

# 2014

ANNUAL REPORT



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Established in 1999, the Flanders Marine Institute (VLIZ) has evolved into the central coordination and information platform for marine scientific research in Flanders. VLIZ is a centre for marine and coastal research; it also promotes and supports the international image of Flemish marine scientific research and international marine education as a partner in various projects and networks.



# The 2014 VLIZ annual report

6 PREFACE

8 2014 HIGHLIGHTS

24 VLIZ ORGANISATION

34 VLIZ DIVISIONS

36 Coordination

40 Research Infrastructure

46 Data Centre

54 Library

58 Communication

64 Policy Information

70 SUPPORT OF INTERNATIONAL  
ORGANISATIONS

82 KEY PERFORMANCE INDICATORS

90 Colophon

Ostend, May 2015

# Annexes

Only available in digital format: downloadable from the VLIZ website [www.vliz.be/en/vliz-annual-report](http://www.vliz.be/en/vliz-annual-report)

- 3 Financial statement
- 5 Other indicators
- 19 National and international networks
- 21 External financing projects
- 29 Scientific equipment and infrastructure
- 31 2014 events
- 34 2014 publications



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Dear reader,

Close collaboration between the institute and the network of researchers, scientific institutions and administrations to which support is provided is crucial to VLIZ. The important research-supporting achievements from 2014 include the Marine Station Ostend, which became fully operational and was made available to researchers; the extension of the sailing schedule of RV Simon Stevin, whereby more time at sea can be provided to multidisciplinary marine research and education; the large number of (re)new(ed) cooperation agreements with authorities, the industry and scientific institutions in Belgium and abroad; the launch of the secretariat of the European Marine Observation and Data Network at the InnovOcean site; and the publication of products derived from the Compendium for Coast and Sea (Vademecum – Marine policy instruments and legislation for the Belgian part of the North Sea, Guide on Funding Instruments for Marine Research and Innovation Projects).

However, we do not just focus on professional marine researchers and users. Broad public involvement is central to the VLIZ activities. Elements promoting the interaction between the general public, teachers, pupils, students, scientists, policy makers and the industry are integrated in the organisation of events and conferences. Examples include the many lectures (World Oceans Day), workshops (SeArch seminar), networking opportunities (Young Marine Scientists' Day) and information sessions (Seaside Dip for Teachers) organised in 2014.

From 2014 onwards, VLIZ has added an extra dimension to its social policy. From now on, we also invest in philanthropy with a focus on the sea. This alternative funding method enables citizens to contribute to the VLIZ mission: to promote marine scientific research with a view to the sustainable management of marine resources and their preservation for future generations. The financial contribution may consist of membership, a donation, bequest, legacy or sponsoring. Through philanthropy, VLIZ will provide targeted support to projects worldwide which increase our scientific knowledge about the sea and raise public awareness of the major importance of oceans to humanity and the planet. A concrete example of a VLIZ project carried out under the umbrella of philanthropy is the beach observation network. Within this scope, experts and volunteers monitor the beach and the sea on a regular basis. A large volume of data is generated via this network. Scientists can use these data to analyse problems and come up with possible solutions. In the near future, the financial contributions will make it possible to grant scholarships for scientific research in topical ocean subjects and allow VLIZ to give young scientists the opportunity to gather knowledge and exchange experiences with colleagues in other coastal regions through its north-south programme. With this initiative, VLIZ is looking forward to a future where citizens are increasingly involved in the collection of scientific data regarding the oceans and thus get the chance to 'give something back' to the sea they care so much about.

We hope you enjoy reading this annual report!


**Jan Mees**

General Director of VLIZ









The Highlights are the special events, achievements, activities or projects of VLIZ that took place in 2014. They are often the result of intensive cooperation between various divisions. The information on these accomplishments of VLIZ is therefore no longer provided in the description of the divisions and is covered extensively in this chapter.

# Highlights

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## VLIZ recognised as a charity



### **A CONCRETE EXAMPLE OF A PHILANTHROPY PROJECT IS THE BEACH OBSERVATION NETWORK.**

With the help of volunteers and experts, VLIZ is developing a measuring network for our coastal waters.

© VLIZ

Thanks to donations, bequests and other financial contributions from private individuals and companies, VLIZ is now able to realise philanthropy projects. This includes initiatives that contribute to the scientific knowledge about coastal and marine areas and help develop a worldwide interdisciplinary network of marine researchers. These projects can be inspired by curiosity and wonder; in any case, they should contribute to sustainable ocean management in the short or long term by generating new scientific knowledge and measurement data. All possible research topics qualify, with a focus on emerging and new issues such as jellyfish blooms, plastic pollution, recently discovered phenomena and species, underwater archaeology and innovative technologies for sampling and exploration. In addition to local initiatives, VLIZ aims to give young scientists the opportunity to conduct research and exchange experiences with colleagues in other coastal regions through its north-south programme.

Each philanthropy project should communicate a neutral and objective message, and it is advisable that not just professional scientists but also youngsters and other layers of society are actively involved in the gathering and accumulation of knowledge (citizen science, ocean literacy). Each project proposal is submitted to the Scientific Committee of VLIZ. Every year, the Committee draws up a list of the projects to be funded, which is then submitted to the Board of Directors of VLIZ for approval.

A concrete example of a philanthropy project is the beach observation network. With the help of volunteers and experts, VLIZ is developing a measuring network for our coastal waters. The beach and the North Sea are monitored on a regular basis by means of specialised measuring equipment. This generates a large volume of data which our scientists can use to expand their knowledge, analyse problems and propose possible solutions.

## MSO operational

The Marine Station Ostend (MSO) has been operational since 2014. The satellite laboratory by the sea is at the disposal of all Flemish marine scientists and is used within the scope of European infrastructure networks Lifewatch, EMBRC and ICOS. Scientists from different marine research groups have made use of these VLIZ research facilities for a shorter or longer period in 2014 to conduct research (GhEnToxLab – UGent), to temporarily store their materials (INBO and OE) or to organise field training for students (MarBiol – UGent, RCMG – UGent).

The renovation of 'the house', part of the MSO, was finalised in 2014. This former residence now accommodates a chemical lab to support the activities within the scope of the ICOS project, two offices and a central multipurpose room on the ground floor. A kitchen, a central multipurpose room and two offices have been installed on the upper floor.

Following the renovation of the MSO warehouses, sanitary facilities have been built in shed 4. This shed contains a 235 m<sup>2</sup> space which is open for public events. An additional laboratory room has been installed in shed 2 to conduct molecular research within the scope of the European biodiversity project LifeWatch.

The technical workshop in shed 3 has been optimised. ROV Genesis does not have to leave the MSO for maintenance and repairs any longer, while it had to be transported to NIOZ in the past. The VLIZ marine technicians can now prepare the ROV for campaigns in the technical workshop, possibly with backup from NIOZ colleagues.

Communication on the scientific activities that take place at the MSO and on the building's function is crucial to its establishment as a recognised marine station in Ostend. To this end, communication must not be limited to researchers and policy makers; the general public needs to be informed as well through public events. The MSO therefore opened its doors for the first time on Science Day (23 November 2014). The marine scientists who worked at the station guided visitors and immersed them in the fascinating world of the North Sea. In the different sheds they discovered the wide range of equipment used by scientists to take samples at sea, the concept of eDNA, the great variety of zooplankton and macrobenthos and a few archaeological finds, and they were informed on the tagging of fish, birds and lobsters. The MSO received no less than 800 interested citizens on this open house day.



**ON SCIENCE DAY, THE MSO** opened its doors to the general public for the first time. The marine scientists who worked at the station guided visitors and immersed them in the fascinating world of the North Sea.

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**THE RENOVATION OF 'THE HOUSE'**, part of the MSO, was finalised in 2014. This former residence now accommodates a chemical lab, a multipurpose room, several offices and a kitchen.

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## Dutch-language and English-language policy-informing briefs



**A DUTCH CUTTER IS PULSE TRAWL FISHING:** mechanical stimulation by means of a beam trawl with tickler chains has been partly or fully replaced by electrical stimulation by means of a beam trawl with electrodes generating electrical pulses.

© Oscar Bos - BENTHIS-project

The Flanders Marine Institute (VLIZ) provides policy-relevant information concerning marine, estuarine and coastal matters at the request of target groups as well as on its own initiative. This information is made available in the form of Dutch-language policy-informing briefs (Beleidsinformerende Nota's or BINs). Replies to public consultations regarding specific marine policy issues of the European Commission are published in English-language policy informing briefs (PIBs).

The contents of the policy-informing briefs are based on current scientific insights and objective information and data. VLIZ relies as much as possible on the expertise of coastal and marine scientists within the network of marine research groups in Belgium / Flanders as well as within the international network. The publications reflect VLIZ's neutral and non-aligned character and its pursuit of the best possible translation of the basic principles of sustainability and an ecosystem-

oriented approach as set forth in the European integrated maritime policy and coastal zone management.

## Dutch-language policy-informing briefs published in 2014:

**De effecten van pulsvisserij door Nederlandse vaartuigen in Belgische wateren - een synthese van het Vlaams wetenschappelijk onderzoek.** In March 2014, Promovis Nieuwpoort vzw expressed concerns about Dutch pulse fishing activities in Belgian waters to governor of West Flanders Carl Decaluwé. The provincial governor then requested VLIZ to investigate this complaint further and define possible measures. In collaboration with ILVO, UGent and KU Leuven, VLIZ drew up a BIN detailing the effects of pulse fishing.

**De problematiek van de Japanse oester (*Crassostrea gigas*) aan de Vlaamse kust.** In August 2014 Flemish Minister for Environment, Nature and Agriculture Joke Schauvliege received a written request for clarification and advice with regard to the possible problems caused by the Pacific oyster on the Flemish Coast. VLIZ formulated a reply in consultation with experts from RBINS, UGent, IMARES, IKWV, RNSYC Oostende, RBSC Zeebrugge and VVW Inside Outside.

**Marien onderzoek in Vlaanderen en België: Een inventaris van het onderzoekslandschap.** On its own initiative, VLIZ annually informs policy makers, the research community and other stakeholders on the state of marine research in Flanders and Belgium.

**Marien onderzoek en het marien en maritiem beleid in het federaal en het Vlaams regeerakkoord.** On its own initiative, VLIZ informs policy makers, the research community and other stakeholders on the (concrete) actions and measures which concern (marine) research as well as marine and maritime policy as set forth in the coalition agreements of the Belgian federal (2014-2019) and Flemish (2014-2019) governments.

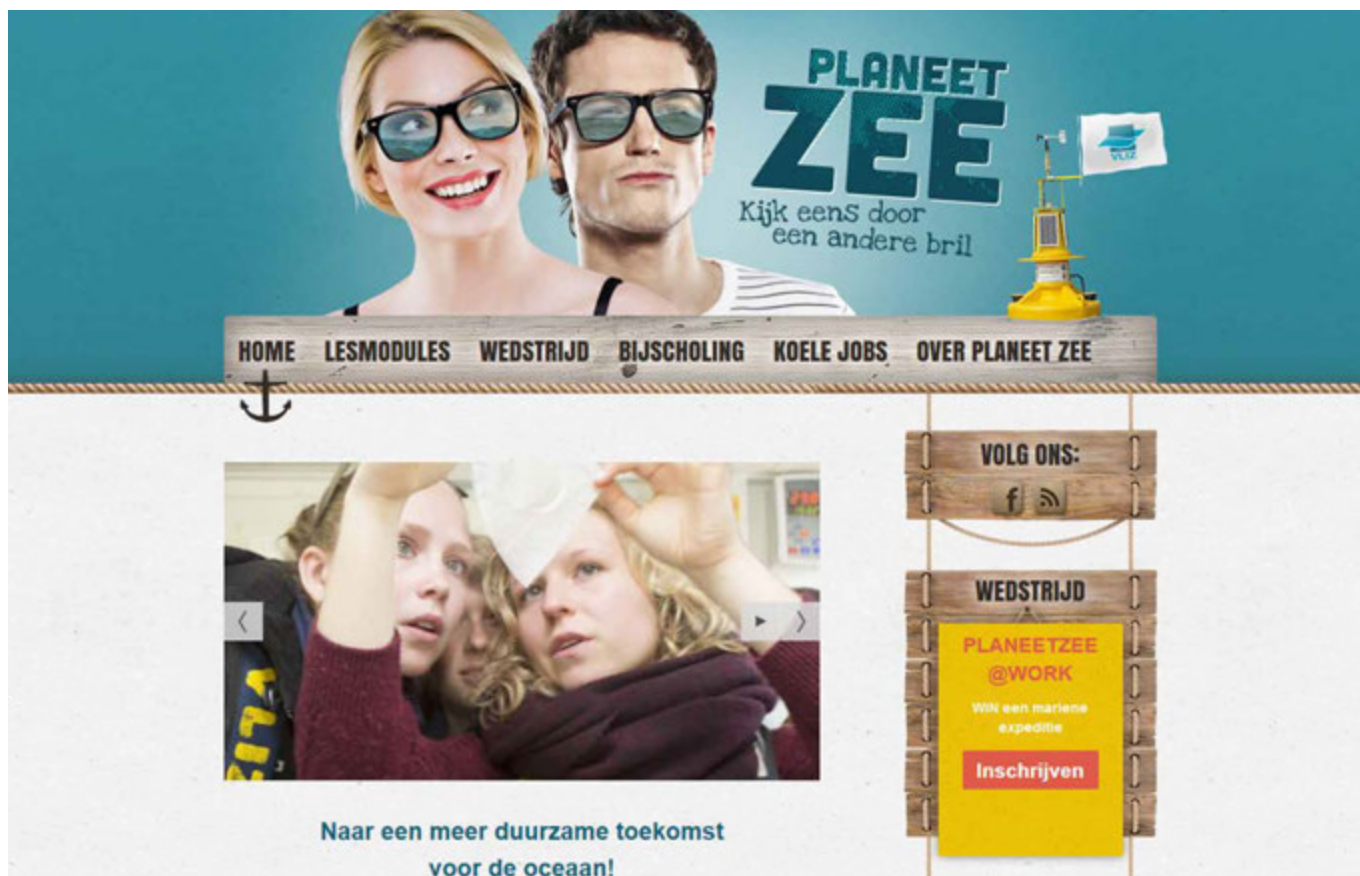
## English-language policy-informing briefs published in 2014:

**EC Consultation on the achievements and future developments for the marine biotechnology sector in the EU.** Through enquiries with the Member States, the European Commission wished to obtain an overview of the achievements and prospects of the marine biotechnology industry. In partnership with the Federal Public Service Health, Food Chain Safety and Environment and the Belgian Federal Science Policy Office (BELSPO), VLIZ provided input as to the possibilities, future and role of science and industry in Belgium in the form of a PIB.

**EC Consultation on the developments in the seabed mining sector in the EU.** In 2014, the European Commission consulted its Member States on the developments relating to the extraction of mineral deposits from the seabed. VLIZ provided input on the basis of research conducted by Belgian / Flemish marine research groups and shed light on the extraction of sand and gravel in the Belgian part of the North Sea.



## Planeet Zee (Planet Ocean) gets a face-lift



THE REDESIGNED EDUCATIONAL WEBSITE [WWW.PLANEETZEE.BE](http://WWW.PLANEETZEE.BE) continues to bring marine sciences to the classroom.

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The redesigned educational website of Planeet Zee (Planet Ocean) [www.planeetzee.be](http://www.planeetzee.be) has replaced the previous website [www.planeetzee.org](http://www.planeetzee.org) and continues to bring marine sciences to the classroom. This digital learning platform offers learning modules and practical exercises concerning topical ocean subjects that fit into the final attainment levels for sciences for the third cycle of secondary education. The learning modules currently available deal with the following topics: the marine food web, ocean landscapes, plastic pollution in the oceans, sustainable fish consumption, ocean acidification, the deep sea, marine biotechnology and beach morphology and dynamics. New modules are added on a yearly basis.

With the Planeet Zee concept, VLIZ also organises a contest for schools. To put this contest and the launch of the redesigned website in the limelight, VLIZ beached a mysterious five-metre long animal in

Ostend. This was a plastic sea monster consisting of about 100 kg of plastic waste from the sea. Through this media stunt, VLIZ wanted to highlight the problem of plastic pollution in the ocean and encourage schools to participate in the Planeet Zee contest, which challenged young people to come up with solutions for a more sustainable use of plastics. They could find background information in the learning module 'Een oceaan vol plastic' (an ocean full of plastic). The class with the most original project won a week-long scientific expedition on board the research vessel Simon Stevin.

Every year, VLIZ organises the 'Seaside Dip', a training session on different learning modules and practical exercises from Planeet Zee for teachers who are curious about current marine research. The first Seaside Dip for Teachers took place at the InnovOcean site in Ostend in 2014. That afternoon, thirty-seven participants were informed by



**AS A MEDIA STUNT, VLIZ BEACHED A MYSTERIOUS FIVE-METRE LONG ANIMAL IN OSTEND.** This was a plastic sea monster consisting of about 100 kg of plastic waste from the sea. This way, VLIZ wanted to highlight the problem of plastic pollution in the ocean and encourage schools to participate in the Planeet Zee contest.

© VLIZ

marine experts on marine food webs and plastic pollution in the ocean. The accompanying practical tests were explained during the hands-on sessions.

New curricula, which became effective on 1 September 2014, were developed within the scope of the update of the final attainment levels for sciences for the third cycle of secondary education in the Flemish Community education system (Gemeenschapsonderwijs or GO!). Several marine topics have now been included in the curricula for the subjects biology, natural sciences, chemistry and physics. The many years of effort by VLIZ to link marine topics to the current final attainment levels have thus been recognised.

Examples of sea-related final attainment levels include:

- **Hypotheses about the origin of life on earth** proved by means of hydrothermal vents (cf. learning module 'Oceaanlandschappen verkennen' [exploring ocean landscapes])
- **Chemosynthesis** illustrated by means of the VLIZ bioluminescence test
- **Ecology with ocean biology as an optional module**; information available via the websites [www.vliz.be](http://www.vliz.be) and [www.planeetzee.be](http://www.planeetzee.be)
- **The concept of acids and bases** explained by means of ocean acidification and the ocean's buffering effect (cf. learning module 'ocean acidification')
- **Information mission with regard to sustainability**, the monitoring of the quality of the (marine) environment and the issue of plastic pollution in the ocean (cf. learning module 'Een oceaan vol plastic' [an ocean full of plastic])

## Achievements within the scope of collaboration with KMFRI



**ON 27 JANUARY 2014, RV MTAFITI** (formerly RV Zeeleeuw) was officially launched by Kenyan President Uhuru Kenyatta in Mombasa in the presence of a Belgian delegation including Mr Bart Ouvry (then Ambassador of Belgium in Nairobi), Governor Carl Decaluwé (chairman of the Board of Directors of VLIZ), Colin Janssen (chairman of the Scientific Board of VLIZ) and Jan Mees (General Director of VLIZ).

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The cooperation between the Kenya Marine and Fisheries Research Institute (KMFRI) and the Flanders Marine Institute (VLIZ) resulted in a few nice achievements in 2014. This is a continuation of the good relations that have existed between both countries since 1985 for conducting marine research as well as training and exchanging marine scientists.

Within the scope of this VLIZ-KMFRI partnership, the Flemish government donated the former research vessel Zeeleeuw to the Kenyan government in 2013. The ship is now managed by KMFRI and sails under the name of RV Mtafiti; it is the only permanent marine scientific vessel present on the East African coast. In early January 2014, VLIZ organised training sessions for the new crew as well as the scientific and technical staff of KMFRI in Mombasa on board RV Mtafiti.

During an official ceremony on 27 January 2014, RV Mtafiti was commissioned in the port of Mombasa by Kenyan President Uhuru Kenyatta in the presence of VLIZ representatives and the Governor of West Flanders. KMFRI was visited by a president for the first time in its history. During his speech, the President highlighted the importance of the ocean to Kenya's food supply and economic growth. In addition, he stated that the Kenyan government gives priority to offshore research, marine monitoring and fisheries control by deploying RV Mtafiti. This ceremony and the accompanying political attention constitute a milestone for KMFRI and will create leverage for marine scientific research in Kenya over the coming years.



In February 2014, VLIZ and professional wildlife photographer Misjel Decler went to the Kenyan coast to portray the research activities and the spectacular, dynamic coastal ecosystems together with KMFRI colleagues. The high-resolution pictures are freely available to promote local marine research ([www.vliz.be/kenya](http://www.vliz.be/kenya)).

From 27 to 29 October, KMFRI organised the international conference 'Sustainable use of marine and coastal resources in Kenya: from research to societal benefits' with financial support from VLIR-UOS and in close cooperation with VLIZ, UGent and VUB. The conference brought local, national, regional and international scientists, professors, students, policy makers and other people interested in marine and maritime science together. Belgian ambassador to Kenya Ms Roxane de Bilderling, Principal Secretary of the State Department of Fisheries Prof Micheni Ntiba and Belgian Honorary Consul in Mombasa Mr Lou Dierick were among the prominent speakers.

The focus was on the challenges for sustainable management of the Kenyan coast and ocean, such as the problems of overfishing, pollution, climate change and mangrove clearing. The sustainable development of aquaculture and a strategic plan for the deployment of RV Mtafiti also featured high on the agenda. In addition, recent developments in marine research and education as well as the relevant Flemish, Kenyan and regional scientific expertise were presented. During the discussions, the research and educational priorities for Kenya were delineated in line with the Kenyan development strategy (Kenya Vision 2030) and the country's future policy. The way in which Flemish scientific expertise can contribute to these developments was always taken into consideration. The conference was dedicated to the late Prof Philip Polk, who had started up the marine scientific collaboration between Kenya and Belgium about 30 years ago on behalf of the Belgian government. The conference proceedings will be published in 2015 and will be made available online ([www.vliz.be/kenya/conference-output](http://www.vliz.be/kenya/conference-output)).



**DURING THE INTERNATIONAL CONFERENCE 'SUSTAINABLE USE OF MARINE AND COASTAL RESOURCES IN KENYA: FROM RESEARCH TO SOCIETAL BENEFITS'** East African and Flemish scientists met to discuss the priorities of Kenyan marine research and link these priorities to Flemish expertise.

© KMFRI

## Inauguration of the EMODnet secretariat



**FORMAL OPENING OF THE EMODNET SECRETARIAT** in the presence of Lowri Evans (Director-General for Maritime Affairs and Fisheries of the European Commission), Dirk Van Melkebeke (Secretary-General of the Flemish department of Economy, Science and Innovation) and the EMODnet partners.

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The European Marine Observation and Data Network (EMODnet) celebrated the inauguration of its Secretariat Office at the InnovOcean site in Ostend on 19 February 2014. Under the impetus of the European Commission, EMODnet aims to centralise the abundance of marine observations in Europe and make them optimally accessible for users such as government bodies, scientists and maritime companies, primarily so as to support sustainable growth and employment. After years of preparatory initiatives, EMODnet now provides Europe with an instrument to support previous initiatives such as the Integrated Maritime Policy (2007), the European Marine and Maritime Research Strategy (2008), the Marine Strategy Framework Directive (2008) and the communication on Marine Knowledge 2020.

The Flemish government made an offer to the European Commission to house the EC project office of EMODnet at the InnovOcean site. The secretariat coordinates and provides general support to the development of the central portal ([www.emodnet.eu](http://www.emodnet.eu)), monitors the various EMODnet projects and takes care of the internal and external communication and user feedback.

The inauguration was formally opened by Lowri Evans (Director-General for Maritime Affairs and Fisheries of the European Commission), Dirk Van Melkebeke (Secretary-General of the Flemish department of Economy, Science and Innovation), Dr Wendy Watson-Wright (Executive Secretary of the Intergovernmental Oceanographic Commission and Assistant Director-General of UNESCO) and EMODnet representatives.



## VLIZ Young Marine Scientists' Day 2014

For the fourteenth edition of the VLIZ Young Scientists' Day on 7 March 2014, no less than 333 marine professionals and students met at Katholieke Hogeschool VIVES in Bruges. That day, young scientists got the opportunity to present their research results and demonstrated the multidisciplinary nature of marine research in Flanders/Belgium. They turned the event into a major success with some 100 poster and pitch presentations relating to the most diverse marine subjects. A few experienced marine scientists inspired the younger generation through their rich career. Senior scientist Jan Bourgois (UGent) explained how he had given his research in sports physiology a marine touch by studying the shocking reality of drowning at sea. Ann-Katrien Lescauwae (VLIZ) provided an insight into the Compendium for Coast and Sea and the latest communication product called 'Vademecum', and she specifically focused on its usefulness for the audience of students, (post)docs and other marine scientists. For the first time, VLIZ and Flanders' Maritime Cluster organised a job fair, in which six companies took part. This added value of the event turned out to be a unique opportunity for them to come into contact with young researchers and graduates who are looking for a job in the marine and maritime sector.

As every year, the public voted for the best speaker and poster. Jan Reubens (UGent, MarBio) received the award for best speaker for his pitch presentation 'Big brother is watching you! An acoustic receiver network to track the whereabouts of fishes'. Marieke Desender (UGent – ILVO) was awarded for her poster presentation 'Electrical trawling for brown shrimp: Impact on young life stages in nurseries and spawning areas?'. Within the context of its coordinating role, VLIZ aims at encouraging marine and coastal scientific research, for example by granting awards for meritorious scientific studies conducted by starting scientists. The VLIZ North Sea Award (1,000 EUR) is granted for post-graduate or post-doctoral research while two theses are awarded with the VLIZ Thesis Awards for Marine Sciences (2 x 500 EUR). These awards are traditionally presented at the VLIZ Young Scientists' Day. The North Sea Award 2013 was won by Dr Anouk de Brauwere (UCL, IMMC) for her work 'Multi-disciplinary/scale modelling of the Scheldt Estuary and tidal river network. A collection of articles from 2009 to today'. The Thesis Awards for Marine Sciences 2013 went to Jeroen De Waegemaeker (UA, Faculty of Design Sciences) for his master thesis 'Klimaatverandering als motor voor een vernieuwd kusttoerisme? Potenties van een gecompartmenteerde kuststrook voor het kusttoerisme' and to Julia Schmidt-Petersen (UGent, Research Group Phycology) for her master thesis 'What influences predation by Coralliophila? Exploring the relationships between corals, symbiotic zooxanthellae, and corallivorous gastropods'.

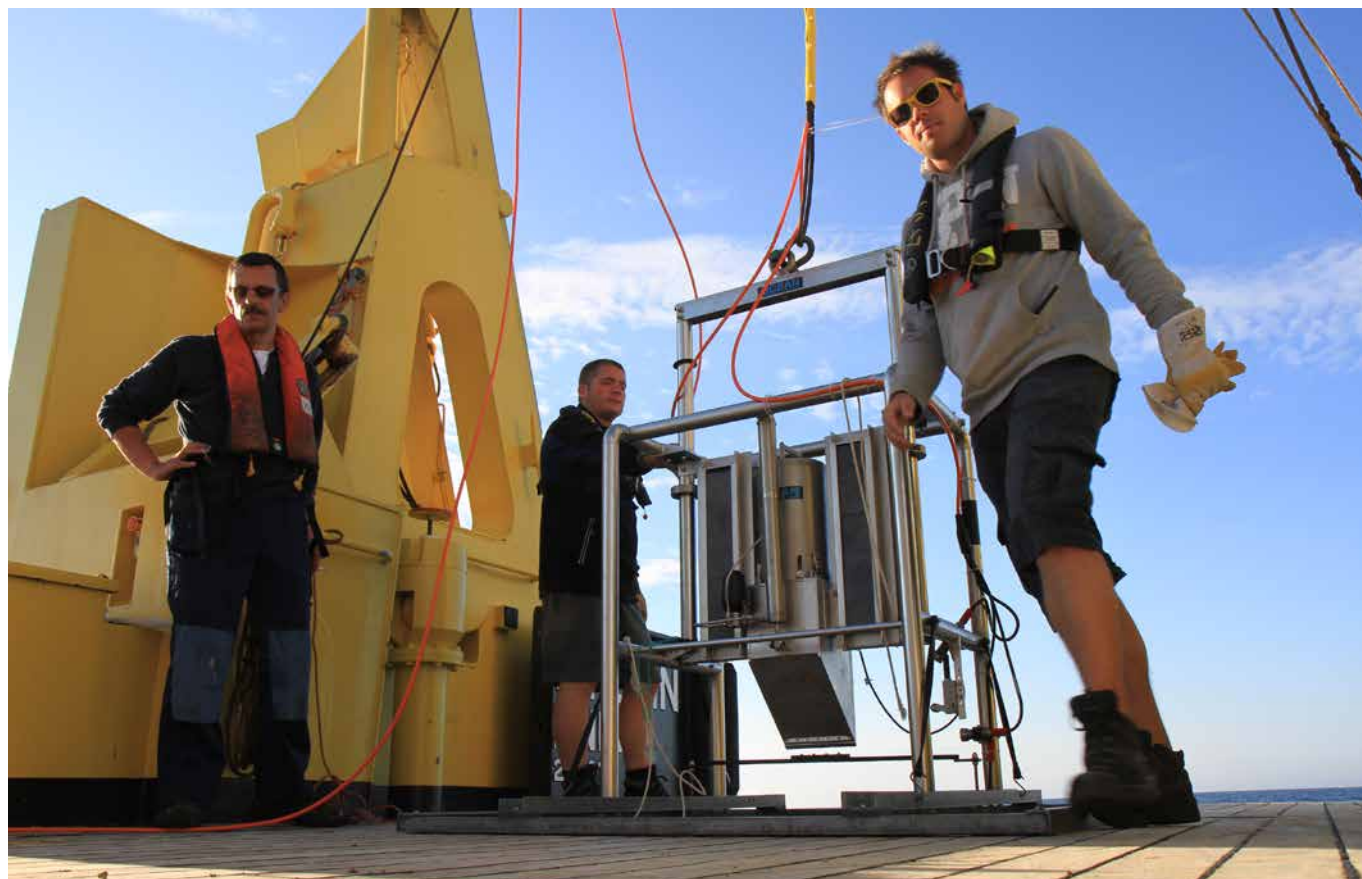
The contributions of all participants and the winners of the VLIZ awards are bundled in a book of abstracts (VLIZ Special Publication 67). This publication provides an overview of the current marine scientific research in Flanders and the neighbouring regions. An overview of the winners, abstracts, posters and photographs is available on the VLIZ Young Marine Scientists' Day website: [www.vliz.be/jcd/en](http://www.vliz.be/jcd/en).



**THE LAUREATES OF THE VLIZ SCIENTIFIC AWARDS AND THE WINNERS OF THE BEST SPEAKER AND POSTER CONTEST RECEIVED THEIR PRIZE ON THE VLIZ YOUNG SCIENTISTS' DAY.** Left to right: Jan Mees (General Director of VLIZ), Anouk de Brauwere (VLIZ North Sea Award 2013 laureate), Jan Reubens (public award for best pitch presentation), Governor Carl Decaluwé (chairman of the Board of Directors of VLIZ), Julia Schmidt-Petersen (VLIZ Thesis Award for Marine Sciences 2013 laureate), Marieke Desender (public award for best poster), Jeroen De Waegemaeker (VLIZ Thesis Award for Marine Sciences 2013 laureate) and Colin Janssen (chairman of VLIZ Scientific Committee).

© VLIZ - de Witte

## Sailing schedule of RV Simon Stevin extended



© Oscar Bos - BENTHIS-project

The increased range of new technologies on board the research vessel Simon Stevin has created an increasing demand for time at sea. New possibilities are opened up by the use of a multibeam echosounder to map the seabed, seismic equipment to investigate the soil, an A-frame to test new fishing techniques, the sediment profile imaging unit for soil exploration and the in situ video plankton recorder for studying zooplankton. In addition, there is a growing need for substantiation within the scope of sustainable management of the ocean and the development of the European 'Blue Growth' strategy to support job growth in the maritime industry. In practice, demand increased by no less than 30% in 2013. Marine scientists particularly needed additional overnight trips to study day/night cycles and make trips to more distant stations more efficiently.

A greater range also proved to be necessary, e.g. to make samplings in the Western Scheldt, the Maasvlakte area and near the Frisian Front possible. To meet this demand, VLIZ has received an additional amount of 400,000 EUR from the Flemish government since 2014. This enables researchers not only to make 10-hour daytime trips but also to stay 40 nights a year at sea so as to explore these new research topics. This is in addition to the basic allocation allowing to sail for 150 days a year. Thanks to the additional means, the shipowner of the Flemish government (VLOOT dab) can employ extra crew on the ship. The new sailing schedule became effective in April 2014.

## Jan Mees, chair of the European Marine Board



Jan Mees, General Director of VLIZ, was elected chair of the European Marine Board (EMB). The EMB provides a pan-European platform to its marine scientific member organisations to establish common research priorities, to promote marine scientific research and to close the gap between science and policy. During the EMB plenary meeting in Brest in the spring of 2014, Jan Mees was appointed as chair for a term of three years. VLIZ has represented Flanders (Research Foundation – Flanders or FWO) in the European Marine Board since 2001. In addition, VLIZ was given the mandate by the Flemish government to accommodate and support the EMB secretariat at the InnovOcean site. Jan Mees served as EMB vice-chair from 2006 to 2011. In his new capacity, he undertakes to work on behalf of the member organisations to reinforce the EMB's key role as a foresight and strategy network for marine science in consultation with the European Commission, the funding bodies and the major marine scientific institutions and universities in Europe. On a local level, the chairmanship will benefit the visibility and influence of VLIZ and of Flemish marine research.



**JAN MEES, GENERAL DIRECTOR OF VLIZ**, in his capacity as chair of the European Marine Board, at the EurOCEAN 2014 conference, where the Rome Declaration was presented.

© EMB



## Sustainable fish in book form

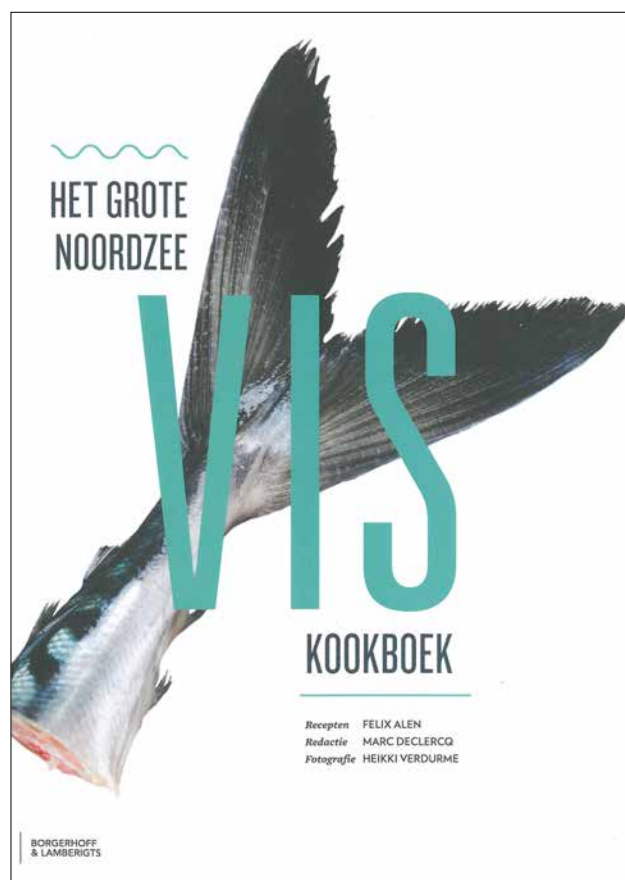


**VIS- EN ZEEVRUCHTENGIDS** – voor professionele gebruikers

© SeaWeb Europe - VLIZ

Seafood lovers are increasingly looking for correct and scientifically based information on the state of the ocean and fishery resources. They would like to know whether seafood consumption is sustainable. In 2014, VLIZ contributed to two publications which provide consumers with complete information on this issue.

A unique information source has been made available with the publication of 'Vis- en zeevruchtengids - voor professionele gebruikers' (seafood guide for professional users). This is the first time cooks and other seafood consumers are provided with comprehensible, tailored and scientifically based information on the 70 most widely consumed fish and shellfish in Belgium, France and Switzerland. By means of this knowledge, they can purchase more responsibly and improve their communication towards their customers. 'Guide des espèces - à l'usage des professionnels', published annually by SeaWeb Europe, has existed on the French market for many years. A Dutch version, adapted to the Belgian market, is now available as well. This is a joint initiative by the Flanders Marine Institute (VLIZ) and the Institute for Agricultural and Fisheries Research (ILVO). The guide is freely available in Dutch and French via the VLIZ website on [www.zeevruchtengids.org](http://www.zeevruchtengids.org) and will be updated with the latest information on a yearly basis. Hundreds of



**HET GROTE NOORDZEEVISKOOKBOEK**

© Borgerhoff & Lambergits

copies of the guide have been distributed among chefs, fishmongers and other parties in the fishery chain which pursue sustainability.

Together with VLIZ and ILVO, culinary journalist Marc Declercq collected the latest information on fish and shellfish harvested in the North Sea in 'Het Grote Noordzeviskookboek' (the big North Sea fish cookery book). In addition to culinary recipes, this reference work also contains scientifically correct information on the species, the fishing techniques, the products' origin, seasonal consumption recommendations, and the state of the fish stocks harvested by Belgian fishermen. The result is a cookery book which addresses topics such as overfishing, discards and soil degradation while showing the possibilities of preparing delicious dishes with sustainably sourced fish and with lesser known species or species that have been discarded until now. This way, the book contributes to sustainable fishing. Each fish species is portrayed separately; the book also contains digestible scientific, nutritional and culinary information and of course lots of delicious recipes by Felix Alen. From easy to challenging, from traditional to a bit more creative ... there is something for every (amateur) cook and the book is illustrated with wonderful pictures. The book is published by Borgerhoff & Lambergits and is available in book shops.

## Cooperation with Flanders' Maritime Cluster



**THROUGH THE COOPERATION AGREEMENT BETWEEN VLIZ AND FMC** both organisations aim to promote the interaction between science and industry.

© VLIZ

The Flanders Marine Institute (VLIZ) and Flanders' Maritime Cluster (FMC) signed a formal cooperation agreement at the end of 2014. In addition to concluding agreements with Belgian and foreign universities, research institutions and individual research groups, VLIZ also plays a supporting role by promoting the interaction between science and industry. FMC is the networking organisation for the Flemish marine and maritime industry and its 110 members include large companies, port authorities, consultancy agencies and SMEs. Its principal vocation is the promotion, enhancement and development of marine and maritime activities in Flanders. Europe strives towards the development of a blue economy centred around marine knowledge, sustainable management of the ocean and job growth in the maritime industry. As a result, the demand for new sea-related market research will increase. Furthermore, companies are in need of innovative research. It is therefore crucial for both VLIZ and FMC to maintain and develop knowledge and data concerning marine and maritime research domains and technologies through increased interaction between marine research groups and companies. So both parties think there is added value to be gained from bilateral cooperation in the Belgian part of the North Sea and the Scheldt estuary aimed at cross-fertilisation between marine sciences and the marine / maritime industry.



VLIZ is administered by the Board of Directors and consults the Scientific Committee for its scientific support tasks. The General Assembly provides assistance in managerial and administrative decisions.

# VLIZ organisation

[www.vliz.be/en/organisation](http://www.vliz.be/en/organisation)









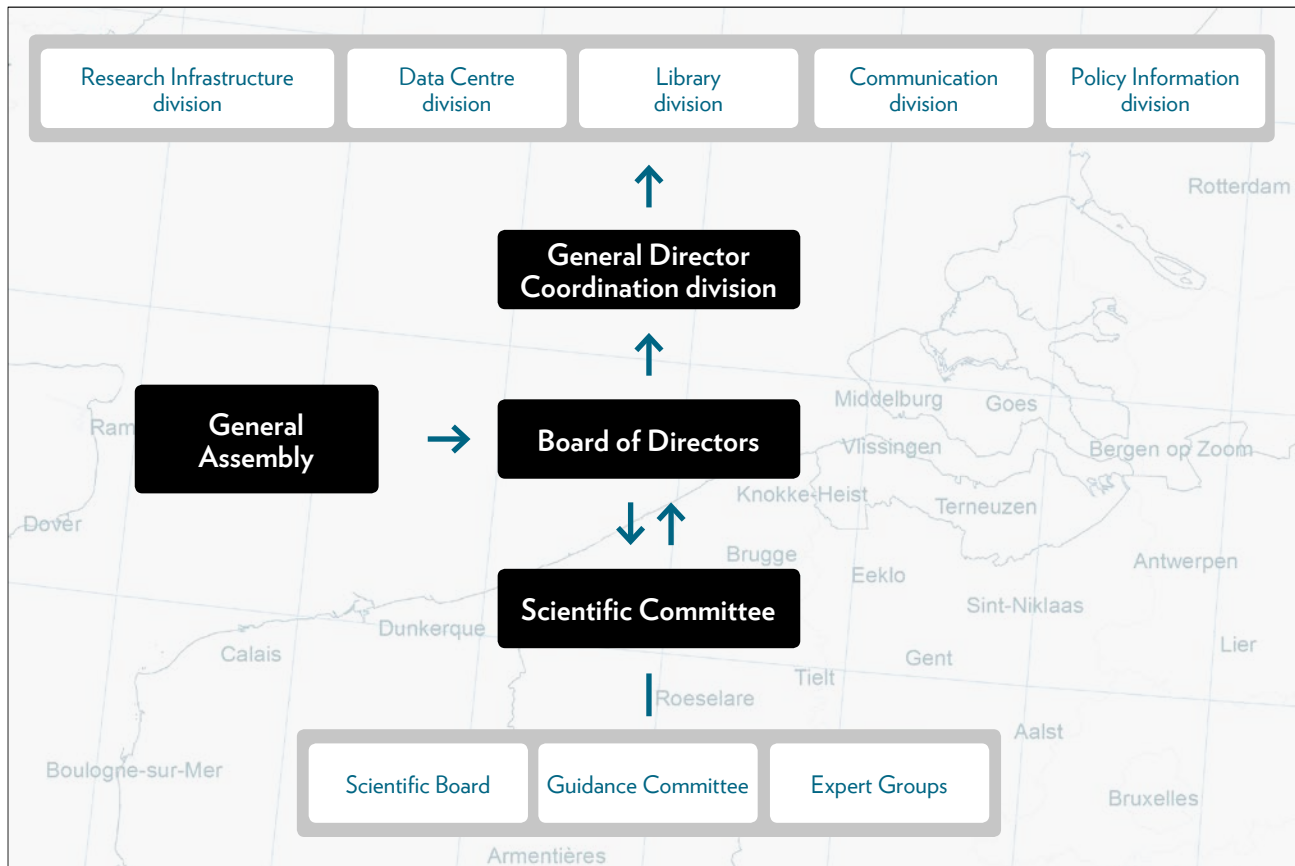
**ON 22 APRIL 2014 THE GENERAL ASSEMBLY  
OF VLIZ ASSEMBLED IN PROVINCIEHUIS  
BOEVERBOS, BRUGES.**

Left to right: bottom row: Colin Janssen, Carl Decaluwé, Paul Breyne, Jan Mees. Second row: Guido Decorte, Ann Overmeire, Marie Claire Van de Velde, Ilse Hoet. Third row: Jean Berlamont, Philip Van Avermaet, Luc Gobin, Anthony Dumarey. Top row: Willy Versluys, Magda Vincx, Ernest Schockaert and Paul Gerard.



# Organisation VLIZ

The Flanders Marine Institute (VLIZ) is an autonomous institute with the legal status of a non-profit organisation under Belgian law that receives an annual allowance from the Flemish Community and from the Province of West Flanders. VLIZ is administered by a Board of Directors. The General Director ensures the coordination of daily operations with the assistance of the Coordination division. To perform and assess its scientific support tasks, VLIZ consults a permanent team of scientists several times a year. This Scientific Committee then advises the Board of Directors. If required, the Board of Directors can convene a General Assembly for specific managerial and administrative decisions.





# Composition of the Board of Directors

## at the end of 2014

Pursuant to the articles of association, the Board of Directors is composed of 14 members.

Carl Decaluwé, governor of West Flanders, is **the chairman**.

### Eight members were nominated by the Flemish government:

- Colin Janssen, Ghent University, vice-chairman
- Paul Breyne, honorary governor
- Jean Berlamont, Katholieke Universiteit Leuven
- Yves Goossens, VLOOT dab (Agency for Maritime and Coastal Services – MDK)
- Ilse Hoet, Port and Water Policy division (MOW)
- Brenda Utterwulghe, Blauwvoet bvba
- Philip Van Avermaet, Department of Economy, Science and Innovation
- Magda Vincx, Ghent University

### The two members nominated by the province of West Flanders are:

- Guido Decorte, member of the Provincial Executive (secretary)
- Anthony Dumarey, member of the Provincial Council

### The three other members are:

- Ann Overmeire, Innovation, Provincial Development Agency of West Flanders
- Paul Gerard, AG Haven Oostende
- Willy Versluys, fishing vessel owner

### The government commissioners are:

- Luc Gobin, on behalf of the Flemish Minister for Finance
- Marie Claire Van de Velde, on behalf of the Flemish Minister for Science Policy

### Attend the meetings:

- Gert Verreet, Department of Economy, Science and Innovation
- Patrick Braet, province of West Flanders, Provincial Treasurer
- Jan Mees, General Director of VLIZ
- Tina Mertens, VLIZ Assistant Director
- Ingrid Dobbelaere, VLIZ executive secretary and rapporteur

# Composition of the General Assembly

at the end of 2014

Carl Decaluwé, governor of West Flanders, is **the chairman**.

## The ten voting members appointed by the Flemish Community are:

- Patric Jacobs, Ghent University
- Willy Baeyens, Vrije Universiteit Brussel
- Jean Berlamont, Katholieke Universiteit Leuven
- Ernest Schockaert, Hasselt University
- René Van Grieken, University of Antwerp
- Magda Vincx, Ghent University
- Philip Van Avermaet, Department of Economy, Science and Innovation
- Ulrike Vanhessche, Coast Guard secretariat (MDK)
- Ilse Hoet, Port and Water Policy division (MOW)
- Jan Strubbe, honorary director-general of the Waterways and Marine Affairs Administration

## The four voting members appointed by the province of West Flanders are:

- Guido Decorte, member of the Provincial Executive
- Anthony Dumarey, member of the Provincial Council
- Patrick Braet, Provincial Treasurer
- Jan Denys, principal of the Mercator Maritime Institute

## The member appointed by the Research Foundation – Flanders (FWO) is:

- Elisabeth Monard, secretary general of the Research Foundation – Flanders

The members of the Board of Directors of VLIZ have the right to attend the General Assembly with an advisory vote.

# Scientific Board

at the end of 2014

The Scientific Board consists of **14 effective** and **14 substitute members**. Its composition was approved by the Board of Directors on 27 October 2010.

## The chairman is the vice-chair of the Board of Directors:

- Colin Janssen

## Two delegates from Ghent University:

- Ann Vanreusel (substitute: David Van Rooij)
- Patrick Sorgeloos (substitute: Julien De Rouck)

## Two delegates from Katholieke Universiteit Leuven:

- Filip Volckaert (substitute: Ilaria Coscia)
- Jaak Monbaliu (substitute: Erik Toorman)

## One delegate from Vrije Universiteit Brussel:

- Loreto De Brabandere (substitute: Marc Kochzius)

## One delegate from the University of Antwerp:

- Patrick Meire (substitute: Gudrun De Boeck)

## One delegate from Hasselt University:

- Tom Artois (substitute: Natalie Beenaerts)

## One delegate from the Institute for Agricultural and Fisheries Research (ILVO):

- Hans Polet (substitute: Bart Sonck)

## One delegate from the Research Institute for Nature and Forest (INBO):

- Jurgen Tack (substitute: Eric Stienen)

### One delegate from the Flemish Institute for Technological Research (VITO):

- Roger Dijkmans (substitute: Bart Deronde)

### One delegate from the Flemish Environment Agency (VMM):

- Steven Vinckier (substitute: Marleen Van Steertegem)

### One delegate from the Flanders Heritage Agency:

- Marnix Pieters (substitute: Tom Lenaerts)

### One delegate from Flanders Hydraulics Research:

- Frank Mostaert (substitute: Toon Verwaest)

### Attend the meetings:

The General Director, the Assistant Director and a rapporteur from the Flanders Marine Institute:

- Jan Mees
- Tina Mertens
- Jan Seys (substitute: Nancy Fockedeey)

### A representative of the Department of Economy, Science and Innovation:

- Gert Verreet





**THE SCIENTIFIC BOARD VISITED THE INSTITUTE FOR AGRICULTURAL AND FISHERIES RESEARCH IN OSTEND ON 11 APRIL 2014.**  
Left to right: André Cattrijsse, Bart Deronde, Toon Verwaest, Hans Polet, Colin Janssen, David Van Rooij, Jan Mees, Jurgen Tack, Loreto De Brabandere, Marnix Pieters, Jaak Monbaliu, Tom Artois, Jan Seys and Steven Vinckier.

© VLIZ

In addition to the highlights of the year, many other projects, activities, events and publications should be considered as well. As these are mostly the achievements of a specific division, they are discussed in the respective chapters.

# VLIZ divisions

[www.vliz.be/en/divisions](http://www.vliz.be/en/divisions)





# Coordination

The Coordination division oversees the daily operations of VLIZ and constitutes the communication link with all other partners of the InnovOcean site in Ostend. The Coordination division concludes cooperation agreements with Flemish research groups and administrations, and integrates the activities of VLIZ into national and international networks.

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[www.vliz.be/en/general-director-and-coordination-division](http://www.vliz.be/en/general-director-and-coordination-division)

**COMMUNICATION DIVISION.** Left to right: Ingrid Dobbelaere, An Vanhoorne, Nathalie Keersebilck, Tina Mertens, Petra Willaert, Fien De Raedemaecker, Delphine Vanhaecke and Jan Mees.

© VLIZ - Verhaeghe







**VLIZ DELEGATIONS** visit research groups and administrations in Flanders and the wider region to exchange information on our activities, proactively promote partnerships and optimise the current cooperation. The Operational Directorate Natural Environment (RBINS) in turn visited VLIZ on the occasion of the change of management and restructuring.

© VLIZ

The Flanders Marine Institute (VLIZ) is an autonomous institute with the legal status of a non-profit organisation under Belgian law that receives an annual allowance from the Flemish Community and from the Province of West Flanders. VLIZ is administered by a Board of Directors. The General Director ensures the coordination of daily operations with the assistance of the Coordination division. To perform and assess its scientific support tasks, VLIZ consults a permanent team of scientists several times a year. This Scientific Committee then advises the Board of Directors. If required, the Board of Directors can convene a General Assembly for specific managerial and administrative decisions.

**Investment subsidy.** In addition to the basic amount of € 4.374 million, VLIZ receives an annual investment subsidy of € 1.09 million. This additional amount is made available by the department of Economy, Science and Innovation (EWI) of the Flemish government and has been included in the Covenant for the 2012-2016 period. In 2014 this subsidy was largely used for funding the renovation of 'the house' at the Marine Station Ostend as well as the purchase of scientific equipment.

**Board of Directors.** VLIZ is administered by a Board of Directors. It convened five times in 2014 (22 April, 18 June, 22 October, 25 November and 22 December). The composition of the Board of Directors is discussed in the chapter 'VLIZ Organisation'.



**ON 27 JUNE 2014 PROFESSOR LORA FLEMING RECEIVED THE PRESTIGIOUS 'DR EDOUARD DELCROIX PRIZE'.** This international award is granted by Hydro vzw and VLIZ for a scientific study on the links between ocean and human health. In this picture: Prof Fleming together with Ms Delcroix and Dr Casteur from Hydro vzw.

© VLIZ - Verhaeghe

The **General Assembly** consists of the effective or voting members of VLIZ, who control the institution's policy through this highest ruling organ. The General Assembly is convened at least once a year and presided by the chairman of the Board of Directors. In 2014 the General Assembly was held on 22 April together with a meeting of the Board of Directors.

The **Scientific Committee** consists of a Scientific Board, a Guidance Committee and various Expert Groups. The Scientific Board is a compact steering committee that reports to the Board of Directors. Its composition is discussed in the chapter 'VLIZ Organisation'. The Scientific Board met four times in 2014. The Scientific Board visited ILVO in Ostend on the occasion of the 11 April session. The June session was combined with the annual meeting of the Guidance Committee. The other two Scientific Board sessions took place at Het Pand – UGent on 17 October and 5 December.

The Guidance Committee is convened once a year by VLIZ for a plenary session open to all marine scientists (independent academic staff, postgraduates and executives). The Guidance Committee meeting in Ostend on 13 June 2014 was attended by 75 marine scientists from the most diverse disciplines.

**Staff.** On 31 December 2014 VLIZ employed 64 staff members, who accounted for 60.38 full-time equivalents (FTEs). Over half of them were part of the permanent staff (33.7 FTEs), the rest were employed on a temporary basis (26.68 FTEs). Scientific employees accounted for 42.63 FTEs, while 17.75 FTEs were devoted to support work (including 8.56 FTEs for administrative staff, 7.93 FTEs for IT workers and 1.26 FTEs for maintenance staff). During the summer months, 44 students were employed at VLIZ, accounting for 3.39 FTEs. During

the previous calendar year, 10 students did a work placement at different VLIZ divisions.

**Members.** VLIZ is a membership organisation. Anyone who is interested in marine and coastal research can individually or collectively join as a supporting member to become part of the Flemish marine research community. At the end of 2014, the Flanders Marine Institute had a total of 222 members, including 153 individual members, 31 students, 25 institutional members and 13 honorary members.

**Cooperation agreements.** Cooperation agreements. VLIZ consolidates its cooperation with Belgian and foreign universities, research institutions and individual research groups by concluding agreements. In 2014 VLIZ entered into partnerships with:

- The governor of West Flanders within the scope of storage facility management in order to implement the law on the protection of underwater cultural heritage
- Ghent University within the scope of the funding of the Flemish participation in the ESFRI project EMBRC
- the University of Antwerp within the scope of the ESFRI project ICOS
- SeaWeb Europe within the scope of general collaboration
- the University of Valparaíso (Chile) within the scope of the ESFRI project ICOS as well as its application to MV Condor, a 'Ship of Opportunity' which will conduct measurements for ICOS in Chilean waters
- VLOOT dab within the scope of additional funding for the deployment of RV Simon Stevin (amendment)
- the Flemish Environment Agency (VMM) within the scope of additional water quality monitoring in the North Sea on board RV Simon Stevin (amendment)
- Flanders' Maritime Cluster within the scope of general collaboration (for further information, see the relevant highlight)

The complete list of current national and international cooperation agreements can be found at [www.vliz.be/en/cooperation-agreements](http://www.vliz.be/en/cooperation-agreements).

**Tour of Flanders.** VLIZ delegations visit research groups and administrations in Flanders and the wider region to exchange information on our activities, proactively promote partnerships and optimise the current cooperation. The development of framework cooperation agreements modelled after the agreement with Marine@UGent is specifically advocated for all universities. Within this scope, VLIZ visited Flanders Hydraulics Research in January 2014. In July, a meeting was organised with all marine research groups and marine scientists of KU Leuven. VLIZ colleagues visited DOVO / SEDEE – Zeebrugge company in October. In November, the Operational Directorate Natural Environment (RBINS) in turn visited VLIZ on the occasion of the change of management and restructuring.

**Networks, committees and expertise.** One of VLIZ's most important tasks is to network with people from different backgrounds who are active in marine and coastal sciences. Every year VLIZ organises numerous events to achieve this. VLIZ is also active in numerous national and international formal networks. A list of the events and networks is available in the digital annexes to this annual report.

## ● TRAINEES ACTIVE AT VLIZ IN 2014

Claeys Pauline	University College Ghent	Education trainee
Coucke Nicky	University College Ghent	Education trainee
Debergh Jens	University College West Flanders	Data Centre trainee
De Herdt Gorik	Artesis Plantijn University College Antwerp	Education trainee
Fazackerley Adam	University of Bath (UK)	JPI Oceans trainee
Kleppe Raoul	CAH Vilentum University of Applied Sciences (NL)	Policy Information trainee
Pognonec Alexia	Université Nice Sophia Antipolis (FR)	JPI Oceans trainee
Semmelink Frank	VHL University of Applied Sciences, Leeuwarden (NL)	Policy Information trainee
Seurynck Rien	University College West Flanders	Education trainee
Steelandt Silke	Artevelde University College Ghent	Education trainee

## ● STUDENT EMPLOYEES ACTIVE AT VLIZ IN 2014

Andries Maaike	Grosemans Tara	Meyers Nelle	Temmerman Anna
Bossier Sieme	Hernandez Lisa	Mogensen Tess	Temmerman Lucas
Bovit Lorenzo	Hernandez Simon	Mortier Julien	Torrez Pieter
Cunha Ana	Hofmans Matti	Pissierssens Jeffrey	Vancraeynest Freek
Debosschere Jill	Kerkhove Thomas	Roelofs Stijn	Van Damme Stefan
Decock Elien	Leerschool Anna-Roos	Rouzeré Julie	Van Moorlegheem Charlotte
de Lichtervelde Astrid	Lier Yeo	Selene Alvarez Pena	Vanstenhoud Berthe
De Wulf Leontien	Maslov Sil	Seys Tineke	Velleman Jules
Fabrice de Kisangani Aäron	Mees Temesgen	Sorel Jana	Verhaegen Gerlien
Fougner Alexine	Mestdagh Sebastiaan	Steenkiste Gregory	Vermeiren Serge
Green Jenny	Mestdagh Thomas	Storms Simon	Versteeg Muriel

**International visits.** VLIZ provides interested people with information sessions regarding its activities. In addition to students in training, international organisations also visit VLIZ in this informal manner. For instance, delegations from Vietnam, Kenya and the Directorate-General for Maritime Affairs and Fisheries (DG Mare) visited VLIZ in 2014.

**Delcroix Prize 2010.** Professor Lora Fleming, Director of the European Centre for Environment & Human Health (ECEHH – UK), received the prestigious ‘Edouard Delcroix Prize’ on 27 June 2014. This international award amounting to € 25,000 is offered by Hydro vzw and VLIZ for a scientific study on the links between ocean and human health every three years. As a physician and epidemiologist, Professor Fleming has studied the effects of harmful algal blooms and the potential consequences for human health. The possible future increase of harmful algal blooms in coastal waters around the world requires an international and multidisciplinary approach. Professor Fleming’s research constitutes a major contribution to the monitoring of these effects.

**Marine Biotechnology ERA-NET.** VLIZ coordinates the communication tasks within ERA-MBT. For example, VLIZ ensured the organisation of the first stakeholder meeting in Lisbon (October 2014), which was attended by the industry, funding agencies, policy makers and researchers. The meeting was aimed at shaping and expanding the developments within European marine biotechnology and determining the opportunities for ERA-MBT.



# Research infrastructure

The **Research Infrastructure** division provides logistical support to marine researchers by ensuring the management, maintenance and operational support of the research facilities and equipment.

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[www.vliz.be/en/research-infrastructure-division](http://www.vliz.be/en/research-infrastructure-division)

**RESEARCH INFRASTRUCTURE DIVISION.** Left to right: André Cattrijsse, Michiel T'Jampens, Thanos Gkritzalis and Wim Versteeg.

© VLIZ - Verhaeghe







**RV SIMON STEVIN** took part in an international sampling campaign within the scope of the BENTHIS project and travelled to the Frisian Front (Netherlands) for this purpose. RV Isis and two fishing vessels were deployed simultaneously.

© Oscar Bos – BENTHIS-project

**RV Simon Stevin.** During its second full operational year, the vessel spent 183 actual days at sea on scientific research, including 15 continuous trips (overnight trips). The ship was deployed for a total of 1,649 hours for measurements throughout the Belgian part of the North Sea, the Western Scheldt and the Dutch continental shelf (near the Frisian Front).

**Scientists and passengers.** A total of 1,184 people sailed on board RV Simon Stevin in 2014, including 616 scientists and 568 students. Nineteen marine research groups made use of RV Simon Stevin for a total of 31 different projects (see table for details). The vessel made 39 day trips for educational or demonstration purposes, e.g. for the rector of Ghent University with a delegation, for the Centre for Nature and Environmental Education (CVN), within the scope of the Week of the Sea and Planeet Zee (Planet Ocean), and for training courses at the Antwerp Maritime Academy as well as the universities of Brussels (biology), Ghent (biology, geology, environmental toxicology), Leuven (biology) and KULAK (biology).

In June, RV Simon Stevin took part in an international sampling campaign within the scope of the BENTHIS project and travelled to the Frisian Front (Netherlands) for this purpose. A team of biologists from ILVO and IMARES was on board. The aim of the six-day trip was to study the effects of different types of bottom fishing (beam-trawl, pulswing and sumwing fishing) on the benthic ecosystem. A Sediment Profile Imaging (SPI) camera, a Reineck box corer and a multibeam echosounder were used during the campaign. RV Isis and two fishing vessels were deployed simultaneously with RV Simon Stevin.

**Measuring and sampling equipment.** The wide range of marine scientific measuring and sampling equipment VLIZ puts at the disposal of the marine research community was extended in 2014. The flow-through system for sea water, installed in the dry lab of RV Simon Stevin, was extended further. An optical nitrate sensor and a fast repetition rate fluorimeter were installed in addition to the thermosalinograph, the regular fluorimeter, the  $pCO_2$  sensor and the flow cytometer. The fast repetition rate fluorimeter estimates the primary production. These measuring instruments continuously analyse different seawater characteristics during the sailing trips. This information is gathered to support marine scientific research conducted on board and adds value to the long-term series of marine data.

The high-tech sampling equipment purchased in 2013, such as the SPI camera, the Video Plankton Recorder (VPR) and the flow cytometer, was used to its full potential in 2014. Several research groups including ILVO, UGent – MarBiol, the Continental Shelf Service, VUB and NIOZ made use of the SPI camera. The VPR and the flow cytometer are operational within the scope of Life Watch doctoral scholarships.

The presence of a permanent measuring station at a fixed location at sea adds value to the marine research. To this end, a measurement buoy was installed near the artificial reef at the C-Power wind farm in June 2014. The buoy is equipped with a CTD for continuous measurement of the seawater temperature and salinity; in addition, there are sensors for determining the turbidity, the current, the dissolved oxygen rate, the acidity (pH) and the productivity of the seawater. The buoy also features a transceiver system based on acoustic telemetry to monitor the behaviour and movement patterns of fish around the artificial reefs. Due to damage and loss of measuring instruments, the buoy was brought back to land in September and ought to be operational again in 2015.

**The Facebook page ‘RV Simon Stevin’** had about 965 followers at the end of 2014. The brief reports supplemented with appealing photos and videos are supplied by the marine scientists who make use of the research vessel. This social medium provides interested citizens with an insight into the daily operations on board and illustrates the fieldwork of marine researchers.

**THE CONTROL ROOM OF THE NEW ROV CONTAINER** with a video wall.

© UGent - Ann Vanreusel



## RESEARCH PROJECTS WHICH MADE USE OF RV SIMON STEVIN IN 2014

MARINE RESEARCH GROUP	PROJECT	# OF DAYS AT SEA
VUB – ANCH	Hardwiring the ocean floor	10
VLIZ	Monitoring of porpoises	1
VLIZ	LIVIS – Recreational fishing observations	15
VLIZ	LifeWatch measurement campaigns	19
VLIZ	North Sea Observatory – artificial reefs	3
VLIZ	Planeet Zee (Planet Ocean)	14
VLIZ	Multibeam survey	7
VLIZ	ICOS – pCO <sub>2</sub> measurements	1
Ghent University – RCMG & Flanders Heritage Agency	SeArch: Archaeological Heritage in the North Sea	13
Ghent University – Marine Biology	Ocean acidification	2
Ghent University – Marine Biology	Migration of cod	14
Ghent University – Marine Biology	Fish migrations in coastal areas	3
Ghent University – Marine Biology	Biodiversity patterns of zooplankton	2
UGent – GhEnToxLab	eDNA	5
UGent – GhEnToxLab	Detection of harmful algae	5
Ghent University – Microbiology	Methanotrophic bacteria	2
MOW – WL	Shoreface nourishments as measure	10
INBO	Monitoring of seabirds	15
ILVO – Fisheries	Species separation in beam-trawl fishing (TechVis)	8
ILVO – Fisheries	Understanding connectivity patterns in marine fishes for sustainable management (FISHCONNECT)	21
ILVO – Fisheries	Electric pulse fishing: determination of safety margins for marine organisms and the optimum pulse for catching sole ( <i>Solea solea</i> )	2
ILVO – Fisheries	Pelagic fishing	6
ILVO – Fisheries	Microplastics	6
ILVO – Fisheries	Demersal Young Fish Survey (DYFS)	8
ILVO – Fisheries	Benthic ecosystem fisheries impact study (BENTHIS)	6
ILVO – Fisheries	GA Genomics / CleanSea	4
ILVO – Fisheries	SPI measurements at dredgings dump sites and sand extraction areas	4
KU Leuven – Hydraulics	Broersbank Monitoring	1
OD Natural Environment	MaRVEN	5
FPS Economy – Continental Shelf Service	Sand extraction monitoring	6





**EVERY MONTH, VLIZ EMPLOYEES TAKE SAMPLES OF** water, sediment, macrobenthos, zooplankton and sea water parameters during the LifeWatch measurement campaigns. All the information gathered is freely available for marine scientific research.

© VLIZ

**The monthly measurement campaigns** carried out by VLIZ on board RV Simon Stevin in the Belgian part of the North Sea are part of the LifeWatch project. VLIZ employees take samples of water, sediment, macrobenthos, zooplankton and seawater parameters at nine stations near the coast. In addition, eight stations are sampled seasonally according to an offshore-inshore gradient. Since 2014, the flow cytometer, the VPR, the SPI camera and the nutrient analyzer have also been used in collaboration with universities and research institutes during these measurement campaigns. All the information gathered is freely available for marine scientific research.

**Marine Station Ostend.** An overview of the use, the renovation works and the facilities of the MSO in 2014 is available in the highlight 'MSO operational'.

**ROV Genesis.** Remotely operated underwater vehicle Genesis was deployed in three international expeditions and one national campaign in 2014. In May, ROV Genesis was used on board RV Pelagia to map

the fishing intensity, among other things, in the Atlantic Ocean near the Western Iberian Margin. In June, the ROV was deployed on board RV Pelagia to support the installation of optical measurement equipment (Lander or Optical Modules) in the Mediterranean Sea (Alboran Sea). In September, the remotely operated underwater vehicle was deployed on board research vessel Meteor to observe the interaction between the oceanographic parameters and seabed structures near the Galician Margin off Portugal. In December 2014, the ROV was operationed on board RV Simon Stevin for a test survey on the Westhinder Bank; this was the first time it was used in the Belgian part of the North Sea.

To optimise the use of the ROV, an additional container was put into operation in 2014. It is divided into a technical workspace and a modern control room with video wall where the pilote operates the unmanned underwater vehicle, the navigator directs its course and the senior scientist coordinates everything. The video images of the dive can be viewed in real time on displays in the other rooms on board the ship. A second container contains a winch with a 1600 metre long cable and provides additional space for storing materials.





**ROV GENESIS ON BOARD RV SIMON STEVIN** for the first test survey conducted in the Belgian part of the North Sea.

© VLIZ

# Data Centre

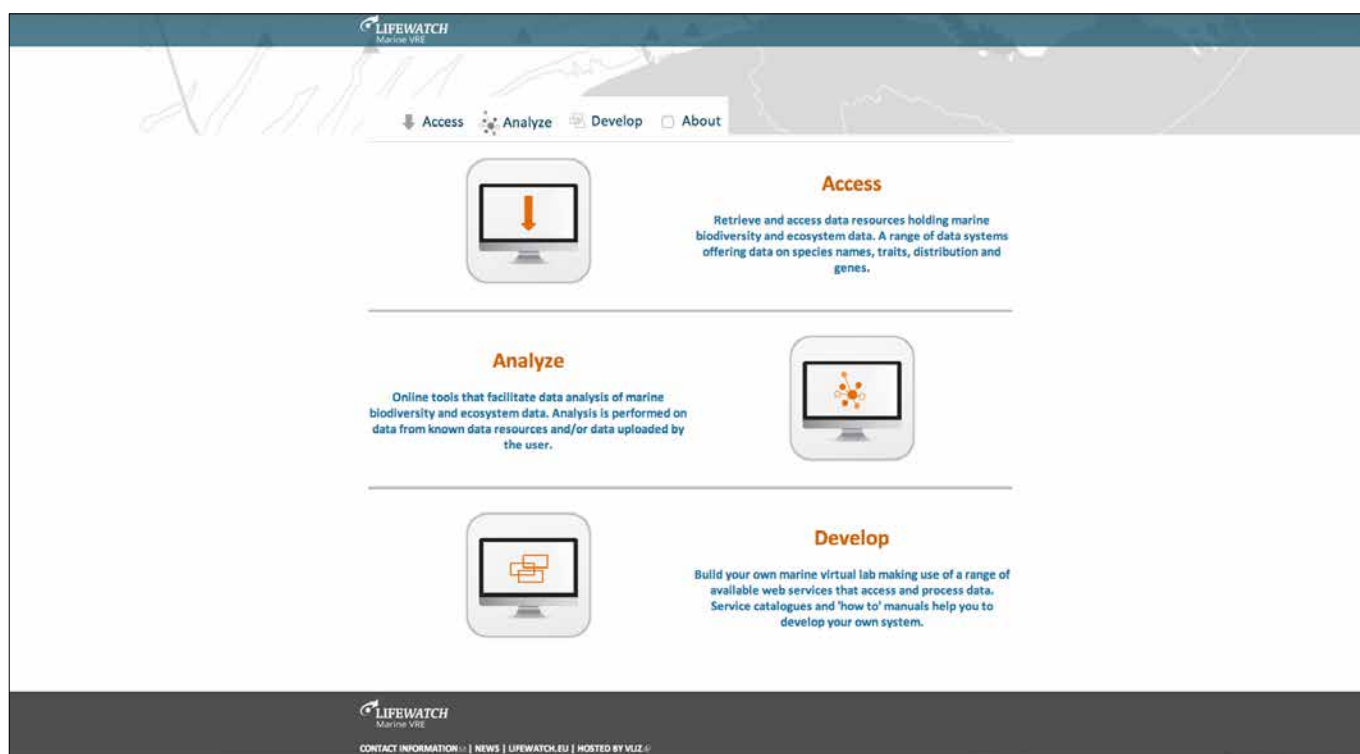
The **Data Centre** division provides assistance, technologies and tools to scientists and policy makers to support marine data management. Within international networks, VLIZ participates in the development of data infrastructures and promotes the flow of marine data from Belgium.

[www.vliz.be/en/data-centre-division](http://www.vliz.be/en/data-centre-division)

**DATA CENTRE DIVISION.** From front to rear, left to right: Carolien Knockaert, Liesbeth Lyssens, Leen Vandepitte, Ruth Vandepitte, Klaas Deneudt, Paula Oset Garcia, Simon Claus, Robin Houthoofd, Francisco Hernandez, Roeland T'Jampens, Aina Trias Verbeeck, Nathalie De Hauwere, Annelies Goffin, Lorenzo Bovit, Jonas Mortelmans, Joram Declerck, Daphnis De Pooter, Filip Waumans, Francisco Souza Dias, Lennert Tyberghein, Pieter Maes, Dylan Moerman (trainee), Jan Reubens, Wim Decock, Bart Vanhoorne, Bruno Pinto Vitorino. Not shown in the picture: Elien Dewitte and Stefanie Dekeyzer.

© VLIZ - Verhaeghe





**VLIZ CONTRIBUTES TO THE CENTRAL LIFEWATCH INFRASTRUCTURE BY COORDINATING THE DEVELOPMENT OF A LIFEWATCH MARINE VIRTUAL RESEARCH ENVIRONMENT (VRE).** The LifeWatch Marine VRE portal includes ecosystem and biodiversity data, data systems, online tools and web services. The portal can be considered the first bottom-up development demonstrating the potential and the capacity of the LifeWatch initiatives.

© LifeWatch

**LifeWatch.** The LifeWatch project aims to develop a virtual European biodiversity laboratory by 2017. This biodiversity infrastructure will consist of observation stations, databases, web services and modelling tools. Several European countries have committed to developing the central and regional LifeWatch components. LifeWatch is currently in the development stage (2012-2016), in which the member states fund their project activities themselves.

Flanders contributes to the central European LifeWatch infrastructure by creating a Taxonomic Backbone. Together with INBO and UGent, VLIZ contributes to the regional LifeWatch infrastructure by building observation stations for marine, freshwater and terrestrial ecosystems.

For the Taxonomic Backbone, different existing taxonomic databases are being combined, geared to one another and complemented with missing information. The World Register of Marine Species (WoRMS) and the European Ocean Biogeographic Information System (EurOBIS), both developed and managed by VLIZ, are examples of databases which are part of this functional tool to support biodiversity research. More information on the specific developments that took place in these databases in 2014 can be found in the relevant sections.

VLIZ also contributes to the central LifeWatch infrastructure by coordinating the development of a LifeWatch Marine Virtual Research Environment (VRE). To this end, VLIZ organised the LifeWatch Marine Technical Meeting in the Hellenic Centre for Marine Research (Crete) in June 2014. This conference was attended by representatives of the regional LifeWatch projects in Spain, Italy, Greece, Sweden and Belgium as well as by partners of related EU-funded projects such as BioVeL, MicroB3, ViBRANT and EMODnet. The participants provided an overview of the most recent LifeWatch-related developments (ecosystem and biodiversity data, data systems, online tools and web services) and subsequently took steps to make further cooperation possible. This resulted in the LifeWatch Marine VRE portal, which can be considered the first bottom-up development demonstrating the potential and the capacity of the LifeWatch initiatives. The degree of integration and interaction between the various



components will increase in future versions of the LifeWatch Marine VRE portal, which will be updated within the scope of emerging developments concerning LifeWatch and Horizon 2020 VRE.

The Flemish marine observation station includes different components ranging from the monthly measurement campaigns on board the research vessel Simon Stevin, the construction and extension of laboratories in the Marine Station Ostend, the purchase and installation of high-tech measurement equipment, the development of a sensor network for the tracking of fish and birds, etc.

In addition to the existing LifeWatch laboratory in shed 2 of the Marine Station Ostend, an extra lab was installed in 2014 to facilitate molecular research conducted within the scope of LifeWatch.

The acoustic receiver network for fish (cod and eel) was expanded with additional tags and receivers within the scope of LifeWatch research both in the Belgian part of the North Sea and in the Scheldt estuary.

The first migration data of tagged large gulls were successfully retrieved in the spring of 2014. These GPS data can be consulted and queried online.

A Belgian-level LifeWatch project meeting took place at the InnovOcean site on 19 and 20 June. Approximately 40 participants reported on the current situation after the start-up phase. In addition, priorities were set for the improvement of the collaboration between the different partners. Better alignment of similar research is an example of this.

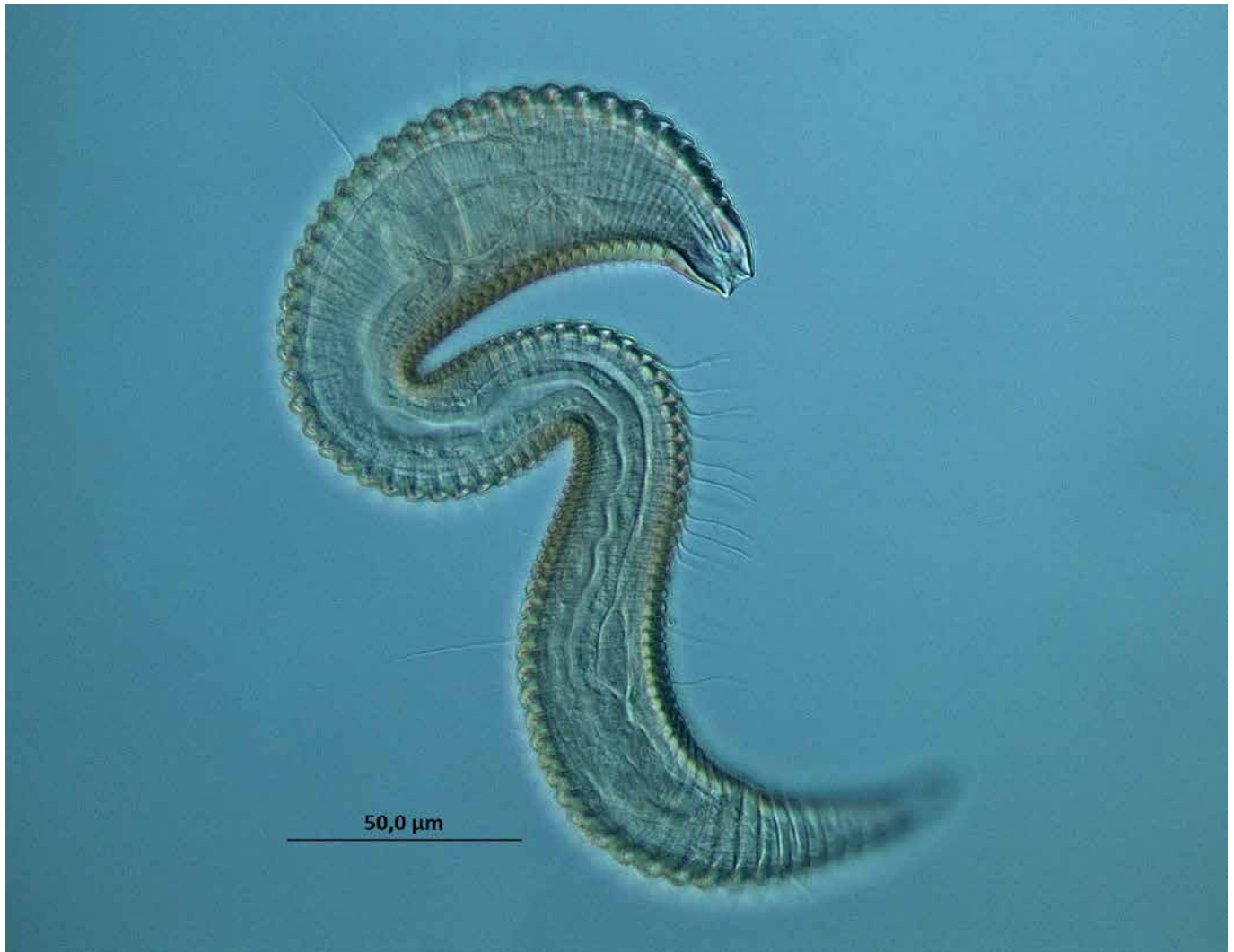
Within the scope of LifeWatch, four doctoral research projects were started in 2014 with financial support from UGent and VLIZ-LifeWatch. The research is focused on the application of the high-tech measurement equipment purchased within LifeWatch: the Video Plankton Recorder and the zooscan, the flow cytometer, the receiver network for fish and the use of the molecular laboratory in the Marine Station Ostend for eDNA analysis.

**World Register of Marine Species – WoRMS.** This taxonomic database is an authoritative and comprehensive list of names of marine organisms. The highest priority is given to valid scientific names, but other names (synonyms and vernacular names) are included as well. WoRMS is part of the consolidated Aphia database, which integrates global and regional taxonomic registers and cooperates with other acknowledged species registers such as AlgaeBase and FishBase.

By the end of 2014, the register contained over 520,000 names, including more than 228,000 valid species names. In 2014, a total of 10,123 marine species were added, 1,527 of which were described in 2014. Over 270 taxonomic experts from all over the world have actively contributed to the verification and supplementation of the register. An average of 230 taxonomic editing actions are carried out on a daily basis within the scope of WoRMS. 96% of the available taxonomic information has now been validated by editors. In part thanks to their contribution, WoRMS is the leading taxonomic reference list for marine species.

As part of the LifeWatch budget, a call for projects was launched under the heading “LifeWatch data grant” in 2014 to further complete WoRMS. A total of 16 grants were allocated, which resulted in the addition of at least 3,000 names across all species as well as the verification of about 5,000 names as to validity, synonyms, etc.

In February 2014, experts met at a workshop at the InnovOcean site and developed a long-term strategy to expand the Mollusca component of WoRMS to MolluscaBase. This global species database is created within the scope of LifeWatch and will cover all marine, freshwater and terrestrial molluscs, both recent and fossil.



**NEMYS, A GLOBALLY RECOGNISED DATABASE REGARDING THE TAXONOMY OF FREE-LIVING MARINE NEMATODES**, was integrated into the WoRMS taxonomic database in 2014. Originally set up by UGent-MarBiol, this database includes taxonomic information as well as 11 online identification keys.

© UGent-MarBiol - Freija Hauquier

NeMys, a globally recognised database regarding the taxonomy of free-living marine nematodes, was integrated into the WoRMS taxonomic database in 2014. Originally set up by UGent-MarBiol, this database includes taxonomic information as well as 11 online identification keys. Since NeMys and WoRMS have joined forces, a new editorial team has been established consisting of about 10 experts from all over the world.

VLIZ has hosted the Interim Register for Marine & Nonmarine Genera (IRMNG) since 2014. This register was created by the Commonwealth Scientific and Industrial Research Organisation (CSIRO, Australia). However, CSIRO was looking for a new host for the database and guaranteed continuation of the project. VLIZ was able to fill this need. The move to the Aphia database is scheduled for 2015.

All the above activities have been carried out within the scope of the LifeWatch Taxonomic Backbone.

### European Ocean Biogeographic Information System.

EurOBIS publishes distribution data of marine species found in European marine waters or collected by European researchers outside European marine waters. These data are available online via [www.eurobis.org](http://www.eurobis.org). VLIZ hosts EurOBIS, keeps the website operational and actively looks for new data sets that may provide a contribution.

As EurOBIS, VLIZ undertakes several central tasks within the international OBIS community. OBIS is part of UNESCO's Intergovernmental Oceanographic Commission within the scope of the International Oceanographic Data and Information Exchange (IODE) programme. The VLIZ Data Centre performs taxonomic quality checks for all regional nodes. This means that the taxon names from all OBIS data sets are compared to the World Register of Marine Species (WoRMS). In addition, VLIZ manages the metadata of all OBIS data sets. (Eur)OBIS data are made available in the LifeWatch infrastructure by means of web services.

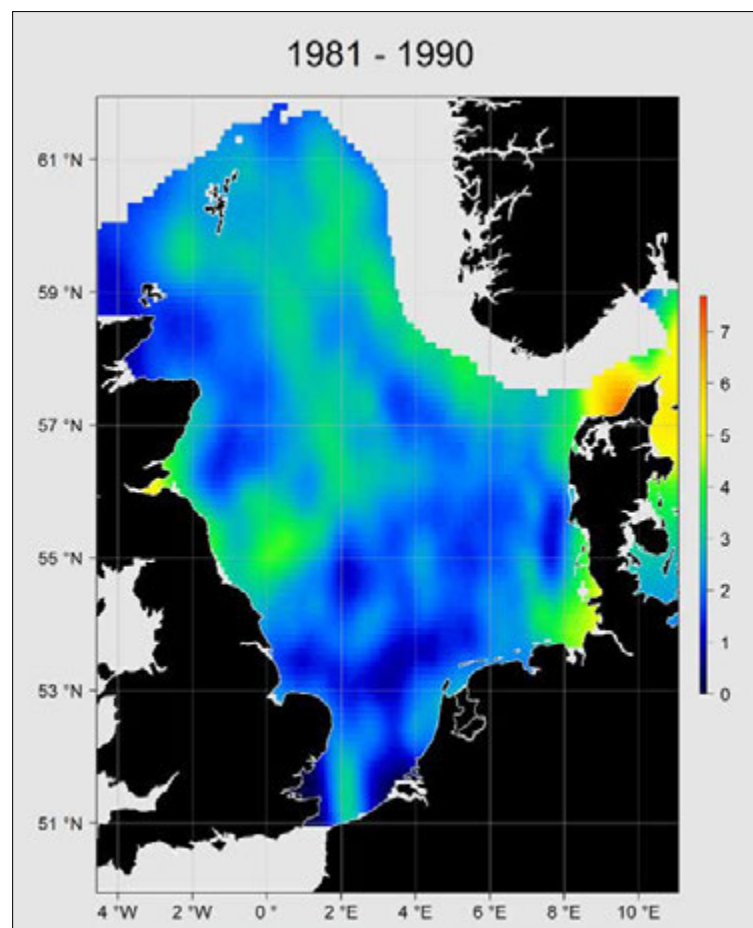
VLIZ has developed quality control procedures within OBIS. These procedures are implemented on the OBIS database so that a record's quality and completeness can be assessed. It will be possible to use the results to filter the data in the near future.

**EMODnet.** The European Marine Observation and Data Network (EMODnet) is an initiative from the European Commission Directorate-General for Maritime Affairs and Fisheries (DG MARE) combining a wide range of European marine observations. Its main purpose is to centralise marine observation data and derived data products, and make these freely available to scientists as well as public and private organisations. This provides them with the opportunity to work more efficiently and save resources, which in turn can be used to create jobs and stimulate innovation. This research infrastructure is part of the European initiative 'Marine Knowledge 2020'.

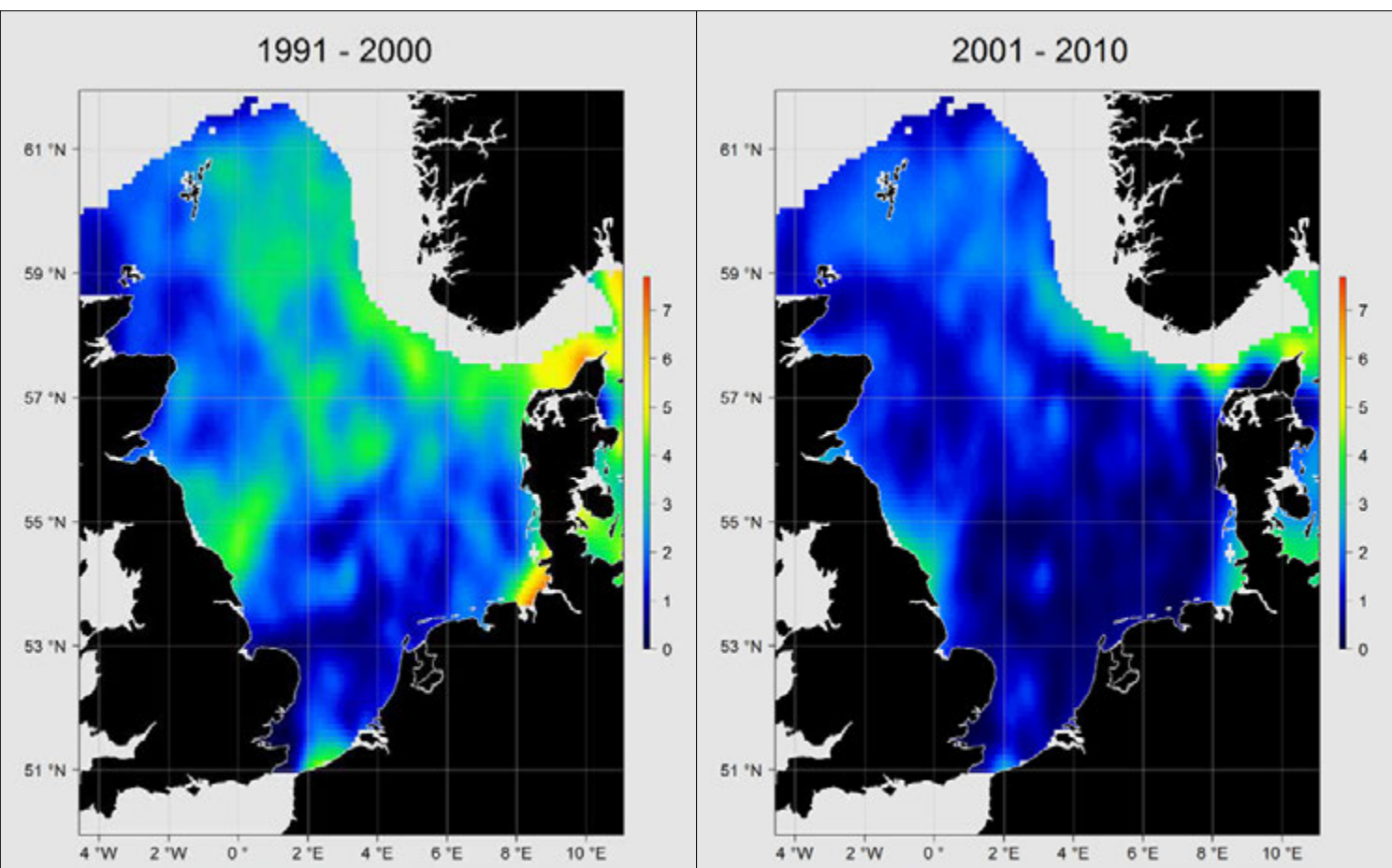
In 2014, VLIZ launched a new data service with regard to data portal interoperability for the central portal in cooperation with the coordinators of the different thematic networks. This new tool enables users to integrate data products from various portals. It can be used, for instance, for a central query of the characteristics as to bathymetry, chemical concentrations of nutrients, species, etc. of a specific location at sea.

As coordinator of the biology portal, VLIZ made a new tool available to users in 2014: 'regional gridded abundance products'. The abundance of a species is mapped spatially through this web service. The resulting operational data can be used for the analysis of the distribution data of a particular species throughout the sea.

The EMODnet secretariat was officially opened in 2014. You can read more on this topic under the highlight in question.







AS COORDINATOR OF THE EMODNET BIOLOGY PORTAL, VLIZ MADE THE TOOL 'REGIONAL GRIDDED ABUNDANCE PRODUCTS' AVAILABLE TO ITS USERS IN 2014. The abundance of a species is mapped spatially through this web service. The resulting operational data can be used for the analysis of the distribution data of a particular species (e.g. cod) throughout the sea.

© EMODnet

# LARGEST SIMULTANEOUS SAMPLING OF THE OCEAN EVER



DURING THE GLOBAL ACTION 'OCEAN SAMPLING DAY 2014', SAMPLES WERE TAKEN ON BOARD RV SIMON STEVIN to gain an insight into the microbial community present in seawater. This action produced very interesting data for marine scientific research and received a great deal of media attention.

© VTM Nieuws

**Marine Regions.** This standardised data system makes geographic information on marine place names and maps freely available on the website [www.marineregions.org](http://www.marineregions.org). It integrates geographic information on seas, ocean basins and undersea features, and indicates the boundaries of marine areas throughout the world. In 2014, the ACUF Gazetteer of Undersea Features, maintained by the US Board on Geographic Names and GEBCO (the General Bathymetric Chart of the Oceans), was fully integrated in Marine Regions.

In the context of Marine Regions, the Data Centre division published the scientific article 'Marine Regions: Towards a global standard for georeferenced marine names and boundaries' in *Marine Geodesy*, written by Claus S. et al.

**Sea Level Monitoring System.** This system, developed and maintained by the data centre, serves over 789 tide gauges throughout the world and shows the tide height (virtually in real time) of each tide gauge. The website and the real-time data service attracted some 84,000 visitors in 2014, processed 401,583,599 page requests and thus distributed no fewer than 1423 GB of data online.

**Micro B3.** Microbial biodiversity, bioinformatics and biotechnology are the pillars of this European FP7 project. In this project, the data centre contributes to improved linking of data from molecular, biodiversity and abiotic databases. During the global action 'Ocean Sampling Day 2014', samples were taken on board RV Simon Stevin to gain an insight into the microbial community present in seawater. This action produced very interesting data for marine scientific research and received a great deal of media attention.



# Library

The **VLIZ Library** manages the most extensive collection of marine scientific literature in Belgium. It is the central point of contact for marine information for scientists, policy makers and the public at large.

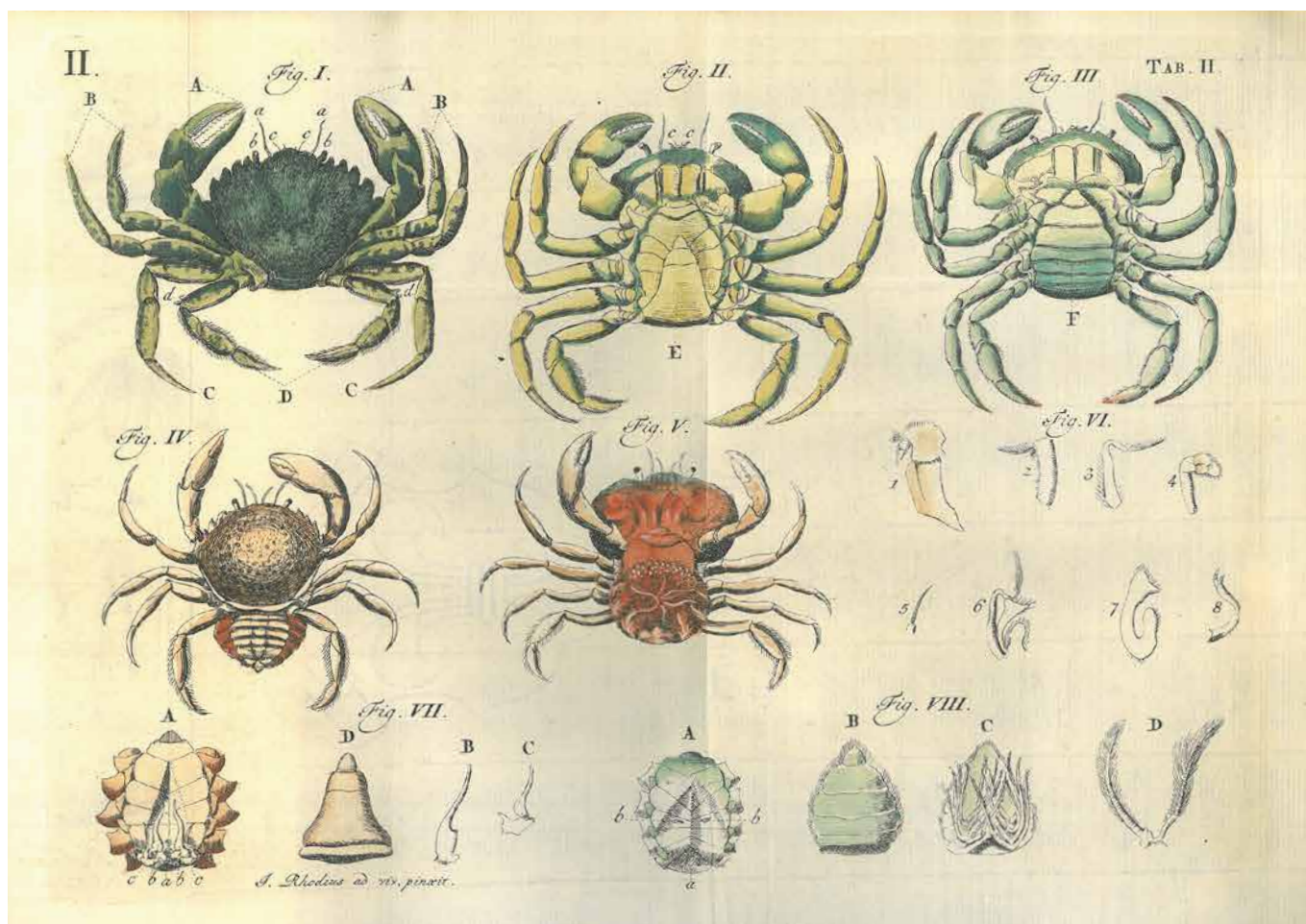
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[www.vliz.be/en/library-division](http://www.vliz.be/en/library-division)

**LIBRARY DIVISION.** Left to right: Chilekwa Chisala, Heike Lust, Zohra Bouchti and Jan Haspeslagh.

© VLIZ - Verhaeghe





**'MALE AND FEMALE SHORE CRABS AND THEIR CLAWS, LEGS AND OTHER BODY PARTS'.** A subcollection from the personal library of the late Prof Philip Polk was donated by his family to the VLIZ library in 2014. The scientific publications included an 18<sup>th</sup>-century book in its original binding by Job Baster entitled 'Natuurkundige uitspanningen, behelzende eenige waarnemingen, over sommige zee-planten en zee-insecten, benevens derzelver zaadhuisjes en eijernesten' (Naturalist accounts of miscellaneous observations on marine plants and insects as well as their seeds and eggs). The book contains numerous illustrations, including this one of the shore crab. The author (1711-1775) was a physician from Zeeland who had a very broad scientific interest and also wrote international publications

**Belgian Marine Bibliography.** The Belgian Marine Bibliography (BMB) constitutes the core of the library collection. It is the reference list of all publications on the Flemish coast and the Belgian part of the North Sea as well as all other marine, estuarine and coastal publications written by Belgian authors and scientists as well as foreign scientists affiliated to Belgian institutes.

Every year, VLIZ provides an overview of Flemish and Belgian marine and maritime scientific research through the Compendium for Coast and Sea. It is based on the Belgian Marine Bibliography and the accompanying information on researchers, research groups, projects, data sets, etc. All Belgian marine, estuarine and coastal output is registered in VLIZ's information system, including the identification of new researchers and research groups. This is one of the VLIZ library's core tasks.

**Belgian Open Marine Archive.** The Open Marine Archive (OMA) aims to archive as many digital full text files from the BMB as possible and make them freely available online. OMA's annual increase of at least 1,000 units is a performance indicator (for details see KPI 1). In 2014, OMA was expanded with no fewer than 3,170 digital publications. This gives a total of 19,272 publications in this open-access repository. The high number of downloads from OMA (368,777) demonstrates that Internet users are finding their way to this archive.

**Other literature in the collection.** In addition to Belgian marine literature, the VLIZ library also continues to expand its collection with relevant international literature which supports marine research and projects inside and outside VLIZ. The new publications are itemised in the

VLIZ Library Acquisitions List on a weekly basis, and this list is sent to 285 subscribers by e-mail. A total of 10,887 new acquisitions were added to the collection in 2014. 18% of these acquisitions were paper publications, and 82% were digitally archived. New publications are screened for taxonomic terms and linked to the World Register of Marine Species.

During the digitising of the collection, the focus was on scientific reports in 2014. About 1,000 paper reports were scanned, as a result of which over 3,000 scientific reports are now available digitally. An example of this are the CIPS reports containing data and work records of Projekt Zee. Projekt Zee started in 1970 and was the first phase of the programmatic research into the North Sea (funded by the former Programmatic Science Policy Service). This archiving activity was carried out within the scope of LifeWatch data archaeology and data rescue project 4DEMON. The data from the publications were digitised, archived and described in IMIS and will be published through online data systems after the 4DEMON project.

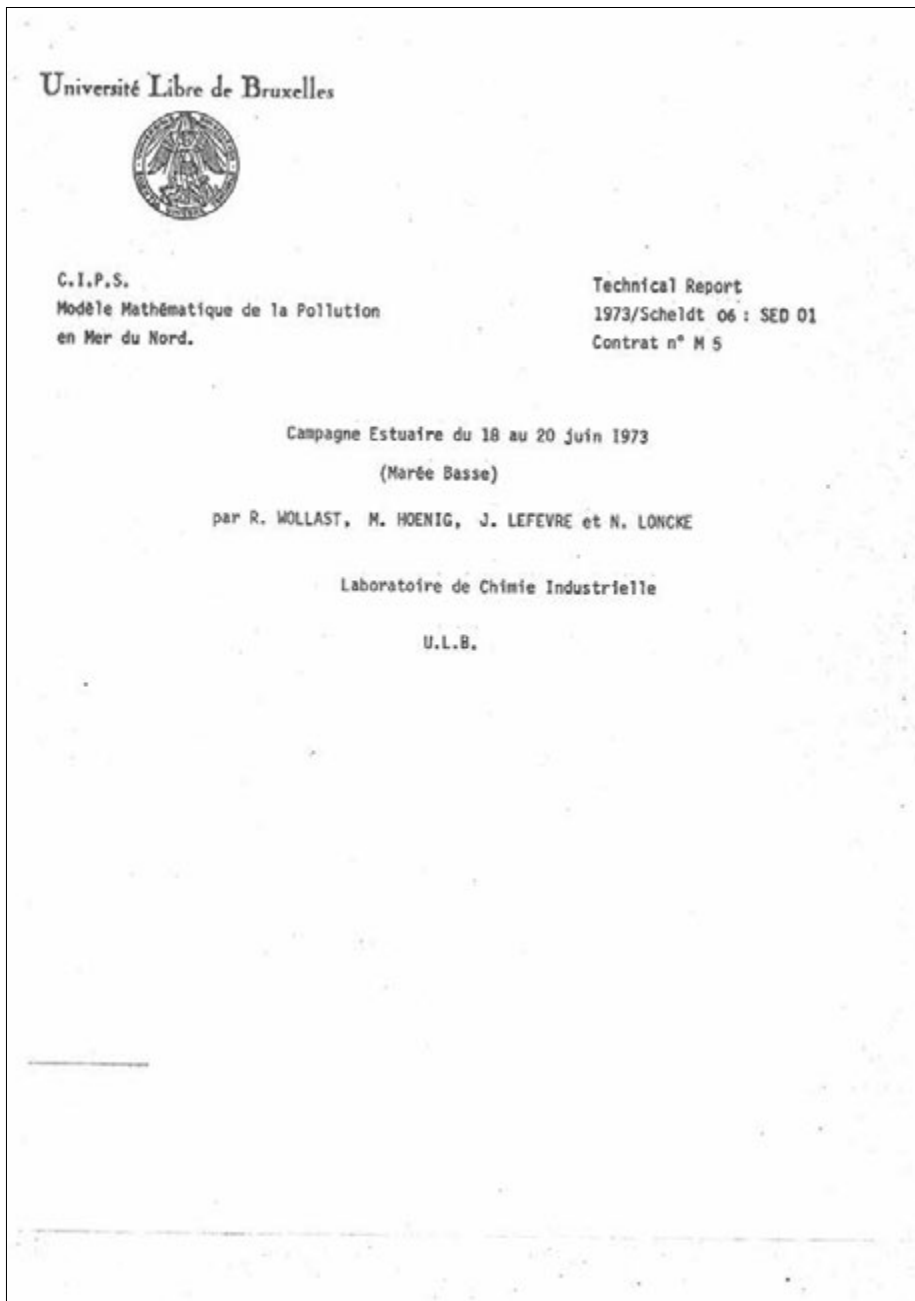
**Optical Character Recognition.** OCR software converts text images into machine-encoded text so that the resulting digital file can be searched for text. Thanks to the purchase of such OCR software, the entire digital collection could be 'read' in 2014. As a result, the full text is now searchable both in the in-house data and information system (IMIS) and by means of online search engines such as Google Scholar.

Service. The library collection is available to everyone. Users can search the catalogue and request publications via the VLIZ website ([www.vliz.be/en/catalogue](http://www.vliz.be/en/catalogue)). Requests can also be made by e-mail, or you can visit the actual library. The number of literature requests (973) remained high in 2014. Three quarters of the requests were made via the online catalogue, the remainder by e-mail. The number of online requests grew by approximately 50% compared to last year. This is an indication that the collection is increasingly picked up by search engines and therefore gains greater visibility on the Internet. It is also notable that very many requests came from abroad, which is also an indication of growing awareness. The library service is not limited to the provision of literature from its own collection. In part thanks to VLIZ's membership of the International Association of Aquatic and Marine Science Libraries and Information Centers, all international marine literature can be looked up and provided.

**Flemish Association for Libraries, Archives and Documentation Centres – VVBAD** In 2014, the VLIZ library became a member of the Scientific and Documentary Information (WDI) section of VVBAD. This group defends the specific interests of scientific libraries in Flanders. VLIZ particularly supports initiatives that promote the integration of scientific publications, information and data sets.

**Cooperation with NIOZ library.** Following the conclusion of a cooperation agreement, VLIZ supports the Royal Netherlands Institute for Sea Research (NIOZ) in the development of its own repository (analogous to the Open Marine Archive) as part of the VLIZ information system. As a result, the VLIZ library now has direct access to all NIOZ publications.





**ALL 297 CIPS REPORTS** containing data and work records of Projekt Zee were digitally archived in 2014. Projekt Zee started in 1970 and was the first phase of the programmatic research into the North Sea.

# Communication

The VLIZ **Communication** division aims to share knowledge with people fascinated by the sea. We try to achieve this central objective by disclosing high-quality marine information to very diverse target groups (young & old, professionals & the general public, local & international, education & research) and in different formats.

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[www.vliz.be/en/communication-division](http://www.vliz.be/en/communication-division)

**COMMUNICATION DIVISION.** Left to right: Jan Seys, Nancy Fockedey, Karen Rappé, Evy Copejans.

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**4 NIEUWS**



**Reuzenhaai**

Lengte: **6-8 m**

Gewicht: **5.200 kg**

Dieet: **plankton, kleine vis, ongewervelde dieren**

Leeftijd: **tot +/- 50 jaar**

Duikdiepte: **tot 1.000 m**

De mond filtert tot **1.800 ton** water per uur

WOENSDAG 5 NOVEMBER 2014 HET NIEUWSBLAD

**Reuzenhaai gespot in Noordzee**

Bij een telling van zeevogels voor de Belgische Oostkust werd een heel ander dier opgemerkt. Zo'n veertig kilometer in zee zagen de opvarenden een reuzenhaai. 'Ik heb wel eens bruinvissen en dolfijnen gespot voor de kust, maar zo'n reuzenhaai is toch wel wat anders', zegt Hilbran Verstraete van Natuur- en Bosonderzoek. 'De haai zwom eerst een honderdtal meter van het schip, kwam dichterbij en zwom nadien onder de boot door.'

De reuzenhaai is ongevaarlijk voor de mens, zegt Jan Seys van het Vlaams Instituut voor de Zee (VLIZ). 'Het dier heeft geen tanden. Het vangt visjes en plankton door met zijn bek open te zwemmen. Het valt de mens niet aan.'

De reuzenhaai is een bedreigde soort, die zelden voorkomt in onze streken. 'De laatste vijf jaar waren er slechts vijf waarnemingen', zegt Seys. (efo)

**VLIZ PROVIDED SUPPORT TO THE PRESS** after the observation of a basking shark by INBO seabird watchers on board RV Simon Stevin.

© Het Nieuwsblad

**Infodesk & Press.** Once again, the VLIZ Infodesk received numerous questions (435) from interested citizens, companies, policy makers, scientists and educators in 2014. The national press also contacted VLIZ regularly in search of information or visual materials. In case of general marine scientific questions, VLIZ provides the answer itself, while experts in specific fields are contacted in case of specialised questions.

In addition, VLIZ sent out 13 press releases in 2014, which resulted in 82 press articles or reports, i.e. nearly half the 171 media items in which VLIZ was mentioned. The highlights in terms of press coverage were the beached plastic sea monster (17), the launch of the long-awaited seafood guide for professional users (14), the artificial reefs which look promising for biodiversity (13), the shocking reality of drowning at sea (9), and lobsters filmed and tagged at the artificial reef (9). VLIZ provided support to the press after the observation of a basking shark by INBO seabird watchers on board RV Simon Stevin, which resulted in 19 press articles. The message was initially posted on the research vessel's Facebook page and was disseminated widely via this social medium. No less than 345 people liked the message, which received 51 responses, and 189 people shared it on their own Facebook page. The message eventually reached no less than 33,824 people.

The demand for explanatory presentations on the sea, mainly delivered by the Communication division, remained high in 2014. VLIZ reached no fewer than 2,294 listeners with 67 presentations. Judging competitions (e.g. Concours Olivier Roellinger – SeaWeb Europe, Conversations with the ocean – Mundus maris) is also part of the Communication division's regular activities.



**Public events.** The Communication division also takes the lead in representing VLIZ at major public events which deal with the ocean and/or marine research. Ostend at Anchor is a real water heritage festival during the last weekend of May which is annually attended by VLIZ with a stand and where VLIZ informs hundreds of visitors on the institute and its fascinating marine research. Open Monument Day, the biggest cultural one-day event in Flanders, draws attention to immovable heritage every year on the second Sunday of September. VLIZ participated in this event for the first time in 2014. At the MSO, VLIZ organised a '3xO' info session on how the historical oyster farms and marine research in Ostend are linked. A fixed item on the VLIZ agenda is Science Day, the biggest science event in Flanders and Brussels, which takes place every year at the end of November. On this occasion, the Marine Station Ostend opened its doors to the general public for the first time in 2014. For more information, see the highlight 'MSO operational'.

**Initiatives for teachers and guides.** As a Structural Science Communication Partner of the Flemish government, VLIZ actively informs teachers and other educators on all things connected with the sea. Two of the performance indicators (KPI 5 and KPI 6) indeed relate to this important specific task.

No less than 4 events accessible for teachers and other educators were organised or supported in 2014 (for details see KPI 5). The annual coastal guide seminar held in Blankenberge on 13 December 2014 was once again a success with a highly appreciated programme and 145 participants. The workshops and the promotional stand provided within the scope of the Flemish Congress for Science Teachers, the Seaside Dip for Teachers and the European Marine Science Educators Association Conference drew a wide response.

Finally, VLIZ developed two educational teaching packages and 5 practical exercises on the sea and coast in 2014 (for details see KPI 6). These were made available on the VLIZ website and on the new digital learning platform 'Planeet Zee' (Planet Ocean). More information on 'Planeet Zee' and the inclusion of 'ocean knowledge' in the curricula is available under the highlight 'Planeet Zee (Planet Ocean) gets a face-lift'.

**Artificial reefs.** The construction of offshore wind farms and other artificial structures at sea requires the conservation and, where possible, strengthening of the natural environment. For this purpose, the cabinet of the Belgian Minister for the North Sea installed two artificial reefs near the Belgian C-Power and Belwind wind farms in 2013. With the support of the Belgian National Lottery, VLIZ developed a semi-automatic marine observatory to monitor the biodiversity of these structures. To this end, a measurement buoy was installed near the artificial reef at the C-Power wind farm in June 2014. After initial damage and loss of measuring instruments, the buoy will be operational again in 2015. It measures different seawater parameters and contains a transceiver system which records the movement patterns of fish around the artificial reefs. In mid-March and early September 2014, scientific divers visited the artificial reef on the Thornton Bank (C-Power wind farm) and on the Bligh Bank (Belwind). Only one year after its installation, they found that the reef had been successfully colonised by various crab species, sea anemones, starfish, fish (pout and cod) and other marine life. Even European lobsters had already discovered the reef, and a few individuals were tagged by the divers-scientists. The underwater images of the reefs and of the tagging of the lobsters received a lot of media attention.

**World Oceans Day.** On Friday evening 6 June 2014, VLIZ organised a Science Happening in CC De Grote Post in Ostend with lectures, test sessions, hands-on experiments, etc. within the scope of World Oceans Day, a global event officially recognised by the United Nations which draws attention to the coast, seas and ocean. With no less than 249 attendants, this new interactive formula proved to be well received by the public. Fritz Buyl, meteorologist at the Oceanographic Meteorological Station, Eric Stienen, seabird expert at the Research Institute for Nature and Forest (INBO), and Patrick Sorgeloos, aquaculture expert at Ghent University (ARC), gave a lecture. A marine market with about 10 stands provided the attendants with the opportunity to gather knowledge about the sea in a playful manner. As every year, the new Zeekrant (2014 edition) was presented at the event.



**WORLD OCEANS DAY** – On Friday evening 6 June 2014, VLIZ organised a Science Happening in CC De Grote Post in Ostend with lectures, test sessions, hands-on experiments, etc.

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PROGRAMMA'S NIEUWS EUROVISIESONGFESTIVAL ZO GEZEGD OOK DAT NOG LIV

**Kreeften op kunstmatig Noordzee-rif krijgen zendertje**

In de eindejaarsperiode komt kreeft vanzelf in de schijnwerpers. Maar ook het Vlaams Instituut voor de Zee zet specifiek de noordzeekreeft in de kijker. Die heeft immers de weg gevonden naar de kunstmatige riften die sinds augustus 2013 in het Belgische deel van de Noordzee zitten. Duikers-onderzoekers van UGent en het Vlaams Instituut voor de Zee voorzien de dieren van een zender om meer over hun gedrag te weten te komen.

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**THE UNDERWATER IMAGES OF THE ARTIFICIAL REEFS** and of the tagging of North Sea lobsters received a lot of media attention.

© VRT - De Redactie



**THE SEARCH SEMINAR** discussed the current state of knowledge with regard to marine archaeological heritage in the Belgian part of the North Sea as well as in our neighbouring countries. The event included interesting lectures as well as a wide range of posters and demonstrations; furthermore, the participants got the opportunity to have their marine (archaeological) finds analysed by experts on site.

© VLIZ - Verhaeghe



**SeArch.** As part of the IWT project 'Archaeological Heritage in the North Sea', scientists and other sea users actively collaborate to inventory marine heritage in an adequate and cost-efficient manner, and ensure operational reliability to marine developers. For this purpose, an evaluation methodology is developed and proposals are made for sustainable management of the Belgian part of the North Sea. VLIZ is responsible for the communication concerning this project. Within this scope, VLIZ provided support in the creation of the website [www.sea-arch.be](http://www.sea-arch.be) and launched the interactive SeArch timeline. In addition, a SeArch seminar was organised in Provinciaal Hof, Bruges on 24 November 2014. The 168 attendants were given an overview of the current state of knowledge regarding this topic by Belgian and foreign experts, both for the Belgian part of the North Sea and for our neighbouring countries. The event included a wide range of posters and demonstrations; furthermore, the participants got the opportunity to bring their own marine (archaeological) 'treasures'. Experts examined the finds on site and gave feedback to the owners right away. The seminar and in particular the session 'Zeeschatten op zolder' (marine treasures in the attic) received extensive press coverage.

**Sustainable fish.** In 2014, VLIZ contributed to the publication of two books on sustainable fish consumption. All information on these publications is available under the highlight 'Sustainable fish in book form'.



**HET GROTE NOORDZEEVISKOOKBOEK** (the big North Sea fish cookery book) was presented to the press in the presence of the Flemish Minister for Environment, Nature and Agriculture.

# Policy Information

The **Policy Information** division supports a scientifically founded coastal and marine policy by providing policy-relevant scientific information products. It focuses on scientists and policy makers as well as coastal and marine professionals.

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[www.vliz.be/en/policy-information-division](http://www.vliz.be/en/policy-information-division)

**POLICY INFORMATION DIVISION.** Left to right: Thomas Verleye, Ann-Katrien Lescrauwaet, Ruth Pirlet, Hans Pirlet and Marleen Roelofs.

© VLIZ - Verhaeghe





**TWO PRODUCTS DERIVED FROM THE COMPENDIUM FOR COAST AND SEA WERE PUBLISHED IN 2014:** Vademecum 'Mariene beleidsinstrumenten en wetgeving voor het Belgisch deel van de Noordzee' (Marine policy instruments and legislation for the Belgian part of the North Sea) and Wegwijzer 'Financieringsinstrumenten voor mariene onderzoeks- en innovatieprojecten' (Guide on Funding Instruments for Marine Research and Innovation Projects).

© VLIZ

**Compendium for Coast and Sea and derivative products.** Vademecum 'Mariene beleidsinstrumenten en wetgeving voor het Belgisch deel van de Noordzee' (Marine policy instruments and legislation for the Belgian part of the North Sea) provides a non-exhaustive overview of the most relevant policy and legislative instruments in the marine and maritime sphere that apply wholly or partially to the Belgian part of the North Sea, the coastal area or the Scheldt estuary throughout the different levels of government (i.e. international, European, Belgian and Flemish). The essence of every regulatory instrument is summarised in a nutshell. Other information such as relevant data, the geographical scope, the legal coverage in the Belgian part of the North Sea and the international and/or national contact points are also mentioned. The Vademecum was officially presented at the VLIZ Young Marine Scientists' Day 2014.

Wegwijzer 'Financieringsinstrumenten voor mariene onderzoeks- en innovatieprojecten' (Guide on Funding Instruments for Marine Research and Innovation Projects) lists the most relevant European, Belgian and Flemish funding possibilities for marine research and innovation. The product is aimed at the Flemish marine research community and innovative actors within the marine field. Each funding channel is explained in this publication by means of an abstract with the general objectives and a reference to the specific marine component. The fact sheet also contains other information such as budget, duration, previous financing instruments, geographical scope, target group, legal basis and website. The reference to the



funding channel's website (web page with calls, Belgian/Flemish contact points, etc.) ensures that interested people can quickly find more information.

The Vademecum and Wegwijzer as well as the entire background document and other communication products of the Compendium for Coast and Sea can be downloaded in pdf format via [www.compendiumkustenzee.be/en/downloads](http://www.compendiumkustenzee.be/en/downloads).

The **GIFS project** (Geography of Inshore Fisheries and Sustainability) investigated the socio-economic and cultural significance and importance of inshore fisheries in the southern North Sea and the English Channel in close cooperation with the fishing industry. The project activities came to an end in 2014. VLIZ was responsible for the website and the creation of the interactive atlas, among other things. The Policy Information division also ensured the inventory and analysis of the existent policy frameworks and technical regulations in the various countries and their impact on inshore fishing. A great deal of attention was paid to the historic importance of this – largely unexplored – segment of the fisheries industry. One of the project's end products is the interactive map. It is designed as an online portal which is part of the Coastal and Marine Wiki. In this portal, the output of the GIFS project is visually represented on a map of the southern North Sea and the English Channel. Users can zoom in up to the level of a port and have access to information on 7 topics: general background information relating to the harbour, economy, education, management and government, socio-cultural data, past & present fisheries, and tourism. Each topic contains the specific results of the GIFS activities, including photographs and links to the final products and relevant websites.

Another end product is the toolkit '21st Century Catch: Practical approaches for sustainable inshore fishing communities'. This publication describes different methods and procedures to map the economic, social and cultural importance of non-industrial and inshore fishing (including recreational fisheries).

**PEGASO** (People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast) (concluded in the spring of 2014) and **SPINCAM** (Southeast Pacific data and information network in support to integrated coastal area management) continued their cross-border partnership for the development of integrated coastal zone management in 2014. An SDI like the one designed within the scope of the PEGASO project for the Mediterranean and the Black Sea was also set up for the southeast coasts of the Pacific, from Panama to southern Chile. The application of a harmonised methodology and the development of a set of indicators among the participating countries will permit the calculation of common indicators at regional level. In addition, information systems will be built at national and regional level which will support the development of policy-relevant data products (indicators, evaluation methodologies, etc.). The 'Integrated Regional Assessments (IRA) in support of ICZM in Mediterranean and Black Sea Basins' promote integrated approaches in the assessment of coastal and marine ecosystems and their sustainable management. The IRA also serve as a blueprint for cooperation between science, policy and management at the level of regional seas.



**VLIZ PUBLISHED A BROCHURE FOR THE MERMAID PROJECT.** It outlines the European and international policy context as well as the socio-economic importance of multipurpose offshore platforms. The research conducted within the scope of this project is illustrated in the booklet by means of four detailed case studies of multipurpose offshore platforms.

© VLIZ - MERMAID

**MERMAID.** This EU FP7 project focuses on the planning, construction and operation of innovative offshore platforms which combine functions such as energy extraction, aquaculture and logistics. VLIZ coordinates the communication work package. In 2014, VLIZ launched a promotional video for this project including interviews with the then European Commissioner for Research, Innovation and Science, and with Dutch, Norwegian and Danish scientists from the aquaculture and wind power industry. VLIZ also published an extensive information brochure on the MERMAID project in 2014. It outlines the European and international policy context as well as the socio-economic importance of multipurpose offshore platforms. The research conducted within the scope of MERMAID is illustrated in the booklet by means of detailed case studies of four multipurpose offshore platforms, each located in another European regional sea (Baltic Sea, North Sea, Atlantic Ocean and Mediterranean Sea).

**Alien species.** In 2014, VLIZ took part in the scientific forum 'Prevention and management of the introduction and spread of invasive alien species' organised by the Committee on Invasive Alien Species (IAS). The forum's role is to coordinate the Belgian position on this matter, and in this context VLIZ takes care of marine and estuarine invasive alien species.

SE FINS (Safeguarding the Environment From Non-Native Species) is a cluster programme of two Interreg projects as to alien species (RINSE and MEMO). The projects are aimed at reducing the impact of invasive alien species and predicting the influence of new alien species that will probably occur in the near future. In this cluster programme, VLIZ acts as advisor for the communication and assessment products developed by the project partners. VLIZ also had an advisory function in the organisation of the cluster event (September 2014).

**Marine Sciences History.** Belgium still plays an important part in marine sciences thanks to prominent scientists as well as remarkable historical figures and events from the 18th, 19th and early 20th centuries. Knowledge about this unique scientific heritage is aggregated in information products available on <http://www.vliz.be/en/persons>. No less than 20 fact sheets are currently available. For an overview, see image.

**Beleidsinformerende nota's (Dutch-language policy-informing briefs) and Policy Informing Briefs.** More information on this is provided under the highlight 'Policy Informing Briefs'.

1. Dautzenberg, Philippe
2. De Beunie, Jean-Baptiste
3. de Maere Limnander, August
4. de Gerlache, Adrien
5. Gilson, Gustave
6. Mann, Théodore-Augustin
7. Mad Leod, Julius
8. Verhaeghe, Louis
9. Lameere, Auguste
10. Massart, Jean
11. Meunier, Alphonse
12. Pelseneer, Paul
13. Renard, Alphonse
14. Stappers, Louis
15. Stevin, Simon
16. Van Bambeke, Charles
17. Van Beneden, Edouard
18. Van Beneden, Pierre-Joseph
19. Belgische mariene wetenschappers tijdens WO I
20. Mercator, Gerardus





1

**MÉMOIRE**  
Présenté à l'Académie Impériale & Royale  
de Bruxelles.  
PAR  
**MR. J. B. DE BEUNIE,**  
Le 24 Juin 1777.  
Sur une maladie produite par les Miasmes  
véniéuxes.

2



**MÉMOIRE**  
Présenté à l'Académie Impériale & Royale  
de Bruxelles.

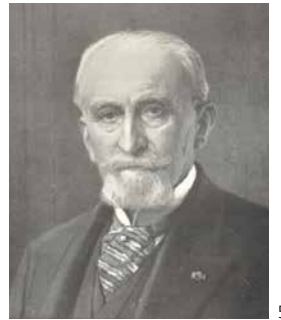
De tout temps on a observé des maladies exotiques  
des Miasmes véniéuxes. Verber, Carleste Alde,  
de, qu'un homme robuste, immédiatement après avoir  
mangé des Miasmes, fut atteint d'une cardalgie, des  
vomissements & d'une fièvre pourpre (purpura urticae)  
& qu'il est mort le troisième jour, selon Buschmann,  
une Dame de Muckelshurg, vient mangée des  
Miasmes véniéuxes, à cet, entre les symptômes ocu-  
laux, une très-grande hémorrhagie urinaire. Le même  
Auteur dit: Fili enim non parvi maronis, reges &  
infantes ex regumque est male fi laborant. Jamque  
pauciorum annorum, futuris fides, apud nos.



3



4



5



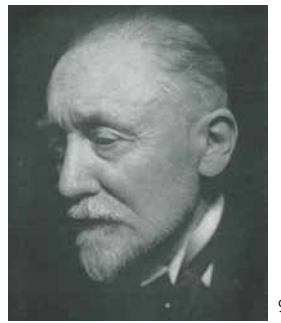
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19

A close-up photograph of several mussels on a dark, rocky surface. The mussels have dark, iridescent shells with some white and blue highlights. Some shells are slightly open, revealing the inner flesh. The background is blurred, showing more rocks and possibly some seaweed or small plants.

By order of the Flemish government, VLIZ supports several international organisations. This capitalises on VLIZ's international experience and reputation, and makes it possible to embed important European initiatives in Flanders.

# Support to international organisations

[www.vliz.be/en/international-mandates](http://www.vliz.be/en/international-mandates)







## European Marine Board secretariat

The European Marine Board provides a Pan-European platform to its marine scientific member organisations to establish common research priorities, to promote marine scientific research and to close the gap between science and policy. VLIZ represents Flanders in the European Marine Board and was given the mandate by the Flemish government to accommodate and support the EMB secretariat.

[www.vliz.be/en/european-marine-board-emb](http://www.vliz.be/en/european-marine-board-emb)  
[www.marineboard.eu](http://www.marineboard.eu)

The European Marine Board represented 36 member organisations from 18 countries in 2014.

**Expert groups.** EMB brings European scientists and other experts together in order to draw up position documents on marine topics of strategic importance for Europe. Such position documents contain scientific recommendations and strategic policy suggestions which contribute to influencing the current and future national and European research agendas. In 2014, a new working group was started with regard to marine training programmes (Marine Graduate Training – Training the 21st Century Ocean Scientists). The working groups on valuing marine ecosystems (VALMARE working group) and on deep-sea research were continued. The working group on the influence of the oceans on human well-being and the one on underwater landscapes and heritage (SUBLAND working group) were concluded.

**Publications.** The EMB publications are aimed at European and national research programme managers, strategic developers, policymakers and the marine research community. They analyse the state of affairs of the topic in question and provide a phased plan with concrete recommendations to improve European research. EMB issued the following publications in 2014:

- **Rome Declaration. Setting a vision for seas and ocean science. Delivering impact, global leadership and sustainable blue growth for Europe.**  
 Every 3 or 4 years the European Marine Board and the European Commission organise the EurOCEAN conference, which is authoritative for marine scientists and policy makers and traditionally ends with a declaration supported by the entire community. The Rome Declaration sets a vision for European leadership in marine science, greater appreciation of the European seas, more efficient knowledge dissemination and a multidisciplinary and broader approach. Central to this document is job creation at sea, which should accompany research in order to be sustainable.
- **Land beneath the waves. Submerged landscapes and sea level change. A joint geoscience-humanities strategy for European Continental Shelf Prehistoric Research.**  
 A position document resulting from the SUBLAND working group. It describes the state of affairs and lists the opportunities and recommendations to promote research into the European continental shelf in the prehistory.



THE PANEL DISCUSSION AT THE FOURTH EUROPEAN MARINE BOARD FORUM 'ARCTIC 2050' focused on how industry and science can join forces to achieve sustainable management of the Arctic Ocean.

© EMB - Hertz

- [Message from Bedruthan.](#)

This policy paper is based on the position paper 'Linking Oceans & Human Health'. It is a call for a coordinated, transnational and interdisciplinary Oceans and Human Health research programme in Europe. The 'oceans and human health' research topic now has a broad support base and has been included in several research funding programmes and coordination actions such as Horizon 2020 and the JPI Oceans strategic research and innovation agenda.

- [How did our ancestors adapt to sea-level change? Discovering and safeguarding Europe's underwater heritage through Continental Shelf Prehistoric Research.](#)

This policy paper is based on the position paper 'Land beneath the waves'. This publication summarises the scientific needs and priorities to discover and protect Europe's underwater heritage.

- [4<sup>th</sup> EMB Forum Proceedings 'Arctic 2050: Towards Ecosystem-based management in a changing Arctic Ocean'.](#)

In 2014, the annual EMB forum focused on the Arctic Ocean and how changes in this region should best be dealt with. An ecosystem-based management was promoted as the solution to cope with the rapid environmental change and commercial exploitation of the region. The roles of industry, science and policy makers in achieving sustainable management of the Arctic Ocean were discussed at the forum.

**European projects.** EMB takes part in framework programme projects of the European Commission to promote cooperation between European marine and maritime stakeholders as well as joint identification of research priorities so as to avoid duplication. Highlights of the European projects in which EMB participated include:

- the SEAS-ERA Final Conference (Majorca – April 2014), where the main results, the impact and the prospects of the SEAS-ERA project were presented. In addition, an overview was provided of the first year of the 5 projects funded by SEAS-ERA Atlantic and Mediterranean call.
- the final STAGES workshop, where a number of practical results were presented that can increase the efficiency of knowledge transfer between science and the Marine Strategy Framework Directive (MSFD) implementation.

**New chair.** During the EMB plenary meeting which took place in Brest in the spring of 2014, Jan Mees (General Director of VLIZ) was appointed as chair of the European Marine Board for a term of three years. You can read more on this topic under the highlight in question.

**Seconded VLIZ staff:** Dina Eparkhina



## EMODnet secretariat

EMODnet, the European Marine Observation and Data Network, aims to centralise the abundance of marine observations in Europe and make them optimally accessible for use by government bodies, scientists and maritime companies, primarily so as to support sustainable economic growth and employment. The Flemish government has mandated VLIZ to accommodate and support the EMODnet secretariat.

[www.vliz.be/en/european-marine-observation-and-data-network-emodnet](http://www.vliz.be/en/european-marine-observation-and-data-network-emodnet)

[www.emodnet.eu/about-secretariat](http://www.emodnet.eu/about-secretariat)

As part of an EMODnet support package, the Flemish government makes available € 180,000 for the accommodation of the secretariat as well as for investment through VLIZ in technical and scientific support to the development of the central data portal and accompanying data services.

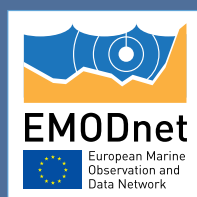
As part of an EMODnet support package, the Flemish government provides furnished office space at the InnovOcean site to house the secretariat. Annually, the Flemish government makes available € 180,000 for the accommodation of the secretariat as well as for investment through VLIZ in technical and scientific support to the development of the central data portal and accompanying data services. Read more on the tasks of VLIZ within the EMODnet project in the Data Centre division chapter.

**Communication.** To raise EMODnet's profile among the organisations supplying data as well as the data users, several promotional materials were developed such as a brochure, a leaflet, a poster, etc. All these products are made available via the central data portal [www.emodnet.eu](http://www.emodnet.eu).

**Events.** At the European Maritime Days in Bremen in May 2014, EMODnet and EuroGOOS organised a stakeholder workshop entitled 'From marine observations and data to information, knowledge and Blue Growth: Towards an integrated end-to-end European Ocean Observing System (EOOS)'.

Ahead of the EurOCEAN 2014 conference in Rome in October, EMODnet organised a pre-event entitled 'The European Marine Observation and Data Network – Connecting people with data'.

The workshops were aimed at informing the attendants on the data services provided by EMODnet and the role EMODnet plays in the broader marine data landscape in Europe. The new EMODnet activities, the EMODnet checkpoints, were presented there as well. These checkpoints per regional sea whether the availability and usefulness of the data meet the real needs of users. With the help of the participants, the current challenges and future needs of the further development of this long-term initiative were also further defined. This knowledge will contribute to the evolution of EMODnet towards a user-friendly service that meets the needs of marine sciences, policy and the industry.



## The European Marine Observation and Data Network

[www.emodnet.eu](http://www.emodnet.eu)



**IN 2014 EMODNET DREW UP A BROCHURE TO RAISE ITS PROFILE** among the organisations supplying data as well as the data users. These and other promotional materials are available via the central data portal.

© EMODnet

**Monitoring.** The EMODnet secretariat is responsible for monitoring the progress of the EMODnet portals twice a month on the basis of a set of about 10 indicators. This includes measuring the input (the amount of data added, the number of observation platforms, etc.) as well as checking the output (the number of visitors, downloads and data set requests). In addition, attention is paid to other indicators such as the type of organisation supplying the data, the data interoperability, the impact translated into the number of publications, and so forth. Specific problem areas and potential solutions are identified in the process.

**Survey.** The EMODnet secretariat conducted an active user survey for each portal in 2014. The ensuing results and recommendations serve as a guideline for increasing the portals' user-friendliness.

**Formal opening.** The EMODnet secretariat was officially opened in February 2014. You can read more on this topic under the highlight in question.

## JPI Oceans

The Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans) is a coordinating and integrating platform open to all European countries that invest in marine and maritime research. Its aim is to combine national research funds and structure cooperation in the field of research policy. The Flemish government has mandated VLIZ to support the JPI Oceans secretariat.

[www.vliz.be/en/jpi-healthy-and-productive-seas-and-oceans-jpi-oceans](http://www.vliz.be/en/jpi-healthy-and-productive-seas-and-oceans-jpi-oceans)

[www.jpi-oceans.eu](http://www.jpi-oceans.eu)

**Pilot action - intercalibration.** This pilot action was presented by Belgium in the Board of Directors of JPI Oceans and approved in April 2014. The action is aimed at the joint funding of the intercalibration for the Water Framework Directive for coastal waters and estuaries in the north-east Atlantic Ocean. This way, a new mechanism of joint funding through the environment administrations of nine member states is tested which goes beyond the traditional joint calls model. JPI Oceans selected the most suitable experts to assume the tasks. This way, JPI Oceans has started a structural dialogue between the different member states' environment administrations and scientific communities to address the final scientific challenges for the Water Framework Directive together.

**Pilot action – microplastics.** Within the scope of the action concerning microplastics, a bibliometric study was conducted to map the national and international research landscape. The study confirms that European researchers play an important part in the global networks involved in microplastics research. The pilot action was also supported by a microplastics research forecast aimed at the development of a roadmap for this form of research for Europe. Ten JPI Oceans member states eventually confirmed the funding of a joint call for research proposals. The call with a budget of € 7.5 million will be launched in early 2015.

**Pilot action – deep-sea mining.** Within the scope of the pilot action on the ecological aspects of deep-sea mining, preparations were made for a research campaign starting in March 2015. The campaign is financed by eleven JPI Oceans member states and is aimed at improving the assessment of the impact of seabed mining activities. For this purpose, research will be conducted in areas where such deep-sea mining could take place (the DISCOL area off the coast of Peru and the Clarion-Clipperton Fracture Zone in the Pacific).



**Pilot action – multi-use of infrastructure for monitoring.** The action concerning multi-use of research infrastructure for monitoring the North Sea was successfully completed. The evaluation of the action is expected for early 2015.

**Strategic research and innovation agenda.** At the Board of Directors meeting in December 2014, the research agenda was discussed and endorsed by the JPI Oceans member states. The approval constitutes a milestone for JPI Oceans since the document will be the basis for future lines of action by the initiative. The preparation of the research agenda was preceded by a broad consultation process in which scientific organisations, industry representatives, funding agencies and ministries helped to investigate what role JPI Oceans could play within the research and innovation field.

**JPI Oceans video.** In a video explaining the role played by JPI Oceans, former European Commissioner for Research and Innovation Máire Geoghegan-Quinn, former Flemish Minister for Innovation Ingrid Lieten and Norwegian Minister of Fisheries Elisabeth Aspaker set out their views on joint programmes in general and on the JPI Oceans initiative in particular. The political heavyweights gave concrete examples of the added value of increased European cooperation in the field of marine and maritime research policy. For instance, the current pilot action on the ecological aspects of microplastics is cited as an example of improved cooperation between the JPI Oceans members.

The video was developed within the scope of the CSA Oceans project to support JPI Oceans in the development stage.

**Website and newsletter.** To improve online communication, a full screening was conducted to determine the new website's structure and contents. The website's contents were subsequently substantially modified and supplemented with new pages on the JPI Oceans strategy, the progress of the pilot actions and an update on the national marine and maritime research strategies of the JPI Oceans members. In addition, the website provides an overview of the European and global research policy. A database of European marine research infrastructure can be consulted via the website as well. This database was developed in collaboration with EurOcean and maps over 785 research vessels and other facilities. Finally, the online newsletter was completely revised.

**Seconded VLIZ staff:** Wendy Bonne, Willem De Moor, Marie-Agnès Leroy-Danielsen and Tom Redd



**IN 2014 JPI OCEANS LAUNCHED A REDESIGNED WEBSITE** with new pages on the JPI Oceans strategy, the progress of the pilot actions and an update on the national marine and maritime research strategies of the JPI Oceans members. In addition, the website provides an overview of the European and global research policy and includes a database of European marine research infrastructure which can be consulted.

# UNESCO/IOC Project Office for IODE

VLIZ has a special responsibility to accommodate and support the secretariat of the International Oceanographic Data and Information Exchange Programme (IODE) of UNESCO's Intergovernmental Oceanographic Commission (IOC). The UNESCO/IOC Project Office for IODE is the principal training centre of the IODE programme worldwide.

[www.vliz.be/en/unescoioc-project-office-iod](http://www.vliz.be/en/unescoioc-project-office-iod)

[www.iod.org](http://www.iod.org)

The Flemish government annually contributes approx € 250,000 to the operational support of the UNESCO/IOC project office for IODE, and VLIZ seconds three employees to the office under the supervision of Peter Pissierssens. Thanks to this support, Flanders contributes to the development of international coordination with regard to oceanography and to the promotion of sustainable use and development of coastal areas worldwide. In addition to the funds made available by the Flemish government through VLIZ, the Project Office also receives funds from UNESCO, the European Commission, the UNESCO/Flanders Fund-in-Trust for the support of UNESCO's activities in the field of Science (FUST), and individual IOC member states.

**Training courses.** The UNESCO/IOC Project Office for IODE in Ostend is primarily a training centre where oceanographic data and information managers can acquire knowledge and skills thanks to the OceanTeacher Academy Project (OTA). In 2014 the IODE project office organised nine training courses within the scope of the OTA project, six of which were held at the InnovOcean site in Ostend. A total of 207 participants from 64 countries took part in these training activities. The training courses made use of the Ocean Teacher Learning Platform. In 2014, the new OceanTeacher Global Academy (OTGA) was launched with the aim of setting up a worldwide network of Regional Training Centres (RTCs). In the future, training courses will still take place in Ostend, but the IODE project office will also coordinate the OTGA network of RTCs. All foreign activities remain linked to the IODE project office in Ostend as the OceanTeacher Learning Platform is used centrally. Attention is constantly paid to reaching an equal distribution of male and female participants in training courses organised by UNESCO.

**Meeting place.** Meeting place. The UNESCO/IOC Project Office for IODE in Ostend is also a meeting place where experts and data and information managers can discuss and develop IODE projects. Five international meetings were organised at the Project Office in 2014. Due to IODE's international character, several meetings and events obviously took place abroad. Flemish experts also participated in these meetings and events. The complete list of meetings, workshops, conferences etc. can be consulted on the IODE calendar.

**Prof Philip Polk.** In 2014, the IODE project office named its teaching room after the late Philip Polk (1932 - 2014), professor emeritus at Vrije Universiteit Brussel. In 1984 he established the Kenya - Belgium Project in Marine Sciences. Prof Polk inspired many young students and scientists both in Kenya and in Belgium. Thanks to his work and dedication, he promoted the development of projects such as RECOSCIX and the IOC/IODE ODINAFRICA project.

**The Ocean Biogeographic Information System (OBIS)** provides access to the largest online data system in the world for the distribution, diversity and abundance of marine biodiversity ([www.iobis.org](http://www.iobis.org)). OBIS was expanded substantially in 2014. Four new OBIS nodes were established: South-East Asia (SEA OBIS), Persian Gulf and Gulf of Oman (PEGO-OBIS), Caribbean Sea (Caribbean OBIS) and OBIS Senegal. All OBIS nodes were queried three times in 2014. As a result, no less than 3.64 million observations of new species from 264 new data sets were added to the data system.

**Trainee.** As part of his Master's course in Marine Biodiversity and Conservation at Ghent University, Frédéric Dujardin did a work placement at the OBIS secretariat for five months. His thesis was the basis for a chapter on biodiversity in Fischer A. et al. (Eds). *Open Ocean Technical Assessment Report for the Global Environment Facility Transboundary Water Assessment Programme* (in print). The new OBIS maps he created for this purpose are available via [www.iobis.org/maps](http://www.iobis.org/maps).





IN 2014, THE IODE PROJECT OFFICE NAMED ITS TEACHING ROOM AFTER THE LATE PHILIP POLK (1932 - 2014), professor emeritus at Vrije Universiteit Brussel. In 1984 he established the Kenya - Belgium Project in Marine Sciences and he inspired many young students and scientists both in Kenya and in Belgium.

© VLIZ

**UNESCO/Flanders Fund-in-Trust for the support of UNESCO's activities in the field of Science (FUST).** Three new projects were approved by the FUST steering committee and started in 2014. These new projects are: OceanTeacher Global Academy (OTGA), the Caribbean Marine Atlas Phase 2 (CMA2) and DIPS-4-Ocean Assessments which will ensure the development of information products and services based on OBIS and HAEDAT to support the World Ocean Assessment, IPBES and the Global HAB Status Report.

**Seconded VLIZ staff:** Kristin de Lichtervelde, Claudia Delgado and Mark Van Crombrugge.

The Key Performance Indicators refer to important services provided by VLIZ to marine scientific researchers, policymakers, educators and the general public. These are criteria to evaluate the operation of VLIZ. VLIZ has to deliver on at least five KPIs every year.

# Key Performance Indicators







## KPI 1

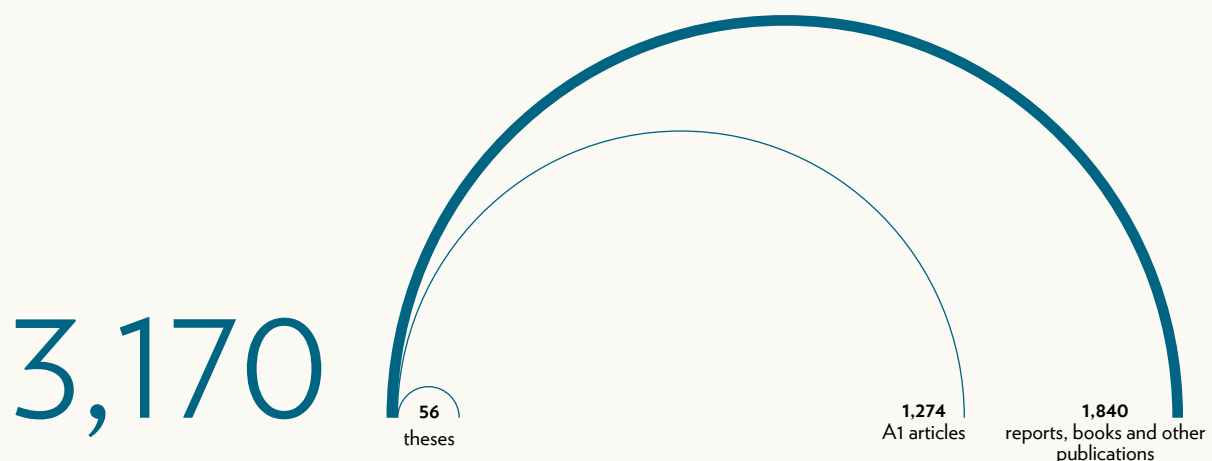
Increase in data volume of the Open Marine Archive for Flanders (articles, reports and theses) of 1,000 units a year.

A key element of the VLIZ library collection is the Open Marine Archive (OMA), which makes publications on the Belgian coast written by Belgian marine scientists digitally available. OMA includes peer-reviewed articles as well as reports, theses, conference papers, scientific posters and publications intended for a general audience.

Internet users from all over the world can freely consult and download this wide range of publications from the VLIZ website ([www.vliz.be/en/open-marine-archive](http://www.vliz.be/en/open-marine-archive)). In addition, search engines such as Google Scholar give publications included in OMA a prominent ranking. This way, Belgian marine research results attain maximum visibility and dissemination via the Internet, and the scientific communication of these results is promoted.

A total of 3,170 new references were added to the Open Marine Archive in 2014. These references include 1,274 A1 articles, 56 theses and 1,840 reports, books and other publications.

### NEW REFERENCES ADDED TO THE OPEN MARINE ARCHIVE



For comparison: a total of 3,844 new references were added to the Open Marine Archive in 2013. These references include 1,559 A1 articles, 40 theses and 2,245 reports, books and other publications.

## KPI 2

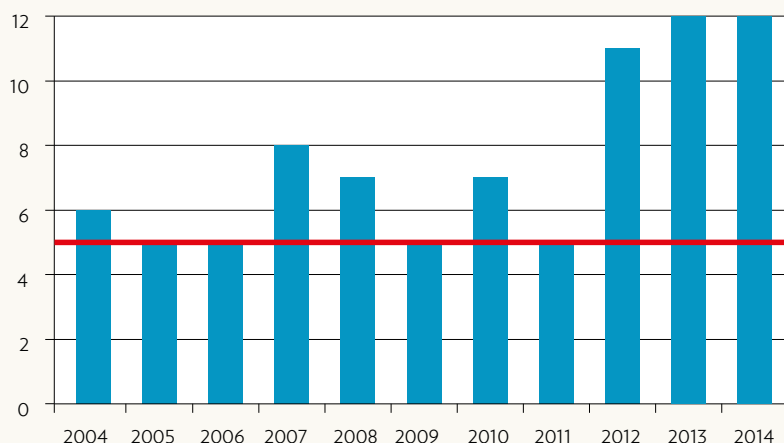
Yearly publication of at least five issues of the electronic newsletter 'VLIZINE' and three issues of 'De Grote Rede'.

One of the responsibilities of the Flanders Marine Institute is to popularise and distribute marine scientific information towards various target groups. The Communication division takes care of two regular publications: the information magazine 'De Grote Rede' and the digital newsletter 'VLIZINE'.

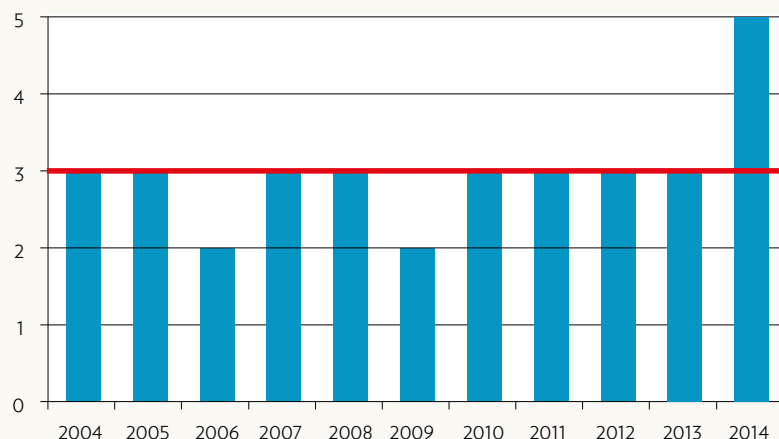
VLIZINE provides practical information on research and policy supplied by and intended for Flemish marine scientists. It also includes announcements of new projects and publications, events, doctorates, vacancies and fairs as well as interesting scientific facts on our coast, seas and ocean. A total of 12 issues of VLIZINE reaching 1,177 subscribers appeared in 2014.

'De Grote Rede' is the information magazine on the coast and sea for the Flemish region and surrounding area. With three leading articles and nine standard features, 'De Grote Rede' provides its readers with a varied yet objective outlook on current knowledge about the coast, sea and ocean as well as an explanation of the conducted research and pursued policy. Two regular editions of 'De Grote Rede' (issues 38 and 39) appeared and were sent to 7,116 subscribers in 2014. In addition, the special issue 'World War I and the sea' (originally published in Dutch in 2013) was translated into English, French and German in 1000, 150 and 100 copies respectively. These special editions were mostly distributed at the Scientific Conference and Commemorative Event on the Underwater Cultural Heritage from World War I, organised by UNESCO in Provinciaal Hof, Bruges (26 – 28 June 2014).

### NUMBER OF ISSUES OF VLIZINE



### NUMBER OF ISSUES OF DE GROTE REDE



## KPI 3

At least 150 sailing days spent on scientific research and associated measurement campaigns on a yearly basis.

VLIZ provides researchers with logistical support by ensuring the management, maintenance and operation of research infrastructure and equipment.

VLIZ has three vessels at its disposal for scientific research: RV Simon Stevin, RIB Zeekat and ROV Genesis. If need be, other vessels, e.g. from the Flemish fleet, can be deployed for research and monitoring activities in the Scheldt estuary. The vessels Scaldis I, Pierre Petit, Luctor and Scheldewacht were used for this purpose in 2014.

RV Simon Stevin is deployed for academic coastal oceanographic research in the Southern Bight of the North Sea and the eastern part of the English Channel. It also serves as a training platform for students from marine sciences as well as maritime training courses.

ROV Genesis is an unmanned underwater vehicle used nationally and internationally on research vessels.

RIB Zeekat can be deployed from the research vessel Simon Stevin or from the shore. RIB Zeekat can be deployed in the Scheldt estuary as well. The reinforced keel is designed to run the vessel aground on tidal banks.

### NUMBER OF DAYS AT SEA

Vessels	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
RV Simon Stevin								100	147	183
RV Zeeleeuw	151	122	150	162	166	151	152	57		
RIB Zeekat	45	35	51	39	32	57	40	37	5	17
ROV Genesis								6	26	20
'Third' vessels	44	41	38	37	36	84	73	110	42	48
<b>Total</b>	<b>240</b>	<b>188</b>	<b>239</b>	<b>238</b>	<b>234</b>	<b>292</b>	<b>265</b>	<b>310</b>	<b>220</b>	<b>268</b>



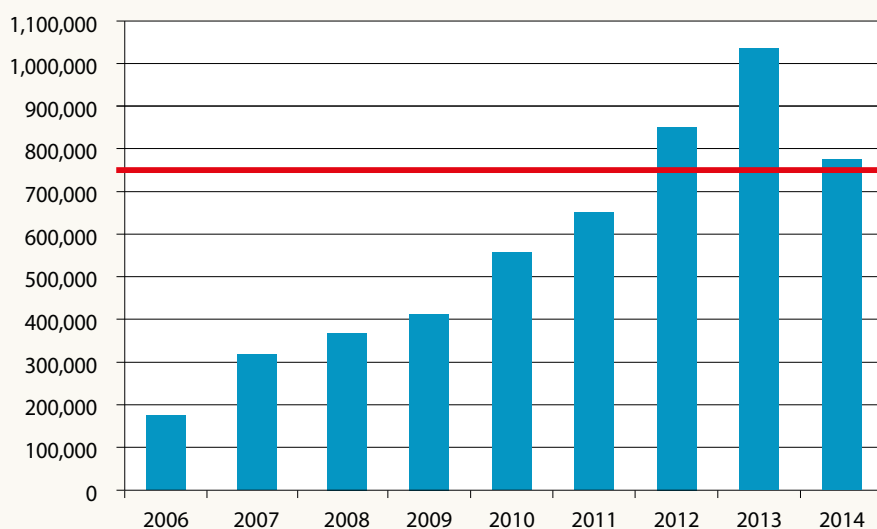
## KPI 4

At least 750,000 unique visitors to the informative websites managed by VLIZ on a yearly basis.

One of the principal aims of VLIZ is to make the versatile and high-quality marine and coastal research in Flanders and the wider region more widely known. For this purpose we invest a great deal in making research results and derivative data products available on the Internet.

A total of 769,951 unique visitors consulted VLIZ's informative websites with the URL [www.vliz.be](http://www.vliz.be) in 2014. The most consulted pages were the Open Marine Archive, the VLIZ homepage, the IMIS database, the sluice dock website and the catalogue of the VLIZ library.

### UNIQUE VISITORS TO THE VLIZ WEBSITES



## KPI 5

The organisation of at least two initiatives (seminars, conferences, workshops, etc.) a year for teachers.

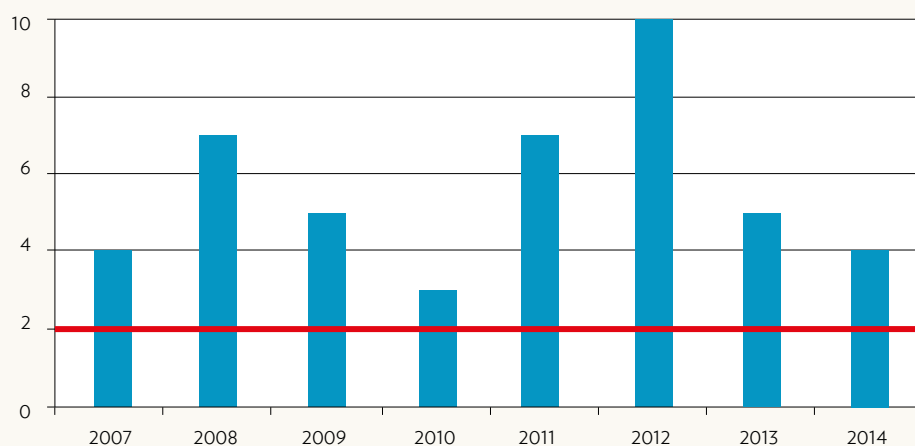
Since 2007, VLIZ has placed a special focus on schools and other educational institutes by means of a Structural Partnership with the Flemish Government. Generally educational products such as practical exercises, posters, images, photo and film galleries as well as thematically arranged marine scientific information can be consulted on the VLIZ website. Specific learning modules for the second and third cycle of secondary education are available on the digital learning platform 'Planeet Zee' (Planet Ocean). These rich sources of information are presented to teachers and other educators (e.g. guides) during seminars, conferences or workshops.

VLIZ (co)organised 4 initiatives for teachers and other educators in 2014.

### INITIATIVES FOR TEACHERS AND OTHER EDUCATORS IN 2014

		LOCATION	ORGANISATION
5.02.2014	Seaside Dip for Teachers workshop	InnovOcean site, Ostend	VLIZ
1 - 3.10.2014	European Marine Science Educators Association	University of Gothenburg, Sweden	EMSEA (in which VLIZ actively participates)
15.11.2014	3 workshops and an info desk at the 20th Flemish Congress for Science Teachers	KULAK, Kortrijk	VeLeWe
13.12.2014	Coastal guide seminar	Belgium Pier, Blankenberge	VLIZ in cooperation with Nature and Environmental Education service of the province of West Flanders

### INITIATIVES FOR TEACHERS AND OTHER EDUCATORS



## KPI 6

The development and provision of at least two educational teaching packages on the sea and coast a year.

In 2014, VLIZ developed 2 educational teaching packages on the sea and coast as well as 6 practical tests. The learning modules, based on the final attainment levels for the second and third cycle of secondary education, are available on the digital learning platform Planeet Zee ([www.planeetzee.be/lesmodules](http://www.planeetzee.be/lesmodules)). The practical exercises can be carried out during science classes and can be consulted on the VLIZ website ([www.vliz.be/en/exercises](http://www.vliz.be/en/exercises)).

**Planeet Zee learning module:**

- Beach morphology and dynamics
- Marine biotechnology

**Practical exercises:**

- Soil and geology
  - Beach terrain profile
  - Polder sample boring
  - Sand, a motley
  - Beach fieldwork excursion bundle
- Biotechnology
  - Visit to the sea pharmacy
  - Extraction of the food additive carrageenan



# Colophon

This 2014 Annual Report of the Flanders Marine Institute (VLIZ) has been presented for approval to the Board of Directors and the General Assembly on 17 March 2015.

## Coordination and editing:

- Jan Mees – General Director of VLIZ
- Tina Mertens – VLIZ policy officer
- Jan Seys – head of the VLIZ Communication division
- Karen Rappé – Senior scientific assistant of the VLIZ Communication division

Many thanks to all who contributed to the completion of this document.

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Copyright: VLIZ

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D/2015/10.906/1



# Annexes

3 FINANCIAL STATEMENT

5 OTHER INDICATORS

19 NATIONAL AND INTERNATIONAL NETWORKS

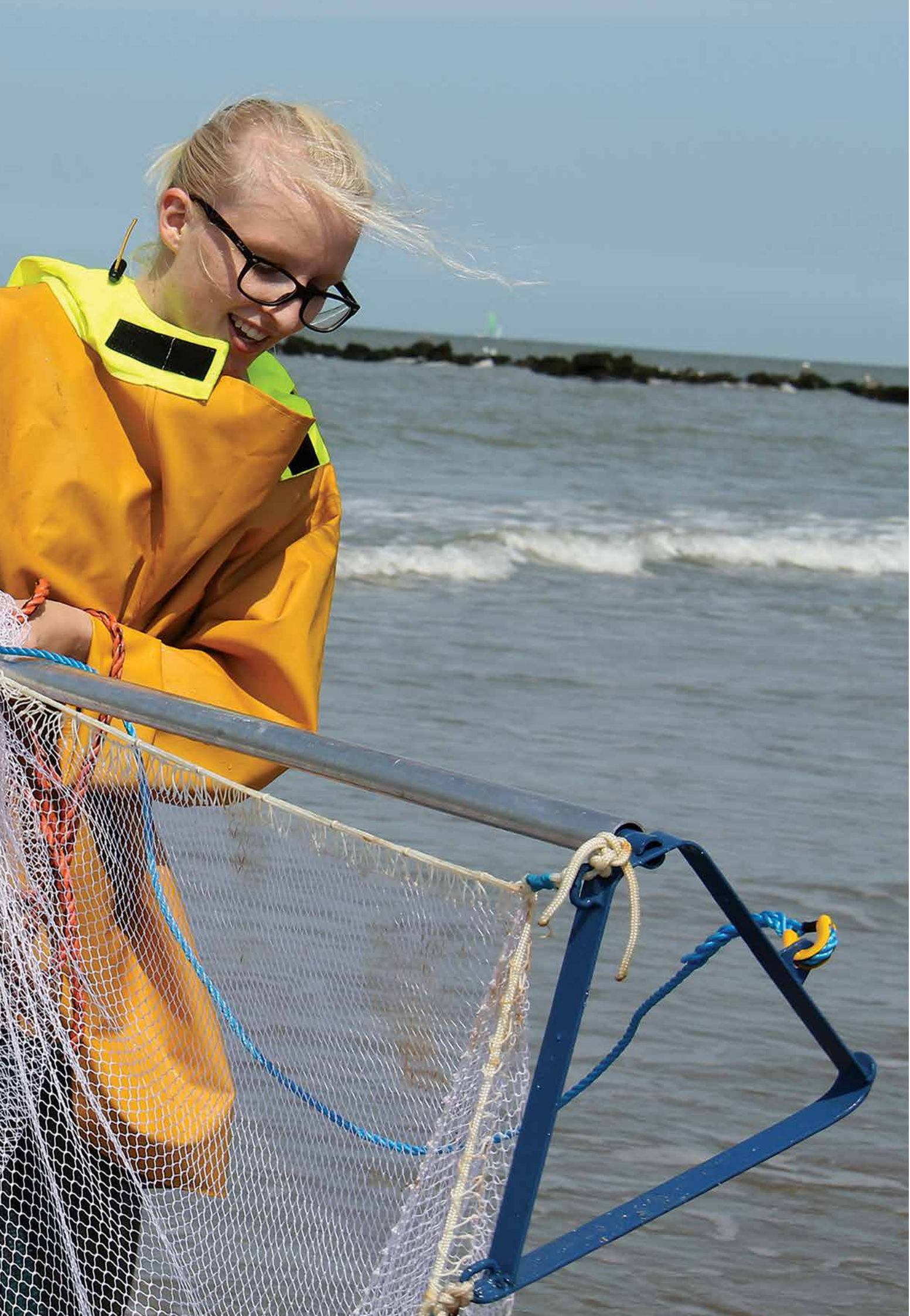
21 EXTERNAL FINANCING PROJECTS

29 SCIENTIFIC EQUIPMENT AND INFRASTRUCTURE

31 2014 EVENTS

34 2014 PUBLICATIONS







# Balance Sheet and Income Statement

December 2014

## BALANCE ON 31 DECEMBER 2014 (kEUR)

Assets	31-12-2013	31-12-2014
Intangible assets	30.93	19.76
Tangible fixed assets	4937.82	5405.73
Financial assets	0	0
Amounts receivable within one year	490.32	971.31
Cash investments	1238.62	257.66
Liquid assets	992.66	592.31
Deferred charges and accrued income	0	0
<b>Total</b>	<b>7,690.35</b>	<b>7,426.77</b>
Liabilities		
Allocated funds	375	375
Profit and losses brought forward	1811.54	1341.71
Capital grants	3761.25	4219.57
Provisions for liabilities and charges	0	169
Amounts payable after one year	920.26	330.59
Amounts payable within one year	822.3	810.65
Deferred charges and accrued income	0	0.25
<b>Total</b>	<b>7,690.35</b>	<b>7,426.77</b>

The figures of the balance sheet and income statement include all subsidies received by VLIZ as stated in the management agreement or the covenant.

No surplus of the allocated subsidy was brought forward as a reserve in 2014 (art. 11 § 3 of the covenant).

Budgetary deviations from the 2014 budget (art. 11 § 3 of the covenant): none.

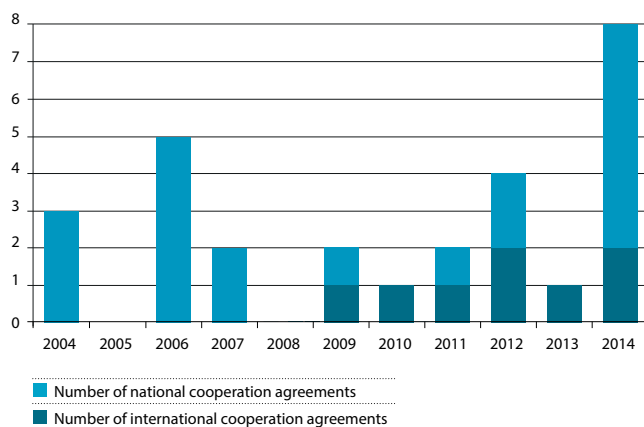
## INCOME STATEMENT ON 31 DECEMBER 2014 (kEUR)

Income	31-12-2013	31-12-2014
Operating income	6703.98	7858.44
Financial income	522.94	642.42
Exceptional income	1.79	9.22
<b>Total</b>	<b>7,228.71</b>	<b>8,510.08</b>
Costs		
Remuneration and social security	4129.31	4533.88
Services and other goods	2139	2078
Provisions for liabilities and charges	0	169
Depreciation	669.6	832.14
Financial expenses	10.83	20.1
Other operating expenses	982.6	1341.79
Exceptional expenses	21.17	5
<b>Total</b>	<b>7,952.51</b>	<b>8,979.91</b>
Income		
<b>Result for the financial year</b>	<b>-723.80</b>	<b>-469.83</b>
<b>Transfer to allocated funds</b>	<b>0.00</b>	<b>0.00</b>
<b>Profit brought forward as of 31/12</b>	<b>1,811.54</b>	<b>1,341.71</b>

## Other Indicators

### Coordination division

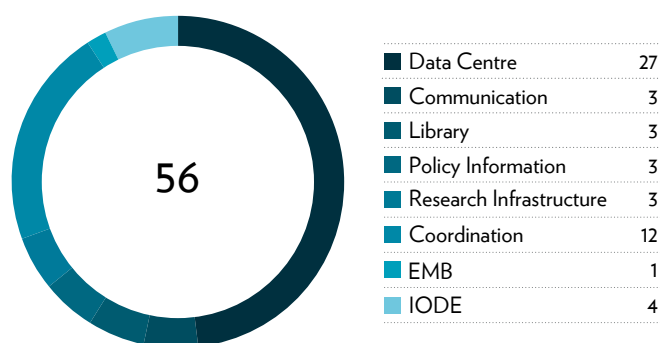
#### AGREEMENTS WITH MARINE RESEARCH GROUPS



A list of all agreements is available on [www.vliz.be/en/cooperation-agreements](http://www.vliz.be/en/cooperation-agreements).

Figures for the majority of indicators date back to the start-up year of VLIZ (1999). However, to promote readability of the diagrams, the choice was made to begin the time series in 2004. For figures prior to 2004, please consult the 2013 Annual Report on [www.vliz.be/en/vliz-annual-report](http://www.vliz.be/en/vliz-annual-report).

#### PERFORMANCE INTERVIEWS



## 2014 ENVIRONMENTAL INDICATORS

#### PAPER CONSUMPTION

0.77

Number of packs of paper per staff member  
A decrease compared to 2013 (0.79)

#### TONER CONSUMPTION

0.69

Number of toners for printers and photocopiers used per staff member  
A decrease compared to 2013 (0.84)

#### GAS, WATER & ELECTRICITY CONSUMPTION



35,694 m³



102,067 kWh



416 m³

Values in 2013: gas 48,582 m³, electricity 118,780 kWh, water 123 m³.

#### COMMUTING

€38,406

Train, tram and bicycle allowances refunded to employees  
A decrease compared to 2013 (50,684 EUR)

#### NUMBER OF KILOMETRES OF VLIZ CARS AT THE END OF 2014

##### FIAT DOBLO

73,000

94,417

##### NISSAN NAVARA

76,742

91,120

##### FIAT SCUDO

33,384

42,724

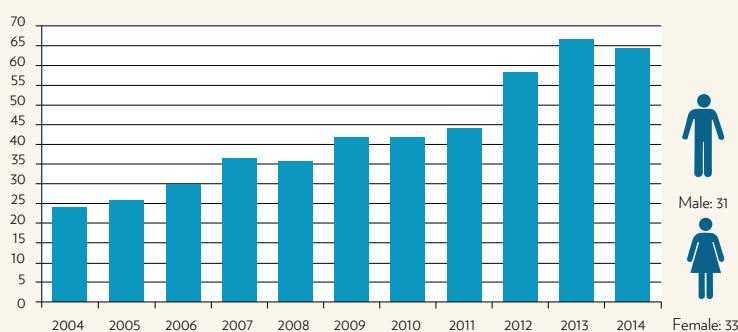
0 20,000 40,000 60,000 80,000 100,000

■ The number of kilometres driven up to the end of 2014  
■ The number of kilometres driven up to the end of 2013



## 2014 SOCIAL INDICATORS

## NUMBER OF STAFF



## FOREIGN ORIGIN

3

Number of people of foreign origin\*

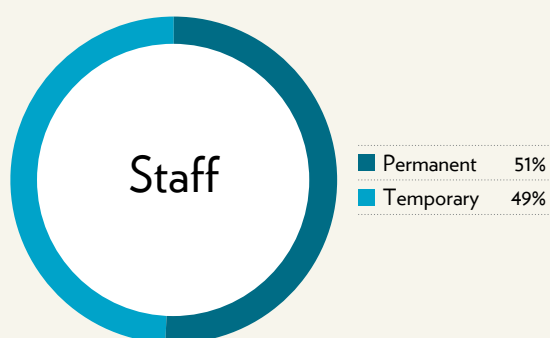
\* Source: Wikipedia (Flemish perspective): any person living in the Flemish or Brussels Region, of whom at least one grandparent was born outside the European Union – excluding other Western and Northern European states, the US and Canada.

## EMPLOYMENT DISABILITY

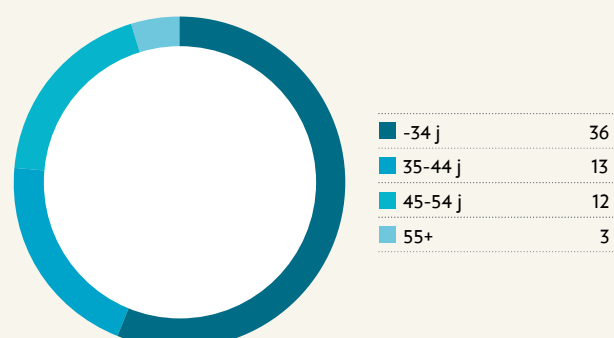
1

Number of people with an employment disability

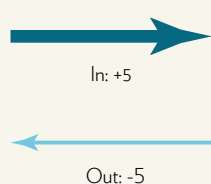
## PERMANENT &amp; TEMPORARY STAFF



## AGE OF EMPLOYEES



## STAFF TURNOVER



Compared to 2013: +11 in and -5 out.

## UNAVAILABILITY FOR WORK

20%

Total number of days of absence (= leave, illness ...) versus the total number of days to be performed

A decrease compared to 2013 (23%)

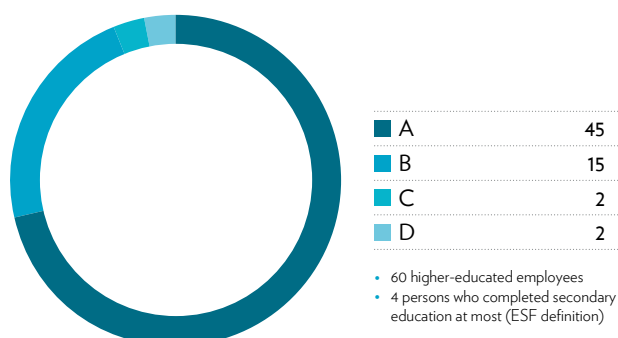
## SICKNESS ABSENCE

2.28%

Number of days on which staff reported sick versus the total number of days to be performed

An increase compared to 2013 (1.89%)

## LEVEL OF EDUCATION



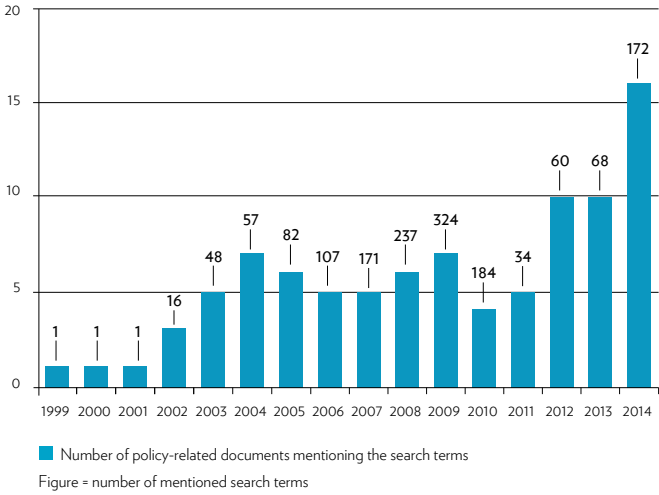
## TRAINING COURSES

11

Total number of training courses taken by staff

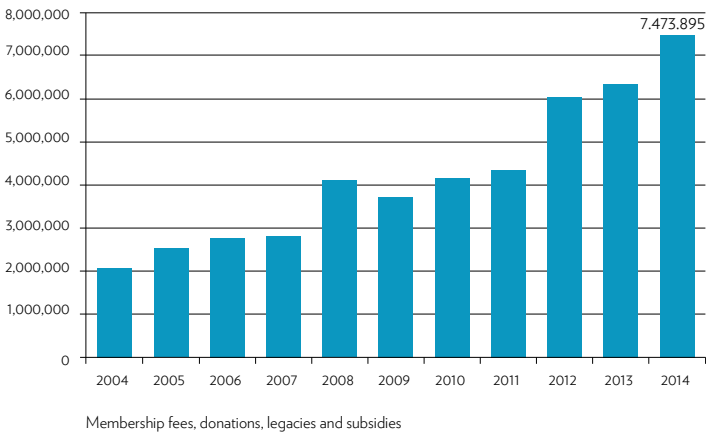
A decrease compared to 2013 (31)

MENTION OF THE TERMS ‘SEA’, ‘MARINE’ OR ‘VLIZ’ IN POLICY-RELATED DOCUMENTS

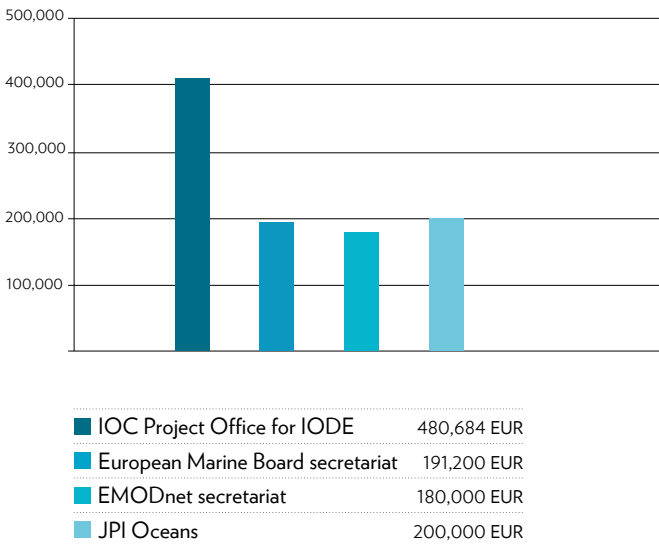


Note: the counts include searches of policy papers (ministers/state secretaries competent for the North Sea, science and innovation, the environment and climate), policy briefs, coalition agreements (Flemish/federal), press releases, ministerial letters, inaugural speeches, policy plans as to science communication, and budget browsers. This list is not exhaustive, as various documents are no longer digitally searchable. This means that the figures are a rough estimate.

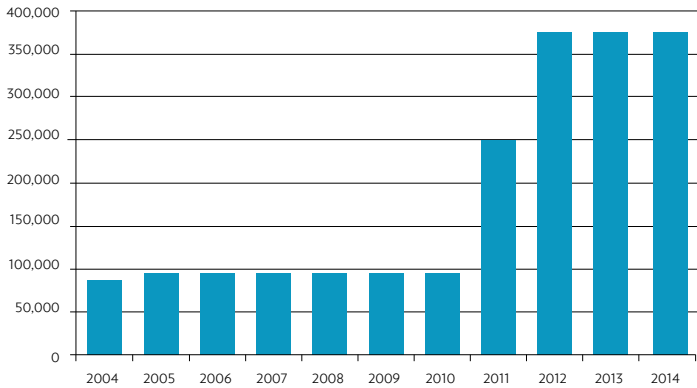
VLIZ TURNOVER (IN EURO)



TURNOVER OF OTHER PARTNERS IN 2014 (in euro)

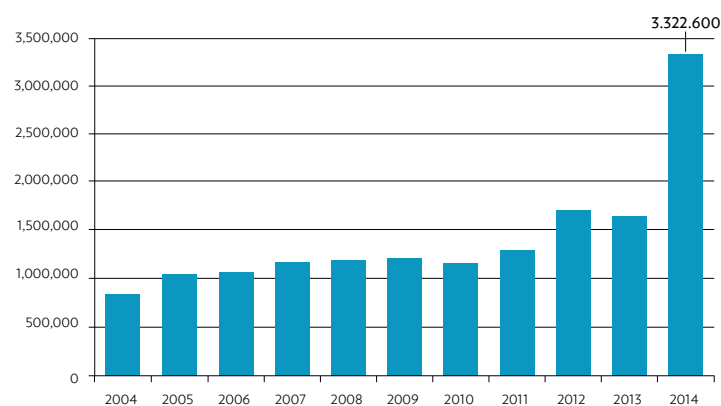


SOCIAL LIABILITIES (IN EURO)



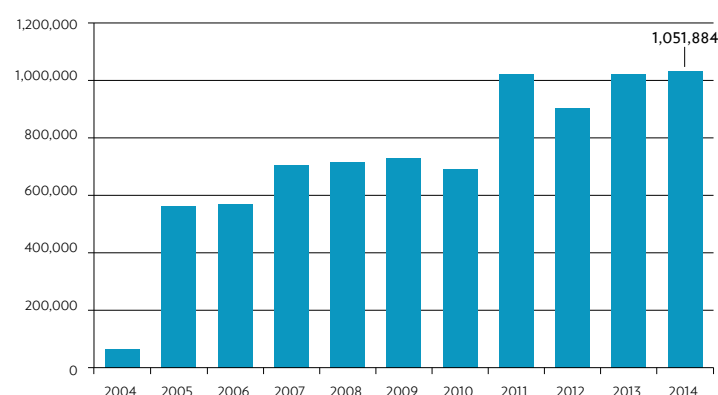
## OVERVIEW OF SUBSIDIES

## ACTIVITIES OF FLEMISH GOVERNMENT (in euro)



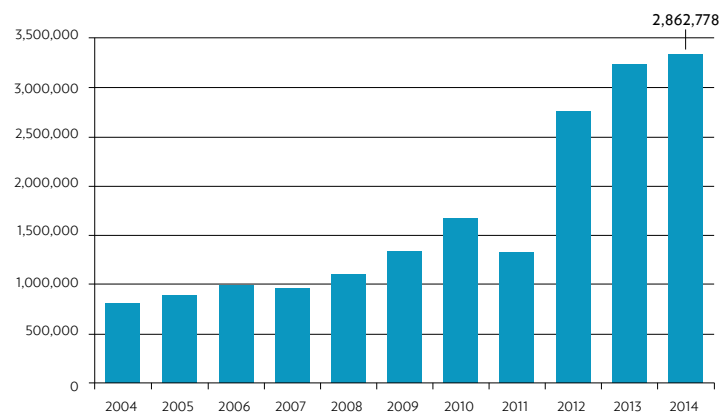
## INTERNATIONAL SUBSIDIES

IOC PROJECT OFFICE FOR IODE, EMB, EMODNET SECRETARIAT, JPI OCEANS (in euro)

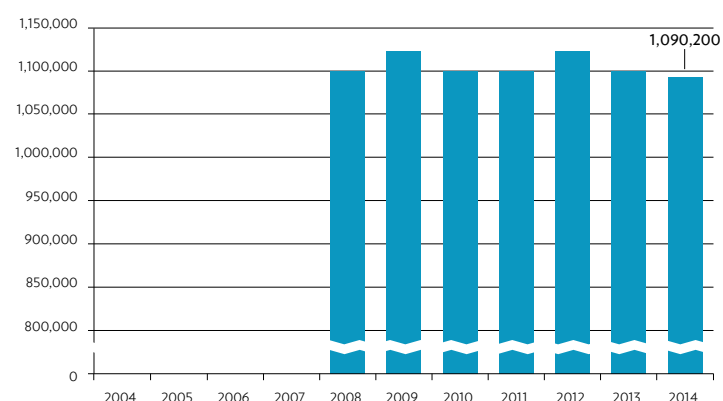


## EXTERNAL FINANCING

Lifewatch, province of West Flanders, national and international projects (in euro)

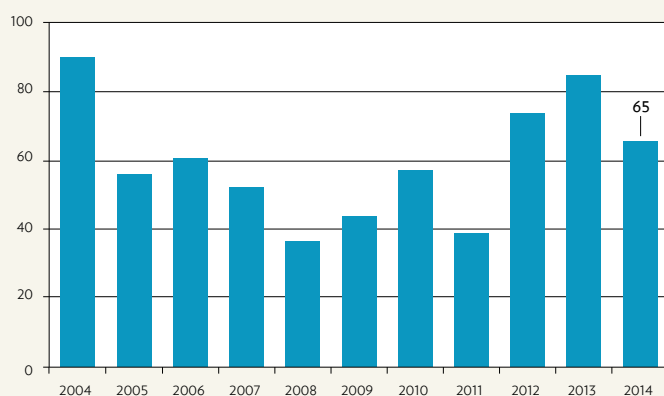


## INVESTMENTS (in euro)



## EXTERNAL FINANCING VERSUS OTHER FINANCING

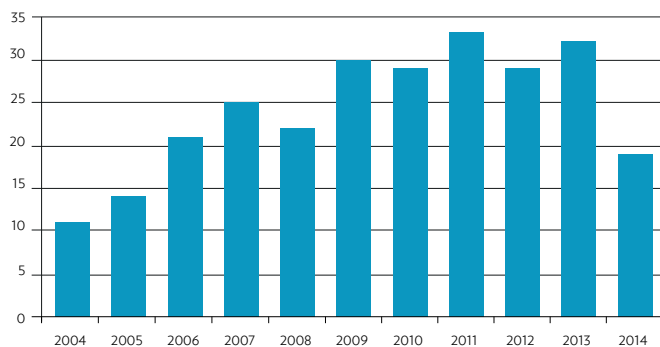
(in %)





## Research Infrastructure division

### NUMBER OF PUBLICATIONS ON VLIZ RESEARCH FACILITIES (RV SIMON STEVIN / RV ZEELEEUW AND GREENHOUSES)



### SCIENTIFIC PROJECTS

141



Number of scientific projects which have made use of  
RV Simon Stevin / RV Zeeleeuw since 1999.  
In 2014: 31 projects



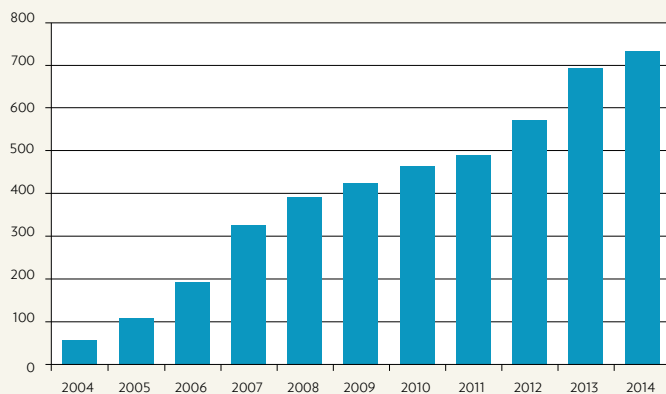




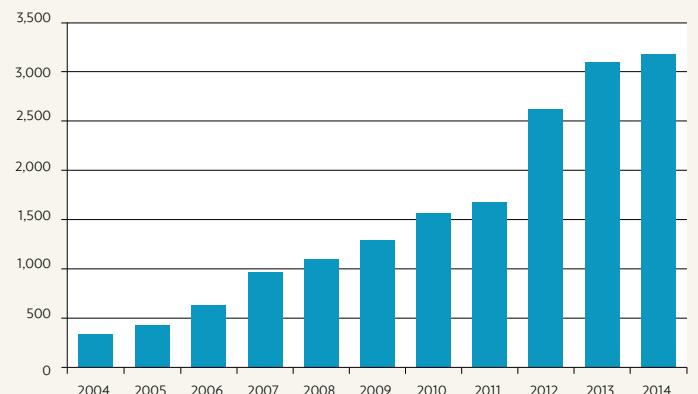
# Data Centre division

## ARCHIVED AND DISCLOSED DATA SETS

### ARCHIVED DATA SETS



### DISCLOSED DATA SETS



### INTEGRATED DATA SETS

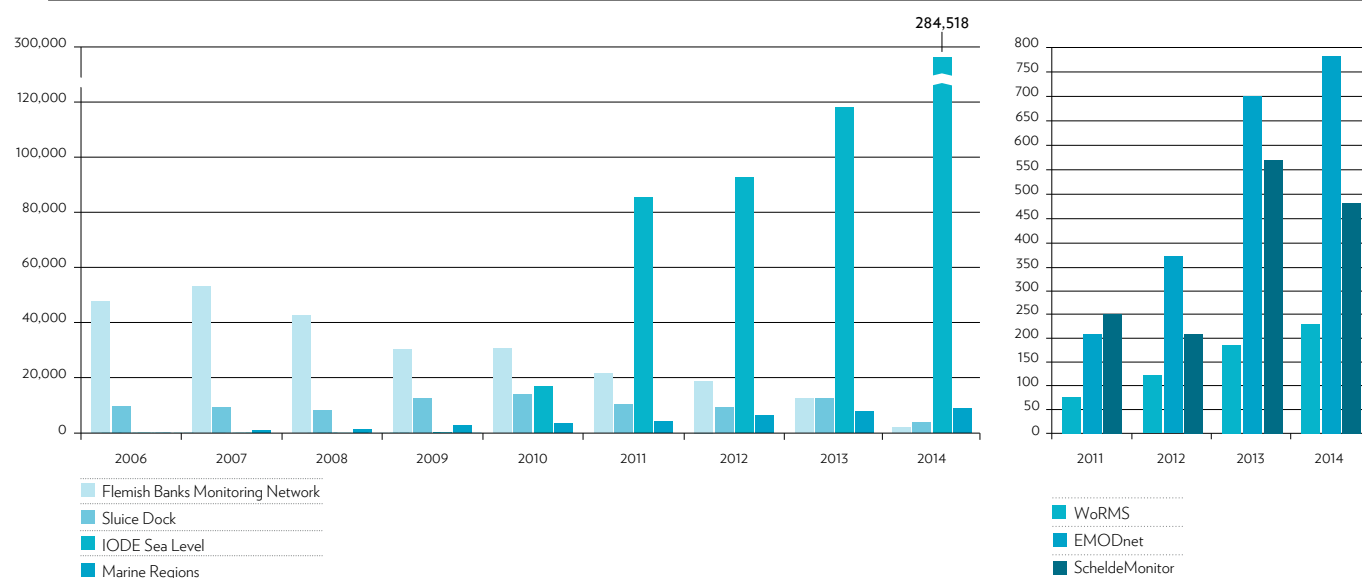


### SUPPLIED DATA

**170** Number of data requests (via data@VLIZ.be) in 2014

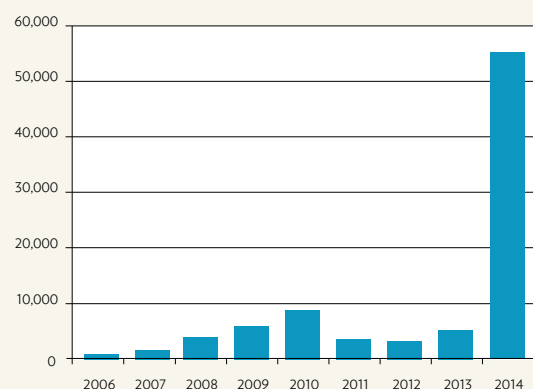
A decrease compared to 2013 (174)

## DOWNLOADS OF DATA



## DOWNLOADS OF INFORMATIVE PRODUCTS

### DE GROTE REDE



### TEACHING PACKAGES

4,842



Since 01.11.2011

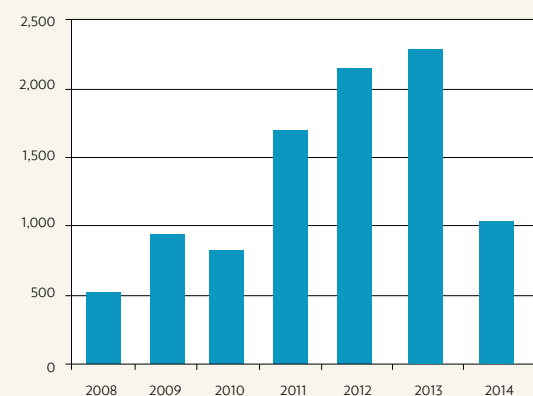
### SIMON STEVIN PRODUCTS

89,659



Since 01.09.2012

### ZEEKRANT



### VIDEOS

285,315



2005-2014 period

### PHOTOS

19,401,836

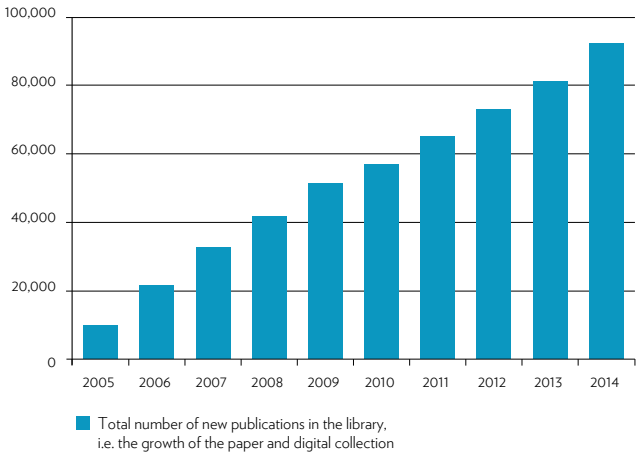


2005-2014 period

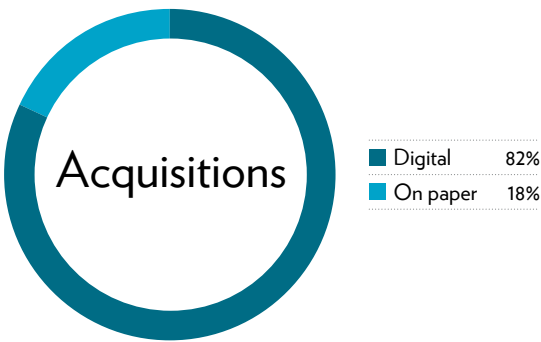


# Library division

## GROWTH OF LIBRARY COLLECTION

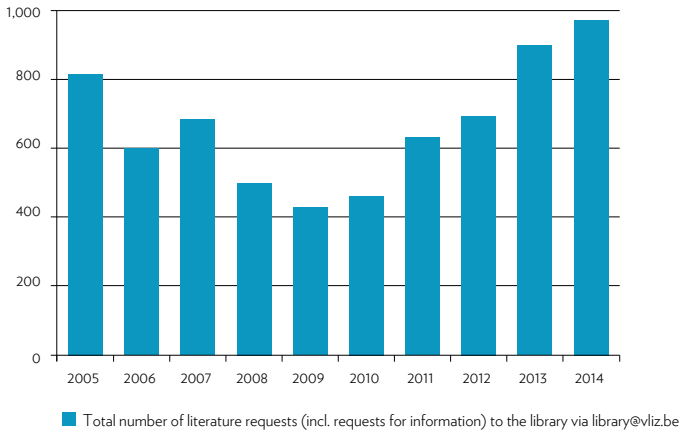


## ACQUISITIONS IN 2014

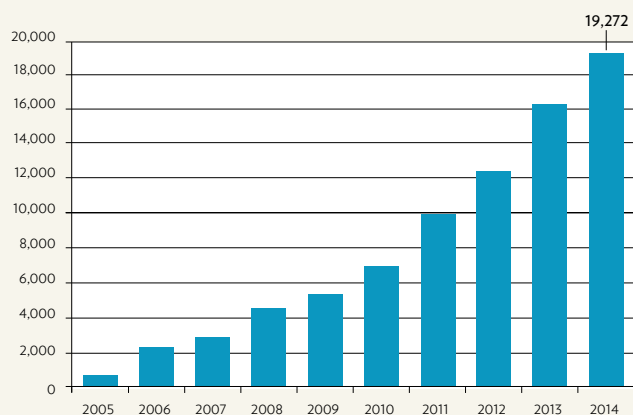


Values for 2013: 75% digital and 25% on paper.

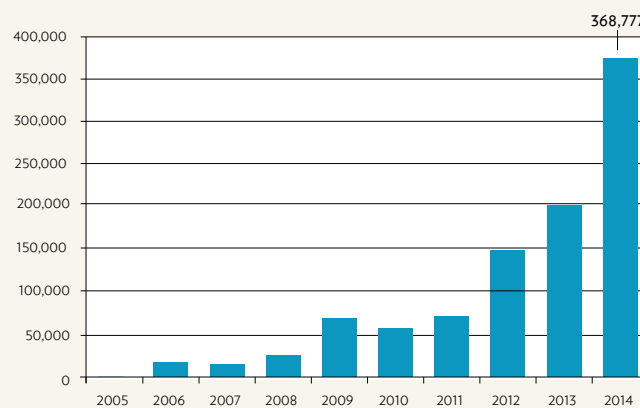
## LITERATURE REQUESTS IN THE LIBRARY



### REFERENCES IN THE OPEN MARINE ARCHIVE



### TOTAL NUMBER OF DOWNLOADS FROM THE OPEN MARINE ARCHIVE



### UNIQUE TITLES DOWNLOADED FROM THE OPEN MARINE ARCHIVE IN 2014

19,033

Total number of downloads in 2014

An increase compared to 2013 (13,226)

### OTHER ITEMS FROM THE OPEN ACCESS COLLECTION

24,396

Unique titles downloaded in 2014

An increase compared to 2013 (10,646)

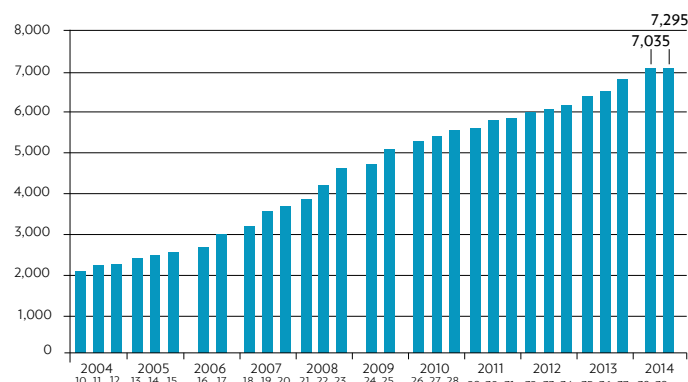
486,718

Total number of downloads in 2014

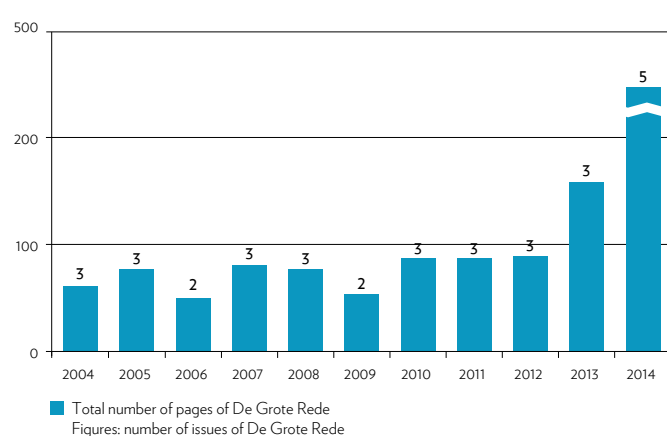
An increase compared to 2013 (184,144)

# Communication division

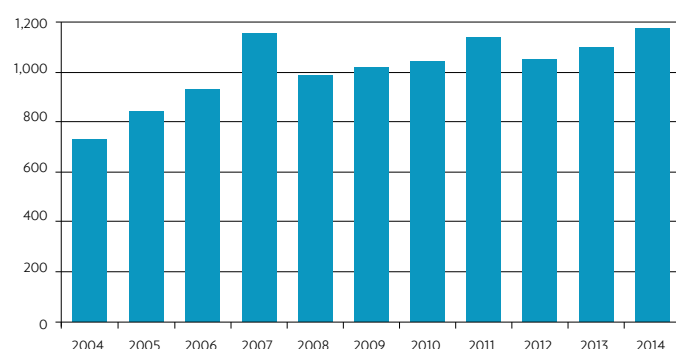
## NUMBER OF SUBSCRIBERS TO DE GROTE REDE



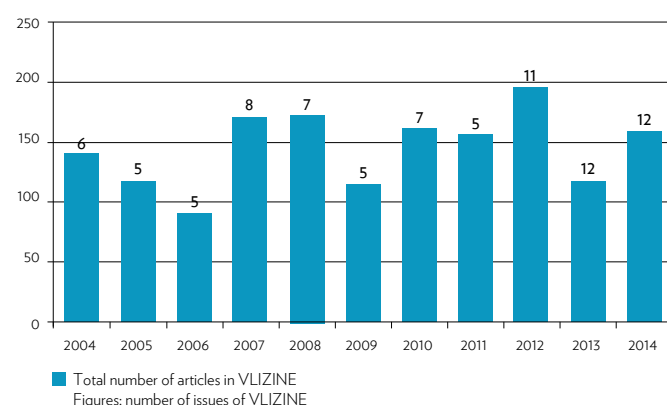
## PAGES AND ISSUES OF DE GROTE REDE



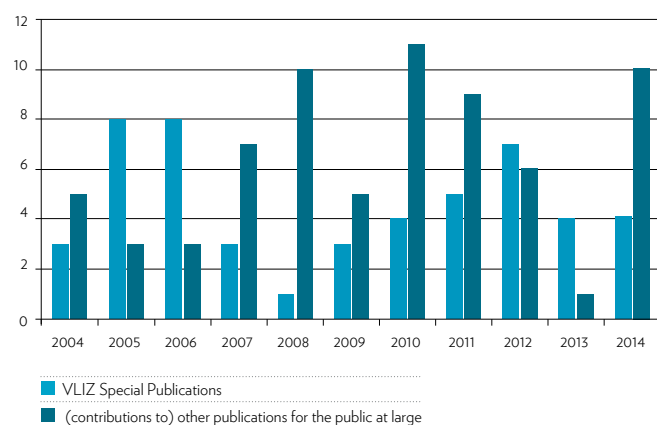
## NUMBER OF SUBSCRIBERS TO VLIZINE



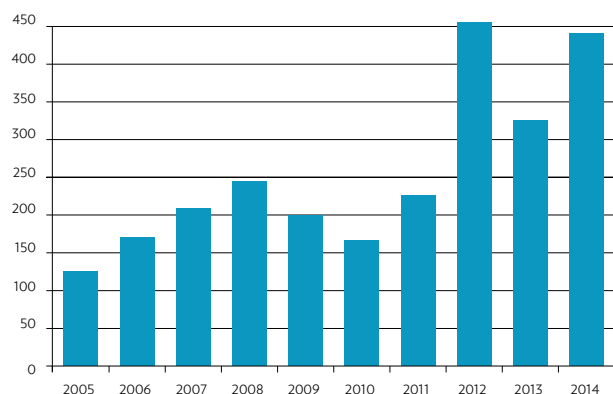
## ARTICLES AND ISSUES OF VLIZINE



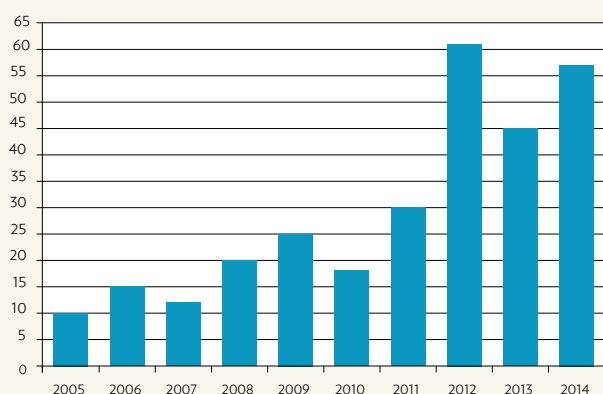
## OTHER PUBLICATIONS



## REQUESTS FOR INFORMATION ANSWERED BY VLIZ IN ITS ENTIRETY

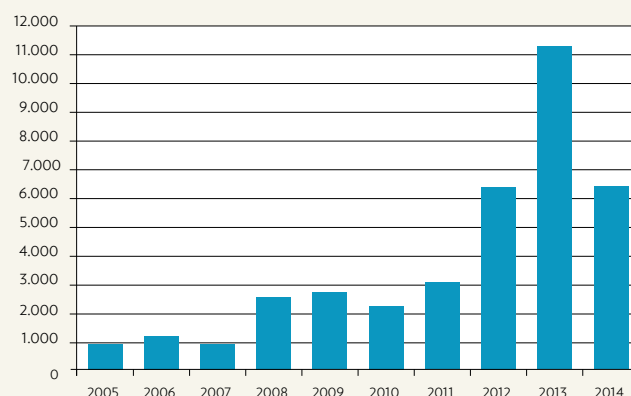


## NUMBER OF EVENTS ORGANISED



■ Events (co)organised or facilitated by VLIZ

## NUMBER OF PARTICIPANTS IN ORGANISED EVENTS



## GENERAL PUBLIC REACHED BY MEANS OF LECTURES

# 67

Informative lectures in 2014

An increase compared to 2013 (60)

# 2,294

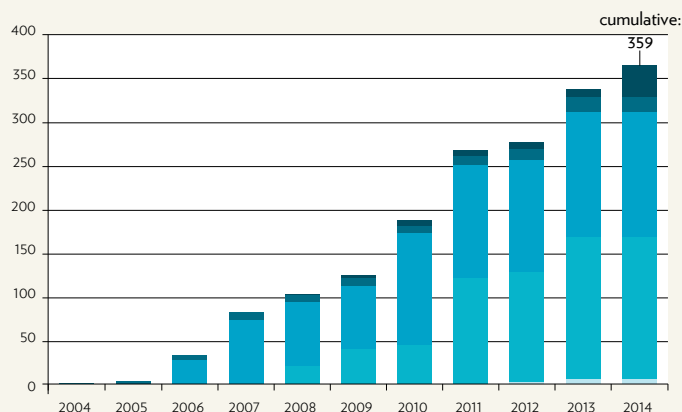
Members of the general public reached

A decrease compared to 2013 (2,364)



# Policy Information division

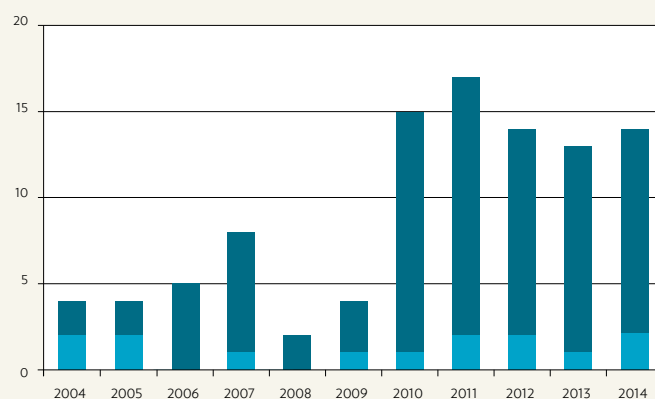
## INFORMATION PRODUCTS



Number of new products in 2014:

Beleidsinformerende Nota (BIN)	4
Policy Informing Brief (PIB)	2
Fact sheet	6
Indicator sheet	2
Book	4
Web application	3

## COOPERATION AGREEMENTS AS TO POLICY DEVELOPMENT AND SUPPORT



Number of new cooperation agreements in 2014:

External projects	2
Steering committees, guidance groups and working groups	2

## NEW COMPENDIUM FOR COAST AND SEA 2014 INFORMATION PRODUCTS

# 24

(Updated) fact sheets of marine research groups

# 32

Thematic chapters on the use of the coast and sea

# 112

(Updated) fact sheets on legislation/treaties



© VLIZ

# Networks in which VLIZ participates

## National networks and advisory and consultative committees

*A few examples of national networks in which VLIZ participates:*

- Consultation on sustainable coastal management by the province of West Flanders
- Science Information Network (WIN) of the Flemish government
- Flanders' Maritime Cluster vzw
- Flemish Marine Biotechnology Platform
- Flemish Platform for Algae Research
- IkHebEenVraag.be consortium (RBINS)
- Flemish Association for Libraries, Archives and Documentation Centres (VVBAD)
- Local group of Axis 4 of the Belgian Operational Programme for the Fisheries Industry and steering committee of Fish2know, Fish2know for Professionals, VALDUVIS, A l'Ostendaise, NorthSeaChefs & Vissers, Het Grote Noordzeeviskookboek, Smartboek Hoe bereid ik vis
- Advisory Committee of VNR Knokke-Heist & Westkust (ANB)
- Coastal Compass 2012 working group
- 'Surveillance, early warning and rapid response –Invasive Alien Species' steering committee
- NAVIGO scientific advisory group

## International networks and advisory and consultative committees

*A few examples of international networks in which VLIZ participates:*

- IODE oceanographic data centre network (UNESCO/IOC) (IODC NODC)
- Executive Council and General Assembly of the Intergovernmental Oceanographic Commission (IOC) of UNESCO
- Steering committee of the UNESCO/Flanders Fund-in-Trust for the support of UNESCO's activities in the field of Science (FUST)
- IAMSILC/IODC Group of Experts on Marine Information Management
- IODE Group of Experts on Biological and Chemical Data Management and Exchange Practices
- Partnership for Observation of the Global Oceans (POGO)
- News & Information Group of the Partnership for Observation of the Global Oceans
- European Marine Board (representative of Research Foundation – Flanders and chairmanship)
- European Marine Board Communications Panel (EMBCP)
- Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans)
- European Centre for Information on Marine Science and Technology (EurOcean)
- EuroMarine cluster (cluster of three European marine FP6 networks: EUR-OCEANS, MarBEF and Marine Genomics Europe) (Euromarine+)
- European network of Marine Biodiversity and Ecosystem Functioning (MARBEF+)
- European Network of Marine Research Institutes and Stations (MARS)
- European Research Vessel Organisation (ERVO)
- International Research Ship Operators (IRSO)
- European Association of Aquatic Sciences Libraries and Information Centres (EURASLIC)
- National Marine Educators Association (NMEA)
- European Marine Science Educators Association (EMSEA)
- European Census of Marine Life (EuroCoML)
- Society for the Management of European Biodiversity Data (SMEBD)
- Executive committee of the European Register of Marine Species (ERMS)
- ICES Working Group on Biodiversity Science (ICES – WGBIODIV)

- ICES Data and Information Group (ICES – DIG)
- ICES Working Group on the History of Fish and Fisheries (ICES – WGHIST)
- Steering committee of the World Register of Marine Species (WoRMS)
- Sea Data Network (SeaDataNet II)
- International Coastal Atlas Network (ICAN)
- Global Sea Level Observing System Network (GLOSS)
- Flemish-Dutch Scheldt Commission (VNSC)
- World Data System of the International Council for Science (ICSU-WDS)
- LifeWatch National Centers network (LiNC)
- European Marine Biodiversity Observatory System (EMBOS)
- Species 2000
- INSPIRE Thematic Working Group on Biogeographical Regions, Habitats and Biotopes and Species Distributions
- Coastal Wiki Editorial Board
- Steering Committee and Marine Observation and Data Expert Group (MODEG) within the European Marine Observation and Data Network (EMODnet)
- Seaweb Europe – Jury of Concours Olivier Roellinger
- Catalogue of Life Global Team, Editorial Board, Board of Directors
- Occupational Fields Advisory Committee of Hogeschool Zeeland

In addition, VLIZ is represented in guidance groups and end-user committees of several research projects, including: LECOFISH, CLIWAT, BEES - ECOPLAN, WAKO-II.



## Projects – External financing

VLIZ received external financing for coordination, communication and/or data management within the scope of 31 projects in 2014. Most of these projects were carried out in cooperation with research groups.

### EU

#### *BioVel – Biodiversity Virtual e-Laboratory*

Duration: September 2011 – December 2014

Website: [www.biovel.eu](http://www.biovel.eu)

BioVeL supported research on biodiversity by offering computerised tools to process large amounts of data. The research areas included ecological niche modelling, ecosystem functioning and taxonomy.

#### *CSA Oceans – JPI Oceans Preparatory Action*

Duration: 01.09.2012 – 31.08.2015

This FP7 support action is designed to make the transition from the startup phase to the operational phase of JPI Oceans as smooth as possible. This 3-year action is specifically aimed at 1) supporting the operation of management structures to develop JPI Oceans; 2) promoting the realisation of a strategic research and innovation agenda (SRIA) as well as an implementation plan (iPlan) in line with the vision and objectives of JPI Oceans; and 3) proposing procedures and tools to further long-term cooperation within JPI Oceans. VLIZ coordinates the communication tasks within the CSA.

#### *EMBOS – Development and implementation of a pan-European Marine Biodiversity Observatory System*

Duration: 01.02.2011 – 01.02.2015

This COST project focuses on the coordination and management of a marine biological observation network linked to LifeWatch.

#### *EMODnet – European Marine Observation and Data Network*

Duration: 2013 – 2016

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 ([bio.emodnet.eu](http://bio.emodnet.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. In addition, VLIZ is expanding the EMODnet Central Portal ([emodnet-biology.eu](http://emodnet-biology.eu)), which should 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.

#### *EUROFLEETS – Towards an Alliance of European Research Fleets*

Duration of phase 1: 01.09.2009 – 31.08.2013

Duration of phase 2: 01.03.2013 – 28.02.2017

A network of 24 European research institutes that want to deploy their vessels and research infrastructure more efficiently and develop a central system in order to gain access to other European research vessels ([www.eurofleets.eu](http://www.eurofleets.eu)). VLIZ coordinates a recommendation for an ecological regional research fleet and contributes to the development of a strategic view of the European research fleet. Broadly speaking, EuroFleets II continues the tasks of EuroFleets I but has a different focus. Within the second project, VLIZ continues to contribute to the strategic vision and to a generic design of regional research vessels. In addition, it needs to contribute to the organisation of training courses for young researchers and 'floating universities'. The main contribution of VLIZ consists in making RV Simon Stevin available to foreign researchers for a project in the Southern Bight of the North Sea.

### **GIFS – *Geography of Inshore Fisheries and Sustainability***

Duration: 01.07.2011 - 31.10.2014

Website: [www.gifsproject.eu/en/](http://www.gifsproject.eu/en/)

The GIFS project was aimed at exploring the socio-economic and cultural importance of inshore fisheries in the study area (Interreg 2 Seas) and developing a demonstration project with a view to strengthening the fishing community. VLIZ was responsible for the historical survey of inshore fisheries, its socio-economic importance, the link with integrated coastal zone policy, and the image of inshore fisheries in seaside tourism. Cooperation with the Coordination Centre for Integrated Coastal Zone Management was planned.

### **ISECA – *Information System on the Eutrophication of our Coastal Areas***

Duration: 01.07.2011 - 30.06.2014

This Interreg project ([www.iseca.eu](http://www.iseca.eu)) has created an information platform concerning eutrophication in the Channel area. It includes an information system (with regard to the actors in this study area), data and communication products as well as an evaluation tool for monitoring the water quality by means of earth observations.

### **Marine Biotechnology ERA-NET – ERA-MBT**

Duration: 30.01.2014 - 29.01.2018

The social and economic importance of marine biotechnology is steadily increasing. However, the current marine biotechnological landscape in Europe is highly fragmented and lacks coordination.

The CSA MarineBiotech project has been successful in creating a network of funding institutions and programme managers interested in joint support of marine biotechnological research. The 20 partners from 13 countries have formed the Marine Biotechnology ERA-NET (ERA-MBT). ERA-MBT is aimed at paving the way for common programmes and collaborations so as to move beyond the current fragmentation and avoid duplication. This includes the provision and use of shared research infrastructure. VLIZ coordinates the communication tasks within ERA-NET.

### **MERMAID**

Duration: 01.01.2012 - 31.12.2015

MERMAID will develop concepts for the next generation of offshore platforms which can be used for multiple purposes, including energy extraction, aquaculture and platform-related transport. MERMAID will examine new concepts which combine various functions. VLIZ is responsible for project dissemination & outreach, and organises a high-level end user conference, among other things. Belgian end users include DEME, De Nul, Flanders' Maritime Cluster and Versluys. VLIZ takes care of the communication within the MERMAID project.

### **Micro B3**

Duration: 01.01.2012 - 31.12.2015

Micro B3 intends to develop innovative bioinformatic approaches and a legal framework to make large-scale data on marine viral, bacterial, archaeal and protists genomes and metagenomes accessible for marine ecosystems biology and to define new targets for biotechnological applications.

### **MARBIGEN** - *Supporting research potential for MARine Biodiversity and GENomics in the Eastern Mediterranean*

Duration: 01.11.2010 - 30.04.2014

Website: [www.marbigen.org](http://www.marbigen.org)

MARBIGEN was a European project of the Institute of Marine Biology and Genetics (IMBG) of the Hellenic Centre for Marine Research (HCMR). Its objective was to fully exploit and further develop the research potential of the IMBG in the area of biodiversity. Within the scope of this project, VLIZ was part of the Board of External Advisors and provided training courses to employees of the Institute of Marine Biology and Genetics (IMBG) in Crete with regard to data management of marine biodiversity information.

### **Marine Regions** - *Towards a standard for georeferenced marine names*

Duration: continually since 2011

Website: [www.marineregions.org](http://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. The website [www.marineregions.org](http://www.marineregions.org) now makes it possible to easily locate the Exclusive Economic Zones (EEZs) as well many marine place names worldwide. 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. By combining both databases, the different target groups will undoubtedly be served even better.

### **PEGASO** - *People for Ecosystem Based Governance in Assessing Sustainable Development of Ocean and Coast*

Duration: 01.02.2010 - 31.01.2014

Within this consortium, VLIZ collaborates on the development of a 'spatial data infrastructure' and the preparation of indicators, scenarios and socio-economic evaluations for the Mediterranean Sea and the Black Sea. As data and information coordinator, VLIZ was responsible for ensuring the flow of (meta)data and information between partners and end users, e.g. through the website [www.pegasoproject.eu](http://www.pegasoproject.eu).

### **Sea for Society**

Duration: 01.06.2012 - 30.11.2015

This project will develop modalities for stakeholder participation with regard to the concept of Blue Society. Surveys and consultations of target groups will be organised in different European regions by means of developed protocols. The project is coordinated by Nausicaa, and VLIZ is participating as a member of EurOcean. Especially at a later stage of the project, VLIZ will collaborate on the organisation of stakeholder meetings in Belgium.

### **SeaDataNet 2** - *A Pan-European Infrastructure for ocean and marine data management*

Duration of SeaDataNet2: 01.10.2011 - 30.09.2015

Professional data centres from 35 countries collaborate to make the data sets collected by the pan-European oceanographic research fleet and the new automated observation systems available within one efficiently distributed data system ([www.seadatanet.org](http://www.seadatanet.org)). VLIZ supplies the (meta)data and information collected in Flanders.

### **SE FINS** - *Cluster programma*

Duration: 2014 - 2015

Cluster programme of two Interreg projects regarding alien species (MEMO and RINSE). VLIZ is an associated beneficiary of INBO. VLIZ only provides advice in communication and assessment products developed by the project partners and the organisation of the cluster event (September 2014).

### WoRMS – *World Register of Marine Species*

Duration: continually

Website: [www.marinespecies.org](http://www.marinespecies.org)

The World Register of Marine Species aims to provide an authoritative and comprehensive list of names of marine organisms, including information on synonymy. While highest priority goes to valid names, other names in use are included so that this register can serve as a guide to interpret taxonomic literature.

## Fisheries & Oceans Canada

### CaRMS – *The Canadian Register of Marine Species*

Duration: continually

VLIZ coordinates the quality control of the Canadian marine species register and ensures the maintenance and further development of the database and website ([www.marinespecies.org/carms](http://www.marinespecies.org/carms)).

## Flemish government, Flemish eGovernment Coordination Unit (CORVE) and EWI

### WILOD – *Wetenschap & Innovatie Linked Open Data*

Duration: continually since 2012

The Wetenschap en Innovatie Linked Open Data (WILOD) project is aimed at developing an Open Data platform which brings together and makes accessible a variety of research information so as to promote multidisciplinary research, maximally disclose research data, develop innovative products and services, and increase the strategic intelligence within the policy area of Science and Innovation.

## Flemish government, Waterwegen en Zeekanaal (W&Z)

### OMES – *Research on the environmental effects of the SIGMA plan*

Phase VI: 01.02.2012-30.04.2013

Phase VII: 01.02.2013-30.04.2014

Phase VIII: 01.02.2014-30.04.2015

Phase IX: 01.02.2015-30.04.2016

VLIZ is responsible for the integrated OMES database and ensures its dissemination through the OMES website ([www.vliz.be/projects/omes](http://www.vliz.be/projects/omes)).

## Flemish government, Maritime Access division

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

Duration of current phase: 01.01.2014 - 31.12.2018; started in 2010

The website [www.scheldemonitor.org](http://www.scheldemonitor.org) offers information and, since 2010, data as well in support of the cross-border monitoring and research in the Scheldt estuary.



## Federal government, BELSPO

### *AquaRES – Aquatic species Registry Exchange and Services*

Duration: 2014 - 2016

The World Register of Marine Species (WoRMS) – including the Antarctic Register of Marine Species – and the Freshwater Animal Diversity Assessment (FADA) database are large Global Species Directories (GSD) hosted in Belgium. The AquaRES project is aimed at ensuring and promoting the interoperability of both databases and making them available to the public. In addition, tools are developed to check the quality of the data.

### *4DEMON – Four decades of Belgian marine monitoring: uplifting historical data to today's needs*

Duration: October 2013 – December 2017

Website: [www.4demon.be](http://www.4demon.be)

Historical data are essential for understanding long-term changes in the quality of the marine environment. The 4DEMON project aims to centralise, integrate and valorise data on contamination, eutrophication and ocean acidification collected during expeditions in the BCS over the last four decades. 4DEMON focuses on contaminants and data for determining the level of eutrophication and acidification.

## Hercules Foundation

### *LifeWatch – Flemish contribution to LifeWatch.eu*

Duration: continually since 2012

The Flemish contributions to the LifeWatch infrastructure ([www.lifewatch.be](http://www.lifewatch.be)) are coordinated by the Research Institute for Nature and Forest (INBO) and, as far as the marine component is concerned, by the Flanders Marine Institute (VLIZ). Flanders contributes to the central LifeWatch infrastructure by creating a Taxonomic Backbone. Marine, freshwater and terrestrial observatories are developed regionally, as are different biodiversity data systems, web services and models.

### *ICOS – Integrated Carbon Observing System*

Duration: continually since 2012

Website: [www.icos-infrastructure.eu](http://www.icos-infrastructure.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. Within this scope, VLIZ performs measurements aboard RV Simon Stevin. Over the past year, the ICOS instrumentarium was expanded with an atmospheric CO<sub>2</sub> sensor, a nutrient analyser, a fast repetition fluorometer, a pH sensor and a CO<sub>2</sub> sensor to be installed on a measurement buoy. The laboratory equipment required to calibrate all measurements and maintain the sensors is provided as well. Within the scope of ICOS, VLIZ collaborates with NIOZ-Yerseke and the University of Liège (Alberto Borges). In addition, VLIZ will have devices installed on ferries which operate along the Chilean coast, and is investigating the possibilities to find a 'ship of opportunity' which regularly sails from Belgium to America or South Africa. To this end, an agreement was concluded with the University of Valparaíso, which will instal measuring instruments on MV Condor.

### EurOBIS – *European Ocean Biogeographic Information System*

Duration: continually since 2007

Website: [www.eurobis.org](http://www.eurobis.org)

EurOBIS is a distributed system which makes it possible to simultaneously search for biogeographic information on marine organisms in various data sets. EurOBIS has been developed within the MarBEF network and serves as the European node of OBIS.

## UNESCO

### GLOSS – *Sea Level Station Monitoring Facility*

Duration: continually since 2008

Website: [www.ioc-sealevelmonitoring.org](http://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).

## Belgian National Lottery

### North Sea Observatory – *'Sustainable Development' call by the Belgian National Lottery*

Duration: May 2013 – December 2014

Website: [www.vliz.be/en/artificial-reefs](http://www.vliz.be/en/artificial-reefs)

Development of a semi-automatic marine observatory located at the Belgian offshore wind farms to monitor the biodiversity of the installed artificial reefs and seal haul-out sites. VLIZ implemented the project and coordinated the steering group meetings in which the purchase of equipment and the monitoring plan were discussed. The following parties were represented in the steering committee: cabinet of the Belgian Minister for the North Sea, VLIZ, RBINS, INBO, Ghent University, Dredging International. The monitoring will be continued after the termination of the project subsidy.

## IWT – Strategic Basic Research

### SeArch – *Archaeological Heritage in the North Sea*

Duration: 2013 - 2016

Website: [www.sea-arch.be](http://www.sea-arch.be)

Development of an efficient assessment methodology and proposals for a sustainable management in Belgium. VLIZ is one of the six partners and in charge of the work package concerning 'outreach and guidance' (WP 3). Within this scope, VLIZ ensures the layout and distribution of several information products as well as the organisation of a number of workshops and seminars. VLIZ also provides support in terms of the setup of the website.

## Toerisme Vlaanderen

### The battle of the North Sea, exhibition on WWI and the sea

Duration: October 2014 – September 2018

From 23 April to the end of September 2018, an exhibition on WWI and the sea will be organised in Provinciaal Hof at the Markt square in Bruges. On this occasion, VLIZ cooperates with the tourism services, WWI experts, the Bruges museums, the cabinet of the governor and the Agency for Maritime and Coastal Services (MDK).

## FUST – Flanders UNESCO Trust Fund for Science

### SPINCAM

Duration: continually since 2008

Website: [www.spincamnet.net](http://www.spincamnet.net)

The project has been designed to establish an integrated coastal area management (ICAM) indicator framework in the countries of the Southeast Pacific region (Chile, Colombia, Ecuador, Panama and Peru) focusing on the environment and the socio-economic conditions in the context of sustainable development and integrated coastal zone management. The application of a harmonised methodology and the development of a set of indicators among the participating countries will permit the calculation of a core of common indicators at regional level.

In addition, information systems will be developed at national and regional level to support the creation of the indicators and the dissemination of the results.





# Scientific equipment and infrastructure

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

## Water sampling and characterisation equipment

- Acoustic current meter (ADCP) and speed log
- Carrousel 6 x 4 litre Niskin bottles
- CTD equipped with sensors for:
  - Photosynthetically active radiation (PAR)
  - Dissolved oxygen
  - Turbidity
  - Acidity and oxidation reduction potential (ORP)
  - $\text{pCO}_2$
- Fluorometer
- 10 litre GO-FLO bottle
- Multibeam sonar
- 5 litre Niskin bottle
- 10 litre Niskin bottle
- Underway data acquisition system on board RV Simon Stevin with:
  - Thermosalinograph
  - Fluorometer
  - Nutrient analysis system
  - Atmospheric  $\text{pCO}_2$  analysis device
  - Oxygen sensor
  - Turbidity sensor
- Secchi disk
- Tripod
- LISST-100X turbidity meter

## Soil sampling and soil mapping equipment

- Bowers & Connelly multi-corer
- Cohesive Strength Meter (CSM)
- Hamon grab
- Multibeam sonar
- Reineck Box Corer
- Sediment Profile Imaging (SPI) system
- Singlebeam sonar
- Van Veen grab
- Gilson dredge
- Video frame

## Biological sampling equipment

- Bongo net
- Beam trawl
- Otter trawl

- Pelagic otter trawl
- Bowers and Connelly multi-corer
- Porpoise detectors
- Fast repetition rate Fluorometer (FrrF)
- Flow cytometer
- Gilson dredge
- Hamon grab
- Hydrophone
- Hyperbenthic sledge
- MIK net
- Neuston net
- Sieving table
- Apstein plankton net
- CalCoFi plankton net trawl
- Vertical plankton net – WP2
- Plankton pump
- Reineck Box Corer
- Sediment Profile Imaging (SPI) system
- Sensor network for large birds
- Van Veen grab
- VEMCO receiver network in Western Scheldt and Belgian part of the North Sea
- Video frame
- Video plankton recorder
- Fish sorting table
- Wilson auto-siever
- Zooscan

## Miscellaneous

- Biological laboratory
- Bird tracking camera
- Chemical laboratory
- Compressor for filling diving cylinders
- Core repository – cold store for drill cores
- DGPS hand-held unit
- Freezers
- Weather station on board RV Simon Stevin:
  - Atmospheric pCO<sub>2</sub>
  - Wind speed
  - Wind direction
  - Temperature
  - Atmospheric pressure
- Microscopes
- Mini ROV
- Molecular laboratory
- Underwater camera
- ROV Genesis
- Underwater Diver Receiver
- Video frame
- Web cameras

# Events organised, co-organised and facilitated by VLIZ in 2014

57 EVENTS - 6,339 PARTICIPANTS

DATE	TITLE	LOCATION	NUMBER OF PARTICIPANTS	ORGANISER	ROLE OF VLIZ	TYPE
22.01.2014	Safeguarding the World's Underwater Cultural Heritage – Centenary of World War I	InnovOcean site, Ostend	15	UNESCO	facilitator	workshop
5.02.2014	Seaside Dip for Teachers	InnovOcean site, Ostend	37	VLIZ	organiser	workshop
6 - 7.02.2014	From WoRMS to a Mollusca Global Species Database	InnovOcean site, Ostend	12	Muséum national d'Histoire naturelle in collaboration with VLIZ	co-organiser	workshop
12 - 13.02.2014	EMODnet Species Traits Vocabulary Workshop	Ifremer, Parijs	25	VLIZ	organiser	workshop
19.02.2014	Inauguration of the EMODnet secretariat	InnovOcean site, Ostend	100	EMODnet-secretariaat	facilitator	ceremony, press conference
19 - 20.02.2014	21 <sup>st</sup> Meeting of the Marine Data and Observation Expert Group	InnovOcean site, Ostend	34	EMODnet-secretariaat	facilitator	meeting
27.02.2014	Contact moment for divers within the scope of the SeArch project 'Archaeological Heritage in the North Sea'	InnovOcean site, Ostend	115	Flanders Heritage Agency in collaboration with VLIZ	co-organiser	seminar
7.03.2014	VLIZ Young Marine Scientists' Day 2014	KHBO, Bruges	333	VLIZ	organiser	seminar
28.03.2014	waterinfo.be portal site training	InnovOcean site, Oostende	80	Afdeling Kust	facilitator	workshop
31.03.2014	Fish network seminar	InnovOcean site, Ostend	64	INBO	facilitator	seminar
5 - 9.04.2014	28 <sup>th</sup> European Cetacean Society Conference	ULg, Liège	375	ULg MARE	co-organiser	conference (international)
7.04.2014	Third edition of Concours Olivier Roellinger	Ferrandi culinary school, Paris	16	SeaWeb Europe	Active participant	competition
23.04.2014	Artificial reefs, multifunctional offshore platforms & marine spatial planning	InnovOcean site, Ostend	50	Cabinet of the Belgian Minister for the North Sea in collaboration with VLIZ	co-organiseert	press conference
25.04.2014	Oorlog onder water (underwater war)	InnovOcean site, Ostend	96	Davidfonds publishers	facilitator	book presentation
30.04.2014	Planeet Zee (Planet Ocean) finals	InnovOcean site, Ostend	40	VLIZ	organiser	competition
9.05.2014	Scientific retreat	InnovOcean site, Ostend	5	Coastal Engineering, Bridges and Roads research unit, UGent	facilitator	meeting
9.05.2014	Planeet Zee (Planet Ocean)	VLOOT dab, Ostend	45	VLIZ in collaboration with VLOOT dab	co-organiseert	press conference
13.05.2014	Members' meeting – Reform of the common fisheries policy	InnovOcean site, Ostend	30	Rederscentrale	facilitator	meeting
21.05.2014	International Seminar Nautical Accessibility and Maritime Traffic Management	InnovOcean site, Ostend	18	APEC	facilitator	seminar
22.05.2014	Rijkdommen van de Zee (marine resources)	InnovOcean site, Ostend	48	Uitstraling Permanente Vorming vzw	co-organiser	seminar
28.05.2014	Rescue operations on the coast and at sea	InnovOcean site, Ostend	25	Communication and Information Centre West Flanders	facilitator	workshop

DATE	TITLE	LOCATION	NUMBER OF PARTICIPANTS	ORGANISER	ROLE OF VLIZ	TYPE
31.05 - 1.06.2014	Oostende voor Anker	VLOOT dab, Oostende	860	VLOOT dab in collaboration with VLIZ	active participant	open house day
3 - 5.06.2014	LifeWatch marine technical meeting	HCMR, Crete	30	VLIZ in collaboration with HCMR	co-organisier	workshop
6.06.2014	World Oceans Day	De Grote Post, Ostend	249	VLIZ	organisier	open house day
10.06.2014	Grenzeloos Oostends	InnovOcean site, Ostend	110	Roland Desnerck	facilitator	book presentation
11.06.2014	Conversation with the oceans	FARNET, Brussels	40	Mundus maris	active participant	competition
12.06.2014	Offshore factory	InnovOcean site, Ostend	25	VOKA	facilitator	workshop
26.06.2014	TECHVIS	InnovOcean site, Ostend	15	ILVO	facilitator	meeting
26 - 28.06.2014	Scientific Conference and Commemorative Event on the Underwater Cultural Heritage of the first World War	Provinciaal Hof, Bruges	109	UNESCO in collaboration with VLIZ	co-organisier	conference (international)
27.06.2014	Dr Edouard Delcroix Prize award ceremony	InnovOcean site, Ostend	38	HYDRO vzw in collaboration with VLIZ	co-organisier	competition
30.06 - 1.07.2014	ISECA Final Conference	Nausicaa, Boulogne-sur-Mer	67	Nausicaa in collaboration with VLIZ	co-organisier	conference (international)
1 - 8.08.2014	The Great Downhill Journey of little Tommy	MSO, Oostende	550	Theater aan Zee (Theatre by the Sea)	facilitator	theatre performance
5.09.2014	Smart Grids Flanders Board of Directors	InnovOcean site, Ostend	20	Smart Grids Flanders	facilitator	meeting
8 - 9.09.2014	First International Conference on Marine Science Communication	Porto, Portugal	117	CIIMAR, Ciência viva, EMBCP	co-organisier	conferentie (internationaal)
10 - 12.09.2014	2 <sup>nd</sup> Deep-water Circulation Congress: the Contourite Log-book	't Pand, Ghent	100	RCMG UGent	co-organisier	conferentie (internationaal)
14.09.2014	Open Monument Day: Oostende, Oesters & Onderzoek (Ostend, oysters & research)	MSO, Ostend	75	Culture Department of Ostend in collaboration with VLIZ	co-organisier	open house day
15.09.2014	Shrimp fishing info session (1)	InnovOcean site, Ostend	30	ILVO	facilitator	info session
25.09.2014	Shrimp fishing info session (2)	InnovOcean site, Ostend	10	ILVO	facilitator	info session
1 - 3.10.2014	European Marine Science Educators Association Conference	University of Gothenburg, Gothenburg	125	EMSEA	co-organisier	conference (international)
2.10.2014	Shrimp fishing info session (3)	InnovOcean site, Ostend	12	ILVO	facilitator	info session
6 - 8.10.2014	Biodiversity workflows using Taverna	InnovOcean site, Ostend	18	BioVel in collaboration with VLIZ	co-organisier	workshop
3.10.2014	Shrimp fishing info session (4)	InnovOcean site, Ostend	12	ILVO	facilitator	info session
15 - 16.10.2014	Conclave of rectors and vice-rectors of the Flemish universities	InnovOcean site, Ostend	22	Research Foundation - Flanders	facilitator	meeting



DATE	TITLE	LOCATION	NUMBER OF PARTICIPANTS	ORGANISER	ROLE OF VLIZ	TYPE
20.10.2014	2014 sand extraction seminar	Belgium Pier, Blankenberge	100	Continental Shelf Service of FPS Economy	active participant	conference (national)
27 - 29.10.2014	Sustainable use of marine and coastal resources in Kenya: from research to societal benefits	Kikambala, Kilifi County, Kenia	106	VLIR-UOS in collaboration with VLIZ, UGent, VUB & KMFRI	co-organiser	conference (international)
28 - 29.10.2014	First Marine Biotechnology ERA-NET Stakeholder Meeting - Waves of Innovation	Olissippo Oriente Hotel, Lisbon	99	FCT in collaboration with VLIZ	co-organiser	meeting
31.10.2014	APNA research group	InnovOcean site, Ostend	10	APNA - VUB	facilitator	conference (international)
4 - 7.11.2014	Sustainable Fish @ UGent	UGent, Ghent		Marine@UGent in cooperation with VLIZ	co-organiser	conference (national)
6.11.2014	Wetenschapscafé Duurzame-visweek UGent (UGent sustainable fish week science café)	UGent, Ghent	25	Marine@UGent in cooperation with VLIZ	co-organiser	conference (international)
14.11.2014	Oostendse spookverhalen en wondervertellingen (Ostend ghost stories and miracle tales)	InnovOcean site, Ostend	130	Roland Desnerck	facilitator	meeting
15.11.2014	Promotional stand and workshop for Planeet Zee – 20th Flemish Congress for Science Teachers	KULAK, Kortrijk	450	VeLeWe with the cooperation of VLIZ	active participant	conference (international)
19.11.2014	Academic session 'Verduurzaming Vlaamse Vissersvloot' (making the Flemish fishing fleet sustainable)	InnovOcean site, Ostend	80	SDVO vzw	facilitator	conference (national)
23.11.2014	Science Day – Marine Station Ostend opens its doors	MSO, Ostend	800	VLIZ	organiseert	conference (international)
24.11.2014	Archaeology and underwater landscape seminar	Provinciaal Hof, Bruges	170	SeArch in collaboration with VLIZ	co-organiser	meeting
26.11.2014	Press conference by state secretary for the North Sea Bart Tommelein	InnovOcean site, Ostend	15	Cabinet of the state secretary for the North Sea	facilitator	meeting
11.12.2014	VALOREVIS steering committee	InnovOcean site, Ostend	12	ILVO	facilitator	conference (international)
13.12.2014	Coastal guide seminar	Casino, Blankenberge	145	Nature and Environmental Education service of the province of West Flanders in cooperation with VLIZ	co-organiser	meeting

## 2014 publications

### De Grote Rede

- **Issue 36** - special issue 'The Great War and the Sea' with 15 leading articles on various aspects of WWI and the sea, 7 one-page sections on the same topic, and toponyms of the principal places in the front area, published in Dutch in November 2013 and translated into French, English and German in the spring of 2014.
- **Issue 38** (May 2014) – with leading articles on cruise shipping: worldwide trends and developments in the coastal port of Zeebrugge; malaria on the Belgian coast; what is the perfect beach?
- **Issue 39** (November 2014) – with leading articles on 'Blue mind': what the sea does to us; major heritage value of the North Sea highlighted by three recent finds; spatial planning at sea: what Belgium is good at.

### VLIZINE

A total of 12 issues of the e-newsletter 'VLIZINE' appeared in 2014, including a total of 159 articles.

### VLIZ Library Acquisitions

A total of 36 Library Acquisitions lists were forwarded by e-mail in 2014.

### Zeekrant 2014

This eight page annual publication of the Flanders Marine Institute and the province of West Flanders was printed in 80,000 copies. The publication was launched on 6 June 2014 on the occasion of World Oceans Day.

### Sociale Media

#### Facebook:

RV Simon Stevin

#### Twitter:

@jmeesvliz  
@LifeWatchVLIZ  
@VLIZBib  
@WRMarineSpecies

#### LinkedIn:

VLIZ - Flanders Marine Institute

### Books

- Lamour, L.; Vallet, E.; Fockede, N.; Moreau, K.; Kinds, A.; Polet, H. (Ed.) (2014). **Vis- en zeevruchtengids voor professionele gebruikers**. Editie 2014. SeaWeb Europe/Vlaams Instituut voor de Zee (VLIZ): Paris, Oostende. 183 pp.
- Lamour, L.; Vallet, E.; Fockede, N. (Ed.) (2014). **Guide des espèces à l'usage des professionnels**. Édition 2014 du Guide des espèces. SeaWeb Europe: Paris. 181 pp.
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## Fact sheets

### Historical figures:

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## Teaching packages

- Planeet Zee learning modules on the following topics: beach morphology and dynamics; marine biotechnology.
- Practical exercises on the following topics: beach terrain profile; polder sample boring; sand, a motley; beach fieldwork excursion bundle; visit to the sea pharmacy; extraction of the food additive carrageenan.

## Short films

- Promotional video within the scope of the MERMAID project. ['Designing multi-purpose offshore platforms'](#). 2014. Filmed by Bruneel H. Coordinated by Copejans E., Claus S., Pirlet H., Rappé K. Produced by the European Commission FP7 and the MERMAID project (grant agreement N°. 288710). Executive producer: VLIZ. Ostend.
- Underwater images of the dive to the Belwind artificial reef and the tagging of lobsters. 3 September 2014. Copyright: VLIZ.

## VLIZ acknowledged

VLIZ was mentioned in the acknowledgements of 11 peer-reviewed publications and 28 non-peer-reviewed publications.

## Scientific A1 publications (co-)written by VLIZ employees

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- Warrington, S. (Ed.) (2014). [International work. Europe, Belgium: Peeling shrimp](#). *Oral History* 42(1): 22.

## A selection of publications (co-)written by VLIZ employees

(except for regular VLIZ publications and peer-reviewed publications)

- Acott, T.; Urquhart, J.; Church, A.; Kennard, M.; le Gallic, B.; Leplat, M.; Lescrauwaet, A.-K.; Nourry, M.; Orchard-Webb, J.; Roelofs, M.; Ropars, C.; Zhao, M. (2014). [21st Century Catch: Toolkit prepared as part of the INTERREG 4a 2 Seas GIFS \(Geography of Inshore Fishing and Sustainability\) project](#). University of Greenwich, Chatham Maritime: Kent. 118 pp.
- Copejans, E. (2014). [Wat iedere leerling over de oceaan zou moeten weten](#), Ocean literacy. Jaarb. aardrijkskunde (Ghent) 2014: 63-70.
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