

Attachments

Attachment 1: Networks

National networks and advisory and consultation committees

This list of national networks and advisory and consultation committees (temporary, project-based) in which the Flanders Marine Institute (VLIZ) participates is not exhaustive.

- Advisory Committee VNR Knokke-Heist and West Coast (ANB)
- Belgian National Committee UN Decade of Ocean Science for Sustainable Development, NDC-BE. Co-chair
- Belgian network of Early Career Ocean Professionals (ECOP) in the UN Decade of Ocean Science for Sustainable Development (forming, as coordinator and chairman)
- Belgian network of working and advisory groups under ICES - BICEpS
- Belgian Secretariat UN Decade of Ocean Science for Sustainable Development
- Belgian section of the Scientific Committee on Oceanic Research (SCOR)
- Belgian National Risk Assessment (BNRA 2023-2026)
- Business Advisory Board of the Flemish Smart Data Space
- Covenant Sustainable Fisheries Working Group Coast - Subgroup Training and education
- Coordination Committee International Environmental Policy (CCIM) steering group plastics (UNEA Resolution 5.2)
- The Blue Cluster (Blue Cluster): acting member Board of Directors, member Steering Group, chairman scientific advisory board (WAR)
- Expert Group Blue Energy (POM West Flanders)
- Federal Council for Sustainable Development Belgium (FRDO-FCSS)
- Flanders Environmental Library Network (FELNET)
- Mandated member of the Flemish Unesco Commission (VUC)
- Grote Rede editorial board
- Port of Oostende (Port of Oostende): Board of Directors
- IkHebEenVraag.be consortium (KBIN)
- Industrial Advisory Board KU Leuven (KU Leuven)
- KVAB awards science communication (KVAB) and ad hoc working groups
- Member in the network of the Flemish European Liaison Agency (VLEVA)
- MCM-lab (mine counter measures)
- Monuments Watch (Monuments Watch)
- NAVIGO Scientific Advisory Group (NAVIGO)
- OECD marine data
- Coastal Vision Project (Coastal Vision): member Policy Committee and reporter Technical-Scientific Committee (TWC)
- Strategic steering group of the Flemish Aquaculture Platform (SSAQ)
- Steering group European Marine Biological Resource Centre (EMBRC)
- Steering group North Sea and Oceans (MNZ) CCIM
- Steering group PIO: Collection and removal of floating debris in the marinas along the coast.
- Steering group Flemish Bio-economy Policy Plan
- Steering group Flemish Knowledge Centre for Citizen Science (SCIVIL)
- Technical Advisory Board of the Flemish Smart Data Space
- Association of Geography Teachers (VLA)
- Association Education in Biology (VOB)
- Flemish FWO-NCP: European Liaison Officers network (ELO)
- Flemish network of experts, members of advisory committee for Belgian membership to the international World Heritage Convention
- Flemish open science board (FOSB)
- Flemish Supercomputer Centre - HEC council (VSC)

- Flemish Supercomputer Centre - User Committee (VSC)
- Flemish steering group Marine litter (OVAM)
- Flemish Association for Library, Archive, and Documentation Sciences (VVBAD)
- VLIR Learning network
- VLIR PhD Talent Advisory Board
- Working Group Sustainable Coastal Management (Province of West Flanders)
- Working Group international strategy (POM West Flanders)
- Working Group on measures program Marine Strategy Framework Directive of the Marine Environment Service
- Working Group on marine litter (Federal Public Service for the Environment)
- Working Group on fisheries measures (Federal Public Service for the Environment)
- Scientific Advisory Board OVIS vzw
- Scientific Council IAS (Invasive Alien Species)
- Science Communication Network FWO
- ZEEBteam Province

International networks and advisory and consultation committees

This list of international networks and advisory and consultation committees in which the Flanders Marine Institute (VLIZ) participates is not exhaustive, alphabetically ordered, and does not include steering groups and working groups linked to the implementation and management of project activities.

- Biodiversity Information Standards (TDWG)
- Catalogue of Life Global Team, Editorial Board, Board of Directors (Catalogue of Life)
- Coastal Wiki Editorial Board (Coastal Wiki)
- EMO BON (European Marine Omics Biodiversity Observation Network)
- EMODnet coordination group for the UN DECADE of OCEAN SCIENCE for Sustainable Development (co-chair)
- EMODnet Steering Committee (SC) & Technical Working Group (TWG)
- EU MSP network, Ocean Governance network
- EUROGOOS Tide Gauge Task Team (Eurogoos)
- European Association of Aquatic Sciences Libraries and Information Centres (EURASLIC)
- European Centre for Information on Marine Science and Technology (EurOcean)
- European Citizen Science Association (ECSA)
- European Geosciences Union: Ocean Science division officer (<https://www.egu.eu/os/structure/>)
- European Marine Biodiversity Observatory System (EMBOS)
- European Marine Board (representative of the Research Foundation – Flanders) (EMB)
- European Marine Board Communications Panel (EMBCP)
- European Marine Science Educators Association (EMSEA)
- European network of Marine Biodiversity and Ecosystem Functioning (MARBEF+)
- European Network of Marine Research Institutes and Stations (MARS)
- European Parliament InterGroup on Seas and Ocean (SEARICA): IDEM here: network is from the MEP
- European Plate Observing System (EPOS) Tsunami Consortium Board
- European Regions Research and Innovation Network (ERRIN): active member in WG Blue Growth and WG BioEconomy
- European Research Vessel Organisation (ERVO)
- European Sustainable Blue Economy Partnership SBEP
- Executive Council and General Assembly of the Intergovernmental Oceanographic Commission (IOC) of UNESCO
- Global Carbon Budget: member of the Ocean core team
- Global Sea Level Observing System Network (GLOSS)
- HUBOcean
- ICES Data and Information Group (ICES - DIG)
- ICES Working Group on Biodiversity Science (ICES - WGBIODIV)
- ICES Working Group on Greening the Research Fleet (WGGRF)
- ICES working group on Marine Litter & Microplastics (WGML)
- ICES Working Group on Recreational Fisheries Surveys (ICES – WGRFS)
- ICES Working Group on the History of Fish and Fisheries (ICES - WGHIST)
- INSPIRE Thematic Working Group on Biogeographical Regions, Habitats and Biotopes and Species Distributions (INSPIRE)

- Integrated Carbon Observation System Marine Station Assembly (ICOS)
- Integrated Carbon Observation System Oceanographic Thematic Centre meeting (ICOS)
- International Coastal Atlas Network (ICAN)
- International Hydrographic Organisation (IHO)
- International Research Ship Operators (IRSO)
- International Seabed Authority (ISA)
- International working group sDevtrait - streamlining development efforts in tools for ecological trait analyses
- IOC Expert Group on Ocean Capacity Development: and chair of Task Team on Clearinghouse Mechanism for the Transfer of Marine Knowledge
- IOC Group of Experts on Global Sea Level Observing System
- IOC Group of Experts on Ocean Literacy
- IOC Intergovernmental Panel on Harmful Algal Blooms (IPHAB) Task Team on the Harmful Algal Information system
- IOC Ocean Decade Strategic Communications Group
- IODE Group of Experts on Biological and Chemical Data Management and Exchange Practices (IODE - GE-BICH)
- IODE Network of National Oceanographic Data Centres (IODE NODC)
- Joint IAMS LIC/IODE Group of Experts on Marine Information Management (IAMS LIC/ IODE GE-MIM)
- Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans)
- JPI Oceans reference expert group on marine spatial planning (JPI Oceans) Working Groups: MSP/ICZM
- LIBER (Ligue des Bibliothèques Européennes de Recherche – Association of European Research Libraries)
<https://libereurope.eu/>
- LifeWatch National Centers network (LifeWatch - LiNC)
- Marine Biodiversity Observation Network (MBON)
- News & Information Group of the Partnership for Observation of the Global Oceans (POGO - News & Information Group)
- Ocean Biodiversity Information System (OBIS) (Steering Group + Executive Committee + Taxonomy Task Team + Vocabulary Infrastructure Team + Data Quality Task Team + GUMP Team)
- Ocean Economy Working Group events and network (OECD)
- Ocean InfoHub (OIH) Steering Group
- Ocean Tracking Network (OTN)
- Oceans Past Initiative (OPI)
- Open Geospatial Consortium (OGC)
- Ostend working groups (Ocean and human health - national; coastal climate change - international)
- Partnership for Observation of the Global Oceans (POGO)
- Pool of experts of the Regular Process - World Ocean Assessment (second & third cycle)
- Scientific Committee on Oceanic Research (SCOR): member of Steering Committee and associate member of SCOR Working Group 168 (Coordinating the Development of Gridded Four-Dimensional Data Products from Biogeochemical-Argo Observations (4D-BGC))
- Sea Data Network (SeaDataNet II)
- SeaWeb Europe - Jury concours Olivier Roelinger (SeaWeb)
- Southern Ocean Observing System (SOOS) (Data management sub-committee)
- Species 2000 (Species 2000)
- Steering Committee of the FLANDERS UNESCO SCIENCE Trust Fund (FUST)
- Steering Committee of the World Register of Marine Species (WoRMS)
- Strategic Advisory Board TETTRIs project (Transforming European Taxonomy through Training, Research, and Innovations)
- Surface Ocean CO₂ mapping intercomparison (SOCOM) project
- UN DECADE of OCEAN SCIENCE for Sustainable Development - member of the Data Strategy Implementation group
- UN DECADE of OCEAN SCIENCE for Sustainable Development- Decade Implementing Partner
- UN DECADE of Ocean Science for Sustainable Development- network of national decade committees
- Vlaams-Nederlandse Scheldecommissie m.e.r. (VNSC)
- World Data System of the International Council for Science (ICSU - WDS)

Additionally, VLIZ also participates in advisory groups and end-user committees of multiple research projects.

Attachment 2: Projects with External Funding

In 2023, VLIZ received external funding for coordination, communication, and/or data management in projects. Most of these were conducted in collaboration with research groups.

EU

ANERIS - Operational Sensing Life Technologies for Marine Ecosystems

Duration: 01.01.2023 – 31.12.2026

The project proposes the concept of Operational Marine Biology (OMB), understood as a biodiversity information system for systematic and long-term routine measurements of the ocean and coastal life, and their rapid interpretation and dissemination. The technologies will be tested and validated in different case studies, involving the ANERIS innovations, commercial instruments to be improved and different world-class research infrastructures (RI).

BIOcean5D - Marine biodiversity assessment and prediction across spatial, temporal and human scales

Duration: 01.12.2022 – 30.11.2026

<https://www.biocean5d.org/>

BIOcean5D unites major European centers in molecular/cell biology (EMBL), marine biology (EMBRC), and sequencing (Genoscope), together with 26 partners from 11 countries, to build a unique suite of technologies, protocols, and models allowing holistic re-exploration of marine biodiversity, from viruses to mammals, from genomes to holobionts, across multiple spatial and temporal scales stretching from pre-industrial to today.

Blue-Cloud 2026 - A federated European FAIR and Open Research Ecosystem for oceans, seas, coastal and inland waters

Duration: 01.01.2023 – 30.06.2026

Blue-Cloud 2026 builds upon the pilot Blue-Cloud project which established a pilot cyber platform, providing researchers access to multi-disciplinary datasets from observations, analytical services, and computing facilities essential for blue science. Core services delivered are the federated Data Discovery & Access Service (DD&AS), the Virtual Research Environment (VRE) and Virtual Labs.

Blue4All - Blueprint Demonstration for Co-Created effective, efficient and resilient networks of MPAs

Duration: 01.01.2023 – 31.12.2026

<https://www.blue4all.eu/>

This project explores the application of a bottom-up approach towards MPA delineation, designation and management. True interaction with the stakeholders will be the starting point to ensure social acceptability, while taking account of top-down constraints as defined in EC (and national) regulations and the EU Biodiversity Strategy.

Blue Mission Banos

Duration: 01.12.2022 – 30.11.2025

<https://bluemissionbanos.eu/>

This project is part of the set of calls, procurements and grants which are launched in the framework of the Mission Ocean. The current project is the regional CSA (first conceived as a procurement) to support the IA Lighthouse actions.

Digital Twin for GEOPhysical extremes (DT-GEO)

Duration: 01.09.2022 – 31.08.2025

<https://www.dtgeo.eu>

A Digital Twin for GEOPhysical extremes (DT-GEO) is a European project that aims to analyse and forecast the impact of tsunamis, earthquakes, volcanoes, and anthropogenic seismicity. The project relies on the cooperative networks of 26 research institutions, building upon existing knowledge from other European projects and Centres of Excellence and pushing it forward.

DTO – BioFlow - Integration of biodiversity monitoring data into the Digital Twin Ocean

Duration: 01.09.2023 – 31.03.2027

DTO-BioFlow will activate access to marine biodiversity monitoring data and enable automated data flows from various sources to EMODnet and into the EDITO infrastructure serving the EU DTO. Combining sustained data flows, models and new algorithms, DTO-BioFlow will develop and integrate the biological component of the DTO, including new digital tools and services.

EDITO-Infra - EU Public Infrastructure for the European Digital Twin Ocean

Duration: 01.10.2022 – 30.09.2024

<https://edito-infra.eu/>

The main objective of EDITO-Infra, the "EU Public Infrastructure for the European Digital Twin", is to build the backbone of the EU Public Infrastructure for the European Digital Ocean Twin (RDF) by upgrading, combining and integrating key service components of the existing EU ocean observation, monitoring and data programmes Copernicus Marine Service and the European Marine Observation and Data Network (EMODnet) into a single digital framework.

eDNAquaPlan - A Plan towards an eDNA reference library and data repository for Aquatic Organisms, navigating Europe towards the next generation biodiversity monitoring.

Duration: 01.09.2023 – 31.08.2026

The eDNAqua-Plan consortium has the overarching aim of promoting synergies, harmonization and interoperability between existing EU initiatives and resources linked to the generation, storage, analysis and accessibility of environmental DNA (eDNA) data from marine and freshwater ecosystems and thereby providing a framework for maximizing the efficiency of future aquatic biodiversity monitoring activities.

EMODnet – European Marine Observation and Data Network

Duration: continuously since 2014

<https://emodnet.ec.europa.eu/en>

The European Marine Observation and Data Network (EMODnet) develops a data infrastructure to make marine data available so as to support scientists, policy makers and other end users within the scope of the new European maritime policy. VLIZ is responsible for the biological pilot project (www.emodnet-biology.eu). It will use the existing European atlas with distribution data of marine species (EurOBIS) as a basis and complete it. VLIZ is also involved in the chemical project of EMODnet and the Data Ingestion initiative. In addition, VLIZ is expanding the EMODnet Central Portal (www.emodnet.eu), which is intended to provide access to the data products and data collected within the EMODnet thematic networks. The EMODnet Secretariat is located at the InnovOcean site in Ostend.

EMODnet Bathymetry - European Marine Observation and Data Network - Bathymetry Lot

Duration: 01.01.2021 – 20.12.2024

EMODnet Bathymetry aims to provide a single access point to bathymetric products, Digital Terrain Models (DTM) and data (survey data sets and composite DTM) collected and managed by an increasing number of organisation from government and research scattered over Europe.

EMODnet Biology 5 - European Marine Observation and Data Network- Biology V

Duration: 10.05.2023 – 09.05.2025

<https://emodnet.ec.europa.eu/en/biology>

The European Marine Data and Observation Network (EMODnet) aims to develop a system to make marine data available in support of scientists, policy makers and other end-users, within the framework of the new European maritime policy. VLIZ coordinates this project of 22 European partners and several sub-contractors and develops webservices to allow for the data, metadata, products and tools to be available via the Central Portal within 6 months of the start of the project

EMODnet Chemistry Lot 5 - Europees Marien Observatie and Data Network - Chemisch Lot V

Duration: 03.10.2021 – 02.10.2023

<https://emodnet.ec.europa.eu/en/chemistry>

EMODnet Chemistry's first goal is to provide interoperable, high quality and publicly available data and products on marine water quality issues. Its activity is firstly to collect, validate, and guarantee access to marine pollution data streams, and secondly generate and publish corresponding data products. EMODnet Chemistry is focused on eutrophication, ocean acidification, contamination, and marine litter.

EMODnet ingestion 3 - European Marine Observation and Data Network - Data ingestion 3

Duration: 30.03.2022 – 30.03.2024

The EMODnet Data Ingestion portal aims at streamlining the data ingestion process so that data holders from public and private sectors that are not yet connected to the existing marine data management infrastructures can easily release their data for safekeeping and subsequent distribution through EMODnet. This will enrich the total offer for all types of users and conform to the EMODnet motto 'collect data once and use it many times'.

EMODnet Physics IV - European Marine Observation and Data Network – Physics

Duration: 23.08.2021 – 24.08.2023

EMODnet Physics aims to provide a single access point to physical oceanographic data collected and managed by an increasing number of organisations from government and research scattered over Europe.

EMODnet Seabed Habitats Phase V

Duration: 21.09.2023 – 20-09-2025

The objective is to collate and make available data and metadata from benthic ground truthing surveys and create products based on these data but also modelled environmental parameters.

ENVRI-FAIR - ENVIRONMENTAL RESEARCH INFRASTRUCTURES BUILDING FAIR SERVICES ACCESSIBLE FOR SOCIETY, INNOVATION AND RESEARCH

Duration: 01.01.2019 – 30.06.2023

<https://envri.eu/home-envri-fair/>

ENVRI-FAIR is the connection of the ESFRI Cluster of Environmental Research Infrastructures (ENVRI) to the European Open Science Cloud (EOSC). Participating research infrastructures (RI) of the environmental domain cover the subdomains Atmosphere, Marine, Solid Earth and Biodiversity / Ecosystems. The overarching goal is for the RI's to build a set of FAIR data services that enhance the efficiency and productivity of researchers, support innovation and enable data- and knowledge-based decisions.

EOSC-FUTURE

Duration: 01.02.2022 – 30.09.2023

<https://eoscfuture.eu/>

EOSC Future will build on the existing baseline for the European Open Science Cloud to deliver a platform with a durable set of user-friendly components that are designed for the long haul.

EOSC-LIFE - PROVIDING AN OPEN COLLABORATIVE SPACE FOR DIGITAL BIOLOGY IN EUROPE

Duration: 01.03.2019 – 31.08.2023

EOSC-Life brings together the 13 Biological and Medical ESFRI research infrastructures (BMS RIs) to create an open collaborative space for digital biology. The project aims to respond to the challenge of analysing and reusing the prodigious amounts of data produced by life-science. By publishing data and tools in a Europe-wide cloud, EOSC-Life aims to bring the capabilities of big science projects to the wider research community.

EROVMUS - ENHANCED REMOTE OPERATED VEHICLE INTERFACE FOR MUNITIONS SOLUTIONS

Duration: 01.01.2022 – 31.12.2024

The EROVMUS project aims to streamline ROV operations in munitions-affected areas by providing a better interface for ROV pilots. Tests are planned in the North Sea, Black Sea and Baltic Sea.

EUROFLEETS+

Duration: 01.02.2019 – 31.10.2023

<https://www.eurofleets.eu/>

Coordinated by IM (Ireland), the Eurofleets+ project brings together over 20 scientific institutions to take the first steps towards a coordinated European research fleet and associated infrastructure. Through the Eurofleets+ call we hope to get funding for a two week campaign on board of the RV Sanna in Nuuk, Greenland. We would like to use the VPR in two fjord systems (Godhabsfjord and Ameralik) and the shelf connecting these areas, to research the zooplankton distribution. This project would fit within the PhD of Anouk Ollevier (Understanding and optimizing zooplankton imaging observations).

FAIR-EASE - FAIR EARTH SCIENCES & ENVIRONMENT SERVICES

Duration: 01.09.2022 – 31.08.2025

<https://fairease.eu/>

The overall objective of FAIR-EASE is to customize and operate distributed and integrated services for observation and modelling of the Earth system, environment and biodiversity by improving their different components implemented in close cooperation with user-communities, the European Open Science Cloud (EOSC) and research infrastructures in their design and sustainable availability.

FISH COMMERCIAL NAMES - INFORMATION SYSTEM ON COMMERCIAL DESIGNATIONS FOR FISHERY AND AQUACULTURE PRODUCTS

This project is an offer for the open tender procedure No MARE/2022/OP/0002 "Fish Commercial Names (Information system on commercial designations for fishery and aquaculture products)", published by the Directorate-General for Maritime Affairs and Fisheries (DG MARE).

FISH_INTEL - FISHERIES INNOVATION FOR SUSTAINABLE SHARED INTERCHANNEL RESOURCES

Duration: 01.02.2021 – 30.06.2023

The project's main objective is the "Provision of evidence to statutory and fisheries enforcement bodies on the identification of essential fish habitats and successful implementation of ecosystem based fisheries management."

GEANS - Genetic tools for Ecosystem health Assessment in the North Sea region

Duration: 01.03.2019 – 30.06.2023

GEANS aims to harmonize and consolidate existing DNA-based methods, to ensure their application for assessing ecosystem health in the North Sea environment. The compilation of a DNA sequence reference library will be set-up, current methods will be optimized and standardised, genetic indicators developed, and a roadmap for management implementation will be provided. This will enable policymakers to adapt their management strategies in order to improve or conserve the quality of the environment.

Geo-INQUIRE - Geosphere INfrastructures for QUestions into Integrated REsearch

Duration: 01.10.2022 – 01.10.2026

<https://www.geo-inquire.eu/>

Real time data access will be enhanced for broader scientific impact. Access to bulk data for researchers will be improved through integration into EPOS, the inclusion of DART data, additional data processing (QC and de-tiding) and by filling geographical gaps through cooperation with new data providers. The access to bulk data & link with EMODnet data will be set up so to allow data transfer to HPC environments for scientific models (...) and in the framework of the EPOS candidate Tsunami TCS.

GEORGE - Next generation multiplatform Ocean observing technologies for research infrastructures

Duration: 01.01.2023 – 30.06.2027

Ocean biogeochemistry is going through unprecedented changes. Anthropogenic emissions of CO₂ since the industrial revolution have led to warming in ocean temperature (>1 °C since pre-industrial) and increase in ocean acidity (100-150% increase in H⁺ concentration). Recent developments in sensing technologies, robotics and artificial intelligence offer new opportunities and potential for autonomous, wide scale and high-resolution biogeochemical observations.

GreenFeedBack

Duration: 01.07.2022 – 30.06.2026

<https://eu-greenfeedback.com/>

The overall objective of GreenFeedBack is to enhance our understanding of key processes of the terrestrial biosphere - freshwater - ocean continuum in surface-atmosphere GHG exchange and the impacts from human pressures. A nr of RIs (e.g. GIOS, ICOS, ACTRIS, PEEEX) located in high latitude ecosystems will be used. Primary focus is on enhancing our understanding of the GHG exchange processes, and connections with Earth System Models (ESM). allowing for more certain climate change projections.

IG-Waves - Influence of infragravity waves during storms on the hydro- and morphodynamics along hybrid soft-hard coastal defence structures with a shallow foreshore

Duration: 01.01.2022 – 31.12.2025

Urban areas in low-lying coastal zones are protected from flooding by a hybrid soft-hard coastal defence structures. Ig wave-related processes in these structures have a significant but insufficiently researched effect on the beach erosion and wave overtopping over the dike. The proposed research aims at gaining more insight into the influence of those ig waves on the wave propagation over the beach and dike (hydrodynamics), and how that affects erosion of the beach (morphodynamics).

iMagine - Imaging data and services for aquatic science

Duration: 01.09.2022 – 31.08.2025

<https://www.imagine-ai.eu/>

This project will deploy, operate, validate, and promote a dedicated iMagine AI framework and platform, connected to EOSC and AI4EU, giving researchers in aquatic sciences open access to a diverse portfolio of AI based image analysis services and image repositories from multiple RIs, working on and of relevance to the overarching theme of 'Healthy oceans, seas, coastal and inland waters.

INSPIRE - Innovative Solutions for Plastic Free European Rivers

Duration: 30.05.2023 – 29.05.2027

<https://inspire-europe.org/>

The main goal of INSPIRE is to contribute to the reduction of litter and plastics in European rivers through a holistic approach, by bringing together 20 technologies and actions for: DETECTION of pollution; COLLECTION of litter and plastics in the river; PREVENTION of plastic and litter.

JERICO-S3 - Joint European Research Infrastructure of Coastal Observatories: Science, Service, Sustainability

Duration: 01.02.2020 – 31.01.2024

<https://www.jerico-ri.eu/projects/jerico-s3/>

JERICO-S3 will provide a state-of-the-art, fit-for-purpose and visionary observational RI, expertise and highquality data on European coastal and shelf seas, supporting world-class research, high-impact innovation and a window of European excellence worldwide.

MAREGRAPH – towards an interoperable MARinE knowledge GRAPH

Duration: 01.01.2023 – 31.12.2025

The MAREGRAPH project will provide an open linked data production and publication of three high impact datasets in the marine domain (the World Register of Marine Species (WoRMS), Marine Regions and EurOBIS (the European Node of the international Ocean Biodiversity Information System) using state of the art technologies.

MARBEFES - MARine Biodiversity and Ecosystem Functioning leading to Ecosystem Services

Duration: 01.09.2022 – 31.08.2026

<http://marbefes.eu/projects/Marbefes/>

The overall aim of MARBEFES is to determine the links between the biodiversity and functioning of coastal and marine ecosystems and the resulting ecosystem services and societal goods and benefits.

Marco-Bolo - Marine & coastal biodiversity long-term observation framework

Duration: 01.12.2022 – 30.11.2026

<https://cordis.europa.eu/project/id/101082021>

MARCO-BOLO aims to structure and strengthen European coastal and marine biodiversity observation capabilities, linking them to global efforts to understand and restore ocean health, hence ensuring that outputs respond to explicit stakeholder needs from policy, planning and industry. MBO will establish and engage with a Community of Practice to determine enduser needs with the aim of optimising marine data flows, knowledge uptake, and improving governance based on biodiversity observations.

Marine Regions - Towards a standard for georeferenced marine names

Duration: continually since 2011

www.marineregions.org

Marine Regions is a standardised geographic data system which makes geographic information on marine place names and maps freely available. It integrates geographic information on seas, oceans and undersea features, and indicates the boundaries of various marine areas throughout the world. 'Marine Regions' integrates the data and information from the VLIMAR Gazetteer (place name register) and the MARBOUND database (EEZ boundaries). Both global data systems have been developed by the Flanders Marine Institute and have demonstrated their added value for many users over the past few years. The combination of both databases is intended to benefit the different target groups.

Marine Sabres - Marine Systems Approaches for Biodiversity Resilience and Ecosystem Sustainability

Duration: 01.11.2022 – 31.08.2023

www.marinesabres.eu

Marine SABRES will enable and upscale Ecosystem Based Management across Europe and abroad on a course to reverse biodiversity decline, it will conserve and protect biodiversity by integrating sustainable ecosystems and a resilient blue economy; enable managers to make sustainable decisions; empower citizens to engage with marine biodiversity conservation; promote sustainable development and in coastal and marine sectors.

Mission Atlantic

Duration: 01.09.2020 – 31.08.2025

www.missionatlantic.eu

The "mission" of Mission Atlantic is to investigate how multiple pressures within and across important sub-areas affect the resilience of the Atlantic Ocean to future climate and societal changes. The project will tackle this question by advancing knowledge on ecosystem processes as well as applying new observation technology and state-of-the-art predictive capacity to develop an operational regional and basin-scale Integrated Ecosystem Assessment (IEA).

MSP4BIO - Improved Science-Based Maritime Spatial Planning to Safeguard and Restore Biodiversity in a coherent European MPA network

Duration: 01.08.2022 – 31.07.2025

<https://msp4bio.eu>

The MSP4BIO project builds on existing approaches to improve the science-based implementation of MSP and MPA planning by providing a modular framework for characterising biodiversity characteristics, interactions between socioeconomic and ecological issues, and modelling.

North Sea Wrecks - an opportunity for blue growth (NSW)

Duration: 01.11.2018 – 30.01.2023

<https://northsearegion.eu/nsw/about/>

The project will provide the tools required by planners, response organisations, economic actors and other stakeholders to assess the risks posed by shipwrecks and ammunition in the North Sea and propose risk mitigation solutions.

Plastic Pirates - Go Europe! - Data consolidation

Duration: 01.10.2023 – 30.06.2024

www.plastic-pirates.eu/en

Within the framework of the present EU funded Other Action “Europeanization of the Plastic Pirates Citizen Science Initiative”, the aim of this project is to consolidate all data that has been gathered during the autumn sampling period of the Plastic Pirates – Go Europe! initiative while making recommendations to update the existing data management plan of the action PlasticPiratesEU.

PREP4BLUE - Preparing the Research & Innovation Core for Mission Ocean, Seas & Waters

Duration: 01.06.2022 – 31.05.2025

PREP4BLUE aims to facilitate a successful first phase (2022-2025) of the Mission Ocean seas and Waters, by developing the co-creation and co-implementation of R&I modalities and preparing the ground for inspiring and engaging citizens and stakeholders. PREP4BLUE will deliver tools, guidelines, methodologies and recommendations tested through pilots, which will interlink, leverage and optimise activities among the projects funded under the Mission.

SBEP - Sustainable Blue Economy Partnership

Duration: 01.09.2022 – 31.08.2029

<https://bluepartnership.eu/>

The partnership will catalyse the transformation of Europe’s ocean economy towards climate neutral status by 2050. By aligning national, regional and EU R&I priorities and bringing together science, industry, governance and society, it will deliver knowledge and solutions to make ocean business sustainable. Responding to national and EU policy goals (e.g. MSFD, Green Deal), the partnership will target a healthy ocean and a sustainable, productive ocean economy and the well-being of citizens.

SeaBioComp – Development and demonstrators of durable biobased composites for a marine environment

Duration: 01.05.2019 – 28.02.2023

<http://www.seabiocomp.eu/>

SeaBioComp will develop demonstrators using innovative bio-based thermoplastic composite materials with the following characteristics: (1) mechanical properties that are at least equivalent to the ones of conventional oil-based composites, (2) tailored durability according to the specific application (2 to >20 years), (3) reduced CO2 emission (30%) and reduced ecotoxic impact (due to microplastics).

SOS-ZEROPOL2030 - Source to Seas - Zero Pollution 2030

Duration: 01.09.2022 - 31.08.2026

<https://soszeropol2030.eu/>

Source to Seas - Zero Pollution 2030 (SOS-ZEROPOL2030) overall aim is to develop a holistic zero pollution framework which can guide the process towards achieving zero pollution in European seas by 2030.

ULT-Farms - circUlar Low Trophic oFfshore Aquaculture in wind farms and Restoration of Marine Space

Duration: 01.01.2023 – 30.06.2027

Project will demonstrate solutions for increasing circularity by the production of low-emission, zero- or low-carbon and toxic-free farming of aquatic organisms in an optimally used marine space.

Flemish Government, Maritime Access division

ScheldeMonitor – Flemish-Dutch knowledge platform for research and monitoring of the Scheldt estuary

Duration 01.01.2022 – 31.12.2030

www.scheldemonitor.org

ScheldeMonitor is a Flemish-Dutch knowledge and information system for research and monitoring of the Scheldt estuary. This portal provides an overview of publications, institutions, projects, datasets, etc. related to research and monitoring in the Scheldt estuary as well as access to measurements and data products such as maps, charts and indicators.

Federal Government, BELSPO

ANDROMEDA - Analysis techniques for quantifying nano-and microplastic particles and their degradation in the marine environment

Duration: 01.04.2020 – 31.03.2023

Within ANDROMEDA, in situ detection, efficient sampling and cost-effective laboratory methods will be developed and optimized to analyze microplastics. Approaches will be based on hyperspectral imaging, chemical markers and fluorometric detection techniques. Advanced analysis techniques making use of μ FTIR, Raman imaging and SEM-EDX (amongst others) will be applied to quantify and characterize micro and nanoplastics.

BG-PART - BioGeochemical PARTicle interactions and feedback loops on the Belgian Continental Shelf

Duration: 01.07.2021 – 15.09.2025

Interactions between biological and mineral particles may underlie phytoplankton and sediment dynamics in our North Sea. Phytoplankton produces sticky marine gels that influence flocculation, floc size and settling velocity of mineral particles. In turn, higher settling velocities decrease turbidity, changing the underwater light conditions and fostering photosynthesis. BG-PART aims to obtain an integrated understanding of biotic and abiotic interactions that drive particle dynamics in the BCS.

TURBEAMS - Towards 3D TURbidity by correlating multiBEAM sonar and in-situ Sensor data

Duration: 15.12.2021 – 15.03.2026

A 3D approach is recommended for turbidity/SPM monitoring, since the variability can be high. In TURBEAMS, we want to build on the TIMBERS results by coupling the acoustic instruments of the RV Belgica to the sampling-capacity. This will result in a number of correlation equations (depending on among other season and location) which will allow the transformation of multibeam backscatter values into characteristics of SPM and/or turbidity.

WALDO - Where are All the (proglacial) Lake seDiments in the NOrth Sea Basin?

Duration: 15.12.2021 – 15.03.2026

Proglacial lakes are believed to have existed in the southern North Sea. Evidence of these lakes is elusive. By using high-resolution geophysical data and cores, we will test the hypothesis that proglacial lakes were important features in the southern North Sea during the last three ice ages.

Province West Flanders

Blue Accelerator

Duration: since 2022 (before: ERDF Flanders project)

The Blue Accelerator project is aimed at creating so-called living labs where testing is possible under real marine conditions. The principal focus is on the development of an offshore test location (incl. platform) off the coast of Ostend.

Zeekrant

Duration: Since June 2007

Annual publication of VLIZ in partnership with the province of West Flanders with all sorts of facts on the sea and beach. After 10 editions, an updated version of the Zeekrant was released in cooperation with the province of West Flanders.

FWO (formerly the Hercules Foundation)

Decision support framework for plastic clean-up technologies in rivers and estuaries: minimizing unintentional bycatch while maintaining efficient plastic removal under realistic environmental conditions

Duration: 01.11.2021 – 31.10.2025

The aim is to develop a mathematical model to quantify the bycatch of plastic removal technologies. This model will support water managers in their choice of a suitable technology to remove plastic and limit ecological collateral damage.

DISARM - Dumpsites of munition: Integrated Scientific Approach to Risk and Management

Duration: 01.01.2020 – 31.12.2023

<https://www.disarm.be>

The Paardenmarkt is one of the many munition dumpsites in our oceans. A few m below the seafloor, ca. 35.000 tons of WW1 chemical munition are buried. The present scientific knowledge is insufficient to make any reliable judgement on the state of the site. The DISARM project aims to address the knowledge gaps, but will go an important step further to develop an integrated scientific approach to support risk assessment and management of marine chemical munition dumpsites worldwide.

DiSSCo Flanders - Towards a collection management infrastructure for Flanders.

Duration: 01.01.2021 - 31.12.2024

DiSSCo Flanders will address biological, anthropological and geological collections. The whole workflow from specimen sampling in the field to their digitization and online publication enabling re-use of the data and media will be addressed.

EMBRC.be – European Marine Biological Resource Centre - Belgium

Duration: 01.01.2021 – 31.12.2024

<https://www.embrc.eu/>

EMBRC will be a distributed infrastructure for research and training at leading marine research stations in Europe. It constitutes a virtual network of marine stations for the study of marine species, biodiversity and ecosystem functioning, developmental biology and evolution, biogeochemistry, global change, biomedical sciences and marine products. EMBRC will provide end users from SMEs, academia and industry with access to marine biodiversity, associated metadata and extractable products. Services include access to marine species (model species), biobanks, dedicated 'omics' platforms, structural biological facilities and imaging (microscopy, cytometry, etc.). The Flemish contribution is coordinated by the Marine Biology Laboratory (Ghent University) and VLIZ, with VLIZ making seagoing and land-based facilities available and providing technical support.

FOSB - Flemish Open Science Board

Duration: since 01.09.2020

The mandate of the FOSB is to develop policy on Open Science in Flanders. To assist in this task, both technical and substantive working groups were set up, making maximum use of the already existing expert working groups at stakeholders and the government. With the creation of this council, Flanders is preparing itself to connect to the European Open Science Cloud (EOSC), an ambitious cloud project that aims to offer European researchers an environment for "data storage, management, analysis and re-use across disciplines" and that will bring together existing and future data infrastructures, both horizontal and thematic.

ICOS – Integrated Carbon Observing System

Duration: 01.01.2012 – 31.01.2025

<https://www.icos-cp.eu/>

ICOS provides the long-term observations required to understand the present state and predict future behaviour of the global carbon cycle and greenhouse gas emissions. VLIZ performs the oceanographic measurements which Flanders will transfer to ICOS through the University of Antwerp. VLIZ performs measurements aboard RV Simon Stevin to this end. Within the scope of ICOS, VLIZ collaborates with NIOZ-Yerseke and the University of Liège (Alberto Borges).

LifeWatch – Regional Lifewatch Node - Marine and terrestrial observatories, models and data systems.

Duration: 01.04.2012- 31.12.2024

www.lifewatch.be

LifeWatch is a distributed virtual laboratory and will be used for biodiversity research, for climatological and environmental impact studies. This large European research infrastructure (ESFRI) consists of several biodiversity observatories, databases, web services and modelling tools. With the regional node, VLIZ coordinates the Flemish contribution to LifeWatch in collaboration with INBO.

Testerep - Evolution of the Flemish seascape 5000 BP - present

Duration: 01.10.2021 – 30.09.2025

The project's aim is to extend our spatio-temporal understanding of Flanders' coastal landscape over the last 5000 years by studying the former Testerep peninsula at sea and on land. This will provide new detailed insights into the relative impact of natural changes (e.g. sealevel rise) versus anthropogenic interventions (e.g. constructing embankments) on the morphological dynamics of the coast.

UNESCO

GLOSS – Sea Level Station Monitoring Facility

Duration: continually since 2008

www.ioc-sealevelmonitoring.org

A worldwide service for real-time sea level monitoring by means of measuring stations in cooperation with GLOSS (Global Sea Level Observing System) and IOC (Intergovernmental Oceanographic Commission).

VLAIO (formerly IWT – Strategic Basic Research)

BAR (Brexit Adjustment Reserve) Coastal Fleet – Post-Brexit pelagic coastal fisheries

Duration: 02.10.2022 – 31.12.2023

New economic drivers and resilience for small-scale and sustainable niche fisheries, to compensate for the current loss of catches and funding in UK waters in the Southern North Sea (4C) and English Channel (7D) and access to (fishing) waters in the post-Brexit UK.

BAR (Brexit Adjustment Reserve) mariene robotica - Post-Brexit collaboration on marine robotics

Duration: 01.09.2022 – 31.12.2023

The objective is to reinforce the post-Brexit position of VLIZ with regard to marine robotics and autonomous ocean observations. As such, VLIZ wants to enter as an equal partner in novel collaborations with specialised centres in the UK and reinforce the potential with regard to marine robotics for research and innovation purposes and the Blue Economy in Flanders.

Blue Balance - PuBlic and Economic VALue of ChANGing Coastal ArEas by stimulating “Green” Blue Citizenship and Sustainable Blue Tourism

Duration: 01.07.2022 – 01.12.2025

A key question is how to find balance between naturalness/attractiveness of the environment, social and economic needs of the coastline’s stakeholders (industrial parties, communities, tourists, citizens,...) and sustainable innovations and solutions. The Blue BALANCE project aims to guide all stakeholders towards sustainable transitions of the Flemish coastal region to create a social support base and license to operate for sustainable innovation and development.

Clay Tectonics - Influence of clay tectonics in the North Sea on offshore wind foundation design and installation

Duration: 01.01.2023 – 30.06.2030

A multidisciplinary research project combining geophysical, geological and geotechnical methods to study the influence of clay tectonics in the North Sea on offshore wind foundation design and installation. The project intends to unlock industry-driven valorisation opportunities in close collaboration with the industrial advisory board.

Coastbusters 2.0

Duration: 01.02.2020 – 31.03.2024

An innovative collaboration between public and private parties, Coastbusters 2.0 will implement various reef facilitating systems to induce the formation of a biogenic mussel bed in an early stage and to achieve a nature inspired design (NID) for coastal defence.

PLUXIN - Plastic Flux for Innovation and Business Opportunities in Flanders

Duration: 01.09.2020 – 28.02.2024

A first prerequisite to take effective plastic remediation measures is to know where and when action should be taken. A central objective in this project is to develop a two-dimensional-horizontal (2DH) plastic dispersal model. The model will be calibrated and validated with experiments and field sampling data. Plastics will be identified from remote sensing reflectance data through image recognition algorithms (‘Machine Learning’), hence resulting in an automated plastic detection method.

SUMES - Sustainable Marine Ecosystem Services

Duration: 01.09.2020 – 31.08.2023

The SUMES project aims to develop a model to assess the impact of human-induced changes on the ecosystem, its structure (e.g. biodiversity) and function (e.g. food chains, biogeochemistry), its capacity to provide marine ecosystems goods and services (e.g. sequestration of carbon) and subsequent consequences.

FUST - Flanders UNESCO Trust Fund for Science

OTGA - Ocean Teacher Global Academy

Duration: since 2005

The OceanTeacher Global Academy (OTGA) project aims at building equitable capacity related to ocean research, observations and services in all IOC Member States. UNESCO/IOC's International Oceanographic Data and Information Exchange (IODE) programme has built a comprehensive Learning Management System (OceanTeacher) that, in combination with classroom training, has trained nearly 2000 students from 120 countries since 2005. This success demonstrates the expertise within IODE and its potential to expand the use of this methodology to other IOC programmes. The OTGA project will complement other existing training programmes of the IOC.

Other

APELAFICO - Acoustic ecology of pelagic fish communities: a study into the effects of construction and exploitation of wind farms.

Duration: 01.01.2021 – 31.12.2023

Financiering: NWO

This project concerns an interdisciplinary study with fundamental and applied aspects fitting the targets of the Dutch National Research Agenda (NWA). The project will collect data, using a set of echosounders, on density and diversity of pelagic fish in and around offshore windfarms in association with acoustic conditions during the construction and exploitation of windfarms.

FISHOWF - Developing effective monitoring strategies to identify and evaluate effects of OWF on fish communities

Duration: 01.10.2021 – 30.09.2024

<https://www.france-energies-marines.org/en/projects/fishowf/>

Financiering: CoReD

This project includes the following research lines:

- Research on reef and FAD effects
- Investigate the effects of electromagnetic fields on electrosensitive fish species
- Investigate the need for monitoring to detect these effects (possibly adapted to floating wind turbines)

HYPERNET-POP

Duration: 01.09.2022 – 31.03.2027

Financiering: European Space Agency

HYPERNETPOP (Hyperspectral Network for Visible and Near infra-red Pre-Operation Phase) aims to initiate a pre-operational network of validation instruments called HYPERNET. HYPERNET will provide validation data for surface reflectance to ESA, Copernicus Services and other users, across a range of conditions and locations, for all VISNIR spectral bands of satellite missions.

IHO S-130 Test Dataset Creation

Duration: 30.09.2023 – 31.12.2023

Financiering: the International Hydrographic Organisation

IHO tender for the creation of the S-130 test datasets.

REMARCO - Remediation, Management, Monitoring and Cooperation addressing North Sea UXO

Duration: 01.07.2023 – 30.06.2027

After decades in the sea water, ammunition shells from World Wars are in different stages of degradation. Leaking toxic and carcinogenic compounds have been found surrounding war wrecks and dumping sites. Apart from the risk of uncontrolled explosions, samples taken in marine expeditions and laboratory analyses found leaked toxic compounds also in biota that explained health impairments of exposed organisms. These results are leading to marine food safety concerns. There is no common systematic approach to assess or to implement the monitoring and remediation measures needed to mitigate hazards. These hazards don't stop at borders and require a strategy of transnational dimension, moving from the North Sea Wrecks project analytic approach to remediation. REMARCO aims to reduce pollution and contribute to marine ecosystem protection by 1) increasing the capacity of authorities with a systematized risks assessment strategy within the MFSD and enhanced methodology, 2) promoting the adoption of transnationally validated remote and automated solutions for NSR authorities and supra-national bodies to monitor and remediate risks, 3) promoting a change of behaviour of responsible stakeholders leading to the improvement of policy instruments. To make the proposed change happen, we structure the work into experimental development activities, surveying & laboratory analysis of toxic compounds, test solutions in selected locations, strategies and policy recommendations, promotion and lobbying activities for reaching decision makers.

TREASURE – Targeting the reduction of plastic outflow into the North Sea

Duration: 01.06.2023 – 30.05.2026

The objective of this project is to reduce the outflow of plastic waste from rivers and inland waterways into the marine environment of the North Sea. We want to develop a toolbox to enable science-supported policy and management decisions to combat the plastic outflow.

Attachment 3: Trainees, master students and student employees

Trainees supervised by VLIZ in 2023

Naam	Voornaam	Afdeling	Onderwijsinstelling
Al-Damluji	Nada	Datacentrum	VUB
Beges	Clement	MRC	INP-Grenoble
Biniam	Belete Begna	Datacentrum	VUB
Blomme	Nils	Research	IMBRSea
Campos	Diego	Datacentrum	VUB/UAnt/UGent - Oceans and Lakes
Coupey	Maxence	Datacentrum	Ifremer
Duclos	Constance	MRC	ENSTA Bretagne
Gaviño Alva	Jenny Alexandra	Research	VUB
Larrinoa	Naia	MOC	University of Vigo
Linley	Charlotte Poppy	Research	RPTU Kaiserslautern-Landau, campus Landau
Linley	Lottie	Research	University of Koblenz-Landau, Germany
Marro Salazar	Nicolas	MOC	National Technological University of South Lima in Peru
Moreel	Ruben	IT	Howest
Okeyo Otieno	Nicholas	Research	VUB
Roels	Thomas	Research	UGent
Simon	Laurent	MOC	Institut Polytechnique de Grenoble
Torre	Maxime	MRC	INP-Grenoble
Van den Bremt	Jonas	Research	UGent
Van Tichelen	Helena	Research	UGent

Master students supervised by VLIZ in 2023

Naam	Voornaam	Afdeling	Onderwijsinstelling
Chia-Yu	Chu	Research	IMBRSea
De Wever Van der Heyden	Luka	Research	UGent
De Witte	Yasmine	Research	UGent
Everarts	Camille	MRC	Université catholique de Louvain (UCLouvain)
Klasen	Nora Sophie	Research	IMBRSea
Lambotte	Augustin	MRC	Université catholique de Louvain (UCLouvain)
Lim	Xin Kin	Research	IMBRSea
Mohammed Moinuddin	Sheam	Research	IMBRSea
Nhaca	Jeremias	Research	VUB/UAnt/UGent - Oceans and Lakes
Oco	Regine Conda	Research	VUB/UAnt/UGent - Oceans and Lakes
Pohl	Lotte	MOC	IMBRSea
Rommelaere	Zoe	MOC	Odisee Ugent
Schütte	Wyona	Research	IMBRSea
Soroka	Taylor Emily	Research	VUB

Other students supervised by VLIZ in 2023

Naam	Voornaam	Afdeling	Onderwijsinstelling
Adamopoulou	Argyro	Research	HCMR
Kallend	Auria	MOC	UGent
Markezic	Nora	MRC	OGS Italy
Mikhno	Marta	MOC	UGent
Nault	Nathan	Research	University of the Littoral Opal Coast (France)
Pasquier	Gabriel	Research	ULCO (FR)
Reis	Carolina	DAC	Brazilian Navy & Federal Fluminense University

Student employees supervised by VLIZ in 2023

Naam	Voornaam
Asatsa	Christine Nabwire
Bedoret	Coline
Bourdeaud'hui	Maxime
Chia-Yu	Chu
Deceuninck	Erin
Delanghe	Ludwig
Deleu	Daan
Delvenne	Cyrielle
Everaert	Mathias
Guevara	Michelle
Heyndricxk	Jef
Jacops	Ligeia
Mulhern	Kseniya
Navarro Gonzalez	Patricia
Razaq Saliu	Olayemi
Van der Haegen	Victoria

Attachment 4: Scientific equipment and infrastructure

Overview of scientific equipment and infrastructure for scientific research made available by VLIZ.

- Analytical device for Dissolved Inorganic Carbon
- Analytical device for oxygen based on Winkler titration
- Analytical device for seawater acidity
- Autonomous reef monitoring structures (ARMS)
- Autonomous broadband echosounder
- Autonomous Underwater Vehicle 'Barabas'
 - Small Side scan sonar
 - Sub-bottom profiler
 - CTD (Conductivity, Temperature, Depth)
 - Downward facing camera
 - Aanderaa oxygen optode
 - Eco puck triplet
 - Suna nitrate sensor
 - Pro-oceanus mini PCO₂
 - USBL (Ultra-Short Baseline)
 - ADCP (Acoustic Doppler Current Profiler)
- Batcorder
- Biology laboratory
- Bongo net
- Beam trawl
- Bongo net - otter trawl
- Bongo net - pelagic
- Bowers and Connelly multi-corer
- Porpoise detectors - C/F-PODs
- Carousel 6 x 4 liter Niskin bottles
- Chemical laboratory
- Compressor for filling diving cylinders
- Core repository - cold store for drill cores
- Continuous plankton imaging system
- CTD equipped with sensors for:
 - Photosynthetically Active Radiation (PAR)
 - Dissolved Oxygen and Redox Potential (ORP)
 - Turbidity
 - Chlorophyll a
- Freezers
- Aeolian sand transport measurement system
- Fast Repetition Rate Fluorometer (FrrF)
- Flow cytometer
- FlowCam
- Gilson dredge
- Underwater Glider 'Yoko'
 - ADCP
 - CTD
 - Dissolved oxygen
 - Turbidity (Eco puck)
 - Fluorescence (Eco puck)
- Go-flo bottle 10 liters
- Hamon grab
- Hydrophone
- Hyperbenthic sledge
- Meteorological instruments on board RV Simon Stevin:
 - Atmospheric pCO₂
 - Wind speed

- Wind direction
 - Temperature
 - Air pressure
- Methane sensor
- Molecular laboratory
- Multibeam sonar
- Multibeam sonar system for shallow areas
- Multi-sensor mooring with acoustic release
- Multi-transducer sub-bottom echosounder
- Niskin bottle 5 liters
- Nutrient analysis device
- Underwater camera
- Sedimentation table
- Apstein plankton net
- Calcofi plankton net trawl
- Vertical WP2 plankton net
- Reineck box corer
- RIB Zeekat
- Secchi disk
- Sediment Profile Imaging (SPI)
- Nortek Signature 1000 ADCP (profiling, wave measurement and turbulence)
- Nortek Signature 500 ADCP (profiling, wave measurement and turbulence)
- Nortek AWAC ADCP (profiling, wave measurement)
- pLog pressure sensor (HF pressure sensors)
- RBR Quartz pressure sensor
- Sparker
- Total alkalinity sensor
- LISST-100X and LISST-200X turbidity meters
- Underway data acquisition system on board RV Simon Stevin with:
 - Thermosalinograph
 - Fluorometer
 - Atmospheric pCO₂ analysis device
 - Oxygen sensor
 - Turbidity sensor
- USV 'Adhemar'
 - ADCP
 - Seabird FastCat CTD
 - Airmar Weather Station
 - Vemco acoustic tag receiver
 - Aanderaa O₂ Optode
 - ECO Puck Triplet
 - Forward and aft facing cameras
 - AIS receiver
 - Micro PAM
- Van Veen grab
- Fish telemetry receiver network in Westerschelde and coastal waters
- Vibrocorer
- Video frame
- Video plankton recorder
- Water tanks for marine organisms
- Zooscan

Attachment 5: Research projects with utilization of VLIZ research infrastructure

Research projects that used the RV Simon Stevin in 2023

Marine Research group	Project
FPS Economy – Continental Shelf Service	Mapping gradients in seafloor characteristics
FPS Economy – Continental Shelf Service	Sediment Plume Dispersion
ILVO - Fisheries	Demersal Young Fish Survey (DYFS)
ILVO - Fisheries	I CATCH
ILVO - Fisheries	LED
INBO	Monitoring of seabirds
KUL – Dept Aard- en Omgevingswetenschappen	Quantifying eco-morphodynamic interactions
OD Nature	BG-Part
Ugent - Marine biology	SUSANA
Ugent - ARC	ULTFARMS
Ugent – Vakgroep Veterinaire Pathologie	In-vitro model voor huidziekten vissen
Ugent - Ghenecontox	Spatiotemporal dynamics zooplankton
University of Antwerp	Electrified sediment ecosystems
VLIZ	ICOS
VLIZ	LifeWatch
VLIZ	FishIntel
VLIZ	APELAFICO
VLIZ	PLUXIN
VLIZ	JERICO-Next
VLIZ	Paleolandscapes of the Southern North Sea
VLIZ	Exploration Zone
VLIZ	Life on the Edge
VLIZ	FISHCONNECT
VLIZ	EMOBON
VLIZ	Net op Zee
VLIZ	PELAFISH
VLIZ	BioBlitz
VLIZ	Planeet Zee
VLIZ	Genomic Observatories

Research projects that used the Marine Station Ostend in 2023

Gebuurkte MSO-infrastructuur	Reden	Mariene onderzoeksgroep
Courtyard	DISARM - opstelling corrosie experimenten	HZS Antwerpen
Mesocosms	Enhanced Silicate Weathering	VLIZ, Universiteit Antwerpen
Lab infrastructuur	ICOS	VLIZ
Lab infrastructuur	LifeWatch	VLIZ
Seawater tanks & courtyard	SEATAMIN	Ugent
Seawater tanks	Marine Floating PV	Ugent
Seawater tanks	UNITED	Ugent

Attachment 6: Events

Events (co)organized by VLIZ in 2023

Date	Title	Location	Participants
16 jan 2023	JDA ARMS kick-off meeting	InnovOcean Campus	7
16 jan 2023 tot 17 jan 2023	Ostend Working Group O&HH - Break-out rooms + Plenary	InnovOcean Campus	26
17 jan 2023 tot 18 jan 2023	WoRMS - finalising WoRMS metrics paper	InnovOcean Campus	4
18 jan 2023	SeaBioComp Partner Meeting	InnovOcean Campus	25
18 jan 2023	Bijscholing voor leerkrachten: Een oceaan vol plastic	UAntwerpen	25
19 jan 2023	SeaBioComp Conference	InnovOcean Campus	75
20 jan 2023	Journal Club	InnovOcean Campus	5
23 jan 2023	MAREGRAPH project	InnovOcean Campus	25
25 jan 2023	Ecopath model overleg	InnovOcean Campus	3
26 jan 2023	LifeWatch Biodiversity Day 2022 - Habitat mapping	KVAB, Brussel	100
26 jan 2023	EGMONT visit	InnovOcean Campus	15
27 jan 2023	NIOZ - VLIZ bibliotheek	InnovOcean Campus	6
27 jan 2023	ISA - VLIZ meeting	InnovOcean Campus	6
27 jan 2023	Stakeholderbevraging MSP4BIO	InnovOcean Campus	3
2 jan 2023	Kick-off event LL Raversijde	InnovOcean Campus	67
6 jan 2023	VLIZ PhD Symposium	InnovOcean Campus	50
8 jan 2023	MARBEFES Steering Board	InnovOcean Campus	5
14 jan 2023	Stad Oostende - (geo)dataoverleg	InnovOcean Campus	9
15 jan 2023	Kick-off meeting + Gebruikersgroep Clay Tectonics	InnovOcean Campus	32
17 jan 2023	IMBRSea Methods in experimental marine ecology	InnovOcean Campus	25
22 jan 2023	MSP4BIO Interview	InnovOcean Campus	3
23 jan 2023	SHMEAGOL planning meeting	InnovOcean Campus	4
24 jan 2023	Journal Club	InnovOcean Campus	7
28 jan 2023	HyperNet POP Workplan	InnovOcean Campus	4
7 feb 2023 tot 8 feb 2023	MARBEFES Steering Committee meeting	InnovOcean Campus	15
1 mrt 2023	VLIZ Marine Science Day	BMCC Brugge	400
3 mrt 2023	Coastbusters 2.0 Decommissioning	InnovOcean Campus	12
7 mrt 2023	Overleg VLIZ - provincie	InnovOcean Campus	5
9 mrt 2023	Opleiding schelpen herkennen	InnovOcean Campus	47
14 mrt 2023	Overleg vzw Kustcampings	InnovOcean Campus	12
15 mrt 2023	Bezoek Koperen Passer	InnovOcean Campus	50
17 mrt 2023	ASP-net Vlaanderen	InnovOcean Campus	61
17 mrt 2023	Wetenschappelijke Kerngroep	InnovOcean Campus	15
20 mrt 2023 tot 21 mrt 2023	MSP4BIO_Next GA	InnovOcean Campus	37
23 mrt 2023	VLIZ PhD Symposium	InnovOcean Campus	50
24 mrt 2023	VLIZ_Porpoise meeting	InnovOcean Campus	3

25 mrt 2023	Grote Schelpenteldag	MSO	500
28 mrt 2023	BAR kick-off meeting	InnovOcean Campus	21
28 mrt 2023 tot 30 mrt 2023	MongoDB workshop March - 1	InnovOcean Campus	13
30 mrt 2023	ESFRI Collaboration	InnovOcean Campus	20
21 apr 2023	VLIZ_TREC voordrachten	InnovOcean Campus	50
26 apr 2023	VLIZ_MARBEFES SH survey	InnovOcean Campus	6
2 mei 2023	VLIZ_VOC website migratie drupal7 -> drupal9	InnovOcean Campus	3
2 mei 2023	VLIZ_Greenfeedback	MSO	5
2 mei 2023	Overleg website IKUWA8	InnovOcean Campus	2
2 mei 2023 tot 4 mei 2023	WoRMS Steering Committee meeting	InnovOcean Campus	18
3 mei 2023	VLIZ_Overleg Oostende havengemeenschap	InnovOcean Campus	4
3 mei 2023	VLIZ_Regional Innovation Valleys	InnovOcean Campus	5
4 mei 2023	VLIZ_Kennismakingsevent vzw Kustcampings	InnovOcean Campus	30
5 mei 2023	VLIZ_Decanet Symbiose Workshop	InnovOcean Campus	18
8 mei 2023	VLIZ_PlaneetZee - brainstorm leerkrachten	InnovOcean Campus	20
9 mei 2023	VLIZ_PlaneetZee - schoolbezoek	InnovOcean Campus	15
10 mei 2023	VLIZ_PlaneetZee - brainstorm leerkrachten	InnovOcean Campus	20
11 mei 2023 tot 12 mei 2023	Hotels and the Registration of Travelers, Migrants and Tourists	InnovOcean Campus	25
13 mei 2023	Buurtdag InnovOcean Campus	InnovOcean Campus	1 000
15 mei 2023	VLIZ_MARBEFES SH survey	InnovOcean Campus	5
15 mei 2023	VLIZ_Bezoek Facultair Bestuur Geneeskunde UGent	InnovOcean Campus	12
16 mei 2023	EMBRC-BE Event	InnovOcean Campus	60
16 mei 2023	VLIZ_MARBEFES SH survey	InnovOcean Campus	5
16 mei 2023	VLIZ_Bezoek ambassade Indonesië	InnovOcean Campus	5
17 mei 2023	VLIZ_Overleg regional innovation valley	InnovOcean Campus	9
22 mei 2023 tot 24 mei 2023	The Wave - World Ocean Day - Pint of Science	De Kaap	100
23 mei 2023	Esero - VLIZ/PlaneetZee	InnovOcean Campus	4
25 mei 2023	VLIZ_Geohydra 3D modelling	InnovOcean Campus	4
25 mei 2023	VLIZ_WALDO follow-up committee meeting	InnovOcean Campus	5
30 mei 2023	VLIZ_ANERIS workshop	InnovOcean Campus	10
30 mei 2023	VLIZ_Vergadering Ria Bruynseels VLAIO	InnovOcean Campus	1
31 mei 2023	VLIZ_ANERIS workshop	InnovOcean Campus	10
1 juni 2023 tot 4 juni 2023	Oostende voor Anker	Oostendse Binnenstad	1 000
2 juni 2023	VLIZ_Vergadering WWF-Natuurpunt	InnovOcean Campus	2
2 juni 2023	VLIZ_Overleg offshore security	InnovOcean Campus	6
2 juni 2023	Wetenschappelijke Kerngroep	InnovOcean Campus	15
6 juni 2023	VLIZ_Onderzoek 'Persoonlijke reacties op onze omgeving'	InnovOcean Campus	15
8 juni 2023	VLIZ_Regional Innovation Valleys	InnovOcean Campus	6
9 juni 2023	VLIZ_Onderzoek 'Persoonlijke reacties op onze	InnovOcean Campus	15

	omgeving'		
13 juni 2023	Meeting FAO (NFISI) - EWI / ILVO / VLIZ	InnovOcean Campus	6
14 juni 2023	Bezoek Koperen Passer W1 clubs 11/12	InnovOcean Campus	50
16 juni 2023	VLIZ_LifeWatch.BE project meeting	InnovOcean Campus	5
16 juni 2023	VLIZ_Ambassade Panama	InnovOcean Campus	1
19 juni 2023	Sustainable Blue Economy Partnership meeting	InnovOcean Campus	20
23 juni 2023	VLIZ_Stage - PlanktoScope	InnovOcean Campus	5
23 juni 2023	VLIZ_Bezoek van aspirant-diplomaten aan Oostende (DKBUZA)	InnovOcean Campus	23
23 juni 2023	Ledendag 2023	MSO	250
26 juni 2023	VLIZ_MCMLab	InnovOcean Campus	30
26 juni 2023	VLIZ_Vergadering DEME-VLIZ	InnovOcean Campus	9
27 jun 2023 tot 28 jun 2023	VLIZ_INSPIRE KoM	InnovOcean Campus	50
28 juni 2023	VLIZ_INVEMAR	InnovOcean Campus	10
29 juni 2023	VLIZ_DISARM progress meeting	InnovOcean Campus	8
4 juli 2023	VLIZ_Sustainable Blue Economy Partnership (Core Group)	InnovOcean Campus	18
4 juli 2023	VLIZ_Odysea	InnovOcean Campus	4
4 juli 2023	VLIZ_Stakeholder meeting MARBEFES	InnovOcean Campus	3
5 juli 2023	VLIZ_Opleiding LifeWatch-website	InnovOcean Campus	3
6 juli 2023	VLIZ_Meeting Clay Tectonics	InnovOcean Campus	8
13 juli 2023	VLIZ_Treasure Project	InnovOcean Campus	5
13 juli 2023	VLIZ_Bezoek Marine	InnovOcean Campus	5
25 juli 2023	VLIZ_BE-Contribution REMARCO	InnovOcean Campus	4
28 juli 2023	VLIZ_Bezoek NEOS Oostende	InnovOcean Campus	50
4 aug 2023	VLIZ_Interview Testerep magazine – Meeuwen	InnovOcean Campus	4
7 aug 2023	Tweeweg IT – veeam	InnovOcean Campus	5
11 aug 2023	VLIZ_Zeewoorden redactie	InnovOcean Campus	10
17 aug 2023	VLIZ_Com&Sea	InnovOcean Campus	15
18 aug 2023	Training LifeWatch website	InnovOcean Campus	5
21 aug 2023	VLIZ_Bestuur Faculteit Bio-ingenieurswetenschappen – Universiteit Gent	MSO & InnovOcean Campus	41
23 aug 2023	VLIZ_Satellite event OceanData2030 - Marine Regions	InnovOcean Campus	4
24 aug 2023	Wetenschapshaven startmeeting	InnovOcean Campus	8
31 aug 2023	VLIZ_Kennismaking boekhoudkantoor	InnovOcean Campus	4
31 aug 2023	VLIZ_Wetenschapshaven	InnovOcean Campus	8
1 sept 2023	VLIZ_Overleg Gouverneur	InnovOcean Campus	4
4 sept 2023	VLIZ_Persconferentie Gouverneur West-Vlaanderen	InnovOcean Campus	20
5 sept 2023	VLIZ_overleg SeaMoose - logo WCMB 2026	InnovOcean Campus	3
5 sept 2023	VLIZ_MarineInfo Logo	InnovOcean Campus	5
7 sept 2023	VLIZ_Vergadering VLAIO Circulaire en Bio-economie	InnovOcean Campus	9
7 sept 2023	VLIZ_Clay Tectonics project meeting	InnovOcean Campus	12

7 sept 2023	VLIZ_Clay Tectonics Lab	InnovOcean Campus	22
7 sept 2023	VLIZ_Break out Clay Tectonics	InnovOcean Campus	2
9 sept 2023	VLIZ_Alumni Mariene Masters	InnovOcean Campus	60
11 sept 2023	VLIZ_Wetenschapshaven	InnovOcean Campus	8
11 sept 2023	VLIZ_Overleg IKUWA8	InnovOcean Campus	6
13 sept 2023	VLIZ_Bio-Oracle & Modelling	InnovOcean Campus	3
14 sept 2023	VLIZ_Expertengroep Compendium voor Kust en Zee - Bespreking IR2023	InnovOcean Campus	25
14 sept 2023	VLIZ_STEM-project Don Bosco Kortrijk	InnovOcean Campus	35
14 sept 2023	VLIZ_Cassandra F/S for integrated NbS	InnovOcean Campus	5
18 sept 2023	VLIZ_Wetenschapshaven	InnovOcean Campus	8
20 sept 2023	VLIZ - HPe meet	InnovOcean Campus	6
20 sept 2023	VLIZ_Bezoek Vlaamse diplomaten	InnovOcean Campus	30
21 sept 2023	VLIZ_Bezoek Koperen Passer Erasmus (A'pen)	InnovOcean Campus	30
22 sept 2023	VLIZ_ARMS JDA technical meeting	InnovOcean Campus	8
22 sept 2023	VLIZ_Promo-overleg experimentenboek	InnovOcean Campus	4
25 sept 2023	VLIZ_Zeewoorden redactie II	InnovOcean Campus	10
25 sept 2023	VLIZ_Wetenschapshaven	InnovOcean Campus	8
26 sept 2023	VLIZ.DTO-BioFlow preparation	InnovOcean Campus	2
26 sept 2023	VLIZ_Overleg Grote Rede Bredero Graphics	InnovOcean Campus	4
27 sept 2023	VLIZ_Visit Ambassador Iceland	InnovOcean Campus	4
27 sep 2023 tot 28 sept 2023	VLIZ_DT BioFlow kick off meeting	InnovOcean Campus	59
28 sept 2023	VLIZ.DTO BioFlow kick off_break out rooms	InnovOcean Campus	65
29 sept 2023	VLIZ_DT BioFlow kick off meeting_Steering Committee	InnovOcean Campus	16
29 sept 2023	VLIZ_Brainstorm: Artic Marine Science	InnovOcean Campus	18
2 okt 2023	VLIZ-JRC- MUNDUS MARIS	InnovOcean Campus	12
2 okt 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	8
4 okt 2023	VLIZ_Stakeholder project Testerep	InnovOcean Campus	15
5 okt 2023	VLIZ_Research noon seminar-Chile edition	InnovOcean Campus	15
9 okt 2023	Overleg wetenschapshaven	InnovOcean Campus	8
10 okt 2023	VLIZ_Overleg kustgidsendag	InnovOcean Campus	3
10 okt 2023	VLIZ_Mobiliteit	InnovOcean Campus	5
13 okt 2023	Borgerhoff & Lamberigts	InnovOcean Campus	2
16 okt 2023	VLIZ_CoastBusters Day	InnovOcean Campus	170
16 okt 2023	VLIZ_MAE Visit to VLIZ	InnovOcean Campus	9
16 okt 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	8
16 okt 2023	VLIZ_Sandresource	InnovOcean Campus	3
16 okt 2023 tot 20 okt 2023	VLIZ_IRSO Conference	Grand Hotel Casselbergh, Brugge	129
18 okt 2023	VLIZ_Testerep brainstorm	InnovOcean Campus	12
18 okt 2023	VLIZ_Bedrijfsbezoek Groep Noël Dewulf	InnovOcean Campus	50
18 okt 2023	VLIZ_Bezoek Wandelclub Bredene	InnovOcean Campus	20

19 okt 2023	VLIZ_Nagoya&ABS Marine	InnovOcean Campus	12
20 okt 2023	VLIZ_HoGent Business Analyse interview	InnovOcean Campus	6
20 okt 2023	VLIZ_Overleg VLIZ - POM W-VL	InnovOcean Campus	4
20 okt 2023	VLIZ_Bird data explorer	InnovOcean Campus	3
23 okt 2023	VLIZ_CoP Ultfarms	InnovOcean Campus	14
23 okt 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	8
23 okt 2023	VLIZ_Meeting POM W-VL - VLIZ	InnovOcean Campus	4
26 okt 2023	VLIZ_Blue Mission Banos Workshop	InnovOcean Campus	15
26 okt 2023	VLIZ_BARYON: Infographic IR2023	InnovOcean Campus	5
27 okt 2023	VLIZ_Brainstorm Zeekrant	InnovOcean Campus	5
30 okt 2023	Overleg wetenschapshaven	InnovOcean Campus	8
6 nov 2023	VLIZ_ERP Fase 2	InnovOcean Campus	15
6 nov 2023	VLIZ_Wetenschapshaven	InnovOcean Campus	8
6 nov 2023 tot 7 nov 2023	VLIZ_ERP Fase 2	InnovOcean Campus	20
6 nov 2023 tot 10 nov 2023	VLIZ_ICOS/SOCAT Meeting	InnovOcean Campus	125
7 nov 2023	VLIZ_Blue Balance Project Meeting	InnovOcean Campus	12
10 nov 2023	VLIZ_Brainstorm Interreg	InnovOcean Campus	8
13 nov 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	8
16 nov 2023	Meeting Clay Tectonics	InnovOcean Campus	6
20 nov 2023	VLIZ_POM meeting	InnovOcean Campus	4
20 nov 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	8
21 nov 2023	VLIZ_Miricle Meeting	InnovOcean Campus	63
21 nov 2023	VLIZ_300 Jaar Oostendse Compagnie - Publieke Lezing	InnovOcean Campus	100
22 nov 2023	VLIZ_Visit Welsh Minister for Climate Change	InnovOcean Campus	8
22 nov 2023	VLIZ_Algemene Vergadering Hydro vzw	InnovOcean Campus	10
22 nov 2023	VLIZ_APHIA Branding	InnovOcean Campus	4
23 nov 2023 tot 24 nov 2023	VLIZ_300 Jaar Oostendse Compagnie	InnovOcean Campus	46
24 nov 2023 tot 26 nov 2023	VLIZ_Dag van de Wetenschap 2023	MSO	500
27 nov 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	8
27 nov 2023	VLIZ_Overleg Belgian Climate Centre	InnovOcean Campus	7
28 nov 2023	VLIZ_MSP4BIO CoP workshop	InnovOcean Campus	8
28 nov 2023	VLIZ_Bezoek VUB	InnovOcean Campus	5
28 nov 2023	VLIZ_MSP4BIO CoP workshop	InnovOcean Campus	8
29 nov 2023	VLIZ_Bezoek Senior Consultants VI	InnovOcean Campus	30
30 nov 2023	VLIZ_DISARM Progress meeting	InnovOcean Campus	18
1 dec 2023	VLIZ_Wetenschappelijke Kerngroep	InnovOcean Campus	15
1 dec 2023	VLIZ_Wetenschappelijke Klankbordgroep	InnovOcean Campus	100
4 dec 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	8
6 dec 2023	VLIZ_INSPIRE General Assembly	InnovOcean Campus	3
7 dec 2023	VLIZ_PWC	InnovOcean Campus	5

8 dec 2023	VLIZ_1st LifeWatch Advisory Board	InnovOcean Campus	13
8 dec 2023	VLIZ_Grote Rede redactie	InnovOcean Campus	12
11 dec 2023	ULCO-TREASURE	InnovOcean Campus	10
11 dec 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	16
14 dec 2023	VLIZ_DISARM Stakeholderoverleg	InnovOcean Campus	35
14 dec 2023	TESTEREP - Team meeting	InnovOcean Campus	8
14 dec 2023	VLIZ_Plastic Pirates Belgium KO	InnovOcean Campus	21
14 dec 2023	WoRMS SC Meeting	InnovOcean Campus	5
15 dec 2023	VLIZ_IG-Waves Partner Meeting	InnovOcean Campus	11
18 dec 2023	Security awareness training	InnovOcean Campus	25
18 dec 2023	VLIZ_Wetenschapshaven	InnovOcean Campus	8
18 dec 2023	VLIZ_Overleg wetenschapshaven	InnovOcean Campus	8

Attachment 7: Publications

Regulatory publications

VLIZ Policy Information Briefs

Dauwe, S.; Pirlet, H.; Gkritzalis, T.; Landschützer, P. (2023). The opportunities and challenges of marine carbon accounting - a case study for the North Sea shelf ecosystem and the potential value of the ICOS Oceans Network. *VLIZ Beleidsinformerende Nota's, 2023_01*. Flanders Marine Institute (VLIZ): Ostend. 34 pp. <https://dx.doi.org/10.48470/34meer>

Devriese, L.I.; Janssen, C.R. (2023). Beleidsinformerende Nota: Overzicht van het onderzoekslandschap en de wetenschappelijke informatie inzake (marien) zwerfvuil en microplastics in België. *VLIZ Beleidsinformerende Nota's, 2023_002*. Vlaams Instituut voor de Zee (VLIZ): Oostende. 54 pp. <https://dx.doi.org/10.48470/64meer>

De Grote Rede

(2023). De Grote Rede 57. *De Grote Rede: Nieuws over onze Kust en Zee, 57*. Vlaams Instituut voor de Zee (VLIZ): Oostende. 32 pp. [meer](#)

(2023). De Grote Rede 58. *De Grote Rede: Nieuws over onze Kust en Zee, 58*. Vlaams Instituut voor de Zee (VLIZ): Oostende. 32 pp. [meer](#)

Annual report

Mees, J.; Mertens, T.; Seys, J.; De Smet, B.; Coulembier, E.; Muyldermans, M. (2023). VLIZ Jaarboek 2022. *VLIZ Jaarboek = VLIZ Annual Report*. Vlaams Instituut voor de Zee (VLIZ): Oostende. 100 pp. [meer](#)

Annual report for Donors

Mees, J.; Mertens, T.; Rappé, K. (Ed.) (2023). VLIZ Jaarverslag voor schenkers 2022. *VLIZ Jaarverslag voor schenkers*. Vlaams Instituut voor de Zee (VLIZ): Oostende. 20 pp. [meer](#)

Testerep magazine

In 2023, a total of 10 issues of the e-newsletter Testerep appeared.

Zeekrant

Seys, J.; Bogaert, K.; Tavernier, I.; De Smet, B.; Fockedey, N.; Bauwens, S.; Depoorter, M. (Ed.) (2023). Zeekrant 2023: jaarlijkse uitgave van het Vlaams Instituut voor de Zee en de Provincie West-Vlaanderen. *Zeekrant ... : jaarlijkse uitgave van het Vlaams Instituut voor de Zee en de Provincie West-Vlaanderen*. Vlaams Instituut voor de Zee (VLIZ)/Provincie West-Vlaanderen: Oostende. 8 pp. [meer](#)

VLIZ Special Publications

Mees, J.; Seys, J. (Ed.) (2023). Book of abstracts – VLIZ Marine Science Day, 1 March 2023, Bruges. *VLIZ Special Publication*, 90. Vlaams Instituut voor de Zee - Flanders Marine Institute (VLIZ): Oostende. vi + 112 pp. <https://dx.doi.org/10.48470/41meer>

VLIZ Library Acquisitions

In 2023, a total of 38 Library Acquisitions lists were sent out by e-mail.

Ad hoc publications

Bacchi, A.; Berqué, F.; Duriez, A.; Fockedey, N.; Stoops, S.; Torreele, E.; Vallet, E. (Ed.) (2023). Guide des espèces à l'usage des professionnels. Pour un marché des produits de la mer durables. Édition 2023. Ethic Ocean: Paris. ISBN 978-2-9565028-7-6. 234 pp. [meer](#)

Janssen, C.; Mees, J. (2023). De onbekende zee: Het belang van de oceaan voor mens en planeet. Academia Press: Gent. ISBN 978-94-014-9137-2. 300 pp. [meer](#)

National Ocean Decade Committee Belgium (2023). National Decade Committee for Belgium (NDC-BE) Handbook. First edition. Flanders Marine Institute (VLIZ): Ostend. 20 pp. <https://dx.doi.org/10.48470/63 meer>

Scientific publications

Peer reviewed

Bouchet, P.; Decock, W.; Lonnaville, B.; Vanhoorne, B.; Vandepitte, L. (2023). Marine biodiversity discovery: The metrics of new species descriptions. *Front. Mar. Sci.* 10: 1-14. <https://dx.doi.org/10.3389/fmars.2023.929989 meer>

Boyen, J.; Ribes-Navarro, A.; Kabeya, N.; Monroig, Ó.; Rigaux, A.; Fink, P.; Hablützel, P.I.; Navarro, J.C.; De Troch, M. (2023). Functional characterization reveals a diverse array of metazoan fatty acid biosynthesis genes. *Mol. Ecol.* 32(4): 970-982. <https://dx.doi.org/10.1111/mec.16808 meer>

Castagna, A.; Dierssen, H.; Devriese, L.; Everaert, G.; Knaeps, E.; Sterckx, S. (2023). Evaluation of historic and new detection algorithms for different types of plastics over land and water from hyperspectral data and imagery. *Remote Sens. Environ.* 298: 113834. <https://dx.doi.org/10.1016/j.rse.2023.113834 meer>

Catarino, A.I.; Asselman, J.; Khan, F.R.; Everaert, G. (2023). Editorial: Plastic pollution in a changing marine environment: effects and risk. *Front. Mar. Sci.* 10: 1213393. <https://dx.doi.org/10.3389/fmars.2023.1213393 meer>

Catarino, A.I.; León, M.C.; Li, Y.; Lambert, S.; Vercauteren, M.; Asselman, J.; Janssen, C.; Everaert, G.; De Rijcke, M. (2023). Micro- and nanoplastics transfer from seawater to the atmosphere through aerosolization under controlled laboratory conditions. *Mar. Pollut. Bull.* 192: 115015. <https://dx.doi.org/10.1016/j.marpolbul.2023.115015 meer>

Catarino, A.I.; Mahu, E.; Severin, M.I.; Akpetou, K.L.; Annasawmy, P.A.; Asuquo, F.E.; Beckman, F.; Benomar, M.; Jaya-Ram, A.; Malouli, M.; Mees, J.; Monteiro, I.; Dwiga, J.; Silva, P.N.; Nubi, O.A.; Martin-Cabrera, P.; Sim, Y.K.; Sohau, Z.; Pinn, W.S.; Zizah, S.; Everaert, G.; Hwai, T.S.; Krug, L.A.; Seeyave, S. (2023). Addressing data gaps in marine litter distribution: Citizen science observations of plastic pollution in coastal ecosystems by high-school students. *Front. Mar. Sci.* 10: 1126895. <https://dx.doi.org/10.3389/fmars.2023.1126895 meer>

Catarino, A.I.; Patsiou, D.; Summers, S.; Everaert, G.; Henry, T.B.; Gutierrez, T. (2023). Challenges and recommendations in experimentation and risk assessment of nanoplastics in aquatic organisms. *Trends Anal. Chem.* 167: 117262. <https://dx.doi.org/10.1016/j.trac.2023.117262 meer>

Davies, P.; LeGall, M.; Niu, Z.; Catarino, A.I.; De Witte, Y.; Everaert, G.; Dhakal, H.; Park, C.H.; Demeyer, E. (2023). Recycling and ecotoxicity of flax/PLA composites: Influence of seawater ageing. *Composites Part C: Open Access* 12: 100379. <https://dx.doi.org/10.1016/j.jcomc.2023.100379 meer>

De Grave, S.; Decock, W.; Dekeyser, S.; Davie, P.J.F.; Franssen, C.H.J.M.; Boyko, C.B.; Poore, G.C.B.; MacPherson, E.; Ah Yong, S.T.; Crandall, K.A.; de Mazancourt, V.; Osawa, M.; Chan, T.-Y.; Ng, P.K.L.; Lemaitre, R.; van der Meij, S.E.T.; Santos, S. (2023). Benchmarking global biodiversity of decapod crustaceans (Crustacea: Decapoda). *J. Crust. Biol.* 43(3): ruad042. <https://dx.doi.org/10.1093/jcobiol/ruad042 meer>

de Pontual, H.; Heerah, K.; Goossens, J.; Garren, F.; Martinez, S.; Le Ru, L.; Le Roy, D.; Woillez, M. (2023). Seasonal migration, site fidelity, and population structure of European seabass (*Dicentrarchus labrax*). *ICES J. Mar. Sci./J. Cons. int. Explor. Mer fsad087*: 1-13. <https://dx.doi.org/10.1093/icesjms/fsad087 meer>

DeVries, T.; Yamamoto, K.; Wanninkhof, R.; Gruber, N.; Hauck, J.; Müller, J.D.; Bopp, L.; Carroll, D.; Carter, B.; Chau, T.-T.-T.; Doney, S.C.; Gehlen, M.; Gloege, L.; Gregor, L.; Henson, S.; Kim, J.H.; Iida, Y.; Ilyina, T.; Landschützer, P.; Le Quéré, C.; Munro, D.; Nissen, C.; Patara, L.; Pérez, F.F.; Resplandy, L.; Rodgers, K.B.; Schwinger, J.; Séférian, R.; Sicardi, V.; Terhaar, J.; Trinanes, J.; Tsujino, H.; Watson, A.; Yasunaka, S.; Zeng, J. (2023). Magnitude, trends, and variability of the global ocean carbon sink from 1985-2018. *Global Biogeochem. Cycles* 37(10): e2023GB007780. <https://dx.doi.org/10.1029/2023gb007780 meer>

Di Natale, M.; Catarino, A.I.; Summers, S.; Boyle, D.; Torri, M.; Nicosia, A.; Musco, M.; Masullo, T.; Russo, S.; Bennici, C.D.; Mazzola, A.; Cuttitta, A.; Henry, T.B. (2023). Influence of microplastic-associated biofilms on the bioavailability

of a mixture of cadmium and benzo[a]pyrene by the analysis of biomarker gene expression in larval zebrafish. *Ecol. Indic.* 152: 110369. <https://dx.doi.org/10.1016/j.ecolind.2023.110369> meer

Duke, P.J.; Hamme, R.C.; Ianson, D.; Landschützer, P.; Ahmed, M.M.M.; Swart, N.C.; Covert, P.A. (2023). Estimating marine carbon uptake in the northeast Pacific using a neural network approach. *Biogeosciences* 20(18): 3919-3941. <https://dx.doi.org/10.5194/bg-20-3919-2023> meer

Falk-Andersson, J.; Rognerud, I.; De Frond, H.; Leone, G.; Karasik, R.; Diana, Z.; Dijkstra, H.; Ammendolia, J.; Eriksen, M.; Utz, R.; Walker, T.R.; Fürst, K. (2023). Cleaning up without messing up: Maximizing the benefits of plastic clean-up technologies through new regulatory approaches. *Environ. Sci. Technol.* 57(36): 13304-13312. <https://dx.doi.org/10.1021/acs.est.3c01885> meer

Feys, T. (2023). Book Review: *Migration and Development in Southern Europe and South America* by Maria Damilakou and Yannis G.S. Papadopoulos. *The Journal of Transport History Online first*: 1-3. <https://dx.doi.org/10.1177/00225266231184073> meer

Gan, Y.-M.; Perez Perez, R.; Provoost, P.; Benson, A.; Peralta Brichtova, A.C.; Lawrence, E.; Nicholls, J.; Konjarla, J.; Sarafidou, G.; Saeedi, H.; Lear, D.; Penzlin, A.; Wambiji, N.; Appeltans, W. (2023). Promoting high-quality data in OBIS: Insights from the OBIS Data Quality Assessment and Enhancement Project Team. *Biodiversity Information Science and Standards* 7: e112018. <https://dx.doi.org/10.3897/biss.7.112018> meer

Goossens, J.; Villagra, D.; De Putter, G.; Verhelst, P.; Torrele, E.; Moens, T.; Reubens, J. (2023). Fisheries measures protect European seabass groups with distinct habitat use differently. *ICES J. Mar. Sci./J. Cons. int. Explor. Mer* 80(7): 1899-1910. <https://dx.doi.org/10.1093/icesjms/fsad116> meer

Goossens, J.; Woillez, M.; LeBris, A.; Verhelst, P.; Moens, T.; Torrele, E.; Reubens, J. (2023). Acoustic and archival technologies join forces: A combination tag. *Methods Ecol. Evol.* 14(3): 860-866. <https://dx.doi.org/10.1111/2041-210x.14045> meer

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Hauck, J.; Nissen, C.; Landschützer, P.; Rödenbeck, C.; Bushinsky, S.; Olsen, A. (2023). Sparse observations induce large biases in estimates of the global ocean CO₂ sink: an ocean model subsampling experiment. *Philos. Trans. - Royal Soc., Math. Phys. Eng. Sci.* 381(2249): 20220063. <https://dx.doi.org/10.1098/rsta.2022.0063> meer

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- Grote Schelpenteldag: aankondiging – **1 February 2023**
- Vismigratie STRAIGHTS – **24 February 2023**
- Grote Schelpenteldag: resultaten – **29 March 2023**
- Pint of Science: 'Hoe vervuild is onze Noordzee' – **15 May 2023**
- EMB zuurstof – 'Meeste zuurstof die we ademen (86%) komt uit zee' – **13 June 2023**
- Oostendse Compagnie – 'Driehonderd jaar Oostendse Compagnie in de kijker' – **21 November 2023**