

2012

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.

Government of Flanders



west-vlaanderen
de gedreven provincie



The VLIZ annual report 2012

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Ostend, May 2013.

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Only available in digital format: to download from the VLIZ website (www.vliz.be/annualreport)

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Dear reader

The Annual Report 2012 of the Flanders Marine Institute (VLIZ) provides a brief outline of our activities in the previous year. We have thoroughly considered the way in which the content and presentation could be updated and new initiatives, highlights and other eye-catchers could be emphasised by means of many pictures and key figures. For more extensive information on the numerous internal and external projects, please refer to our website www.vliz.be. We hope you will find this first new-style annual report fresher, more attractive and more informative.

You will notice that 2012 was a very productive year for VLIZ. It was a year with many highlights in all our divisions. These include the launch of the research vessel Simon Stevin and the first change of chairman of our institution, to name just a few. Honorary Governor Paul Breyne became honorary chairman of VLIZ. He was succeeded by Governor Carl Decaluwé in early 2012.

By virtue of his office and the articles of association, the governor of West Flanders is chairman of VLIZ. Mr Paul Breyne was the first chairman of VLIZ, and since its foundation in 1999 he chaired no less than 64 meetings of the Board of Directors. In this pioneering stage VLIZ grew exponentially, which went hand in hand with great dynamism and resulted in an excellent reputation. His chairmanship was characterised by the numerous crucial management decisions typical of an organisation's start-up and growth phase as well as by the safeguarding of the unique character and the strategic vision of the future of VLIZ.

Indeed, the 'VLIZ model' has proved to be highly successful and has resulted in the institution becoming one of the flagships of Flemish science policy; we can therefore proudly state that Flanders, the province of West Flanders and the city of Ostend are world players in the field of oceanography.

In retrospect, the foundation of VLIZ was in effect a timely and visionary decision. Timely because the importance of the seas and oceans – and consequently of marine scientific research – has greatly increased over the past decade. Visionary because the model used has turned out to be very successful. This model – the framework in which the institution operates – implies that VLIZ does not conduct any research itself; instead, it actively supports the researchers of universities, scientific institutions and administrations. The objective scientific, neutral en inter-university character is important in this context. Thanks to this policy, other institutions do not view VLIZ as a competitor but as a supporting, networking and integrating platform.

The marine scientific landscape is very complex: it is a highly fragmented, yet multidisciplinary community with complex funding structures and unique characteristics which requires central logistic support and benefits from the joining of forces and the sharing of information and data.

All activities performed by VLIZ made significant progress under Mr Paul Breyne's chairmanship. He handed over a healthy organisation to his enthusiastic successor. We are most grateful to him for this.

We hope you enjoy reading this annual report!

Jan Mees

GENERAL DIRECTOR VLIZ



THE BOARD OF DIRECTORS OF VLIZ AT THE MEETING OF 12 MARCH 2012, IN WHICH HONORARY GOVERNOR PAUL BREYNE PASSED ON THE CHAIRMANSHIP TO CURRENT GOVERNOR OF THE PROVINCE OF WEST FLANDERS CARL DECALUWÉ.

Left to right: Jean Berlamont (KULeuven), Rudy Herman (EWI), Guido Decorte (member of the Provincial Executive / secretary), Luc Gobin (on behalf of the Flemish Minister for Finance), Ann Overmeire (Provincial Development Agency of West Flanders), Jan Mees (general director of VLIZ / rapporteur), Patrick Braet (provincial treasurer), Carl Decaluwé (Provincial Governor of West Flanders), Paul Breyne (Honorary Governor), Philip Van Avermaet (divisional head of EWI), Colin Janssen (Ghent University / vice-chairman), Paul Gerard (AG Haven Oostende) and Marie Claire Van de Velde (on behalf of the Flemish Minister for Science Policy).

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Important facts and figures for 2012



VLIZ gets a new chairman:
Provincial Governor Carl Decaluwé

© VLIZ

457 REQUESTS FOR INFORMATION

The number of requests from the public for marine information (457) and informative lectures (72) doubled

6,246,066 EUR

New covenant for 2012-2016:
new tasks, higher turnover (6,246,066 EUR)
and more staff (58)

61

The number of (co)organised
and facilitated events doubled (61)



Synthesis of 5 years' work
concerning alien species in
Belgian marine waters was published



First Flemish newly built research vessel
RV Simon Stevin was launched

© Devriendt



Book on shrimp: full of stories, scientific facts and recipes

© Lannoo (Verdurme)



Launch of MarineRegions.org, the standard for maritime boundaries and marine areas and place names



EMODnet



European Marine Observation and Data Network

The European Commission installed the EMODnet secretariat at the InnovOcean site in Ostend

12,000,000

A total of 12 million pictures downloaded so far from the VLIZ photo galleries



The history of oyster farming on the Flemish coast unravelled

© Archief Halewyck

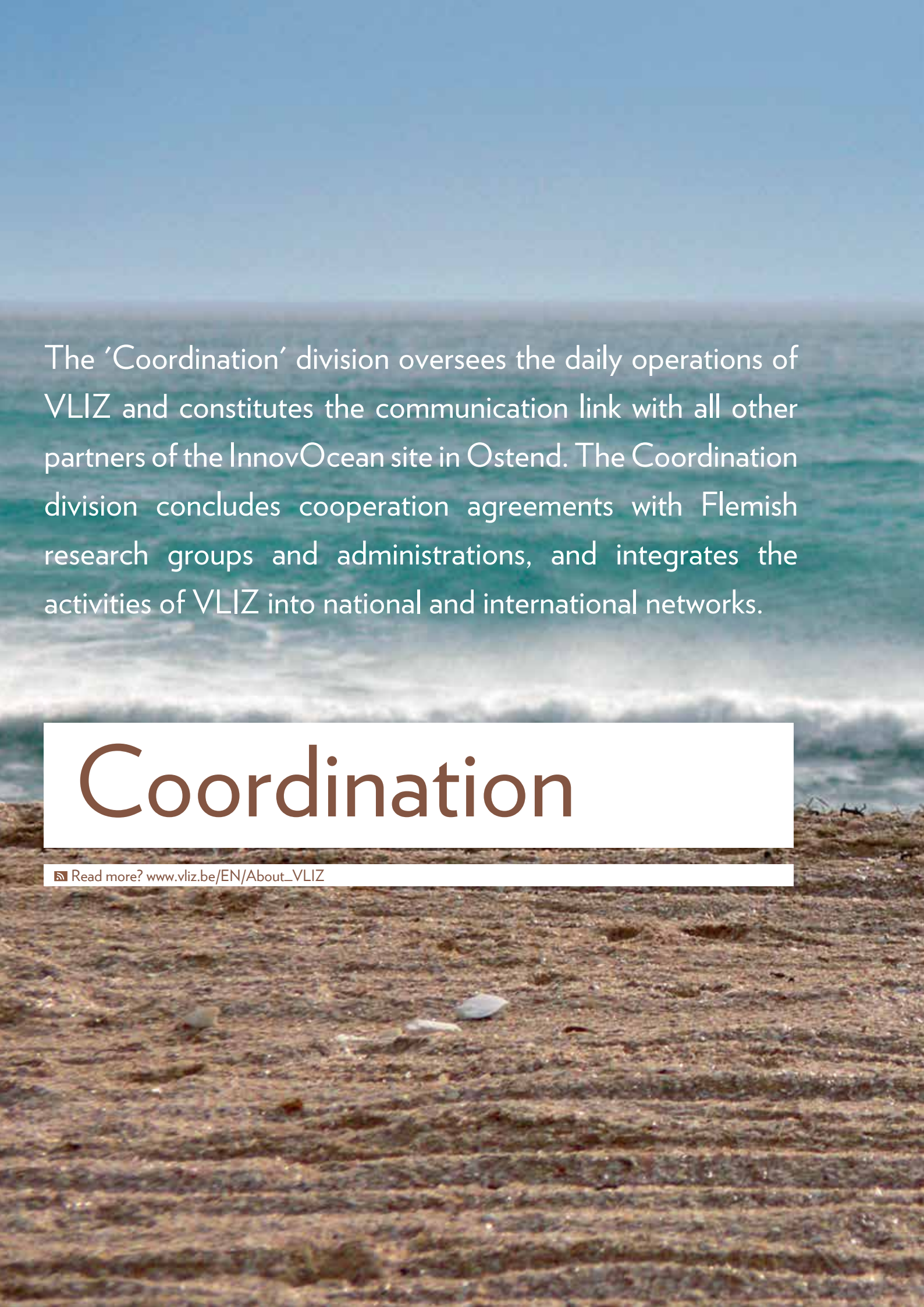
143,123

The number of downloads (143,123) from the Open Marine Archive more than doubled



The first conference on ocean literacy in Europe

© VLIZ (Hertz)



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.

Coordination

Read more? www.vliz.be/EN/About_VLIZ





SCIENTIFIC BOARD VISITS LINKEBEEK. – On 11 October 2012 the VLIZ Scientific Board visited the Research Institute for Nature and Forest in their offices in Linkebeek. After an interesting tour of the research facilities, they proceeded to the order of the day.

Left to right: Jan Mees, Rudy Herman, Toon Verwaest, Julien De Rouck, Ann-Katrien Lescauwae, Tom Artois, Gudrun De Boeck, Tina Mertens, Marnix Pieters, Roger Dijkmans, Jaak Monbaliu, Fien De Raedemaeker, Inne Vught, Jurgen Tack and Nancy Fockedeey.

© VLIZ

Start of the new covenant. On 19 January 2012 the Flemish government, represented by Minister for Innovation Ingrid Lieten, signed a five-year covenant with VLIZ in which VLIZ's objectives of networking, informing, supporting and disseminating the knowledge of 1000 marine scientists in Flanders are confirmed as well as updated. In addition to accommodating and supporting international organisations such as the UNESCO/IOC Project Office for IODE and the European Marine Board secretariat, this covenant lays down a number of particular assignments for VLIZ. For instance, VLIZ represents the Flemish government in the Belgian delegation at the Executive Council and the General Assembly of the Intergovernmental Oceanographic Commission (IOC) of UNESCO as well as in the European thematic working groups and other initiatives relating to marine sciences. In addition, VLIZ has been included in the steering committee of the Flanders UNESCO Trust Fund to support the scientific activities of the UNESCO Science Programme (FUST). Furthermore, the covenant provides the opportunity to embed two important European initiatives in Flanders: the European Marine Observation and Data Network EMODnet as well as the Joint Programming Initiative for Healthy and Productive Seas and Oceans, or "JPI Oceans" for short. You can find more information in the appendix chapter "Support to international organisations" chapter (Appendix 31-44).

Parallel to the covenant with the Flemish government, VLIZ concluded a covenant with the province of West Flanders for the same period from 2012 to 2016.

The agreement entered into by VLIZ for the period from 2012 to 2016 was translated into an updated policy plan / strategic plan for the same period in accordance with the formal obligation laid down in the Covenant with the Flemish government.

Investment subsidy. On top of the basic amount of € 2.417 million, VLIZ annually receives an additional investment subsidy of € 1.122 million from the Flemish government department of Economy, Science and Innovation (EWI) (included in the Covenant for the period from 2012 to 2016). In 2012 the greater part of this subsidy was used to fund the new research vessel Simon Stevin and its scientific equipment as well as to renovate the land-based facilities.

VLIZ good governance charter. Good governance is aimed at making an organisation's management structure and decision-making processes more efficient, transparent and objective. VLIZ undertook to draw up a Good Governance Charter, which was approved by the Board of Directors on 13 December 2012. This Charter can be consulted on the VLIZ website.



THE SCIENTIFIC COMMITTEE'S GUIDANCE COMMITTEE MET ON 21 JUNE 2012 IN OSTEND AND VISITED THE NEW RESEARCH VESSEL SIMON STEVIN. – Every year VLIZ convenes a Guidance Committee to enable the Scientific Board to enter into dialogue with a diverse group of marine scientists with regard to important new and planned activities. The Guidance Committee meeting that took place on 21 June 2012 was attended by an interdisciplinary group of 63 scientists.

© VLIZ

Board of Directors. VLIZ is managed by a Board of Directors which assembled five times in 2012. The Board of Directors consists of 14 members, who are listed in the Annexes to this Annual Report. The chairmanship was passed on in 2012: in his capacity of new governor of the province of West Flanders, Mr Carl Decaluwé succeeded Mr Paul Breyne, who received the title of honorary governor. Mr Breyne also received the title of honorary chairman of VLIZ.

Scientific Committee. 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. The composition of this board can be found in the Annexes to this Annual Report. The Scientific Board met four times in 2012. On the occasion of the meeting of 11 October, the VLIZ Scientific Board visited the Research Institute for Nature and Forest in their offices in Linkebeek. The session in June was combined with the annual meeting of the Scientific Guidance Committee.

The Guidance Committee is convened once a year by VLIZ for a plenary session open to all marine scientists (independent academic staff, post-docs and executives). The Guidance Committee meeting in Ostend on 21 June 2012 was attended by a group of 63 marine scientists

from the most diverse disciplines. Subsequently, all participants got the opportunity to visit the new research vessel Simon Stevin.

Expert Groups may be established as part of the Scientific Committee at the invitation of the Board of Directors or at the suggestion of the Scientific Board. These thematic working groups are composed of the most relevant experts from Belgium and abroad. An expert group can have a limited life span or have a more permanent character. An expert panel's chairman has to report directly to the Scientific Board. A VLIZ employee provides support as secretary-rapporteur. In the course of 2012, the LifeWatch Expert Group was founded (see Data Centre chapter).

Overview of VLIZ staff at the end of December 2012

Staff. On 31 December 2012 VLIZ employed 58 staff members, who accounted for 50.92 full-time equivalents (FTEs). Nearly half of them were part of the permanent staff (22 FTEs), the rest were employed on a temporary basis. Scientific employees accounted for 31.08 FTEs, while 21.97 FTEs were devoted to support work (including 9.5 FTEs for administrative staff, 6.18 FTEs for IT workers and 1.26 FTEs for maintenance staff). During the summer months 19 students were employed at VLIZ, accounting for 2.9 FTEs. During the previous calendar year 4 students did a work placement at different VLIZ divisions.

MANAGEMENT

1 Jan Mees
general director VLIZ



COORDINATION

2 Fien De Raedemaeker
scientific assistant
(since 01.05.2012)

3 Ingrid Dobbelaere
administrative assistant
contact & management secretariat

4 Nathalie Keersebilck
administrative assistant
projects

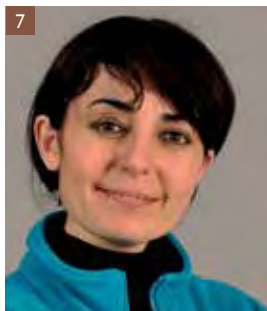
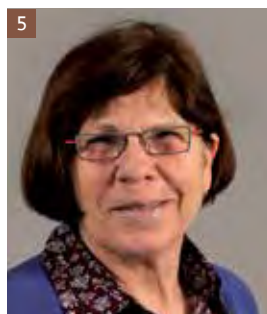
5 Angela Lucas-Diaz
general operation & coordination
VLIZ & EMB maintenance

6 Tina Mertens
policy officer
(since 01.06.2012)

7 Chedi Minkailova
general operation & coordination
VLIZ & UNESCO maintenance

8 Delphine Vanhaecke
scientific assistant
(since 19.11.2012)

9 An Vanhoorne
administrative assistant
financial & personnel management



LIBRARY

1 Heike Lust
information manager

2 Chilekwa Chisala
assistant librarian

3 Jan Haspeslagh
librarian

4 Zohra Bouchti
scientific assistant

5 Marleen Roelofs
scientific assistant
(since 01.10.2012)



RESEARCH INFRASTRUCTURE

1 André (Dre) Cattrijsse
research infrastructure manager

2 Michiel T'Jampens
marine technician

3 Willem (Wim) Versteeg
marine technician
(since 01.03.2012)



FIGURES & POLICY

1 Ann-Katrien Lescauwat
figures & policy manager

2 Heidi Debergh
scientific assistant

3 Hans Pirlet
scientific assistant

4 Ruth Pirlet
scientific assistant
(since 01.02.2012)

5 Thomas Verleye
scientific assistant
(since 01.04.2012)

6 Tim Verstraeten
scientific assistant
(since 01.10.2012)



DATA CENTRE

1 Francisco (Tjess) Hernandez
data centre general manager

2 Simon Claus
data centre project manager

3 Sam Colpaert
scientific assistant
(since 01.05.2012)

4 Nathalie De Hauwere
scientific assistant

5 Daphnis De Pooter
scientific assistant

6 Joram Declerck
IT specialist & developer

7 Wim Decock
scientific assistant

8 Stefanie Dekeyzer
scientific assistant
(since 01.05.2012)

9 Klaas Deneudt
data centre project manager

10 Elien Dewitte
scientific assistant

11 Annelies Goffin
scientific assistant

12 Carolien Knockaert
scientific assistant
(since 01.05.2012)

13 Liesbeth Lyssens
IT specialist & developer

14 Pieter Maes
IT specialist & developer
(since 05.06.2012)

15 Jonas Mortelmans
scientific assistant
(since 01.11.2012)

16 Roeland T'Jampens
IT specialist & developer

17 Aina Trias-Verbeeck
scientific assistant
(since 21.05.2012)

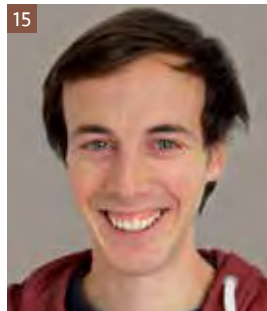
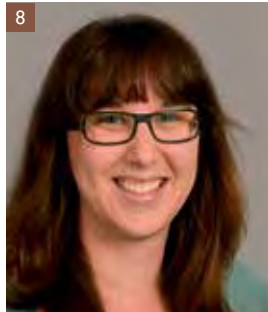
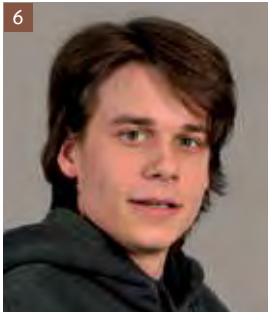
18 Lennert Tyberghein
data centre project manager
(since 01.11.2012)

19 Leen Vandepitte
data centre project manager
(since 01.05.2012)

20 Ruth Vandepitte
administrative assistant
Information & Data

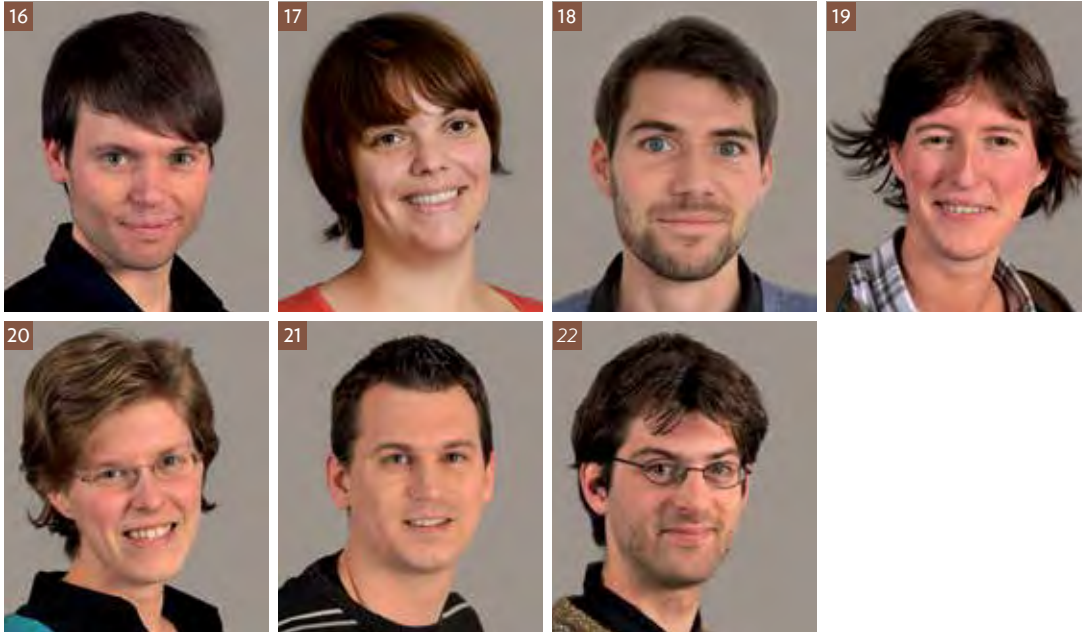
21 Bart Vanhoorne
IT specialist & developer

22 Filip Waumans
data centre project manager



DATA CENTRE

(continued)



COMMUNICATION & INFORMATION

1 Jan Seys

communication & information manager

2 Evy Copejans

educational assistant

3 Nancy Fockedeey

scientific assistant

4 Karen Rappé

scientific assistant

5 Samuel Van de Wallescientific assistant
(since 01.11.2012)**6 Sofietje Voerman**scientific assistant
(since 17.10.2012)

FLEMISH-DUTCH SCHELDT COMMISSION – COMMUNICATION

1 Bregje Beyst

VNSC manager – Flanders

2 Sara Behiels

project assistant



UNESCO/IOC PROJECT OFFICE FOR IODE

1 Kristin de Lichtervelde

administrative assistant

2 Claudia Delgado

training coordinator

3 Annelies Groen

administrative assistant

4 Mark Van Crombrugge

IT specialist & developer



EUROPEAN MARINE BOARD

1 Dina Eparkhina

administrative assistant



JPI HEALTHY AND PRODUCTIVE SEAS AND OCEANS

1 Willem De Moor

advisor



TRAINEES ACTIVE AT VLIZ IN 2012

Jelle Goossens
Artesis University College,
teacher training
education trainee

Igor Reynaert
HoWest
data centre trainee

Simon Storms
Ghent University, geology
Figures & Policy trainee

Naomi Willaert
Vesalius Institute,
technology-sciences
education trainee

STUDENT EMPLOYEES ACTIVE AT VLIZ IN 2012

Eline De Blende
Astrid de Lichtervelde
Elisabeth de Lichtervelde
Eline Haspeslagh
Louise Haspeslagh

Lisa Hernandez
Pauline Hernandez
Simon Hernandez
Nathalie Lambrecht
Kristof Plovie

Vikki Scholdis
Tineke Seys
Levi Vanbelle
Elke Vandekerkhove
Amber Vanhooren

Anneke Verbeke
Gerlien Verhaegen
Lisanne Verhaegen
Sofietje Voerman

A FRAMEWORK WAS DEVELOPED IN 2012 FOR RENEWED COOPERATION WITH KENYA IN THE FIELD OF MARINE SCIENCES. – VLIZ and KMFRI signed a memorandum of understanding in Mombasa, Kenya on 19 October 2012. It provides a general framework for possible cooperation in the field of marine sciences.

Left to right: Carl Decaluwé (Governor of the Province of West Flanders and Chairman of the Board of Directors of VLIZ), Bart Ouvry (Belgian Ambassador to Kenya), Enock Wakwabi (Deputy Director of KMFRI) and Peninah Aloo-Obudho (Chairman of the KMFRI Board of Management).

© VLIZ



Members. VLIZ is a membership organisation. Everyone 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 2012 the Flanders Marine Institute had a total of 280 members, including 209 individual members, 33 students, 26 institutional members and 12 honorary members. In October 2012 the Board of Directors and the Scientific Board agreed to the proposal to register VLIZ as a ‘charity’ on www.filantropie.be. In late December 2012 a preliminary application was submitted to the Ministry of Finance. The way in which contributions from members can be integrated into this fund will be examined in 2013.

Cooperation agreements. Cooperation with national and international universities, research institutions and individual research groups is further enhanced by concluding cooperation agreements. An exhaustive list of the national and international cooperation agreements concluded by VLIZ since its foundation can be found in the Annexes to this Annual Report. A Kenyan delegation of the *Kenya Marine and Fisheries Research Institute (KMFRI)* visited VLIZ in January 2012. On this occasion, a *Memorandum of Understanding* was prepared to create a general framework for possible collaboration in the field of marine sciences.

The MoU was signed on 19 October 2012 when a VLIZ delegation visited Mombasa, Kenya.

VLIZ and Ghent University signed a unique cooperation agreement on 23 August 2012. No less than 45 professors from 24 research units connected to five faculties and combined in the Marine@UGent cluster will work together more intensively with VLIZ with regard to seas and coasts. The framework agreement is initially concluded for a five-year period and creates a general framework for collaboration with regard to five main axes. In addition to the promotion of inter-faculty and multidisciplinary cooperation with VLIZ, both institutions recognized each other’s specific role and image. VLIZ also undertakes to give maximum visibility to the research conducted in Ghent and, if necessary, establish additional specific institutional partnerships with research groups from Ghent University. This cooperation agreement finally states that a new multifunctional laboratory in Ostend (in the “Ostend Marine Station” land-based facilities) and greenhouse facilities in De Haan are put at the disposal of researchers and students from Ghent University. Concerning the use of research equipment, VLIZ has already agreed to manage the unmanned underwater vehicle ROV Genesis, purchased by Ghent University, and to put it at the disposal of the Flemish research community.



FRAMEWORK AGREEMENT FOR A MORE INTENSIVE COLLABORATION WITH THE MARINE@UGENT RESEARCH CLUSTER OF GHENT UNIVERSITY IN THE FIELD OF MARINE SCIENCES. – On 23 August 2012 a cooperation agreement was signed by the Rector of Ghent University, Paul van Cauwenberge (left) and the General Director VLIZ, Jan Mees (right). Colin Janssen (middle) is chairman of Marine@UGent and of the VLIZ Scientific Committee.

2012 VLIZ TOUR OF FLANDERS

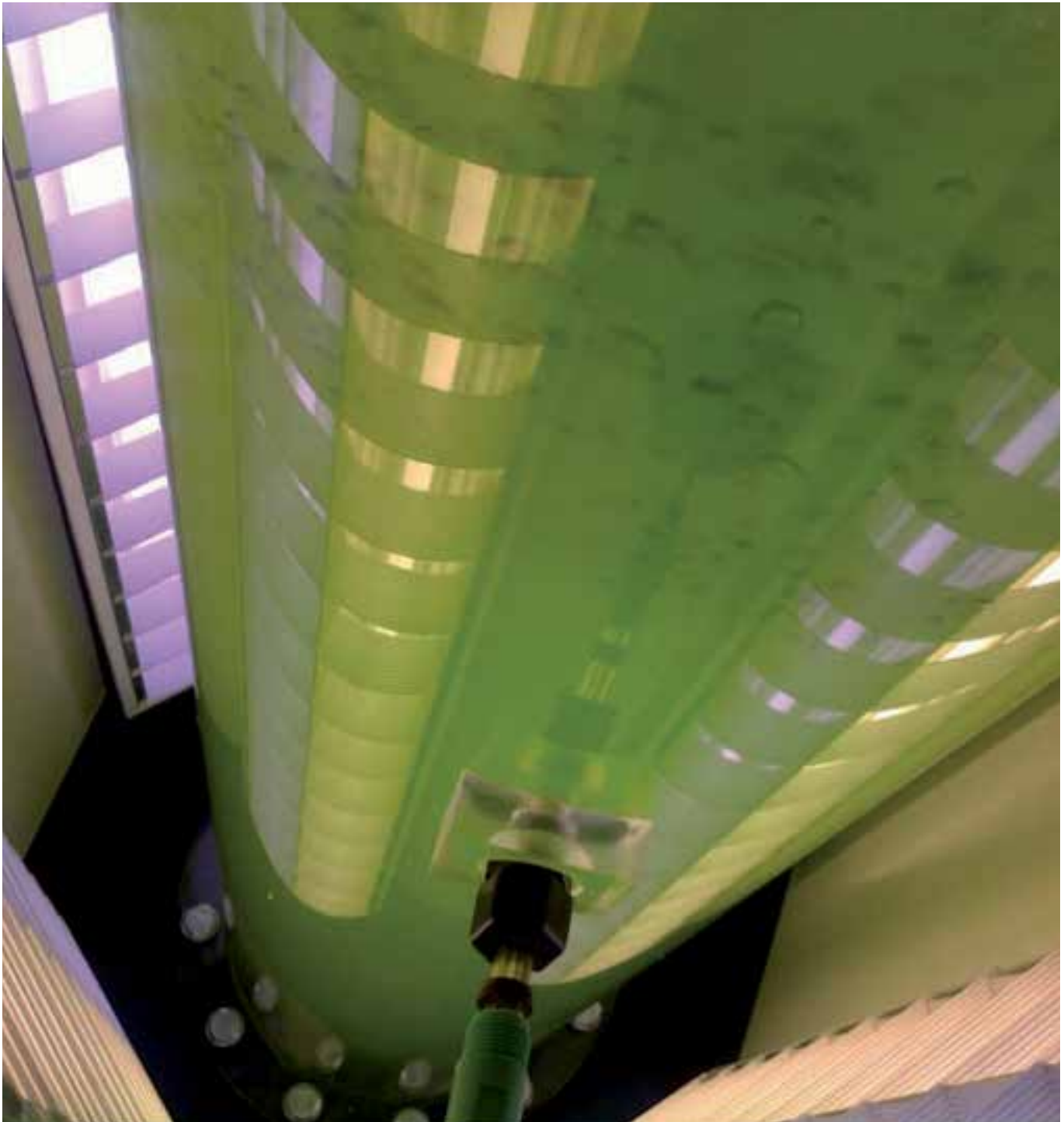
8 February 2012*	Ghent University – Veterinary Medicine
25 June 2012*	JPI Oceans Secretariat
26 September 2012	Katholieke Universiteit Leuven

* visit to VLIZ

VLIZ Tour of Flanders. VLIZ delegations visit research groups and administrations in Flanders and the wider region to exchange information on our activities and proactively promote partnerships. The development of framework cooperation agreements modelled after the agreement with Marine@UGent is specifically advocated for all universities. In the course of 2012 we forged relationships with three research groups, administrations or organisations.

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 bring this about (for an overview, see the "Communication & Information" chapter). VLIZ is also active in numerous national and international formal networks. An exhaustive list is included in the Annexes to this Annual Report. Below you can find a brief overview of a few new initiatives in which VLIZ participates.

The Flemish Aquaculture Platform was established in 2009 as an informal consultative body, a meeting place for all those involved in the aquaculture industry in Flanders and Belgium, from producers to distributors, from biologists to jurists, from the private to the public sector, and from phycologists to ichthyologists. In late 2012 Flemish Minister-President Kris Peeters gave this platform an official status and appointed a strategic steering committee with representatives from the organisations involved. VLIZ developed the Flemish Aquaculture Platform website (www.aquacultuurvlaanderen.be), aiming to sketch the aquaculture landscape in Flanders, which has become more dynamic and competitive over the past few years.



VLIZ SUPPORTS THE FLEMISH MARINE BIOTECHNOLOGY PLATFORM. – This should increase the visibility of marine biotechnology, so that it can contribute to the general recognition of research and can result in improved collaboration and the encouragement of interdisciplinarity. The picture shows a photobioreactor of KU Leuven Kulak and KaHo Sint-Lieven for growing microalgae used for products such as antioxidants and omega-3 fatty acids.

© KaHo Sint-Lieven (K. Goiris)



THE LAUREATES OF THE VLIZ SCIENTIFIC AWARDS RECEIVED THEIR PRIZE ON THE VLIZ YOUNG MARINE SCIENTISTS' DAY 2012.

Left to right: Colin Janssen (chairman of the VLIZ Scientific Committee), Filip Meisman (substituting for Lorenz Meire, VLIZ Thesis Award Marine Sciences 2011 laureate), Elisabeth Debusschere (VLIZ Thesis Award Marine Sciences 2011 laureate), Eric Struyf (VLIZ North Sea Award 2011 laureate), Sven Smolders (public award for best poster presentation), Michiel Vandegehuchte (public award for best pitch presentation) and Carl Decaluwé (Governor of the province of West Flanders and chairman of the VLIZ Board of Directors).

© VLIZ (Verhaeghe)

CSA Marine Biotech. This CSA (*Coordination and Support Action*) intends to pave the way for common programmes and partnerships within the scope of marine biotechnology in Europe so as to eliminate current fragmentation and unnecessary duplication. The ultimate goal is the realisation of an ERA-NET for marine biotechnological research in Europe. VLIZ developed the CSA Marine Biotech website (www.marinebiotech.eu).

CSA Oceans. This support action is designed to proceed the JPI Healthy and Productive Seas and Oceans from the start-up phase to the operational phase as soon as possible. For more information please refer to the “Support of international organisations” chapter (Annexes) and www.jpi-oceans.eu/prognett-jpi-oceans/CSA_Oceans/1253979959045.

Scientific awards. 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. Since 2000 VLIZ has granted one North Sea Award (€ 1000) and two Marine Sciences Thesis Awards Marine Sciences (2x € 500) every year. The 2011 scientific awards were officially presented and granted on the VLIZ Young Marine Scientists’ Day 2012 (24.02.2012).


Dr Eric Struyf won the **VLIZ North Sea Award 2011** for his publication entitled ‘Historical land use change has lowered terrestrial silica mobilization to the North Sea and the Scheldt Estuary’.

The two laureates of the **VLIZ Thesis Award Marine Sciences 2011** were Elisabeth Debusschere (M.Sc. in biology, Ghent University) for the thesis ‘Effect of ocean acidification on the early life stages of the Baltic tellin *Macoma balthica*’ and Lorenz Meire (MareLac, Ghent University) for the M.Sc. thesis ‘Impact of global change on coastal hypoxia’.



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

Research infrastructure

 Read more? www.vliz.be/EN/Logistic_Support





General operation. The Research Infrastructure division coordinates the scientific and educational programme of the land-based and maritime research infrastructure VLIZ puts at the disposal of the Flemish and international marine research community. André Cattrijsse and two marine technicians are also responsible for the use of a large collection of measuring and sampling equipment that can be put into action on various research vessels as well as for the coordination of a monthly monitoring trip to 9 stations in the Belgian part of the North Sea. In addition, VLIZ makes greenhouses for experimental work (De Haan) and storage space (Ostend) available.

On 1 March 2012 Wim Versteeg joined the Research Infrastructure division. He was made responsible for the extension of the land-based facilities up to the Ostend Marine Station, multibeam mapping and the management of ROV Genesis.



ON 25 MAY 2012 THE RESEARCH VESSEL SIMON STEVIN ARRIVED AT THE PORT OF OSTEND. – The ship is 36m long and 9.6m wide, has a draught of 3.5m and meets the needs of the different marine research disciplines present in Flanders. This first Flemish newly built research vessel sails under the Belgian flag and is based at Ostend. The ship was named 'Simon Stevin' after a Flemish intellectual (°1548, Bruges) with numerous maritime and hydraulic accomplishments.

The vessel costs the Flemish government € 11.5 million and the scientific equipment costs another € 1 million. The ship is equipped with state-of-the-art technology: sophisticated sonar technology for flow measurements and soil characterisation, highly accurate positioning by means of a dynamic positioning system and a diesel-electric drive unit which makes it possible to sail as a 'silent ship' so that all acoustic measuring instruments can be used optimally. RV Simon Stevin will mainly be deployed for academic coastal oceanographic research in the Southern Bight of the North Sea and the eastern part of the Channel. The ship will provide the same kind of support as RV Zeeleeuw and will be used mainly for daytime operations, but multiple-day trips may be carried out on a regular basis. RV Simon Stevin will also be deployed in new European infrastructure projects. A marine observation station will be developed for biodiversity research within the scope of LifeWatch and RV Simon Stevin will perform measurements at sea to study and monitor global climate change as part of a European network of measuring stations within the scope of ICOS (Integrated Carbon Observation System).

RV SIMON STEVIN WAS OFFICIALLY CHRISTENED BY FLEMISH MINISTER FOR INNOVATION INGRID LIETEN ON 13 SEPTEMBER 2012 – The godmother of the first Flemish newly built research vessel in history is flanked by Capt Jacques D'Havé, general administrator of the Agency for Maritime Services and Coast (left) and shipmaster Giovanni Terryn (right).

© VLIZ (Verhaeghe)



RV Simon Stevin. On 25 May 2012 the new Flemish research vessel RV Simon Stevin arrived at the port of Ostend. VLOOT (Shipowner of the Authorities) and VLIZ had signed a new cooperation agreement a few days earlier, on 21 May 2012 to be exact. This agreement regulates the provision of the ship (as well as the deployment of the shipmaster and crew) by VLOOT (Shipowner of the Authorities) and the performance of scientific tasks and assignments by VLIZ.

A few test trips were made before the research vessel was officially put into service. The first real scientific trip took place on 7 June 2012 at the request of the Research Institute for Nature and Forest (INBO). Marine scientist Jan Reubens had the honour of making the final trip with the old research vessel RV Zeeleeuw on 15 June 2012 within the scope of his research into the attractiveness of windmills as a habitat for fish.

RV Simon Stevin was officially christened by Flemish Minister for Innovation Ingrid Lieten on 13 September 2012. A total of 240 people attended this event, including various distinguished guests: Mr Jan Peumans, Speaker of the Flemish Parliament, Mr Johan Vande Lanotte, Minister for the North Sea, Mr Carl Decaluwé, Governor of the province of West Flanders, Mr Paul Breyne, Honorary Governor, Ms Fientje Moerman, representative in the Flemish Parliament, Mr Jacques D'Havé, General Administrator of the Agency for Maritime Services and Coast, Mr Paul Gerard, Managing Director of AG Haven Oostende and Mr Jean Vandecasteele, Mayor of the city of Ostend.

THE 'RV SIMON STEVIN' FACEBOOK PAGE WENT ONLINE ON THE DAY OF THE CHRISTENING. – You can view all pictures, movies, short texts concerning the daily operations, special observations, etc. on www.facebook.com/rvsimonstevin. The 'ambassadors of RV Simon Stevin' are researchers from different research groups who often make use of RV Simon Stevin. They post information about the research conducted. The page already has over 200 followers.



ON THE OCCASION OF THE 2012 SCIENCE DAY, THE GENERAL PUBLIC GOT THE OPPORTUNITY TO TAKE A LOOK AT THE BRAND-NEW RESEARCH VESSEL FOR THE FIRST TIME. – On Sunday 25 November 2012 about 400 interested people were given a guided tour of RV Simon Stevin, which was moored at Albertakaai in Bruges.

© VLIZ

NUMBER OF DAYS AT SEA

Vessels	2004	2005	2006	2007	2008	2009	2010	2011	2012
R/V Zeeleeuw and RV Simon Stevin	155	151	122	150	162	166	151*	152*	157
RIB Zeekat	37	45	35	51	39	32	57	40	37
ROV Genesis									6
'Third' vessels	3	44	41	38	37	36	84	73	110
Total	195	240	188	239	238	234	292*	265*	310

* Continuous trips spread over consecutive days – including sampling at night – are counted as one unit in this table (2010: 7 continuous trips, 2011: 6 continuous trips)

Research Vessel RV Zeeleeuw. From 26 to 30 November 2012 a high-ranking Kenyan delegation came to Ostend for a visit to the research vessel RV Zeeleeuw. This visit followed an offer from Flanders to donate the ship to Kenya so that it can be used for marine scientific research along the East African coast.

ROV Genesis. The Remotely Operated Vehicle (ROV) Genesis and accompanying equipment was donated by Ghent University to VLIZ on 1 April 2012. ROV Genesis is an unmanned underwater vehicle primarily used on international research vessels. In the long run, the ROV will be made operational so that it can operate from RV Simon Stevin as well.

Consultations took place with the Royal Netherlands Institute for Sea Research (NIOZ) in 2012 to initiate cooperation as to the deployment of the ROV. This collaboration will be made concrete in 2013 through a cooperation agreement between VLIZ and NIOZ.



THE REMOTELY OPERATED VEHICLE (ROV) GENESIS AND ACCOMPANYING EQUIPMENT WAS DONATED BY GHENT UNIVERSITY TO VLIZ ON 1 APRIL 2012 – VLIZ deployed the ROV during a six-day international expedition in 2012.

RIB Zeekat. This Rigid Inflatable Boat (RIB) was deployed for 37 days in 2012, both from the research vessel RV Simon Stevin as from the shore. RIB Zeekat can be easily used in the Scheldt Estuary as well. Indeed, the reinforced keel is designed to run the vessel aground on tidal banks. For instance, the ROV was used for sampling in the salt marsh of Saeftinghe within the scope of the Theseus project and for the tracking of migrating eels between Terneuzen and Vlissingen (by means of digital receivers) by the Research Institute for Nature and Forest (INBO). RIB Zeekat can take a maximum of 6 persons aboard, including a skipper provided by VLIZ. Modular cases and instruments can be fixed by means of the rails in the deck. A generator is provided to feed a portable computer or other main voltage appliances.

Measuring and sampling equipment. VLIZ manages a wide range of marine scientific measuring and sampling devices as well as storage capacity that can be used by the marine science community. For an overview of all measuring and sampling equipment which VLIZ has at its disposal, please refer to the Annexes to this Annual Report.

In 2012 a few sensors were purchased in duplicate so that the equipment is guaranteed to remain operational during calibration procedures. In addition, a pCO₂ analyser was purchased in collaboration with the University of Liège to support the ICOS project, and the CTD was expanded with pH and PAR sensors for measuring the acidity and photosynthetically active radiation respectively.

Ostend Marine Station. In 1843 Professor Pierre-Joseph van Beneden installed the first marine research station in Ostend and in the world. The station was located in the eastern part of the current harbour channel and was called 'Laboratoire des Dunes'. VLIZ purchased four warehouses at nearly the same location, namely the Halve Maan site on the Ostend eastern bank, in 2009.

The renovation work started in May 2011 and was finalised for the greater part in December 2012; the core repository (for storing drill cores) was reactivated in a new cold store measuring 12 x 6 x 3 metres on 7 December 2012. The Ostend Marine Station offers the opportunity to develop dry and wet laboratories. For instance, a multifunctional laboratory will be created in collaboration with the Ghent University research cluster Marine@UGent. In addition, storage of data logging and research equipment is possible and space for public activities is available.



VLIZ RENOVATED THE OSTEND MARINE STATION'S FOUR WAREHOUSES AT THE HALVE MAAN SITE ON THE OSTEND EASTERN BANK. – The warehouses make it possible to develop dry and wet laboratories. The *core repository* (inset) was reactivated with a new cold store (measuring 12 x 6 x 3 metres) on 7 December 2012.

RESEARCH PROJECTS WHICH MADE USE OF RV ZEELEEUW AND RV SIMON STEVIN IN 2012

		# OF DAYS AT SEA
VLIZ	Monitoring in the Belgian part of the North Sea	12
VLIZ	Monitoring of porpoises	6
VLIZ	Flemish contribution to LifeWatch.eu	7
VLIZ	Marine Microbial Biodiversity, Bioinformatics and Biotechnology (Micro B3)	1
VLIZ	Expedition Planeet Zee 2011-2012	6
VLIZ	Instrument trial & recovery	18
VLIZ	Multibeam survey; together with Belgica & Ter Streep	1
Ghent University – Marine Biology	The importance of artificial hard substrates on the bottom of the North Sea for the ecology of the ichthyofauna	30
Ghent University – Marine Biology	The effect of ocean acidification on the benthic ecosystem	1
Ghent University – Marine Biology	Macrobenthos in permeable subtidal sediments	11
Ghent University – Marine Biology	Exploring the diversity of methane-oxidizing bacteria in marine environments for industrial biotechnology	2
Ghent University – RCMG	Small scale dynamics of sediments	1
Ghent University – RCMG	Instrument trial	2
Ghent University – Veterinary Medicine	Electrofishing: determination of the safety margins for marine organisms and the optimum pulse for catching sole (<i>Solea solea</i>)	4
Ghent University – Veterinary Medicine	Metabolisation and transfer of marine toxins from algae to edible molluscs	1
ILVO - Fisheries	Monitoring the effects of offshore wind farms on the epifauna and demersal fish fauna of soft-bottom sediments	1
ILVO - Fisheries	Species separation in beam-trawl fishing	6
ILVO - Fisheries	Benthos monitoring BPNS ILVO	1
ILVO - Fisheries	Biological impact of sand extraction on Hinder Banks	1
ILVO - Fisheries	Demersal Young Fish Survey (DYFS)	5
ILVO - Fisheries	<i>Mnemiopsis</i> ecology and modeling: observation of an invasive comb jelly in the North Sea (MeMo)	8
ILVO - Fisheries	Instrument trial	1
ILVO – Technology & Food	Innovative and potential valorisation applications for brown shrimp and by-products of shrimp fishery and processing	1
INBO	Monitoring of seabirds	17
INBO	Tracking of migrating eels	1
MUMM	Monitoring of hard substrates at wind farms	1
MUMM	WaTUr – sediment transport and concentration	1
MUMM	Assessing macrobenthos adaptation to environmental conditions with a trait-based model in the Southern Bight of the North Sea	1

De Haan Greenhouses. The Nieuwmunster dunes in the municipality of Zuienkerke (near De Haan) accommodate a greenhouse complex that can be used for research related to coastal vegetation (dunes, salt marshes, polders). The complex consists of 5 greenhouses, 3 of which can be heated, 6 seed beds, a 6ha area and annexes with limited accommodation possibilities and an elementary laboratory.

The Coastal Division of the Agency for Maritime Services and Coast (MD&K) offers the greenhouses and adjacent grounds while VLIZ takes care of the coordination of the scientific programme and manages the research equipment. VLIZ also bears the operational costs and ensures the maintenance and new investments. For example, VLIZ invested in a new fuel oil tank in 2012.

Two students from the Terrestrial Ecology Unit of Ghent University made use of the greenhouses in 2012. Tanja Milotic (under the supervision of Prof Maurice Hoffmann) investigated the survival of plants whose seeds are dispersed by grazers. Celine Ghyselen (under the supervision of Prof Dries Bonte) studied the interaction between herbivores and pollination.

Monitoring. Since 2002 VLIZ has provided a monthly monitoring trip to 9 stations in the Belgian part of the North Sea. This way VLIZ hopes to provide coastal research with the necessary long-term information and data. This time series of data should contribute to improved management of the Belgian coastal waters. More information on the project and the results so far can be found on the website www.vliz.be/monitoring.

Water samples are collected and CTD measurements are carried out during these monthly monitoring campaigns. The samples allow to measure the turbidity, the nutrient content and the chlorophyll-a concentrations. As from the June 2012 campaign, additional stations monitored on a seasonal basis (4 times a year) are added to this monitoring series within the scope of the LifeWatch project (read more in the Data Centre chapter).

DATA MONITORING

- 16 January
- 14 February
- 22 March
- 18 April
- 22 May
- 20 June
- 24-25 July
- 20 August
- 17-18 September
- 22 October
- 19-20 November
- 12 December

Scientific trips. The research vessel RV Simon Stevin replaced the previous research vessel Zeeleeuw in June 2012 and is at the disposal of the local and international marine research community. RV Zeeleeuw and RV Simon Stevin were deployed for 1,343 hours in 2012 for sampling in the Belgian coastal waters and the Scheldt Estuary, or 91% of the time at sea made available by VLOOT (Shipowner of the Authorities). A total of 157 trips were made for various projects (see table). These included six continuous trips (which take two consecutive days, including measurements at night).

Scientists and other passengers. A total of 890 people sailed on board RV Zeeleeuw and RV Simon Stevin in 2012, including 447 scientists and 536 other passengers (pupils, students, divers, etc.). Sixteen different research groups made use of RV Zeeleeuw or RV Simon Stevin within the scope of 24 projects (see table). Education and demonstration were the main purpose of 32 out of 157 trips (20%). The educational trips took place within the scope of Planet Zee, Week of the Sea, projects of the Flanders Heritage Agency and the Belgium Scientific Diving Committee (BSDC), and training courses at the universities of Brussels (biology and chemistry), Liège (geology), Ghent (biology and geology), Antwerp (biology), Leuven (biology), Kulak (biology) and Hasselt (biology).

If need be, vessels from the Flemish fleet VLOOT (Shipowner of the Authorities) and Maritime Access division) other than RV Zeeleeuw and RV Simon Stevin can be deployed for marine scientific research as well. In 2012 this was primarily the case for research and monitoring activities of the University of Antwerp, the Flemish Environment Agency (VMM) and INBO, for which 110 trips were carried out.

VLIZ coordinated a total of 310 effectively realised scientific days at sea in the calendar year 2012, including 157 with RV Zeeleeuw and RV Simon Stevin, 37 with RIB Zeekat, 6 with ROV Genesis and 110 with other vessels from VLOOT (Shipowner of the Authorities) and the Maritime Access division.

MIDAS database. When at sea, a computer network on board RV Simon Stevin registers the navigation data as well as meteorological and oceanographic (physicochemical) data. This data is kept and managed in the MIDAS database, which stands for Marine Information and Data Acquisition System (www.vliz.be/vmdcdata/midas). In 2012 this system was updated and installed aboard RV Simon Stevin. MIDAS also helps to plan cruises and to register ship activities.



THE ANNUAL ERVO MEETING WAS HELD IN HORTA (AZORES) ON 8 AND 9 MAY 2012. – Experiences and information are exchanged at the annual meeting of this informal European network of research vessel operators. On the far left (front row) is André Cattrijsse of VLIZ.

© ERVO

Projects and networks. **ERVO** (European Research Vessels Operators) is an informal European network of research vessels operators. The annual meeting enables participants to exchange experiences and information so as to develop a common approach and European collaboration with regard to research vessels and their associated equipment and expertise. André Cattrijsse represents VLIZ in the ERVO network. He participated in the annual ERVO meeting held on 8-9 May 2012 in Horta (Azores).

The **IRSO** (International Research Ship Operators) meeting is aimed at a global audience of operators of ocean-going ships. André Cattrijsse represents VLIZ in the IRSO network. He participated in the annual IRSO meeting held on 16-18 October 2012 in Southampton.

VLIZ's main task within the **EuroFleets** project came to a close in September 2012 with the publication of the guidelines for research vessel eco-design. The project report will be published in open professional journals in 2013.

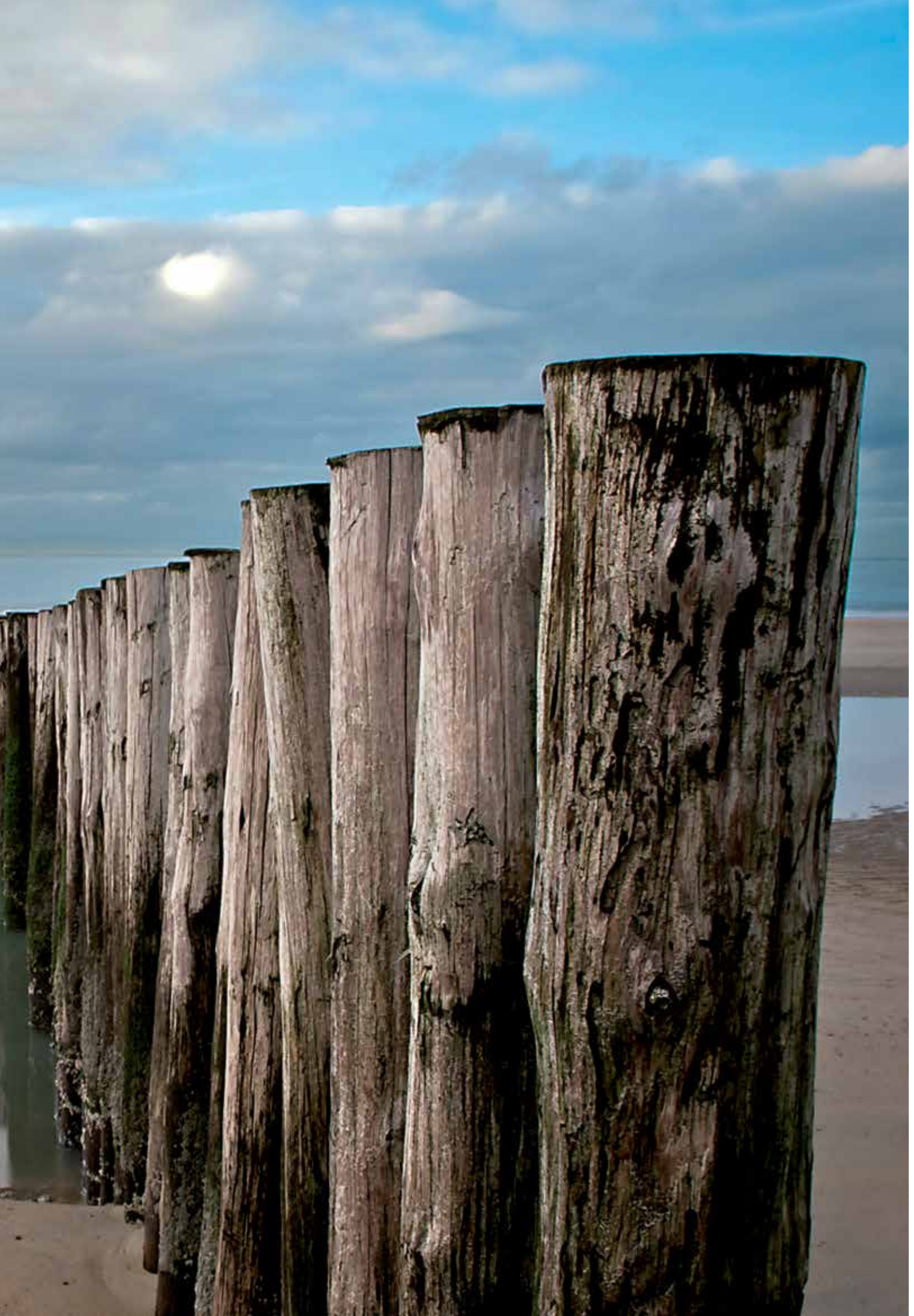
Investment subsidy. Since 2008 VLIZ has annually received an additional investment subsidy of € 1.122 million from the Flemish government department of Economy, Science and Innovation (EWI) (included in the Covenant for the period from 2012 to 2016). In 2012 the greater part of this subsidy was spent on funding the new research vessel Simon Stevin and its scientific equipment as well as on the renovation of the land-based facilities.



The 'Flanders Marine Data & Information Centre' (VMDC) provides assistance, infrastructure and tools to scientists and policy makers to support marine data management. Within the context of international networks, VMDC participates in the development of infrastructures and promotes the data flow from Flanders.

Data Centre

 Read more? www.vliz.be/EN/Data_Centre





1. DOCUMENTATION: making data accessible

- creation of a context / an identity for data
- linking of data to relevant information
- development of a suitable data policy

VMDC developed the Integrated Marine Information System (IMIS) in order to provide an as accurate as possible picture of the Flemish marine scientific landscape. Information on data sets, publications, persons and institutions is stored in a structured manner in this system (www.vliz.be/imis).



2. STANDARDISATION: creation of structured and timeless data

- structuralisation in standard formats and databases
- standardisation by means of registers
- quality control and completion

The **Aphia taxonomic register** contains a description of all known marine species and provides an overview of the accepted taxonomic names. This register is used worldwide as a standard list. It includes the European, Arctic and global list of marine species (www.marinespecies.org).

Marine Regions is a **register of geographical areas** and place names. It lays down a standard for maritime boundaries and marine areas and locations (www.marineregions.org).

Integrated databases (IMERS, EurOBIS, ScheldeMonitor, etc.) are used to collect measurement data of Belgian and international projects and measurement campaigns. The integration goes hand in hand with quality control and linking to technical metadata.



3. ARCHIVING: making data digitally available, also for the future

- enabling structured version management
- data file backup
- data file archiving

Scientific data are unique and need to be prevented from being lost. For this reason VLIZ developed the **Marine Data Archive (MDA)**: a secure, online system where researchers can archive their data files in a well-documented manner (mda.vliz.be).



4. DATA REDISTRIBUTION: promotion of science

- redistribution of data within projects or consortia
- pursuance of open access
- handling of data requests
- facilitation of data flow towards national and international networks

Websites are created to disclose information and data. For instance, **portals** as well as websites are developed as a means of communication for scientific projects and institutes.

VMDC is a member of international data exchange **networks** (such as OBIS, GBIF, SeaDataNet, EMODnet and IODE). VMDC also provides IT services to international scientific initiatives such as GLOSS, POGO, LifeWatch and PESI. VMDC has been part of the world data centre network since 2011.



FLEMISH MINISTER FOR INNOVATION INGRID LIETEN AND JAN MEES AT THE LAUNCH OF THE FOUR EUROPEAN INFRASTRUCTURE PROJECTS TO WHICH FLANDERS WILL CONTRIBUTE. – Four ESFRI (European Strategy Forum on Research Infrastructures) projects were launched in Brasschaat on 7 May 2012. The Flemish contributions to two of these projects, ICOS and LifeWatch, will be coordinated by the Research Institute for Nature and Forest (INBO) and by the Flanders Marine Institute (VLIZ) as far as the marine component is concerned.

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LifeWatch. It is important that supporting research infrastructure is available to stimulate research, management and policy concerning biodiversity and ecosystems in Europe and to steer it in the right direction. Europe therefore started the LifeWatch project in 2008 as part of the European Strategy Forum on Research Infrastructures (ESFRI). In the end, LifeWatch needs to become a strongly integrated and virtual European biodiversity laboratory consisting of observation stations, databases, web services and modelling tools installed all across Europe.


The LifeWatch project takes place in three stages. The preliminary stage (2008-2011) was funded by the European Commission within the scope of the seventh framework programme. In the current development stage (2012-2015) all activities are financed by the participating countries themselves (Spain, Italy, the Netherlands, Hungary, Romania, Sweden, Greece and Belgium). Each member state has undertaken to (help) construct the central and regional LifeWatch components. In addition, special attention has been paid to the establishment of a new legal entity for Pan-European infrastructures (European Research Infrastructure Consortium or ERIC). As from 2016, LifeWatch needs to be fully operational as a permanent biodiversity research infrastructure. This operational stage will run for at least 20 years.

Flanders contributes to the central LifeWatch infrastructure through the construction of a taxonomic backbone which facilitates the standardisation of species data as well as the integration of the various biodiversity facilities. Different existing taxonomic databases are being geared to one another. In addition, access services are being developed to supply LifeWatch with the data from each database. For the moment, the emphasis is on gearing the World Register of Marine Species (WoRMS), the Freshwater Animal Diversity Assessment database (FADA) and the SCAR-Marine Biodiversity Information Network databank (SCAR-MarBIN) to each other. The different taxonomic databases are also supplemented with missing information. In case of WoRMS, the following actions have been taken in 2012: publications regarding marine viruses, insects and Kinorhyncha were digitised and entered; taxonomic gaps were identified (e.g. molluscs and ostracods) with a view to completion by the taxonomic editors; also global (AlgaeBase) and regional species lists were supplemented.

As a regional contribution, Flanders is developing a marine (VLIZ) and a freshwater-terrestrial (INBO) observation station. The monthly monitoring campaigns with RV Simon Stevin were stepped up for the marine observation station. In 2012 the acquisition of new measuring equipment was investigated: flow cytometer, video plankton recorder, nutrient analyser, etc. In addition, the first steps were taken in the development of a sensor network in the Belgian part of the North Sea, consisting of several buoys and/or platforms on which permanent measuring equipment is mounted (equipment for environmental monitoring, hydrophones for the detection of marine mammals, fish sonars, tagging-tracking systems, etc.). INBO selected four projects for the creation of the freshwater-terrestrial observation station, including some marine applications: GPS tagging of large birds, habitat monitoring with an unmanned aerial vehicle, preparation of an eel management plan and groundwater modelling. These projects were started up at the end of 2012 and the beginning of 2013.


VLIZ and INBO manage numerous biogeographic databases that can make an important contribution to biodiversity research in Flanders: EurOBIS, Breeding Birds, Florabank, VIS, Butterflies, Water Birds, Wildlife Management, etc. These databases are supplemented and integrated within the scope of LifeWatch. In the process, old and 'forgotten' data sets (stored on CD-ROMs and diskettes, in theses and reports etc.) are actively sought. If data are only available on paper, they will be digitised. This data archeology constitutes an important activity during the development stage of LifeWatch. In the course of a first exercise in 2012, over 4,500 publications were identified in the Belgian Marine Bibliography which possibly contain interesting data sets from Belgian researchers (see Library chapter). At a later stage, other sources will be used as well. The final Flemish contribution is the development of several online web services, models and applications that will bring added value to all data available in the databases and the taxonomic backbone, and the data generated by the observation stations and sensor networks.

All web services, models and applications to be developed in the course of the project will be offered on the LifeWatch website (www.lifewatch.be). Users will be able to upload their own observation and biodiversity data and choose from different data services to analyse the data. A few services were already made available in 2012: validation of the data format, geographic services, taxonomic services and a tidal reduction calculation. In case of geographic services, users can opt to generate a map in which the uploaded sampling locations are shown in relation to several available GIS map layers (e.g. Exclusive Economic Zones, bathymetric map of Belgian continental shelf). The taxonomic service 'Taxonmatch' checks whether the species names the user has uploaded occur in the current taxonomic databases such as the World Register of Marine Species (WoRMS), the Catalogue of Life (CoL) and the Integrated Taxonomic Information System (ITIS), etc.

 **LIFEWATCH**
Regional portal prototype

[Homepage](#) | [Project](#) | [Data services](#) | [Downloads](#) | [Login](#)

The map below aims to provide a geographic overview of ongoing LifeWatch related activities. For now the map only displays the current position of the RV Simon Stevin in real-time (red arrow) on the Belgian part of the North Sea (red line). Below the map a real-time list of activities is provided. The list is continuously updated as new operations are registered. For now the list includes: research activities on board the RV Simon Stevin, new or updated taxa in the World Register of Marine Species, content added to the coastal wiki articles, etc.



Lat: 50.54 Lon: 4.18

Realtime operations

UTC	Message
2013-03-19 12:56:06	Waarnemingen.be (Vogels):2013-03-19: Kraanvogel - Grus grus [more]
2013-03-19 12:25:06	Waarnemingen.be (Vogels):2013-03-19: Kraanvogel - Grus grus [more]
2013-03-19 12:23:49	WoRMSTaxonChecked:Trisopathes pseudotristicha Opresko, 2003 [more]
2013-03-19 12:23:49	WoRMSTaxonAdded:Heteropathes americana (Opresko, 2003) [more]
2013-03-19 12:23:49	WoRMSTaxonAdded:Heteropathes Opresko, 2011 [more]
2013-03-19 12:23:49	WoRMSTaxonEdited:Heteropathes pacifica Opresko, 2005 [more]
2013-03-19 12:23:49	WoRMSTaxonEdited:Heteropathes heterorhodzios (Cooper, 1909) [more]

Project news

First meeting expert group on the LifeWatch marine observatory and data archaeology
2013-03-05 12:11:08

On Friday the 1st of March, the expert group for the LifeWatch marine observatory and data archaeology met for the first time at the Flanders Marine Institute (VLIZ) in Ostend, Belgium.

Demo LifeWatch Flanders portal at YSD 2013
2013-02-15 10:45:45

The LifeWatch Flanders data portal is demoed at the VLIZ Young Marine Scientists' Day 2013 (Bruges, Belgium)

Taxon match being presented at the 4th IMarine Technical Committee Meeting
2013-01-24 11:45:13
in Ostend, Belgium (23 - 25 January 2013)

Launch of the regional LifeWatch.be prototype portal
2012-11-08 14:59:54

The new website of the Flemish LifeWatch project went live on 12 November, 2012.

Flemish contribution to LifeWatch launched
2012-11-07 15:17:25

On Tuesday 8 May 2012 the Flemish Minister of Innovation Ingrid Lieten launched the Flemish contribution to Life Watch, which will be coordinated by the Flanders Marine Institute (VLIZ) and the Research Institute for Nature and Forest (INBO).

Bird tracking system: prototype of a LifeWatch virtual laboratory
2012-11-07 14:44:52

THE PROTOTYPE OF THE FLEMISH LIFEWATCH WEBSITE WAS LAUNCHED IN NOVEMBER 2012. – All activities taking place within the scope of this project, e.g. the current position of RV Simon Stevin (red arrow), can be monitored in real time on the homepage www.lifewatch.be.



AT LEAST A THIRD OF ALL OCEANIC SPECIES HAS NOT YET BEEN DISCOVERED. – This analysis is based on the World Register of Marine Species (WoRMS – www.marinespecies.org) and made the international press in 2012. In 2012 a special collection of WoRMS-related publications was also created in the prominent PLoS journal: www.ploscollections.org/marinespecies.

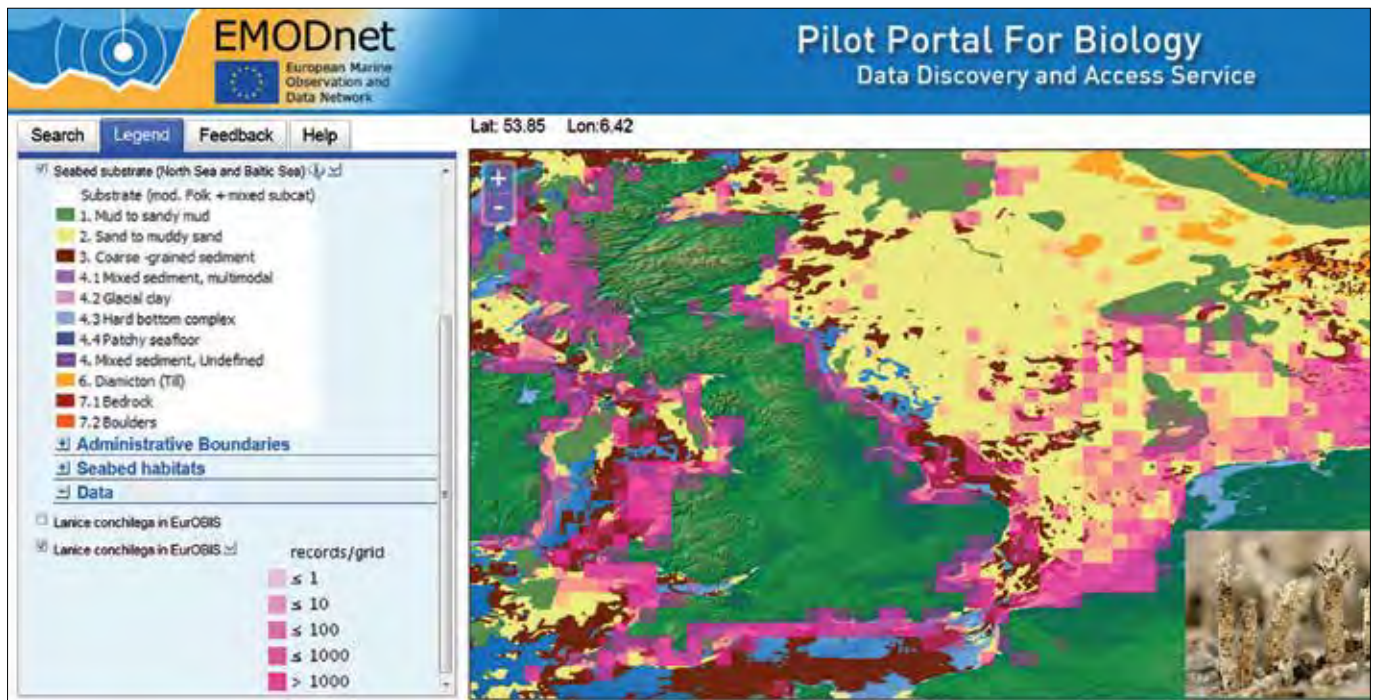
© Current Biology, december 2012. Image by: Gary Williams.

World Register of Marine Species – WoRMS. By the end of 2012 the taxonomic database contained over 465,000 names, including more than 215,000 valid species names. 92% of the available taxonomic information has now been validated by experts. The remaining taxonomic gaps were identified and filled in 2012: marine rove beetles (Staphylinidae), molluscs (Mollusca), parasitic flatworms (Monogenea and Digenea) and ostracods (Ostracoda). In addition, two regional and one thematic species list were launched. The year was concluded with a meeting of the WoRMS steering committee in Ostend on 12 December 2012.

The objective of the African Register of Marine Species or AfReMaS (www.marinespecies.org/afremas) is to compile a reliable species list for the African coast and provide users with the most up-to-date taxonomy. The cooperation of African experts to complete this marine list is sponsored by the ODINAFRICA project; VLIZ is responsible for the management of the list.

A regional species list was drawn up for the British Isles and adjacent seas (www.marinespecies.org/msbias). This subset of WoRMS was compiled on the basis of the British applications Marine Recorder and Unicorn within the scope of the PESI (Pan-European Species directories Infrastructure) project.

The Natural History Museum (London) and the National Oceanography Centre (Southampton) developed the World Register of Deep-Sea Species (WoRDSS) within the scope of the INDEEP project (www.marinespecies.org/deepsea). This register does not only provide taxonomic information but also identification keys and imagery, so that non-specialists can identify deep-sea species too.



OVER THE PAST THREE YEARS VLIZ HAS DEVELOPED THE EMODnet BIOLOGICAL DATA PORTAL. – It provides among others information on sediments in the southern North Sea, represented here in combination with the aggregated distribution data of the sand mason worm (*Lanice conchilega*).

© VLIZ

European Marine Observation and Data Network - EMODnet.

This infrastructure is part of the European initiative 'Marine Knowledge 2020', with which the European Commission aims to bring the wide range of marine observations in Europe together and make them accessible. This way it intends to increase the efficiency of research conducted by companies, the government and scientists to a great extent, which can result in new, innovative ideas.

The Flanders Marine Data & Information Centre makes a considerable contribution to the development of the EMODnet infrastructure, which is to provide online access to all European marine observations. Six thematic data portals were created in a series of preparatory actions: one for hydrography, geology, physics, chemistry, biology and physical habitats. Over the past three years VLIZ has developed the biological data portal within this scope (<http://bio.emodnet.eu/portal>). From 2013 onwards, VLIZ will also be responsible for the central data portal where public or private users can not only consult the standardised

observations and data quality indicators but also obtain data products such as maps of sediments or physical habitats for entire sea basins.

The European Commission also accepted the Flemish offer to install the central EMODnet secretariat on the InnovOcean site in Ostend. This way the EMODnet office is adjacent to VLIZ, the European Marine Board and the IODE project office of UNESCO's Intergovernmental Oceanographic Commission (IOC). This allows easy connection to the global systems for sea level measurement and tsunami warning (2004) as well as for marine biodiversity research such as the World Register of Marine Species (WoRMS, 2007), the Census of Marine Life's *Ocean Biogeographic Information System* (OBIS, 2011) and the LifeWatch research infrastructure already established on this site.

Ocean Biogeographic Information System – OBIS. The Flanders Marine Data & Information Centre has managed the OBIS system since the end of 2011 so as to support the international Ocean Biogeographic Information System which is part of UNESCO's Intergovernmental Oceanographic Commission (IOC) within the framework of the International Oceanographic Data and Information Exchange (IODE) programme. Both the OBIS database and the OBIS website were transferred to servers at the Flanders Marine Institute, where they are currently hosted. Many advantages are attached to this transfer including faster response than before when the available data are retrieved online. VLIZ has also ensured the harvest of distributed OBIS data sets since 2012. This means that VLIZ consults the servers of the different nodes, retrieves their available data sets and subsequently makes them available online via the OBIS web portal.

Contrary to the global OBIS system, the European section EurOBIS (www.eurobis.org) has been hosted and kept operational by VLIZ from the very beginning. EurOBIS makes the distribution data of European marine species available online. The data system is also used in European projects such as EMODnet and LifeWatch, which strongly stimulates the growth of data and information in EurOBIS. Nearly 100 new data sets were made available online in 2012, accounting for over 517,000 additional distribution data. EurOBIS collaborates closely with other online data systems such as GBIF – the Global Biodiversity Information Facility – and the thematic OBIS node OBIS SeaMap in which distribution data for marine birds, reptiles and mammals are collected.

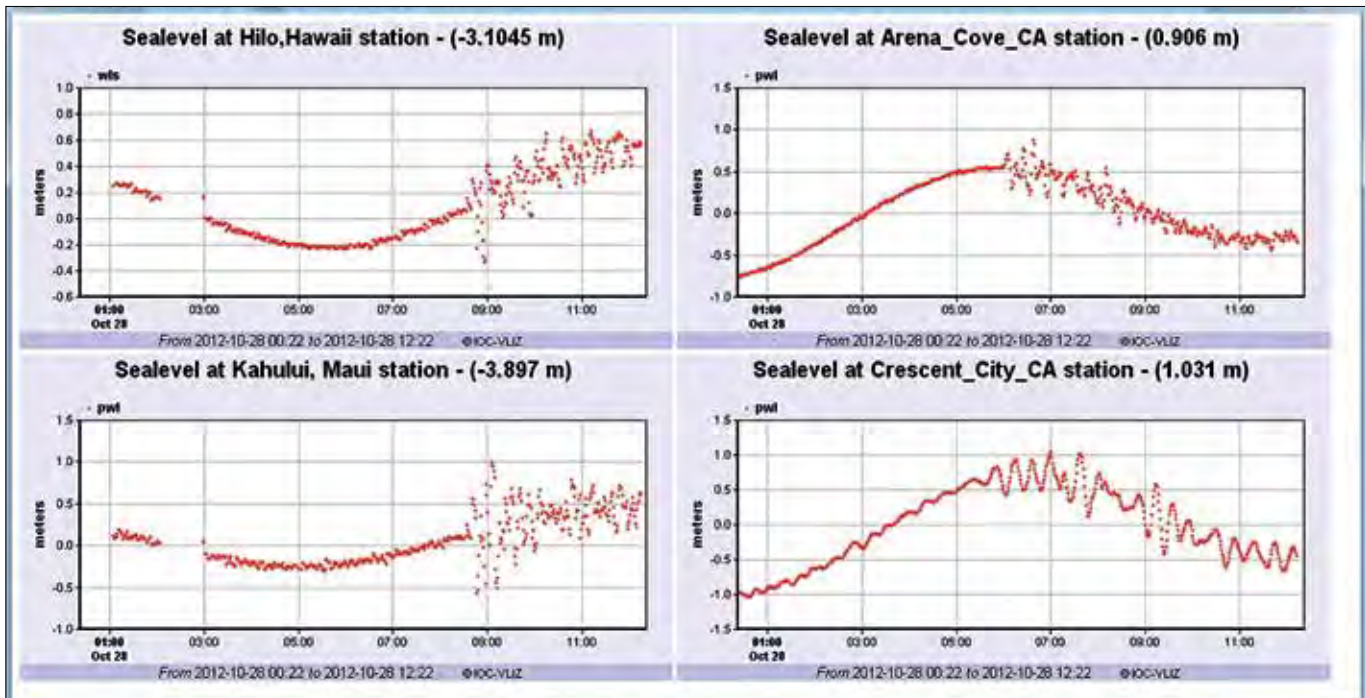
EurOBIS has undertaken several central roles within the OBIS community. For instance, EurOBIS has committed itself to performing the taxonomic quality control for all other nodes. This means EurOBIS ensures that the taxon names from all OBIS data sets are compared to the World Register of Marine Species (WoRMS). In addition, EurOBIS is responsible for the development of several computerised procedures to assess the overall quality of the data received, e.g. checking whether the visited stations are all marine and whether any peaks are present in the data set. On the basis of these checks a certain level of quality can be attributed to the distribution data, which can help users to select data online in the future. The third commitment – in cooperation with the data manager of the Canadian OBIS node – comprises the creation of a manual for node managers.

Marine Regions. The data and information from both the VLIMAR Gazetteer (a marine place name register) and the MARBOUND database (boundaries of the exclusive economic zones) are available together via the MarineRegions.org website. Both global systems have been developed by the Flanders Marine Data & Information Centre and have demonstrated their added value over the past few years. By combining both databases, we hope to serve the different target groups even better. Geographical information on marine place names can now be easily found online by means of a unique persistent ID (the so-called marine regions ID).



MARINE REGIONS BUNDLES THE TWO GLOBAL GEOGRAPHICAL DATA AND INFORMATION SYSTEMS VLIMAR GAZETTEER (PLACE NAME REGISTER) AND MARBOUND (MARITIME BOUNDARIES) PREVIOUSLY DEVELOPED BY VLIZ. – The Exclusive Economic Zones (EEZs) and numerous marine place names can be easily located by means of the MarineRegions.org website.

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THE SEA LEVEL STATION MONITORING SYSTEM WAS EXTENDED AND MADE MORE OPERATIONAL IN 2012. – The system has been developed and maintained by the Flanders Marine Data & Information Centre, but is supported by a worldwide network of 116 institutes that ensure the installation and maintenance of the tide gauges. This allowed to observe over 47 aberrant events in 2012, including at least five which resulted in a tsunami warning.

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Sea Level Station Monitoring System. Started up six years ago, the system serves over 700 tide gauges throughout the world in 2012 and shows the current sea level at every station (in nearly real time). The fast growth in the number of tide gauges is mainly due to the installation of new stations in the Caribbean Sea, the installation of South American stations in the Pacific and the linking of 50 stations around the British coast.

The website (www.ioc-sealevelmonitoring.org) and the real-time data service were visited 118,324 times, processed 4,589,025 page requests and distributed no less than 462 gigabyte of data online. The principal users of the real-time data service are station operators, tsunami research centres and tsunami warning centers for the Atlantic Ocean, the Mediterranean Sea, the Indian Ocean, the Pacific and the Caribbean. The latter users have now become so dependent on the system that the Flanders Marine Data & Information Centre is taking additional measures to improve the system's soundness and operability (separation of data flows, creation of GTS data flow, internet connections on two BELNET POPs in Bruges and Kortrijk, VMWARE cluster, etc.).

ScheldeMonitor. Since 2011 the ScheldeMonitor data portal has primarily been used to support the 'Research & Monitoring' working group of the Flemish-Dutch Scheldt Commission. This falls within the scope of the centralisation of data in view of the T2009 evaluation of the Scheldt Estuary. The data mainly come from various (historical and recent) time series of physical, chemical, morphological and biotic parameters. Data from 1,556 stations spread over the entire estuary have been made available. VLIZ has centralised the data in the portal, integrated them whenever possible and organised the supply to the T2009 consortium for the T2009 evaluation assignment (June 2012 – May 2013). All data files have been filed in the Marine Data Archive as well.

From 2012 onwards all data generated within the scope of the MONEOS monitoring programme are centralised in the ScheldeMonitor data portal. Many of these data sets and metadata are currently being disclosed via the portal, but many others have unfortunately not yet been made publicly available.



THE SCHELDEMONITOR KNOWLEDGE SYSTEM CENTRALISES AND DISCLOSES THE INFORMATION, DATA AND DATA PRODUCTS REGARDING RESEARCH AND MONITORING IN THE SCHELDT ESTUARY. – Since 2004 over 8,000 publications, over 20 million data and 190 map layers have been made available via www.scheldemonitor.org. Different functions have been added so that queries can be refined, the availability of data can be shown, and data and map layers can be visualised together in a map.

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European FP-7 projects. The data centre was involved in the data and information management of different marine research projects within the scope of the seventh framework programme for research and technological development (FP7) in 2012 as well.

As part of the Ocean of Tomorrow call, VLIZ contributes to a better linking of data from molecular, biodiversity and abiotic databases with in the **Micro B3** (Biodiversity, Bioinformatics, Biotechnology) project and, with RV Simon Stevin, VLIZ will also participate in the Ocean Sampling Day, a simultaneous metagenomic sampling campaign of all European seas.

MERMAID also falls within the scope of the Ocean of Tomorrow call; in this context, VLIZ takes care of the information management for the research project concerning the planning, construction and operation of innovative offshore platforms with energy generation, aquaculture and logistic functions.

Within the scope of **PEGASO** (People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast), the Flanders Marine Data & Information Centre contributes to the development of a Spatial Data Infrastructure (SDI) for the Mediterranean Sea and the Black Sea. To support integrated coastal zone management plans, geographical data layers are made available in accordance with the standards set within the European INSPIRE directive as to spatial information.



AT THE END OF 2012 VLIZ ORGANISED A TRAINING COURSE FOR ALL PEGASO PARTNERS REGARDING THE ORGANISATION AND STANDARDISATION OF SPATIAL DATA, IN COLLABORATION WITH THE IODE PROJECT OFFICE. – In the European FP7 project “PEGASO” (www.pegasoproject.eu) 24 partners from 15 countries in the Mediterranean and Black Sea region have adopted a common approach to developing integrated coastal zone management (ICZM).

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VLIZ takes care of the general communication of the **THESEUS** project, which investigates innovative coastal defence techniques within the context of rising sea levels and increasing flood risks in coastal areas. Both the ecology and various socio-economic factors are taken into consideration.

Over 50 partners – mostly data centres from European marine institutes – work together within the framework of **SeaDataNet II** to provide metadata and data via a common infrastructure. VLIZ contributes to this by developing a data format for the exchange of biological data, among other things.

EuroMarine is also aimed at improving the integration of existing data systems. In April 2012 VLIZ organised a workshop in Ostend to investigate how systems developed within EUR-OCEANS, MarBEF and Marine Genomics Europe can be better geared to one another.

Other cooperation. – Every year the Flanders Marine Data & Information Centre invests a considerable amount of time in the further development of cooperation with research groups and organisations in Belgium and abroad. In the past year, numerous activities were therefore organised within the framework of new and existing partnerships on a regional, national, European and international level. Whenever possible, VLIZ always aims to create added value by making its expertise or data systems available.

Within the scope of the renewed cooperation agreement with the **Marine@UGent**-consortium of Ghent University, it was agreed to use the Marine Data Archive for filing the data resulting from the many master and doctoral studies within the Marine Biology division. Several training courses as well as data management support were given as part of the same cooperation. VLIZ created a deepsea biodiversity database which contains information from different partners in the European FP7 project “HERMIONE” (Hotspot Ecosystem Research and Man’s Impact On European Seas), including Ghent University. Assistance was provided to the Environmental Toxicology research group of Ghent University for the creation of a laboratory website (www.milieutox.ugent.be). The collaboration with regard to the tracing of suitable data sources for the research conducted was also productive. Together with the Renard Centre of Marine Geology a website was developed on geological research into ‘contourites’ (www.contourites.org).

The recently collected data from the OMES (Research on Environmental Effects of the Sigma plan) monitoring campaigns were integrated into the IMERS data system as part of the cooperation with the Ecosystem Management Research Group (**ECOBE**) of the University of Antwerp.

A cooperation agreement was signed with **KMFRI**, the Kenya Marine and Fisheries Research Institute, in 2012. Within this scope, arrangements were agreed with regard to common objectives, in particular the centralisation of a great deal of marine knowledge and research data collected in Kenya by Belgian scientists.

Within the scope of the current cooperation agreement with the Institute for Agricultural and Fisheries Research (**ILVO**), additional macrobenthos and epibenthos data were entered into a VLIZ-developed database for the Aquatic Environment and Quality division of this institute. The system was optimised for additional data types as well.

VLIZ is a member of various networks concerning biodiversity data and research (KNEU, MarBEF+, SMEBD, Species 2000, EMBOS, etc.). In 2012 the Flanders Marine Data & Information Centre developed a website (www.embos.eu) for **EMBOS** (European Marine Biological Observatory Sites) aimed at the creation of a European network of observation stations with a common methodology.

VLIZ has been a certified member of the **World Data System** (WDS) of the International Council for Science (ICSU) since 2011. In 2012 VLIZ actively participated in this network by contributing to a common view on data publication, input to WDS meetings and membership evaluation.

Once more a great deal of activities were organised in 2012 within the scope of the cooperation agreement with **UNESCO/IOC project office for IODE**. The work for the Ocean Biogeographic Information System (OBIS) has already been mentioned above. In addition, VLIZ is a member of the IODE Group of Experts on Biological and Chemical Data Management and Exchange Practices (GE-BICH) and within this framework it contributed to the ad hoc workshop as to quality control held in Ostend in October 2012.

The VLIZ 'Marine 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.

Marine Library

 Read more? www.vliz.be/EN/Marine_Library



Belgian Marine Bibliography. The Belgian Marine Bibliography, or BMB for short, forms the core of the Marine Library collection. It includes 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 foreign scientists affiliated with Flemish/Belgian institutions.

In 2012 the input to the Belgian Marine Bibliography was mainly driven by the 'Compendium for Coast & Sea' project initiated by the Figures & Policy division (cf. page 73 of this annual report or on www.vliz.be/EN/Figures_Policy/Figures_Policy_Compndium). The active screening of the bibliographies of marine research groups in Belgium and the searching of external databases has resulted in a virtually complete overview of the current output of the Belgian marine research community during the last 5 years. The next few years this overview will be kept up-to-date and completed retrospectively.

The historical component of the BMB was further expanded by systematically tracking and acquiring old publications by Belgian scientists. This implies examining not only antiquarian sources but increasingly the archives and catalogues of universities, research groups and scientific organisations as well. We pay much attention to 'forgotten' sources (theses, old reports, traces of Belgian scientific studies abroad, etc.), thereby bringing them out into the open and making them accessible for everyone again.

Open Marine Archive. The references from the BMB are preferably obtained in digital form and archived in the Marine Library. This digital part of the Belgian Marine Bibliography is placed in the Open Marine Archive, or OMA for short. It ensures that these publications are permanently and freely available on the Internet.

A total of 1,612 digital publications were added to the Open Marine Archive in 2012, including 711 A1 articles. The remaining publications are mostly reports, theses and conference contributions. A total of 12,258 publications are available in the OMA at the end of 2012. All these publications can be freely consulted by Internet users throughout the world via the VLIZ website (www.vliz.be/EN/Marine_Library/Library_OMA). A total of 143,123 downloads from the Open Marine Archive were registered in 2012, accounting for 10,197 unique titles.

Other literature in the collection. Besides Belgian marine literature, the Marine Library also includes all relevant international literature which supports Flemish marine research and marine projects inside and outside VLIZ. In 2012 the library acquired a total of 7,688 new publications, a quarter of which were paper publications; the remainder was digitally archived. The new acquisitions in the library are itemised in the VLIZ Library Acquisitions List on a weekly basis and this list is sent to 270 subscribers by e-mail.





THE VLIZ MARINE LIBRARY MANAGES THE MOST EXTENSIVE COLLECTION OF MARINE SCIENTIFIC LITERATURE IN BELGIUM.

It contains recent and historical publications and multimedia concerning the sea, ocean and coast. The focus is on the Flemish coast and the Belgian part of the North Sea, but relevant international literature is included as well. The collection is intended for a multidisciplinary group of marine scientists as well as for the general public.

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THE MARINE LIBRARY STARTED TO PREPARE THE COMPLETE BIBLIOGRAPHY OF THE ZWIN RESERVE BY ORDER OF THE PROVINCE OF WEST FLANDERS. – The final result should provide a complete overview of all publications (literature, multimedia, maps, etc.) as to this nature reserve on the Belgian east coast and its immediate surroundings.

© VLIZ (Decler)



IN 2012 THE 'WETENSCHATTEN' IMAGE ARCHIVE WAS SUPPLEMENTED WITH VARIOUS SERIES OF MAPS OF THE BELGIAN COAST (DATING FROM 1770-20TH CENTURY). – Here you can see quarter sheets 7/1, 7/2, 7/3 and 7/5 'Ostende' from the Ferraris maps, the Carte-Cabinet of the Austrian Netherlands and the Prince-Bishopric of Liège (1771-1778).

© National Geographic Institute - A2770


Service. The library catalogue is searchable online by means of the Integrated Marine Information System (IMIS). The entire collection is accessible for everyone either by consultation in the library or on request by e-mail. This way, the Marine Library supports scientific research all over the world through its extensive marine collection. The library received 693 literature requests in 2012. Nearly one third of the requests were made directly by IMIS users worldwide via the literature records in the IMIS system. The remaining requests reached us primarily by e-mail within the context of research and to support internal and external, national and international projects. The delivery of requested literature is not limited to the Marine Library's own collection. VLIZ can also deliver marine literature from external collections on request.

Zwin Bibliography. The Marine Library initiated the 'Het Zwin' project in the autumn of 2012. The province of West Flanders ordered VLIZ to provide a complete overview of all publications (literature, multimedia, maps, etc.) as to this nature reserve on the Belgian east coast. All publications are traced, collected and described in the IMIS information system. Over 800 publications relating to the Zwin reserve and its immediate surroundings were collected in 2012. The launch of the final result, a searchable Zwin bibliography, is planned for July 2013.

ScheldeMonitor. The literature component of the Flemish-Dutch knowledge and information system "ScheldeMonitor" is managed in the Marine Library. Within this project, all relevant literature relating to the Scheldt basin is traced, listed and if possible digitally archived. This literature list is available on the project website www.scheldemonitor.be (> Information > Publications).

Wetenschatten. Since 2008 the Marine Library has been complementing the website 'Wetenschatten – vier eeuwen kustonderzoek in beeld'. This website discloses the many illustrations from publications that have resulted from Belgian coastal and marine research in the course of time. In 2012 the image archive was supplemented with various series of maps of the Belgian coast. The earliest maps date from 1770; the archive also contains official topographic maps from 1830 onwards up to recent maps from the 20th century. The entire collection of maps of the Flemish coast was purchased from the National Geographic Institute. Provided with the necessary background information, they can be viewed on www.wetenschatten.be (> Beeldbank > Beelden per thema > Kaarten en plannen > Kustzone).

NAVIGO. In 2012 a partnership was established with the National Fisheries Museum in Oostduinkerke (NAVIGO), and the IMIS information system is now used to disclose the museum's literature collection. This way, the Marine Library is further developing its portal function by creating hyperlinks and providing access to relevant marine/maritime literature collections.



The VLIZ 'Communication & Information' division aims to share knowledge of 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.

Communication & Information

 Read more? www.vliz.be/EN/Infodesk



Keep an open mind. Communication is by definition a flexible process which constantly evolves and in each case looks for customised solutions depending on the specific target group. An open mind and contact with as many people as possible is essential in this respect. The way the VLIZ Communication & Information division performs its tasks is laid down in the 2012-2015 Communication Plan, which provides a general outline for the coming years in the annex to the policy plan. The team was not just reinforced in the previous year (an increase from 3 to 4 permanent staff members). In addition to steering our regular activities in the right direction (VLIZ Young Marine Scientists' Day, publication of "De Grote Rede", "VLIZINE" and "Zeekrant", educational initiatives, press briefings, etc.), the division also invested much time and energy in several new and unique publications as well as in the organisation of trail-blazing events. You can find a selection below.

Publications. Three issues of the "De Grote Rede" magazine were published and sent to over 6,000 subscribers in 2012. The magazine reaches virtually all layers of the population and is still very positively received. A new "Zeekrant" newsletter, of which 75,000 copies were distributed on the coast, was presented on World Oceans Day (8 June). 11 issues of the e-newsletter "VLIZINE" appeared, including a total of nearly 200 articles. Since April 2012, the 1,053 subscribers can sign up to receive the newsletter every day, every week or every month. In addition, 8 VLIZ Special Publications were issued, 7 of which related to books of abstracts or proceedings of events facilitated or (co)organised by VLIZ. Two promotional films (RV Simon Stevin and

VLIZ Young Marine Scientists' Day) and different flyers/brochures complete the list of publications. The social media also received more attention with three new Facebook pages (RV Simon Stevin, Garnaal (shrimp), MarineArt) and a continuation of the Twitter activities by general director Jan Mees (314 followers; 1776 marine tweets between September 2011 and 31 December 2012). And last but not least: 2012 was the year of the publication of the commercial book 'Garnalen' (Shrimp) and of the children's book 'Flessenpost' (Message in a Bottle).

For a complete list of our publications in 2012, please refer to the Annexes to this Annual Report.

Garnalen: verhalen en recepten van vroeger en nu (Shrimp: stories and recipes from the past and present).

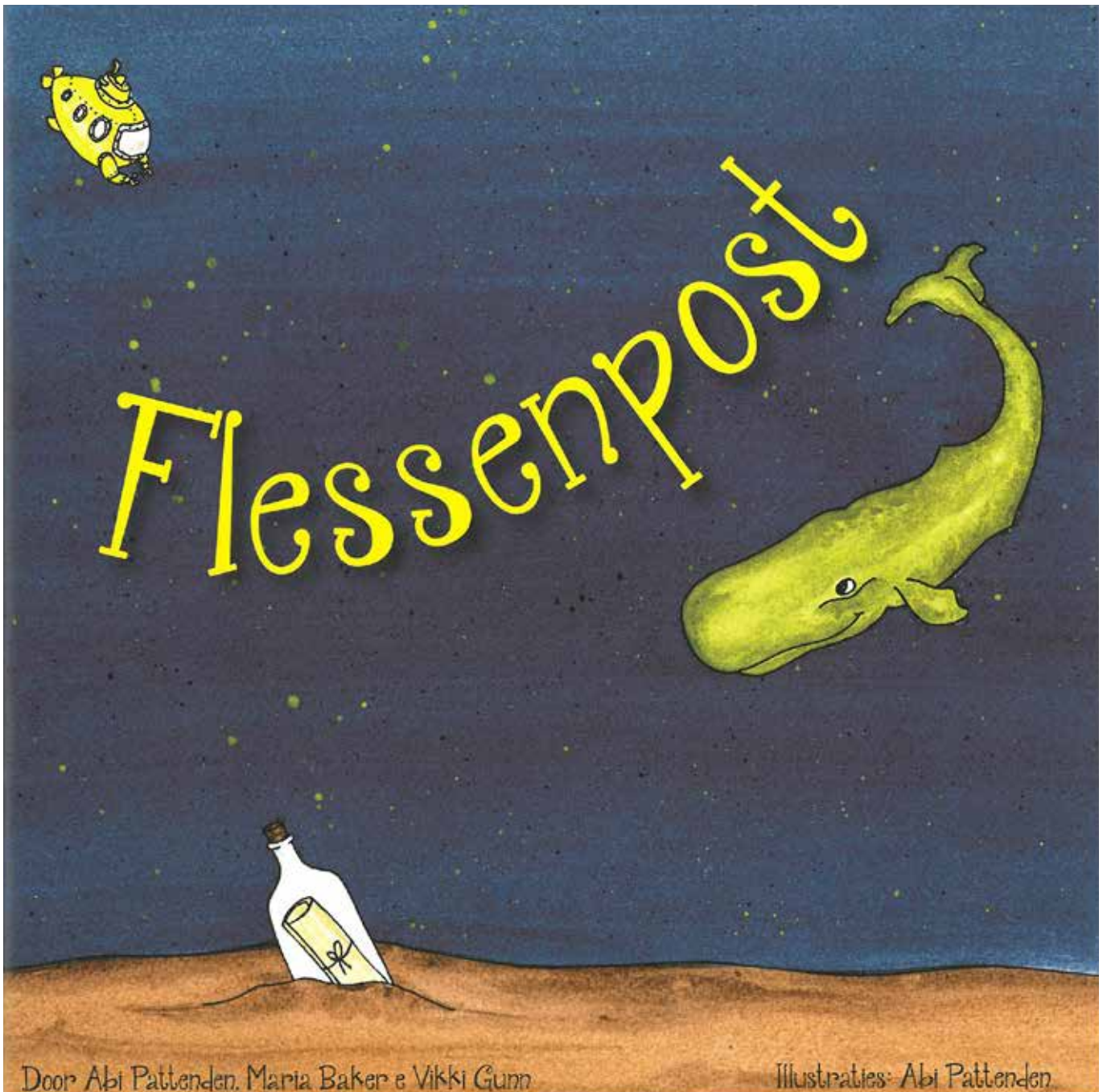
This richly illustrated 200-page book published by Lannoo was officially presented in Nieuwpoort on 15 September 2012 (Shrimp Day). It looks at the 'caviar of the North Sea' from all angles. The authors interviewed horseback shrimpers and experienced the production process at first hand: from the catch on a shrimp boat to the peeling in Morocco. In addition to anecdotes and scientific facts, the book contains numerous well-known and less known traditional shrimp recipes. Maritime author Katrien Vervaele wrote the texts with feedback from and scientific support by Nancy Fockedeey (VLIZ Communication). Nancy also provided the recipes. The book was printed in an edition of 3,000 copies. The authors also took part in a signing session at the Antwerp Book Fair.



THE BOOK 'GARNALEN' (SHRIMP) WAS OFFICIALLY PRESENTED IN NIEUWPOORT ON THE OCCASION OF SHRIMP DAY 2012. -
 Left to right: Iny Cleeren (Lannoo), Nancy Fockedeey (VLIZ), Francine Dalle (fisherman's wife), Charles Beukels (owner of the ship N.86 Surcouf) and Katrien Vervaele (maritime author).

Flessenpost (Message in a Bottle). This beautifully illustrated children's book on the effects of deep-sea litter is a collaborative product of the HERMIONE FP-7 project and the InDEEP project. As this publication was originally only available in French and English, VLIZ gladly accepted the request from the Ghent University partner within the HERMIONE project to take care of the translation and printing of 6,000 copies. This took place in close collaboration with the NIOZ communication division, and fitted in perfectly with the new cooperation agreement between VLIZ and NIOZ. This nice product was widely distributed both in the Netherlands and in Flanders, where the province of West Flanders will use it as promotional material for the 'Week of the Sea 2013'.

MESSAGE IN A BOTTLE FROM THE DEEP-SEA ANIMALS TO HUMANITY. – The deep sea is starting to look like a rubbish dump. The deep-sea animals want to get rid of all the junk in their habitat. They ask Walter the Whale to take a message to the surface so that people can come and help them. This is the beginning of the children's tale...





VLIZ CO-ORGANISED THE FIRST CONFERENCE ON THE PROMOTION OF 'OCEAN LITERACY' IN EUROPE. – With a well-stuffed and high-quality programme and over 100 attendants, this conference turned out to be the perfect start of this initiative.

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Events. VLIZ, and in particular the Communication & Information and the Coordination divisions, ensure the organisation, co-organisation and facilitation of an increasing number of events related to the sea. No less than 57 events were actively supported in 2012. A total of 6,291 people attended these events. In case of 20 events the meetings were only facilitated; the remaining 37 activities were actively organised or co-organised. A few highlights: the VLIZ Young Marine Scientists' Day (24 February; 312 participants), the Marine Science meets Maritime Industry conference (see p. 65), the First Conference on Ocean Literacy in Europe (see next column), the christening of RV Simon Stevin (13 September; 240 participants), the signing of the cooperation agreement with Marine@UGent (23 August; 62 participants), World Oceans Day (8 June; 134 participants), Science Day & Children's University (25 November; 600 participants), the 'De kust van nature' seminar (13 November; 130 participants) and the coastal guides meeting day (15 December; 140 participants).

For a complete list of our events in 2012, please refer to the Annexes to this Annual Report.

First Conference on Ocean Literacy in Europe. The first conference on the promotion of 'ocean literacy' in Europe was held in Bruges on 12 October 2012. Ocean literacy means insight into how the oceans influence us and what impact we have on the oceans. Marine researchers, educators and educationists, opinion makers and policy makers discussed how 'ocean literacy' can be increased and why this is essential for the future of the European seas. Indeed, the sea is increasingly looked upon as a source of new pharmaceuticals, energy, raw materials, food, etc. Marine research and technological developments also provide more means and knowledge to tackle the complex problems and challenges currently facing the oceans. Within this context, it is crucial that all sections of society give their support, are involved and have some basic knowledge of the oceans. The organisation was taken care of by VLIZ, the European Marine Science Educators Association (EMSEA), the Marine Board and its Communications Panel, the Marine Biological Association (MBA) (UK), the University of Göteborg (SE), the College of Exploration (USA) and the National Marine Educators Association (NMEA) (USA). With a high-quality programme and over 100 attendants, this conference turned out to be the perfect start of the initiative to increase ocean literacy in Europe! The next conference will take place in Plymouth on 3-5 September 2013.

Marine Science meets Maritime Industry. One of the highlights of 2012 (Ostend, 29 March 2012). This inspiring knowledge and networking event with a wide range of researchers and companies from the maritime sector was organised by the Flanders' Maritime Cluster in cooperation with VLIZ. It was a great success attended by nearly 100 leading figures from the marine and maritime R&D world (50 company managers and R&D managers; 30 top scientists; 20 government representatives). First an overview of marine/maritime research was provided and the innovations, future challenges and possible synergies were examined in 19 short presentations. In the evening VLIZ general director Jan Mees outlined the diversity of Flemish (Belgian) marine scientific research and its funding, and Mr Tomas Sterckx (Dredging International) provided an insight into the complexity of working at sea.



MARINE SCIENCE MEETS MARITIME INDUSTRY. – Marine researchers and companies from the maritime sector become acquainted.



INTRODUCING CHILDREN TO THE FASCINATING WORLD OF MARINE SCIENCES. – With this in view, VLIZ collaborated on the Children's University with regard to the topic "water", organised by HoWest Brugge on the occasion of Science Day. The event was attended by 160 children.

© VLIZ

Initiatives for teachers and guides. As a Structural Science Communication Partner of the Flemish government, VLIZ actively informs teachers and other educators (such as guides) 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 10 events accessible for teachers and other educators were organised or supported in 2012 (see annex, KPI 5). The coastal guide seminar held in Bruges on 15 December 2012 was a success with a highly appreciated programme and 140 participants. The workshops and lectures organised within the scope of the Congress for Science Teachers, the 'Zee op de korrel' training course and the Syntra training course 'Regiogids Kust' were also very well received. In addition, the organisation of the first conference on ocean literacy in Europe was unprecedented (see Events) and forced a European breakthrough in the promotion of greater attention to the oceans in education and beyond. Finally, VLIZ developed two additional educational teaching packages on the sea and coast (see annex, KPI 6) in 2012, which will be included in the updated digital learning platform 'Planeet Zee'.



THE WINNING CLASS OF THE PLANEET ZEE CONTEST FOR SCHOOLS SAILS ON BOARD THE RESEARCH VESSEL RV ZEELEEUW FOR A WHOLE WEEK. – Students from Sint-Godelieve College in Gistel (SIGO) enjoyed several days of observing, experimenting, navigating ... at sea together with their teacher Ilse Bouchez.

© VLIZ (David)

Children's University – Science Day. On the occasion of Science Day (Sunday 25 November 2012) the brand-new Flemish research vessel RV Simon Stevin was shown to the general public for the first time (600 visitors) in the port of Bruges - in collaboration with VLOOT (Shipowner of the Authorities). In the morning a Children's University activity took place in collaboration with HoWest at the campus in St-Jorisstraat; VLIZ organised a plenary show as well as various workshops concerning the sea and coast for 160 young children (aged 5 to 12).

Planeet Zee contest for schools. In the academic year 2011-2012 youngsters from the third cycle of secondary education could visit the digital learning platform www.planeetzee.org, where marine scientists present their research in 23 learning modules. Approximately 265 students from 11 Flemish schools competed with each other in 2012 to win a scientific expedition aboard RV Zeeleeuw from 23 to 27 April. On the expedition they investigated the health of the Belgian

North Sea together with scientists from ILVO and Ghent University. Afterwards they presented their findings to Belgian Minister for the North Sea Johan Vande Lanotte on a press conference. The 2012 expedition was won by 16 students from the 6th year of the Sint-Godelieve College Gistel (SIGO; under the supervision of Ilse Bouchez). The 2nd prize, a day trip aboard RV Zeeleeuw, went to five boys from the 6th year economics-sciences at Sint-Paulus Instituut in Herzele (under the supervision of Annelies Louage).

Infodesk & Press. Once again, we received many questions via the VLIZ Infodesk (457). Apparently, numerous groups of the public at large consider VLIZ a reliable source of information with regard to the sea. The Communication & Information division in particular is increasingly asked to give explanatory presentations on the sea for all sorts of associations. We reached no less than 3,200 listeners with 72 presentations this year! Over the years VLIZ has also become an important point of contact for the national press. On average, VLIZ is contacted by journalists and/or production companies to provide information and/or visuals once a week. In many cases the press is referred to experts connected to universities and scientific institutions. Only in case of topics for which VLIZ has specific expertise (e.g. gulls or climate change) or if the media themselves insist on a very broad all-in story (e.g. James Cameron's attempted deep-dive record) will the VLIZ spokesperson or VLIZ general director speak to the press in person. In addition, we launched ten press releases in 2012. These resulted in 58 press articles or reports, which made up about half of the 110 media items that mentioned VLIZ in 2012. Highlights in terms of media attention were the construction and christening of the new research vessel Simon Stevin (26), the new VLIZ covenant (12), the relocation of the EMODnet secretariat to Ostend (9), James Cameron's dive to a depth of 11km (8), gull nuisance (7) and the shrimp book (6). In 2012 VLIZ was on television on the occasion of the Koppen documentary on climate change, the James Cameron story (VTM, VRT), the Ocean Health Index (VTM), RV Simon Stevin (VRT, Focus), Planeet Zee (Focus) and the Seal Plan (Focus).



THE CHRISTENING OF THE NEW FLEMISH RESEARCH VESSEL SIMON STEVIN RECEIVED A GREAT DEAL OF MEDIA ATTENTION.

© De Redactie



JAN SEYS, MARINE BIOLOGIST AT VLIZ, IS INTERVIEWED BY VTM WITH REGARD TO JAMES CAMERON'S ATTEMPTED DEEP-DIVE RECORD.

© VTM



The 'Figures & Policy' division supports a sustainable and scientifically underpinned coastal and marine policy by providing policy-relevant scientific information products, concentrating on coastal and marine professionals, scientists and policy makers as well as interested target groups within the general public.

Figures & Policy

Read more? www.vliz.be/EN/Figures_Policy





THE STEERING COMMITTEE OF THE COMPENDIUM FOR COAST & SEA MEETS FOR THE FIRST TIME IN JANUARY 2012. –

Left to right: Hans Pirlet (VLIZ), Dirk Uyttendaele (Flemish Environment and Nature Council), Ann-Katrien Lescrauwaet (VLIZ), Charlotte Herman (Marine Environment Unit), Dirk Van Guyze (SALV), Rudy Herman (EWI, chairman of expert group), Colin Janssen (Ghent University), Jan Vanaverbeke (Ghent University), Jan Seys (VLIZ), Kathy Belpaeme (Coordination Centre for Integrated Coastal Zone Management), Joseph Schnitzler (ULg), Frank Maes (Ghent University), Marleen Van Steertegem (VMM), Marnix Pieters (Flanders Heritage Agency).

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The **Compendium for Coast & Sea** was started by VLIZ in October 2010 and aims to collect objective and scientifically founded information and data from the Flemish marine and maritime world in one information document.



Compendium for Coast & Sea. The Compendium for Coast and Sea was started by VLIZ in October 2010 and aims to collect objective and scientifically sound information and data from the Flemish marine and maritime world (research, administrations, policy, etc.) in one information document. The initiative is supervised by a steering committee whose members have a background in science, policy and civil society.

The Compendium for Coast and Sea consists of three main components. The first provides an overview of the marine scientific landscape and sheds light on the history of marine sciences, the science policy, the institutional capacities and means, and the knowledge output. In 2012 the existing inventory (IMIS) was updated and the data and information flows within VLIZ were perfected in order to produce the desired figures for this chapter on a yearly basis. In addition, an internationally accepted framework was developed for the reporting and benchmarking of the Flemish/Belgian marine scientific landscape. In the second component of the Compendium, the use of the sea is presented in thematic fact sheets. The aim is to create a showcase in which the available knowledge and expertise are compiled per topic and reference is always made to underlying research. Relevant sources (scientific publications, reports, project reports, EIAs, legal source material, time series, useful websites, etc.) were collected for each topic and put in the right context in cooperation with some 70 experts and co-authors in 2012. The third component of the Compendium for Coast & Sea deals with the interface between science and policy.

The Compendium for Coast & Sea will be a cyclical five-yearly publication of which the first edition is planned to appear at the end of 2013. The Compendium will include an extensive background document, a summary and several derived communication products both in Dutch and in English. For instance, a website will be created (in 2013) that will serve as a data and information carrier. The relevant sources and time series will be annually updated on this website.

Beleidsinformerende nota's (BINs). On request, VLIZ provides specific policy-relevant information and makes it available in the form of policy-informing briefs (written in Dutch and named Beleidsinformerende nota's, hereafter abbreviated as BINs). The content of the BINs is always based on current scientific insights and reflects objective information and data concerning the requested topic. VLIZ relies as much as possible on the expertise of coastal and marine scientists within the network of marine research groups in Belgium, and Flanders in particular, but also consults international experts if need be. VLIZ formulated two BINs in 2012: one concerning the reorganisation of the common fisheries policy and one concerning the question of the feasibility, desirability and preconditions of execution of a 'marine show garden' near the eastern breakwater of the port of Ostend.

Policy informing briefs (PIBs). VLIZ participates in public consultations of the European Commission (EC) as to specific marine policy questions. These consultations help the EC gather and utilise insights from a wide range of interested parties in order to shape its discussions, develop new policy tools and reform existing ones. VLIZ publishes summaries of such consultations in the form of Policy Informing Briefs, hereafter abbreviated as PIBs. VLIZ relies as much as possible on the expertise of coastal and marine scientists within the network of marine research groups in Belgium, and Flanders in particular, as well as within the international network. Two PIBs were prepared in 2012 and will be published in the spring of 2013. They cover the topics 'integrated coastal zone management and marine spatial planning in the European Union' and 'European marine data management'.

Coastal Compass 2012. The Coordination Centre for Integrated Coastal Zone Management is the point of contact for integrated coastal zone management in Belgium. As a partner of the Coordination Centre, VLIZ is a member of this organisation's Executive Committee and also provides technical and scientific support to several of their projects and initiatives. For example, the 'Figures & Policy' division was involved in 2012 in the third edition of the Coastal Compass 2012, a publication which regularly updates the indicator set for sustainable coastal zone management in Belgium and has an expert team of coastal and marine professionals investigating it. The indicator set is part of the 'Coastal Barometer for the Belgian Coastal Zone' and is also available in its entirety via the online Coastal Atlas (www.coastalatlant.be/en/). VLIZ acts as a data centre for the Coastal Barometer.

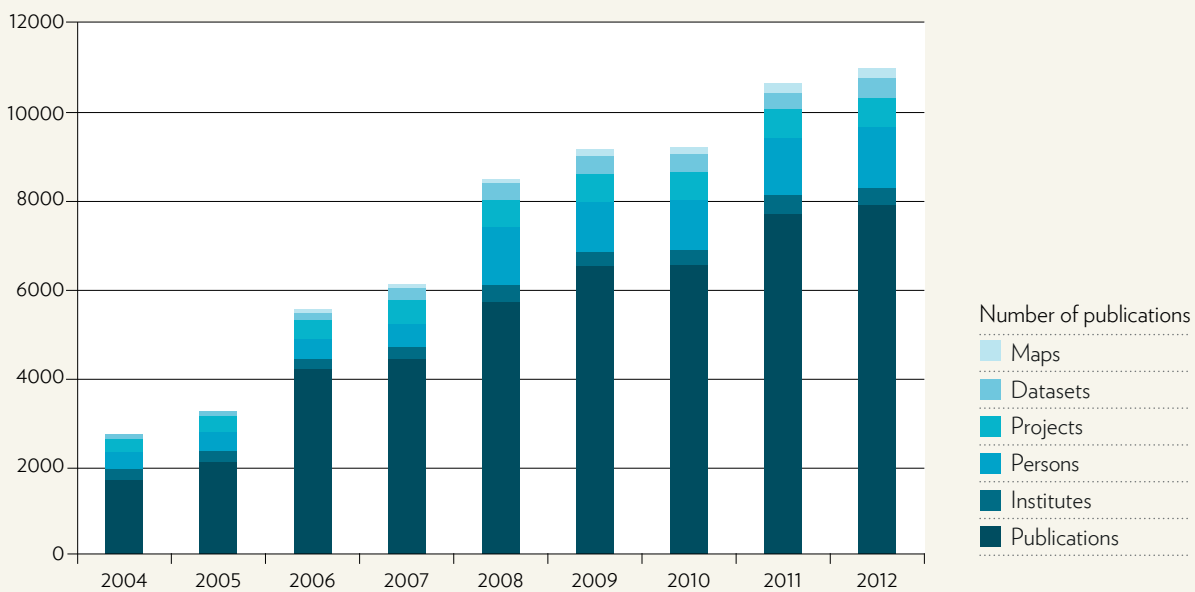


THE THIRD EDITION OF THE COASTAL COMPASS APPEARED IN 2012 – The Coastal Compass keeps a finger on the pulse of policy-relevant topics relating to coastal zone management by means of 24 indicators. This way it aims to inform policy makers, experts and interested people in an objective manner.

© Coordination Centre for Integrated Coastal Zone Management / Deschacht

ScheldeMonitor. This Flemish-Dutch knowledge and information system was established on the initiative of the Maritime Access division (Mobility and Public Works Department of the Flemish government) and the Dutch Ministry of Waterways and Public Works to support the research and monitoring undertaken in the Scheldt Estuary. Since then the ScheldeMonitor has developed into the largest online accessible information centre for the River Scheldt (www.scheldemonitor.be). The ScheldeMonitor has been sponsored by and used to support the objectives of the Flemish-Dutch Scheldt Commission (VNSC) since 2011. The policy-supporting system is searchable by institutes (407), persons (1299), projects (693), maps (190), data sets (407) and publications (7977).

PUBLICATIONS IN THE SCHELDEMONITOR



THE FLEMISH-DUTCH KNOWLEDGE AND INFORMATION SYSTEM 'SCHELDEMONITOR' SUPPORTS RESEARCH AND MONITORING UNDERTAKEN IN THE SCHELDT ESTUARY. – The ScheldeMonitor has been sponsored by the Flemish-Dutch Scheldt Commission (VNSC) since 2011. The system is currently searchable by institutes (407), persons (1299), projects (693), maps (190), data sets (407) and publications (7977).

The Integrated Marine Information System – or IMIS for short – is an information system providing support to the continuous inventory of information on marine sciences in Flanders. Expertise (institutes, persons) as well as projects, publications and data sets are made searchable and, as far as possible, disclosed in their entirety via the website (www.vliz.be/imis).



THE COASTAL WIKI PORTAL ON THE HISTORY OF BELGIAN OYSTER FARMING TELLS THE STORIES OF ALL OYSTER FARMS ON THE BELGIAN COAST AND THUS DISCLOSES A LESS WELL-KNOWN PART OF BELGIAN HISTORY. – In the course of the 18th and 19th centuries, and especially during the 'Belle Epoque', Belgian oysters were in great demand throughout Europe. Both world wars and ever-increasing seawater pollution brought this golden age to an end, however. VLIZ consulted different historical sources and archives. The complete story of the 'Ostendaise' was also published in the De Grote Rede magazine, issue 34 (Pirlet, 2012).

© VLIZ Our Coast photo gallery / Raoul Halewyck Archive

Coastal Wiki and Kust Wiki. This Internet encyclopaedia contains short articles with scientifically sound information on the coast and sea provided for and by marine and coastal experts. There is a Dutch version (Kust Wiki – www.vliz.be/wiki) as well as an English version (Coastal Wiki – www.coastalwiki.org/wiki). In 2012 the latter was supplemented with the EuroMarine portal, which centralises the policy-relevant outcomes of three important FP6 (6th Framework Programme) networks: MarBEF, EUR-OCEANS and Marine Genomics Europe. The portal concerning the history of Belgian oyster farming was developed on the Dutch Kust Wiki website in 2012 (www.vliz.be/wiki/Historiek_van_de_Belgische_oesterkweek).

Alienspecies. A total of 71 alien species with documented established populations in the marine and brackish waters along the Belgian coast and in adjacent estuaries were identified as part of the project 'Non-indigenous species of the Belgian part of the North Sea and adjacent estuaries' at the end of 2012. A fact sheet (in Dutch) on the life cycle and ecology, the pathways of introduction and dissemination, potential

or perceived effects of the species on the environment, and possible measures is available for each species via the Kust Wiki website (www.vliz.be/wiki/Niet-inheemse_soorten_Belgisch_deel_Noordzee_en_aanpalende_estuaria). This information is focused on the local situation (Flanders-Belgium) within a European and international context. In 2012 all information from the files and supporting sources was brought together in a publication which reflects the current state in terms of the knowledge of marine and coastal exotic species as well as on the policy context (VLIZ Special Publication 59). The publication is the result of a cooperation with the 'VLIZ Alien Species Consortium' which consists of approx. 50 experts. The list was supplemented with 3 new species in 2012. A risk analysis has shown that 13 species from this list exhibit invasive characteristics and pose a real threat to the regional biological diversity, the economy and/or habitats. The VLIZ Alien Species Consortium actively works together with the 'Surveillance, early warning and rapid response – IAS (Invasive Alien Species)' steering committee for providing information on coastal and marine species (INBO/ANB).



THE ALIEN SPECIES OF THE BELGIAN COAST AND ADJACENT ESTUARIES WERE EXTENSIVELY DOCUMENTED IN A PUBLICATION. – In 2012 the knowledge on marine and coastal exotic species in Belgian waters was brought together in VLIZ Special Publication N° 59. The publication is the result of a cooperation with approx. 50 experts from the 'VLIZ Alien Species Consortium'. An extensive fact sheet is available for each one of the 71 alien species established on the Belgian coast or in adjacent estuaries. An extensive outline of the policy framework is provided as well.

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THE ICES WORKING GROUP ON THE HISTORY OF FISH AND FISHERIES (WGHIST) VISITS OSTEND. – As co-chair of this ICES working group, VLIZ organised the annual meeting in Ostend on 5-7 September 2012. In the middle of the picture is Dr Sidney Holt, one of the founding fathers of modern fisheries biology.

© WGHIST

History of marine fisheries. Fishing has been one of the principal sources of food, employment, economic development and cultural identity for coastal communities since time. The documentation of the historical background and the recording of long-term series is very important for setting correct reference levels for the management, but also for restoration and conservation of marine resources and ecosystems. The project 'A century of sea fisheries in Belgium' collects data and information from various sources and disciplines to reconstruct this historical background. In addition to the existing timeline of Belgian sea fisheries in which the events, legislation and technological changes are documented (www.vliz.be/cijfers_beleid/zeeverij/timeline_intro.php), a detailed analysis was made of the dynamics of the Belgian offshore fleet since 1830 (Lescauwaet *et al.*, 2012). The collection of Ostend inshore fishing vessels dating from WWII onwards from the book by Barbaix and Eneman (2004) was disclosed in detail in 2012 via the 'Belgian fishing fleet' web application (www.vliz.be/cijfers_beleid/zeeverij/fleet.php).

In 2012 VLIZ organised and accommodated the annual meeting of the ICES Working Group on the History of Fish and Fisheries (WGHIST), which brings together fisheries scientists, historians and marine

biologists. The WGHIST is aimed at improving the understanding of the long-term dynamics of fish populations, fishing fleets and catching technologies. The results are used for setting baselines for management, restoration and conservation of marine resources and ecosystems. VLIZ has cochaired this working group as from the end of 2011.

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. These include internationally renowned researchers as well as scientists who remained relatively unknown or who sank into oblivion despite the relevance of their research. New fact sheets regarding the work and life of Gerardus Mercator, Théodore-Augustin Mann and Adrien de Gerlache were drawn up in 2012. For more information, please visit www.vliz.be/EN/Figures_Policy/Figures_Policy_Marine_Sciences_History.

International cooperation. In the European FP7 project **PEGASO**, 24 partners from 15 countries take up the challenge to adopt a common approach to developing integrated coastal zone management (ICZM) in the Mediterranean and Black Sea region following the ICZM protocol for the Mediterranean Sea. In 2012 VLIZ elaborated a methodological description for the application of a harmonised indicator set so as to jointly map the coastal areas in the Mediterranean and Black Sea. At the end of 2012, VLIZ organised a hands-on training course for the implementation of a Spatial Data Infrastructure (SDI) so as to organise and standardise spatial data in collaboration with the PEGASO partnership and the IODE Project Office. VLIZ also ensures the development and maintenance of the project website (www.pegasoproject.eu).

The collaboration within the INTERREG IVA 2 Seas project **GIFS** (Geography of Inshore Fishing and Sustainability – www.gifsproject.eu) is aimed at the investigation of the socio-economic and cultural significance and importance of inshore fishing in the southern North Sea. Together with partners from the United Kingdom, France, the Netherlands and Flanders, VLIZ sheds light on the historical significance of inshore fishing (landings, value, employment, dynamics in the fleet, etc.). In 2012 efforts were made to inventory historical time series for the southern North Sea. The current management and policy tools as well as the articulation of inshore fishing and coastal zone management were analysed in cooperation with the Coordination Centre for Integrated Coastal Zone Management. The results are aimed at the identification of good practices in fisheries and maritime policy, coastal renewal strategies and sustainable development of coastal communities.

The European FP7 project **MERMAID** (Innovative multi-purpose offshore platforms: planning, design and operation) is a consortium of 28 partners from science and industry which develops concepts for the next generation of offshore platforms. These platforms can be used for multiple purposes and combine different applications such as energy extraction, aquaculture and platform-related transport. The economic, environmental and technical aspects of these platforms are studied in this project. The focus is also on consulting and involving relevant stakeholders. VLIZ is responsible for the communication and outreach as to this project, and created the project website (www.mermaidproject.eu) and designed an information leaflet in 2012.

VLIZ started bilateral cooperation with Chile in the field of marine sciences in 2005. In the 2010-2012 period this partnership was further extended to the research group of the **FOCA** project (in full: 'Development of an innovative environmental monitoring network for the sustainable development of the Chilean fjords') partly thanks to the support of the Flemish Department of Foreign Affairs. Data for physicochemical and biological oceanographic parameters are continuously collected during monthly surveys carried out on ferries in the vast Chilean fjords. These data are made publicly available for further research into the ecological capacity of this area (in terms of fishing and aquaculture). The startup phase was concluded and an operational monitoring and data collection system was set up aboard ferries in 2012. The possibilities to deploy these ferries as cost-efficient platforms for monitoring a wider set of environmental variables will be explored in the future.

Colophon

This 2012 Annual Report of the Flanders Marine Institute (VLIZ) has been presented for approval to the Board of Directors and the General Assembly on 25 april 2013.

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