiative of DAM Museum Representative Sunhild Kleingärtner and the DAM. Within this network, specialist representatives of the Leibniz Research Museums and the DAM’s Transfer core area participate to exchange and collaborate on the jointly defined thematic framework, as follows: “Coasts, seas, and oceans as natural spaces and areas of interest with regard to current and future social challenges based on the historical perspective.”

The “Network Oceans and People” is the basis for the overarching cooperation between leading institutions for marine research and renowned research museums in Germany. Distributed across the coastal federal states, the locations of the Leibniz research museums foster a public debate on relevant issues of future planning at a national level, while the DAM pools the expertise of German marine research institutes. Together they create a strategic framework for the exchange of knowledge and a steady dialog with society. To this end, the network has drawn up an impulse paper, which was agreed with the DAM General Assembly. It forms the basis for joint transfer activities of the DAM and Leibniz research museums that serve as a contribution to the → *United Nations Decade of Marine Research for Sustainable Development* (see page 9).

### OCEAN FUTURE LAB

The future of humankind is directly linked to the fate of the oceans. Yet climate change, pollution, and overexploitation are persistent and increasing threats for marine habitats. The initial question of the → *Ocean Future Lab project*, which the DAM launched as part of the BMBF’s Science Year 2022 “Participate!”, was to find out how people can deal sustainably with coasts, seas and oceans to preserve their natural livelihoods. In a series of co-creative workshops on our future with the sea, citizens and young scientists exchanged their questions and ideas for a desirable future for the oceans and developed future scenarios which were visualized by artists. A total of six workshops were realized between May to August 2022: three workshops took place virtually, three more workshops were held in Bremerhaven, Berlin and Stralsund. The virtual workshops revolved around ideas for a world of tomorrow and possible scenarios for the year 2050. The face-to-face workshops had specific location-related focal points.

The participants’ ideas and prospects focused not only on living off and with the oceans but also on the pivotal question: “How will people live together in the future?” Therefore, ecological, social as well as economic aspects were considered. The future visions emerging from the Ocean Future Lab are summarized in an → *impulse paper*.

The Ocean Future Lab project was implemented by the DAM together with three partners: the German Oceanographic Museum in Stralsund, the German Maritime Museum in Bremerhaven, and the Institute for Art and Innovation. The project was also supported by Futurium Berlin and the Babelsberg Film Academy. At the closing event for the Science Year 2022 on 23rd November, the DAM and the project partners presented their results and artistic visualizations of the Ocean Future Lab at the BMBF in Berlin.

## FUTURE BOX OCEANS

“What will the oceans of tomorrow look like? How do we want to live off and with the oceans? How can we sustainably manage coasts, seas, and oceans so that we secure our natural livelihoods and shape a desirable future for our blue planet?” The → *Future Box Oceans* poses these and more questions: an interactive educational format that invites pupils from age seven to take a playful look into the future of the ocean. One box contains a total of five different sets of cards as well as methodical instructions for workshops that encourage participants to discuss and create future scenarios. The materials in the Future Box Oceans are based on methods from futurology, education for sustainable development, and design thinking. The aim of the Future Box Oceans is threefold: i) to offer all interested parties access to issues relating to the coasts, seas,

and oceans, ii) to sharpen their awareness of interconnections, and iii) to encourage solution-oriented thinking for a sustainable relationship with the “blue world”.

The Future Box Oceans was developed by the DAM and Futurium Berlin in the first half of 2022 as part of the Ocean Future Lab (see *page 28*). Since November of the reporting year, it has been available to educational institutions both digitally and as a ready-to-use box with a set of cards. There are also plans to further use the Future Box as part of future UN Ocean Decade activities.

The Future Box Oceans, seen here as a print version, creates a playful approach to the sustainable use of coasts, seas and oceans.



## “OCEAN ONLINE” AND “INTERACTIVE WORLD OCEAN”

Two more DAM transfer projects were launched in fall 2022: The digital information portal → “Ocean Online” and the → “Interactive World Ocean”.

The “Ocean Online” information portal is intended to provide science-based information on socially relevant marine topics and to pool the expertise of German marine research. The portal’s focus is on the sustainable use of coasts, seas, and oceans. The portal is designed for individuals who wish to have a say and make decisions regarding the subjects of “Oceans and climate, ecosystem services, uses, and sustainability goals”. In cooperation with the German Research Center for Artificial Intelligence (DFKI), an AI-supported semantic search function is being developed to enable users to quickly and efficiently find information that is comprehensible and needs-based.

In addition, a data-based, interactive map of the world ocean is being developed in the project “Interactive World Ocean”. As an exhibit and educational offering of German marine research, the “Interactive World Ocean” is intended

to invite people to dive in, explore, and integrate regional focuses with a global perspective. Selected videos will show what it looks like on the coast, underwater, and on the seabed, what habitats there are and how people live off and with the oceans. The data and video material originate from cooperation partners in marine research, in particular the DAM member institutions. The German Aerospace Center (DLR) is also a cooperation partner. For the “Interactive World Ocean” project, a project group consisting of representatives from the Knowledge Transfer Working Group and the Public Relations Working Group (see *page 34*) is involved in project development and met in November of the reporting year. The establishment of a corresponding project group for the digital information portal “Ocean Online” is planned for 2023.

Both projects are funded by the northern German federal states of Bremen, Hamburg, Mecklenburg-Vorpommern, Niedersachsen, and Schleswig-Holstein; both projects will run until the end of 2024. Three new employees were hired in fall 2022 to implement those projects (see *page 47*).

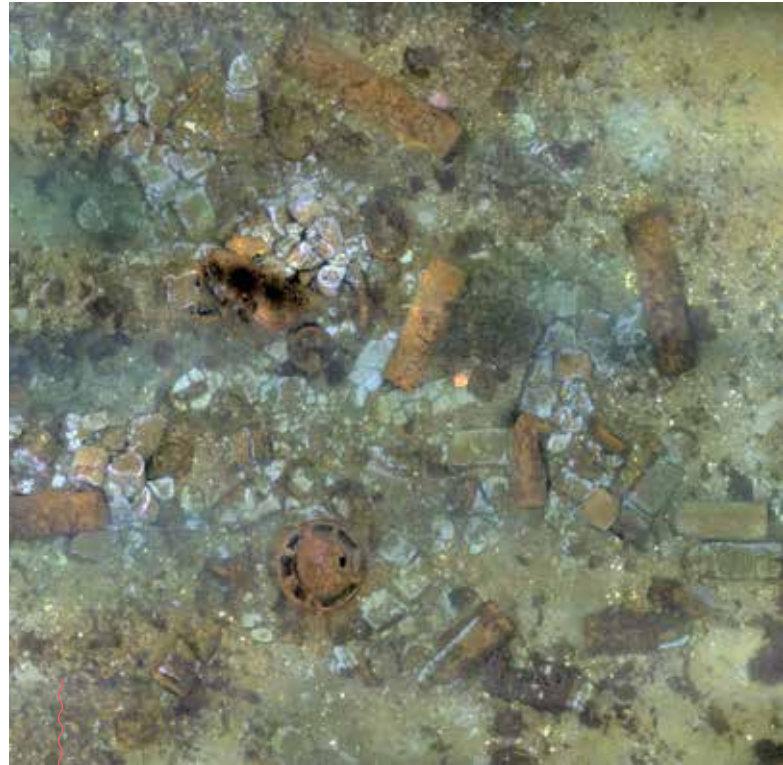


Bringing the ocean to people’s minds: Interaction points on the world map open up a variety of insights into the oceans.

## SCIENTIFIC BACKGROUND INFORMATION ON “MUNITIONS IN THE SEA”

To respond to parliamentary inquiries, the DAM and the German Association for Marine Technology (GMT) worked closely together over the course of 2022 to compile complementary → *background information* on the topic of “Munitions contamination in the sea” – as a sound knowledge base for political and social decision-making processes on dealing with munitions in the sea. Both papers were published on the organizations’ websites in October, an executive summary as well as an English version are also available.

Marine munitions are a threat to the marine environment and represent a sustainability risk for the management of the oceans. Research into the extent of this threat and the future handling of the contaminated sites has been intensifying in recent years. The DAM paper summarizes the scientific status and perspectives on “munitions in the sea”. It expounds the historical development, national and international agents, and dangers posed by munition waste. The paper also sheds light on search and retrieval options as well as the respective economic potentials. Both organizations, DAM and GMT, also provided experts to support the immediate action programme for the recovery of munitions in the North Sea and Baltic Sea as agreed in the German government’s coalition agreement.



Photomosaic of a pile of munitions  
on the seabed in the dump area  
Kolberger Heide (Baltic Sea).

The background of the entire page is an underwater photograph showing three dolphins swimming in clear blue water. Sunlight filters down from the surface, creating a shimmering effect. A white wavy line is visible in the top left corner.

# COMMUNICATION AND DIALOGUE

Promoting exchange and networking –  
for a sustainable management of to coasts,  
seas and oceans.



As a cross-sectional task, communication supports the work in all core areas of the DAM and is closely linked to the core area transfer. The aim is to inform decision-makers and interested parties from politics, civil society and business about activities, developments and topics of German marine research and the DAM itself, and to promote networking and exchange. To this end, information from all areas of the DAM is made available in various formats and channels tailored to the target group – such as the website, information leaflets, newsletter, annual report and YouTube channel. Communication also acts as a voice for the DAM in order to promote networking and cooperation with and between the DAM member institutions and committees.

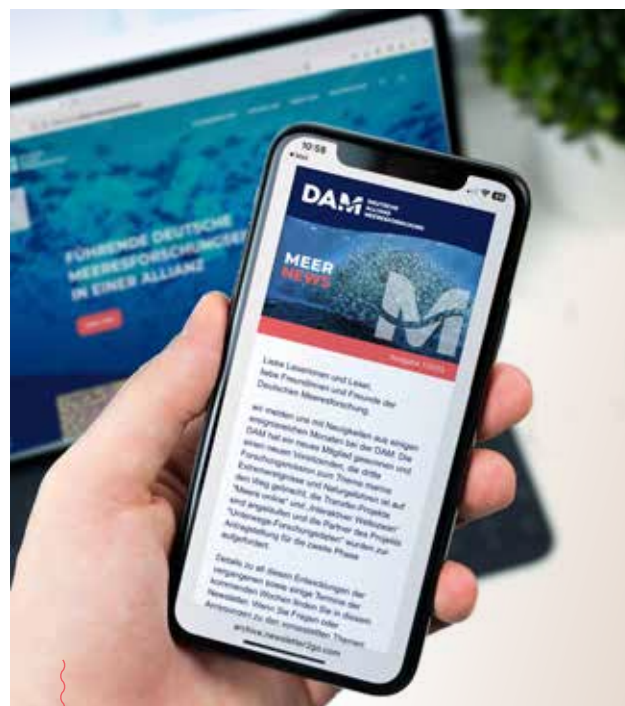
However, to utilise research knowledge for the benefit of society, more is needed: in addition to presenting research findings, it is the task of the DAM to address socially relevant topics and identify knowledge gaps that have not yet been scientifically answered. After a two-year break due to the pandemic, the DAM was finally able to provide opportunities for dialogue and networking in the reporting year with its own events – particularly for the parliamentary stage. The needs identified here will in turn be incorporated into marine research as topics and research questions.

## ACTIVITIES IN THE FIELD OF COMMUNICATION AND DIALOG 2022

### PRESS AND PUBLIC RELATIONS WORK

The central component of the DAM's public relations strategy is the DAM website [www.allianz-meeresforschung.de](http://www.allianz-meeresforschung.de), which was published in 2020 and has been continuously extended throughout the reporting year. In addition to information and documents on the work, goals and structure of the DAM, decision-makers from politics, business and civil society, journalists and those generally interested in the DAM topics can find an overview of current news from DAM members on the website. This allows them to stay informed about the activities and status of German marine research on the sustainable management and use of coasts, seas and oceans. In 2022, the news portal was relaunched so that users can now sort by various marine topics and obtain information according to their needs. From January to December 2022, the DAM compiled 159 reports from its member institutions. In addition, it published 20 news items of its own, including updates on new members, changes to the Executive Board, progress in the core areas, and the Executive Board's statement on the report of Working Group II of the Intergovernmental Panel on Climate Change (IPCC) → *"Oceans are vital for survival - marine research is precautionary research!"*. Some of these reports were also published as press releases.

Public relations work in the reporting year was supplemented by three issues of a digital newsletter. Subscription is effected using a form on the homepage [www.allianz-meeresforschung.de](http://www.allianz-meeresforschung.de). The newsletter provides the latest developments and activities of the DAM directly to the email inboxes of approximately 750 subscribers. The DAM member institutions also received three additional issues of the internal info letter, providing more detailed information on the activities of the Executive Board, committees and office. As a review and summary of the previous year's activities, the DAM also produced the 2021 annual report, which was published in October 2022.



The DAM website bundles current information from the DAM and its members.

### PUBLIC RELATIONS WORKING GROUP

The public relations working group serves as a productive networking and exchange format: The communication managers of the member institutions of DAM and KDM (German Marine Research Consortium, see *page 9*) meet regularly to coordinate topics and activities in communication and to plan joint measures. The working group met three times in 2022: in Hamburg in May and online in February and November. Among other things, the participants agreed that the DAM would be responsible for the central coordination of joint events, for providing experts in response to inquiries from media or politics and for coordinating the integration of activities into the UN Decade of the Ocean.

To support the UN Ocean Decade Committee, the DAM provided staff resources for administrative tasks and public relations activities in 2022.

## PARLIAMENTARY EVENTS AND DIALOG

In accordance with its mandate as set out in the DAM Administrative agreement and Statutes, the DAM brings marine (research) topics to the federal and state level. The aim is to provide decision-makers in the legislative and executive branches of the federal government and the northern German states with specialist knowledge on relevant topics and to create opportunities for dialogue – as a basis for informed, science-based decisions. To achieve this, the DAM promotes topic- and target-oriented networking through events primarily aimed at political actors in ministries and parliaments. The Stakeholder Forum (see *page 45*) also plays an important role for knowledge exchange and dialogue with politics, business and civil society.

After a two-year break due to the pandemic, DAM was finally able to realize parliamentary events in 2022 that had been planned since the DAM's foundation in 2019: As a kick-off, the DAM invited "coastal" members of the Parliament (MPs) on January 28 and new MPs on March 18 to a parliamentary breakfast in the Berlin Bundestag. The purpose was to introduce the DAM and establish it as a sparring partner for background knowledge on marine (research) topics. One event led to a specific need for information: the suggestion to develop a factsheet about "munitions in the sea" (see *page 34*).

These two events, aimed at federal political representatives of federal politics, were followed by parliamentary evenings in three of Germany's five coastal federal states under the heading "Sea Future": in Kiel at the end of March, in Bremen in October and in Schwerin at the end of November. Each of these events involved state politicians and scientists as well as other stakeholders from business and civil society. They promoted exchange and networking in addition to information through keynote speeches and panel discussions followed by a get-together. With around one hundred participants at each event, the parliamentary evenings received an extremely positive response.

The parliamentary events were accompanied by personal discussions with federal and state politicians – aiming to present the DAM and its activities and engage in an exchange with politics.



In 2022, networking events were finally possible – albeit under pandemic safety conditions.

In November 2022, the DAM addressed the scientifically interested general public with an information event at the scientific event "Berlin Science Week". Under the slogan "How the sea can help the climate", scientists from DAM member institutions gave insights into their work. After a brief introduction of the DAM itself, they covered the latest research findings, ideas and approaches on the role of coasts, seas and oceans in tackling the climate crisis. Recordings of these contributions are published on DAM's → *YouTube channel* (which was sparsely used in 2022 due to limited communication capacities and resources).

On the EU level, the → "Mission Ocean – Vision Ocean" event took place in Brussels at the end of October. The DAM participated together with the German Marine Research Consortium KDM, the German Permanent Representation, the Hanseatic Office (Hamburg and Schleswig Holstein) and the state representations of Bremen, Mecklenburg-Vorpommern and Niedersachsen. The event was led by the EU mission "Restore our Ocean and Waters by 2030".

A large school of fish, possibly blue tangs, swimming in clear blue water. The fish are densely packed in the center and right, moving towards the left. The background shows a rocky seabed and sunlight filtering through the water. A white wavy line is in the top left corner.

# **STRUCTURE, BODIES AND COMMITTEES**



The tasks, objectives and the organization and structure of the German Marine Research Alliance are set out in the Administrative Agreement, which came into force on July 18, 2019. The Statutes of the DAM, a non-profit association, specify its purpose, tasks and structure of the, and were adopted on July 4, 2019.

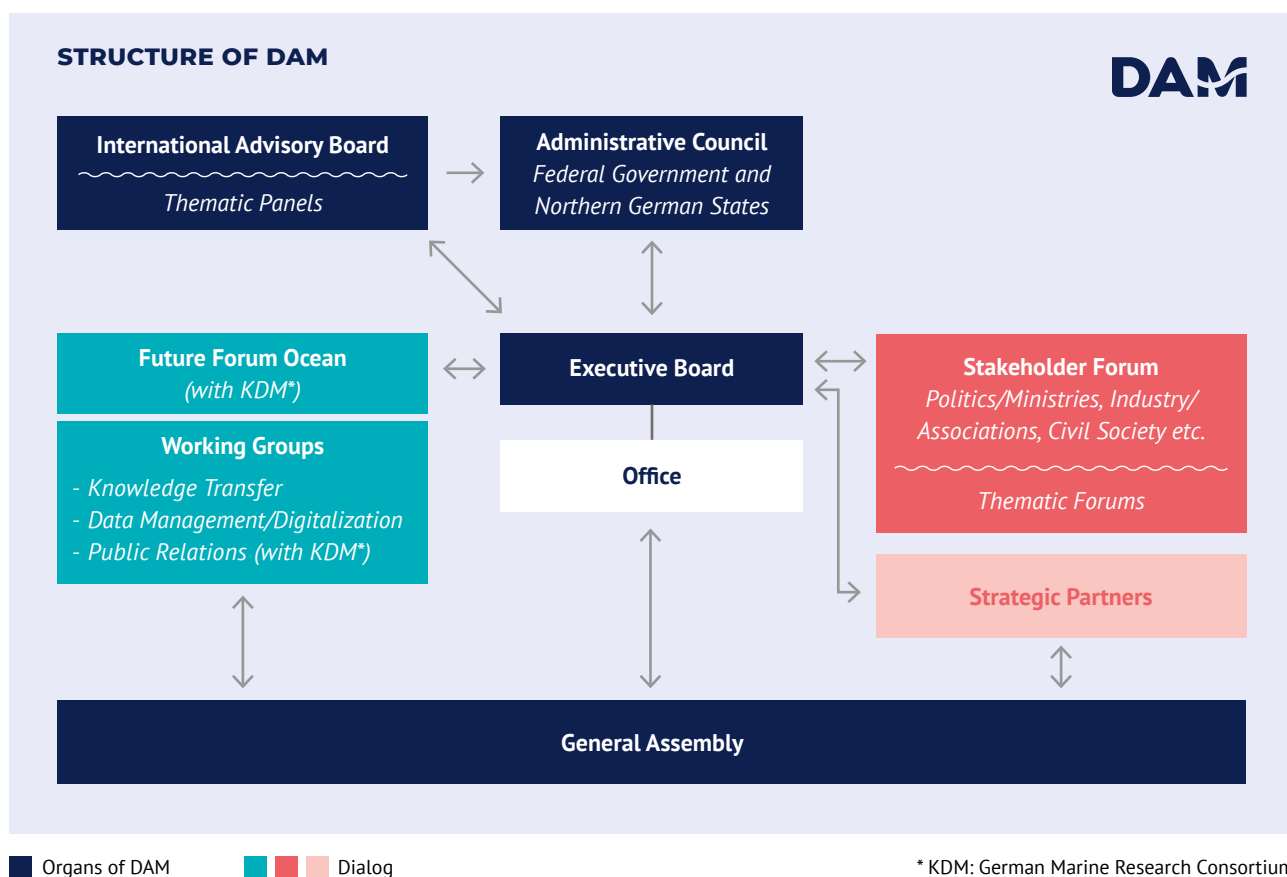
According to its Statutes, the purpose of the DAM is to promote science and research, with a particular focus on strengthening German marine research. Marine research encompasses the relevant disciplines of coastal, marine, and polar research. Through joint action, the DAM aims to address major issues of future marine research and provide knowledge for sustainable management of the sea for politics, business and civil society.

To achieve these goals, the DAM promotes networking and cooperation between leading German marine research institutions and relevant stakeholders from politics, business and civil society. The German Marine Research Alliance has the following bodies according to its statutes:

- ~ **General Assembly**, which determines the principles of work for the DAM,
- ~ **Executive Board**, which manages the association and provides strategic and conceptual guidance to the DAM,
- ~ **Administrative Council**, which serves as the supervisory and decision-making body and includes representatives from the federal government (BMBF) and the participating northern states, and
- ~ **International Advisory Board**, the DAM's independent scientific advisory body.

Additional forums and committees in 2022:

- ~ **Stakeholder-Forum for cooperation and dialogue with politics**, civil society, business and other stakeholders.
- ~ **Working groups for data management and digitalisation**, public relations and knowledge transfer: This is where the DAM member institutions exchange information, pool their expertise and develop joint activities in the respective areas.
- ~ **Future Forum on the Ocean (ZFO)**: The ZFO, a joint forum of the DAM and with the German Marine Research Consortium (KDM), aims to discuss and develop overarching scientific and strategic research topics in marine research.



## ACTIVITIES 2022

The bodies and committees of the DAM collaborate closely. In addition to its activities described in this report, in 2022 the DAM made progress in networking: the Umweltbundesamt (Federal Environment Agency) became a new member of the DAM, the Commissioner for the Sea of the German Federal Government became a member of the International Advisory Board, and new members were recruited for the Stakeholder Forum.

In addition, during the reporting year, the DAM focused on establishing the direction for future activities – in particular regarding the future of the German Marine Research Alliance e.V. and German Marine Research Consortium e.V. (KDM). KDM was founded in 2004 as an association for German marine research and focuses on bottom-up strategies within the marine research community and networking within the broader international community. KDM and DAM were

founded by the German marine research community with complementary tasks and goals with almost identical members.

As the pilot phase of the DAM comes to an end (by the end of 2024 at the latest), both organisations see great potential in combining their strengths. In April 2022, the Executive Boards of DAM and KDM agreed on joint guidelines, and a joint concept was presented in September.

At the same time, the DAM took initial steps to internally prepare for the evaluation of the DAM in 2024. The pilot phase of DAM runs from 2019 to 2025. In order to examine the effectiveness of the DAM, an external strategic and structural evaluation of the DAM's activities to date in the core areas will be carried out. On the basis of this evaluation, the federal and state governments will jointly decide on the continuation, further development and, if necessary, perpetuation of the DAM.

## GENERAL ASSEMBLY

The General Assembly of Members is the highest decision-making body of the DAM. It determines the principles for the work of the DAM: It elects the Executive Board and the International Advisory Board, accepts the annual report submitted by the Executive Board and the annual accounts after approval by the Administrative Council and discharges the Executive Board on the recommendation of the Administrative Council. The General Assembly may appoint special representatives in accordance with Section 30 of the German Civil Code (BGB) and assign them their own areas of responsibility. It also decides on all other tasks assigned to the General Assembly by law or elsewhere in the Articles of Association.

As of December 31, 2022, 23 leading German university and non-university marine research institutions have joined forces in the DAM to strengthen the sustainable management of coasts, seas and oceans: 17 members and six associate members. Two strategic partners have also joined the organisation, expanding the range of marine research to include sustainability research. The DAM member institutions investigate the impact of human activity on ecosystems, the ocean's role in climate change, its social and cultural consequences as well as modern forms of utilisation of the oceans. Their common goal: solution-oriented research to develop options for a sustainable management of coasts, seas and oceans. In the reporting year, the Federal Environment Agency (Umweltbundesamt) joined the circle of DAM members as an associate member, contributing its own research and policy advice to complement the activities of the DAM.

## MEETINGS OF THE MEMBERS IN 2022

Two General Assembly meetings were held in 2022: one on May 11 and a second meeting on September 14. The main topic of the May meeting in Schwerin was the acceptance of the Federal Environment Agency as an associate member of the DAM (see *page 40*). Bettina Martin, Minister for Science, Culture, Federal and European Affairs, welcomed the participants on behalf of the state of Mecklenburg-Vorpommern and emphasised the coordinating role of the DAM for German marine research, combining the scientific and technical capacities in German marine research into a unique research network – a prerequisite for a strong future research community and “precautionary” sciences of marine and climate research.

Other key topics at the meeting were the follow-up funding of the pilot missions as part of the DAM research mission sustainMare (see *page 16*) and the succession planning for DAM's Chairperson of the Executive Board and Managing Director Michael Bruno Klein, who resigned from his position in the middle of the year due to personal reasons.

The General Assembly met out of turn on June 8 to elect the new DAM Chairman. With 16 out of 17 votes and one abstention, the members cast a clear vote in favour of Dr. Joachim Harms as the new Chairman of the DAM (see also “Executive Board”, *page 42*).

The General Assembly meeting in Hamburg in September focused on the DAM activities in the previous months and, in particular, the perspective for KDM and DAM (see *page 45*).

## DAM-MEMBERS 2022

- ~ **AWI** – Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research
- ~ **CEN** – Center for Earth System Research and Sustainability, Universität Hamburg
- ~ **Fraunhofer** – Fraunhofer Society for the Advancement of Applied Research
- ~ **FZK** – Coastal Research Center of Leibniz University Hannover and Technische Universität Braunschweig
- ~ **GEOMAR** Helmholtz Centre for Ocean Research Kiel
- ~ **HEREON** – Helmholtz-Zentrum Hereon
- ~ **ICBM** – Institute for Chemistry and Biology of the Marine Environment, Carl von Ossietzky Universität Oldenburg
- ~ **IOW** – Leibniz Institute for Baltic Sea Research Warnemünde
- ~ **KMS** – Kiel Marine Science, Kiel University
- ~ **MARUM** – Center for Marine Environmental Sciences at the University of Bremen
- ~ **MPI-M** – Max Planck Institute for Meteorology
- ~ **MPI-MM** – Max Planck Institute for Marine Microbiology

- ~ **MTS** – Department Maritime Systems, Universität Rostock
- ~ **SAM** – Senckenberg am Meer, Senckenberg Society for Nature Research
- ~ **THÜNEN** – Johann Heinrich von Thünen Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries
- ~ **TiHo** – University of Veterinary Medicine Hannover
- ~ **UG** – University of Greifswald
- ~ **ZMT** – Leibniz Centre for Tropical Marine Research

### \*ASSOCIATED MEMBERS

- ~ **BAW** – Federal Waterways and Engineering Research Institute
- ~ **BGR** – Federal Institute for Geosciences and Natural Resources
- ~ **BSH** – Federal Maritime and Hydrographic Agency
- ~ **DMM** – German Oceanographic Museum, Stralsund
- ~ **DSM** – German Maritime Museum – Leibniz Institute for Maritime History
- ~ **UBA** – Federal Environment Agency

### \*\*STRATEGIC PARTNERS

- ~ **IDOS** – German Institute of Development and Sustainability
- ~ **IASS** (since January 2023 RIFS): Research Institute for Sustainability



\* Associated members  
\*\* Strategic partners

**NEW:** With UBA\* in Dessau



## EXECUTIVE BOARD

The Executive Board manages the German Marine Research Alliance, implements common goals of the DAM on behalf of the General Assembly and develops strategic and conceptual orientation of the DAM to be approved by the General Assembly and the Administrative Council. Members of the Executive Board are elected by the General Assembly for a period of four years.

At December 31, 2022, the DAM Executive Board consisted of four members:

- ~ **Joachim Harms**, chairperson of the Executive Board.  
The biologist and long-standing head of the division Marine and Maritime Research, Geosciences and Shipping at project management organization Jülich took over the position from his predecessor Michael Bruno Klein on August 22. The latter had left the DAM at his own request to pursue new professional challenges.
- ~ **Michael Schulz**, deputy chairman, director of MARUM – Center for Marine Environmental Sciences at the University of Bremen
- ~ **Katja Matthes**, director of the GEOMAR Helmholtz Center for Ocean Research Kiel
- ~ **Ulrich Bathmann**, director of the Leibniz Institute for Baltic Sea Research Warnemünde (IOW).

In 2022, the Executive Board met weekly, with a few exceptions, and held four joint meetings with the KDM Executive Board. In three additional so-called “open Executive Board meetings”, the DAM offered the opportunity to discuss strategic topics and prepare decisions to the DAM member institutions (management level), KDM management, strategic partners, and the spokespersons of the DAM research missions



## ADMINISTRATIVE COUNCIL

The Federal Government (BMBF) and the northern German states are represented in the Administrative Council. The Administrative Council oversees the work of the DAM and the Executive Board and decides on the implementation of projects in the core areas. It consists of six members, each appointed by the federal states of the Free Hanseatic City of Bremen, the Free and Hanseatic City of Hamburg, Mecklenburg-Vorpommern, Niedersachsen, Schleswig-Holstein and the Federal Republic of Germany, represented by the Ministry of Education and Research.



### MEMBERS OF THE ADMINISTRATIVE COUNCIL

The following representatives from the funding authorities were members of the Administrative Council in the reporting year:

*For the federal government (Chair):*

- ~ **Volker Rieke**, Head of the Department “Provision for the Future – Research for Basic Principles and Sustainable Development”, Federal Ministry of Education and Research (BMBF)

*For the federal states:*

- ~ **Rüdiger Eichel**, Head of the department “Research, Innovation, Europe”, Ministry of Science and Culture of Lower Saxony
- ~ **Dr. Rolf Greve**, Head of Office, Ministry of Science, Research and Equality, Free and Hanseatic City of Hamburg
- ~ **Friederike Kampschulte**, Head of the department “Science”, Ministry of Education, Science and Culture of Schleswig-Holstein (MBWK)
- ~ **Woldemar Venohr**, Head of the department “Science and Research, Universities”, Ministry of Science, Culture, Federal and European Affairs Mecklenburg-West Pomerania (State Coordinator)
- ~ **Kay Wenzel**, Head of the department “Universities and Research”, Senator for Science and Ports, Free Hanseatic City of Bremen

### MEETINGS IN 2022

The Administrative Board met twice in 2022 to discuss regularities and association matters, reports from bodies/committees and activities of the DAM core areas, the main topic of the March meeting was the decision on the third DAM research mission (see [page 17](#)). In November, the focus was on the Science Council's site visit to Kiel (see [page 27](#)).

## INTERNATIONAL ADVISORY BOARD

The International Advisory Board is the independent scientific advisory body of the German Marine Research Alliance. The committee assesses and evaluates proposals for projects and activities in the core areas and implementation of the DAM's research missions.

Two new members joined in the reporting year. In March, Claudia Müller, Federal Government Coordinator for Maritime Economy and Tourism, took over from Norbert Brackmann. On September 19, the new Commissioner for the Sea of the German Federal Government, Sebastian Unger, joined the International Advisory Board, which advises the DAM as an independent scientific advisory body on strategic issues and provides impetus – for a regular, constructive exchange with policymakers.



### MEMBERS OF THE INTERNATIONAL ADVISORY BOARD

At the end of the reporting year, the following members belonged to the International Advisory Board:

- ~ **Prof. Dr. Peter Schlosser**, Chairman (Arizona State University, USA)
- ~ **Prof. Dr. Kate Moran** (University of Victoria and CEO of Ocean Networks, Canada)
- ~ **Prof. Dr. Katherine Richardson** (University of Copenhagen, Denmark)
- ~ **Prof. Dr. Martin Quaas** (University of Leipzig, Germany)
- ~ **Prof. Dr. Nadia Pinardi** (University of Bologna, Italy)
- ~ **Dr. Paul Connolly** (CEO of the Marine Institute, Ireland)
- ~ **Petra Mahnke** (CEO of the German Association for Marine Technology, Germany)
- ~ **Prof. Dr. Stefan Schouten** (NIOZ – Royal Netherlands Institute for Sea Research, The Netherlands)
- ~ **Sebastian Unger** (Commissioner for the Sea of the German Federal Government)
- ~ **Claudia Müller** (Federal Government Coordinator for Maritime Economy and Tourism, at BMWK in an advisory capacity for the maritime public sector)

### MEETINGS IN 2022

The International Advisory Board met online twice in 2022: on June 16 and November 30. Topics included the recommendations on a follow-up funding of the pilot missions launched in 2020 as part of the sustainMare research missions (see *page 16*). The role of the International Advisory Board in evaluating the DAM research missions, the role of the Scientific Advisory Boards of the DAM research missions and the link and cooperation between these two boards were also discussed. In addition, it was agreed to establish a Scientific Advisory Board for the DAM research mission sustainMare (in analogy to the CDRmare mission).

## STAKEHOLDER FORUM

As an independent advisory body with around 30 representatives from politics, industry and civil society, the DAM Stakeholder Forum is an important sounding board and source of fresh impetus for the DAM. Participants play a particularly important role in identifying socially relevant topics for current and future DAM research missions.

### MEMBERS OF THE STAKEHOLDER FORUM

The DAM was able to recruit the following persons, institutions and organizations to participate in the Stakeholder Forum until the end of 2022:

#### *Politics / Federal State*

- ~ **Federal Ministry of Education and Research (BMBF)**, Ministerial Counsellor Rudolf Leisen, Ministerial Counsellor Dr. Zage Kaculevski
- ~ **Federal Ministry for Digital and Transport (BMDV)**, Achim Wehrmann
- ~ **Federal Ministry of Food and Agriculture (BMEL)**, Dr. Hermann Pott
- ~ **Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)**, Government Director Ilka Wagner
- ~ **Federal Ministry of Defence (BMVg)**, Chief Technical Director Dr. Uwe Kretschmer
- ~ **Federal Ministry for Economic Affairs and Climate Action (BMWK)**, Ministerial Counsellor Dr. Zage Kaculevski
- ~ **Federal Ministry for Economic Cooperation and Development (BMZ)**, Jan Weinreich

#### *Politics / Northern German States*

- ~ **Public Authority for Science, Research, Equal Opportunities and Districts, City of Hamburg**, State Council Dr. Eva Gümbel
- ~ **The Senator for Science and Ports, Bremen**, State Council Tim Cordßen-Ryglewski
- ~ **Ministry of Education, Science and Culture in the state of Mecklenburg-West Pomerania**, State Secretary Susanne Bowen
- ~ **Ministry of Education, Science and Culture in the state of Schleswig-Holstein**, State Secretary Dr. Oliver Grundei

- ~ **Ministry of Science and Culture, Lower Saxony**, State Secretary Dr. Sabine Johannsen

#### *Business / Associations*

- ~ **German Maritime Centre (DMZ)**, Claus Brandt
- ~ **German Association for Marine Technology (GMT)**, Petra Mahnke
- ~ **German Association for Mechanical and Plant Engineering (VDMA)**, Alexandra Dreyer

#### *Government Agencies / Technical Sciences*

- ~ **German Coastal Engineering Research Council (KFKI)**, Prof. Dr. Frank Thorenz

#### *Civil Society / NGOs and Foundations*

- ~ **Brot für die Welt**, Francisco Mari
- ~ **BUND (Friends of the Earth Germany)**, Nadja Ziebarth
- ~ **German Society for Marine Research (DGM)**, Prof. Dr. Hanelt
- ~ **German Ocean Foundation**, Frank Schweikert
- ~ **Fair Oceans**, Kai Kaschinski
- ~ **FUTURZWEI. Stiftung Zukunftsfähigkeit**, Dana Giesecke
- ~ **Greenpeace Germany**, Thilo Maack
- ~ **Nature and Biodiversity Conservation Union Germany (NABU)**, Dr. Kim Detloff
- ~ **World Wide Fund for Nature (WWF) Germany**, Heike Vesper

#### *European Level*

- ~ **Joint Programming Initiative Oceans (JPI Oceans)**, Dr. Thorsten Kiefer
- ~ **Mission Board for Healthy Oceans, Seas, Coastal and Inland Waters**, Gesine Meißner, Former Member of the European Parliament (appointed in a personal capacity)

#### *Other*

- ~ **International Conference for YOUNG Marine Researchers (ICYMARE)**, Dr. Viola Liebich
- ~ **Wissenschaft im Dialog (WID)**, Markus Weißkopf

## MEETINGS IN 2022

Two meetings of the Stakeholder-Forum were held in 2022. The March meeting, focused on the progress of the DAM research missions, as well as a survey on relevant marine topics that the DAM had conducted in advance among members of the Stakeholder-Forum. The identified topics will be incorporated into the future direction and activities of the DAM. The September meeting focused on the further development of the DAM research missions. Overall, all participants emphasised the importance of the DAM and the Stakeholder-Forum for networking and providing practical knowledge. The importance of networking was also emphasized by Gesine Meißner and Prof. Dr. Martin Visbeck

from the German Ocean Decade Committee: In addition to the activities for the UN Decade of Ocean Science for Sustainable Development, they also presented opportunities to participate in the UN Decade, e.g. as a network partner or within a Decade project.



## OFFICE

According to the statutes, the members of the office support the Executive Board in fulfilling its tasks. In 2022, 11 people were employed in the DAM office, five of them part-time (PT). Plus the Chairman of the Executive Board:

~ **Chairman of the DAM Executive Board**

Dr. Joachim Harms (from August 2022, previously Michael Bruno Klein, see *page 42*)

~ **Managing Director, Head of Core Area Research**

Dr. Annekatrin Lehmann (Managing Director from August 2022)

~ **Core Area Research**

Dr. Esther Rickert (from June 15, 2022, PT)

~ **Head of Core Area Transfer**

Dr. Ute Wilhelmsen

~ **Third-party funded projects Transfer**

Julia Jung, Project coordinator – World Ocean (PT)  
Dr. Swantje Preuschmann, Project coordinator – Information portal  
Dr. Carolin Müller, Editor Information Portal (PT)

~ **Head of Core Area Data Management and Digitalisation**

and Coordination of Infrastructures  
Dr. Gauvain Wiemer

~ **Communication**

Marion Jüstel (PT)  
Erik Zürn (PT, from March 15, 2022)

~ **Administration**

Sebastian Konitzer

~ **Assistance**

Stephanie Uibel

The DAM office received support from the students Elisabeth Bauer (until 02/2022) and Friedrich Rittner (from 03/2022) and from Dr. Viola Liebich (until 11/2022)



The DAM office team at the end of 2022:  
Sebastian Konitzer, Swantje Preuschmann, Friedrich Rittner,  
Carolin Müller, Erik Zürn, Ute Wilhelmsen, Joachim Harms,  
Marion Jüstel, Annekatrin Lehmann, Stephanie Uibel,  
Gauvain Wiemer, Esther Rickert (from left to right).

The background of the page is a deep blue color with several translucent, glowing jellyfish. One large jellyfish is prominently featured in the center, showing its internal structure and tentacles. Other jellyfish are visible in the upper right and lower right corners. A white wavy line runs vertically down the left side of the page.

# NUMBERS

The German Marine Research Alliance is a registered non-profit organization. It is funded by the federal government, represented by the Federal Ministry of Education and Research (BMBF), and the five northern German states. In addition, membership fees are levied from its members.

## INCOME & EXPENDITURE

In the 2022 financial year, expenditure for the DAM office was covered by grants from the federal states and membership fees, while the federal government funded the research missions.

The DAM office received € 832,998 from grants from the northern German federal states and € 204,375 in income from membership fees to carry out its statutory tasks in the 2022 financial year. The total expenditure amounted to € 1,106,330.

### REVENUE

Grant from the federal states	€ 832,998
Income from membership fees	€ 204,375
<b>Total income</b>	<b>€ 1,037,373</b>

### EXPENDITURE

Personnel expenses	€ 630,278
Expenditure on administration & business operations	€ 188,091
Operating expenses	€ 273,247
Expenditure on investments	€ 14,714
<b>Total expenditure</b>	<b>€ 1,106,330</b>

In addition, designated third-party funds totalling € 268,340 were received for the realisation of the two transfer projects and the "Ocean Future Lab" project (see *page 28*).

The principle of annuality applies to the DAM budget, meaning that unused funds are returned to the donors or offset against the grants of the following financial year.

DAM's annual accounts are audited by an external audit firm, which confirms that the accounts have been properly kept. The donors are responsible for auditing the proper utilisation of funds.

## THE YEAR 2022 AT A GLANCE

■ Meetings and informative offers of the DAM bodies and committees

■ DAM events and activities

### 7 MARCH

Open Executive Board meeting

### 23 MARCH

Stakeholder Forum

## 01

## 02

## 03

### 28 JANUARY

#### Exchange with policymakers:

Parliamentary breakfast with new members of the German Bundestag for knowledge transfer and identification of research needs



### FEBRUARY 17 AND 18

Kick-off meeting of the DAM research mission **sustainMare** (online) with participants from over 30 research institutions, public authorities and regional associations

### 28 FEBRUARY

#### “Oceans are vital for survival – marine research is precautionary research!”

Statement by the Board of the German Marine Research Alliance on the report of Working Group II of the Intergovernmental Panel on Climate Change (IPCC)



### MARCH 9 AND 10

Kick-off meeting of the DAM research mission **CDRmare** in Lüneburg with participants from over 20 research institutions, authorities and companies

### 18 MARCH

#### Parliamentary breakfast

with members of the Bundestag from the German coastal states

### 24 MARCH

#### “Sea Future”

First parliamentary evening of the DAM in Kiel, Schleswig-Holstein



# 2022

**9 MAY**

Open Executive Board meeting

**11 MAY**

General meeting 1/2022

**23 MAY**

Info event for the scientific community

**8 JUNE**

Extraordinary General Assembly meeting  
for the election of the new DAM Chairman

**04**

**21 APRIL**

**Start of the open workshop series**

**Ocean Future Lab**

How do we want to live with the oceans?  
BMBF-funded project as part of the "Science  
Year 2022 – Participate!". A total of six work-  
shops on the future of the seas and oceans  
takes place until September



**END OF APRIL**

Executive Board members of DAM and KDM  
agree on **joint guidelines** for the future of  
both associations

**05**

**11 MAY**

At the 5th DAM General Assembly, the  
**Federal Environment Agency** becomes the  
**23rd DAM member**



**06**

07

**1 JULY****BMBF funding announcement for DAM's 3rd research mission published**

Subject "Pathways to improved risk management in the field of marine extreme events and natural hazards"/ Deadline for submission of project outlines: November 1, 2022.



08

**MID AUGUST**

The DAM Administrative Council speaks out in favor of a follow-up funding for the DAM pilot missions MGF Baltic Sea and MGF North Sea, the funders pave the way for applications.

**22 AUGUST****Change of leadership at DAM**

Joachim Harms, an experienced and recognized science strategist, takes over the chairmanship of the German Marine Research Alliance.

**5 SEPTEMBER**

Open Executive Board meeting

**9 SEPTEMBER**

Info event for the scientific community

**14 SEPTEMBER**

General Assembly meeting 2/2022

**22 SEPTEMBER**

Stakeholder-Forum

09

**19 SEPTEMBER**

The DAM welcomes the **German government's Commissioner for the Sea** of the German Federal Government, Sebastian Unger, as a member of the International Advisory Board.

**29 SEPTEMBER****Parliamentary breakfast in Berlin**

with information about the DAM research mission CDRmare

**30 SEPTEMBER**

Concept "Data management and Digitalization" published

# 2022

10

**6 OCTOBER****Parliamentary evening in Bremen****MID OCTOBER**

**Two new DAM projects are launched:** the digital information portal “Oceans online” and the “Interactive World Ocean”.

**25 OCTOBER**

**Science and policy discussion** for members of the European Parliament, the European Commission, member states and interested stakeholders on the possibilities of carbon capture by seas and oceans, organized by the Horizon 2020 project OceanNETs and CDRmare

**27 OCTOBER**

Publication of the scientific **factsheet “Munitions in the sea”** (with GMT) initiated by the DAM, under the leadership of the CONMAR project (part of the DAM research mission sustainMare).

**30 NOVEMBER****International Advisory Board**

11

**4 NOVEMBER****Berlin Science Week**

Entitled “How the sea can help the climate”, the DAM is bundling four lectures by DAM member institutions for an audience of politicians and science interested members of the public.

**NOVEMBER 16–18****On-site visit for the German Science and Humanities Council in Kiel**

DAM representatives give members of the German Science and Humanities Council an insight into their work on research vessels and with large-scale seagoing equipment.

**17 NOVEMBER**

DAM and Futurium publish the **“Future Box Oceans”**.

**23 NOVEMBER**

Transfer project **Ocean Future Lab** at the closing event for the “Science Year 2022 – Participate!” at the Berlin headquarters of the Federal Ministry of Education and Research (BMBF)

**24 NOVEMBER**

**Parliamentary evening in Schwerin**, Mecklenburg Western Pomerania reaffirms the role of marine research – and the DAM – for a sustainable use of the sea

**END OF NOVEMBER**

Start of the first round of the NFDI4Earth Academy's two-year training program on **“Data Science”**

**5 DECEMBER****Open Executive Board meeting**

12

**2 DECEMBER**

The BMBF approves the **continuation of the DAM research data project “Unterwegs”**.

**31 DECEMBER**

Comprehensive **utilization and operating concept for large-scale marine equipment** completed and agreed



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## IMPRINT

F.i.S.d.P.: Joachim Harms, Chairman of the Executive Board  
Marion Jüstel (in charge), Katrin Matthes  
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**DAM**

**WE STRENGTHEN THE SUSTAINABLE USE  
OF COASTS, SEAS AND OCEANS: THROUGH  
RESEARCH AND TRANSFER, DATA MANAGEMENT  
AND DIGITALISATION AS WELL AS THE  
COORDINATION OF INFRASTRUCTURES.**

## CONTACT

Deutsche Allianz Meeresforschung e.V.

Markgrafenstraße 22 | 10117 Berlin

Tel. +49 (0)30 23 59 627 - 0

[kontakt@allianz-meeresforschung.de](mailto:kontakt@allianz-meeresforschung.de)

[www.allianz-meeresforschung.de](http://www.allianz-meeresforschung.de)

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für Bildung  
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