



20 Annual Report

14 FACTS AND FIGURES



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Foreword



Christoph Ruholl Professor Karin Lochte Dr Uwe Nixdorf

The Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI) conducts interdisciplinary and long-term research in both polar regions as well as comparative research on coastal waters and the North Sea. This annual report presents the key facts and figures relating to the AWI in 2014. In this year, there was a change in the AWI management: the Administrative Managing Director Dr Heike Wolke changed to the Max Delbrück Center in Berlin; Dr Uwe Nixdorf and Christoph Ruholl assumed her responsibilities provisionally.

One highlight of research in 2014 was the publication of the Working Group II of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) entitled „Climate Change 2014: Impacts, Adaptation, and Vulnerability“. This second of a total of three parts of the report focused on the impact of climate change on ecosystems as well as adaptation opportunities for human beings, animals and plants. AWI scientists contributed substantially to the Assessment Report and for the first time a complete section on „Ocean Systems“ was represented in a separate chapter within the report. Extensive information material has been provided for the common media campaign in cooperation with the Helmholtz Association.

The AWI places considerable importance on knowledge transfer to society and in its interactions with different stakeholders. Numerous examples reflect this commitment, such as a major international event in the context of CCAMLR¹ due to the possible creation of a Marine Protected

Area in the Antarctic Weddell Sea, an active participation in the European Maritime Day 2014 in Bremen, the global initiative „Ocean Sampling Day“ and the first international and interdisciplinary Potsdam Summer School „Arctic in the Anthropocene“ jointly organised with the IASS². The latter gathered 38 young researchers of natural and social sciences from 26 countries, discussing with leading scientists as well as representatives from government, business and non-governmental organisations about the risks and challenges the recent climate change brings for the inhabitants of the Arctic and what opportunities might arise.

The strategic investment FRAM „FRontiers in Arctic Marine Monitoring“ started this year with the initial work. A multidisciplinary ocean observing system is being developed based on proven components and new, continuously measuring modules. It will investigate the interactions of cryosphere, hydrosphere, geosphere and biosphere, from the sea surface to the deep sea, in high resolution.

Please enjoy reading this report!

Professor Karin Lochte
Director

Dr Uwe Nixdorf
Administrative Director (temp.)

Christoph Ruholl
Administrative Director (temp.)

¹ Commission for the Conservation of Antarctic Marine Living Resources

² Institute of Advanced Sustainability Studies

Board of Governors

The Board of Governors with representatives from the government, the federal states, scientists and personages from public life, supported by a Scientific Advisory Board, takes decisions on general and financial matters relating to the Institute.

Chairman
Ministerialdirektor
Dr Karl Eugen Huthmacher (AL 7)
Federal Ministry for Education and Research, Bonn

Deputy Chairman
Staatsrat Gerd-Rüdiger Kück
The Senator for Education and Science, Bremen

Ministerialrat Gerd Conrad *)
Federal Ministry of Food and Agriculture, Bonn

Dr Peter Hoth *)
Federal Ministry for Economic Affairs and Energy, Berlin

Legation Councillor First Class
Dr Rainer Lassig
Federal Foreign Office, Berlin

Staatsrat Dietmar Strehl
The Senator for Financial Affairs, Bremen

Ministerialdirigent Carsten Feller
Ministry for Science, Research and Culture, Potsdam (Brandenburg)

Dr Hartmut Euler
Ministry of Economic Affairs, Employment, Transport and Technology, Kiel (Schleswig-Holstein)

Michael Stark
Chief Executive, Chamber of Industry and Commerce, Bremerhaven

Professor Martin Claußen
(Chairman of Scientific Advisory Board)
Max Planck Institute for Meteorology, University of Hamburg

Silvia Schön
Bremen Parliament

Professor Ulrike Feudel
Institute for Chemistry and Biology of the Marine Environment (ICBM), University of Oldenburg

Professor Eva-Maria Pfeiffer
Institute of Soil Science, University of Hamburg

Professor Sarah Jones
National Meteorological Service (DWD), Offenbach

*) The representatives of these Federal Ministries participate in alternating 2-year cycles (Federal Ministry for Economic Affairs and Energy represented since 1 January 2013)

As of: December 2014

Scientific Advisory Board

The Scientific Advisory Board advises the Board of Governors and the Directorate on the fields of research, logistics and coordination.

The President of the Max Planck Society

Professor Martin Stratmann
(since June 2014)
München

Permanent representative

Professor Rudolf Amann
(since March 2011)
Max Planck Institute for Marine Microbiology, Bremen

The President of the German Research Foundation

Professor Peter Strohschneider
(since January 2013)
Bonn

Permanent representative

Professor Wolf-Christian Dullo
(since July 2014)
GEOMAR Helmholtz Centre for Ocean Research, Kiel

The President of the Federal Institute for Geosciences and Natural Resources

Professor Hans-Joachim Kümpel
(since August 2007)
Hannover

Permanent representative

Dr Christian Reichert
(since October 2008)
Federal Institute for Geosciences and Natural Resources, Hanover

The Director of the Federal Research Centre for Fisheries

N. N.
(Professor Cornelius Hammer until January 2008)

Permanent representative

N. N.

The Rector of the University of Bremen

Professor Bernd Scholz-Reiter
(since October 2012)

Permanent representative

Professor Wilhelm Hagen
(since February 2008)
University Bremen

Chairman

Professor Martin Claußen
(since September 2012)
Max Planck Institute for Meteorology, Hamburg

Deputy Chairman

Professor Konrad Steffen
(since September 2012)
Swiss Federal Institute for Forest, Snow and Landscape Research WSL
Switzerland

Professor Peter Henry Burkill
(since July 2007)
University of Plymouth
United Kingdom

Dr John Campbell
(since July 2011)
International Association of Oil & Gas Producers (IOGP)
United Kingdom

Professor Michael P. Meredith
(since January 2013)
British Antarctic Survey (BAS)
United Kingdom

Professor Douglas W. R. Wallace
(since July 2007)
Canada Excellence Research Chair in Ocean Science and Technology (CERC)
Canada

Professor Dorthe Dahl-Jensen
(since July 2012)
Niels Bohr Institute
Denmark

Professor Leif Gunnar Anderson
(since July 2007)
Göteborg University
Sweden

Professor Vladimir E. Romanovsky
(since January 2013)
University of Alaska Fairbanks UAF
USA

Scientific Council

The Scientific Council advises the Directorate on significant matters of the foundation, e.g. development of the Research Programme.

Chair

Brey, Professor Thomas
Kasten, PD Dr Sabine (Deputy)

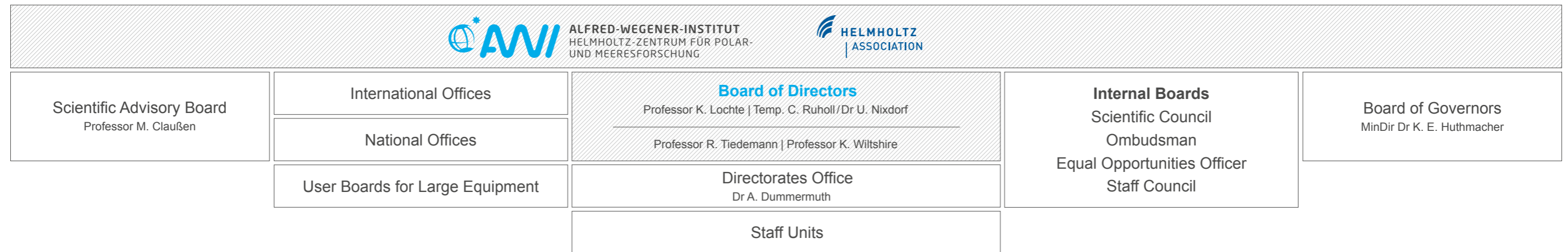
Members

Boetius, Professor Antje
Brey, Professor Thomas
Cembella, Professor Alan
Dethloff, Professor Klaus
Diekmann, Professor Bernhard
Gerdes, Professor Rüdiger
Gerds, Dr Gunnar
Gohl, Dr Karsten
Hanfland, Dr Claudia
Hass, Dr Christian
Hiller, Professor Wolfgang
Hubberten, Professor Hans-Wolfgang
Humbert, Professor Angelika
Jokat, Professor Wilfried
Jung, Professor Thomas
Kanzow, Professor Thorsten
Kasten, PD Dr Sabine
Lohmann, Professor Gerrit
Losch, Dr Martin
Pörtner, Professor Hans-Otto
Richter, Professor Claudio
Tiedemann, Professor Ralf
Wacker, PD Dr Ulrike
Waite, Professor Anya
Wiltshire, Professor Karen
Wolf-Gladrow, Professor Dieter

Permanent guests

Dummermuth, Dr Angelika
Damm, Dr Ellen (AWI-Equal Opportunity Officer)
Hain, Dr Stefan
Lemke, Professor Peter
Lochte, Professor Karin
Nixdorf, Dr Uwe (additionally as acting Administrative Director since March 2014)
Pauls, Margarete
Röcher, Ralf
Ruholl, Christoph (acting Administrative Director since March 2014)
Sauter, Dr Eberhard
Schmengler, Dr Almut
Wilhelms, Dr Frank (AWI Staff Council)
Wolke, Dr Heike (Administrative Director until February 2014)

Organization Chart



Scientific Divisions, Technologies and Services			
Geosciences Professor R. Tiedemann	Biosciences Professor D. Wolf-Gladrow	Climate Sciences Professor T. Kanzow	Infrastructure / Administration
Geophysics Professor W. Jokat	Polar Biological Oceanography Professor A. Waite	Atmospheric Circulation Professor K. Dethloff	Logistics and Research Platforms Dr U. Nixdorf
Glaciology Professor A. Humbert	Marine Biogeosciences Professor D. Wolf-Gladrow	Polar Meteorology PD Dr U. Wacker	Computing and Data Centre Professor W. Hiller
Periglacial Research Professor H.-W. Hubberten	Functional Ecology Professor T. Brey	Physical Oceanography of Polar Seas Professor T. Kanzow	Library M. Brannemann
Marine Geology and Palaeontology Professor R. Tiedemann	Benthopelagic Processes Professor C. Richter	Climate Dynamics Professor T. Jung	Scientific Workshop E. Dunker
Marine Geochemistry PD Dr S. Kasten	Integrative Ecophysiology Professor H.-O. Pörtner	Sea Ice Physics Professor R. Gerdes	Human Resources C. Ruholl
	Ecological Chemistry Professor A. Cembella	Palaeoclimate Dynamics Professor G. Lohmann	Corporate Finances C. Ungermann
	Shelf Sea System Ecology Professor H.-D. Franke (acting)		Purchasing Department J. Eilers
	Coastal Ecology Professor K. Wiltshire (acting)		Administration and Organization M. Bong
	HGF-MPG Joint Research Group for Deep-Sea Ecology and Technology Professor A. Boetius		Construction and Facility Management M. Krüger
			Technology and Environmental Protection G. Tautorat

Junior Research Groups		
Dr G. Grosse	Professor H. Lantuit PD Dr V. Schlindwein Professor I. Weikusat	Dr H. Flores Dr M. Wegner Professor S. Trimbom
		Dr K. Metfies Dr M. Iversen
		Professor A. Bracher Dr T. Laepple

New Senior Members of Staff



Professor Bettina Meyer took office of a professorship in "Biodiversity and Biological Processes of Polar Seas" at the University of Oldenburg in March 2014. With her research group she investigates adaptability of polar pelagic invertebrates to a changing environment.



Dr Lars Henning has headed the Research Support Unit since January 2014. His team supports the scientists at the AWI regarding all aspects of third party proposal preparation and the project implementation with special focus on the framework programme of the EU.



Professor Olaf Eisen took office of a professorship in "Glaciology" at the University of Bremen in January 2014. Until June 2014 he has headed the Emmy-Noether Group LIMPICS (Linking micro-physical properties to macro features in ice sheets with geophysical techniques).



PD Dr Sabine Kasten has headed the research section Marine Geochemistry since March 2014 in the Geosciences Division in Bremerhaven.

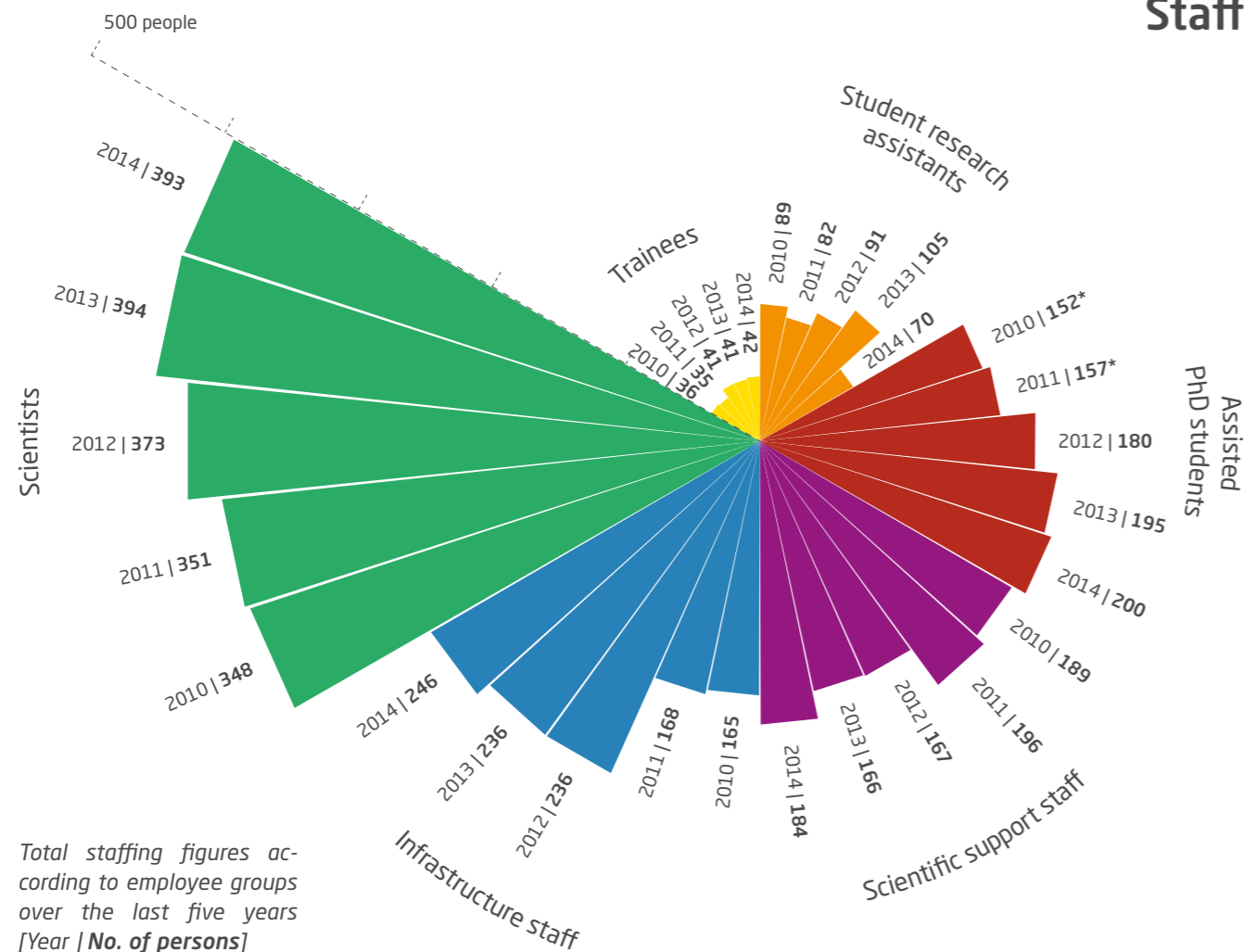


Dr Morten Iversen has headed the SEAPUMP (SEAsonal and regional food web interactions with the biological PUMP) Helmholtz Juniors Group that is located in the Biosciences Division in Bremerhaven.



Professor Anya Waite took office of a professorship in "Polar Biological Oceanography" at the University of Bremen in June 2014 and has headed the corresponding research section.

Staff



Total staffing figures according to employee groups over the last five years [Year | No. of persons]
*only PhD students with AWI contract

Human Resources Development Activities

During the course of 2014, Human Resources Development continued its broad range of activity in areas of staff recruitment and retention, staff development, team building and conflict management, apprenticeship management, health management and the integration of new and international staff.

In the area of staff development, 184 employees attended seminars and courses offered within the AWI, covering the topics soft skills / transferrable skills, languages and computing. All in all, about 3,600 working hours were spent on participating in in-house further education with total costs of around 56,500 Euro. At the same time, the further development of individual employees via external seminars and courses could be further pursued, based on an even more concentrated utilization of the annual one-on-one meetings that might identify and agree upon further education requirements and opportunities.

During 2014, the task force “pre- and early career support” defined and prioritized goals in consultation with the Directorate. In order to achieve these goals, actions and measures have been developed which are to be realized step by step from 2015 on.

The AWI considers it important to inform employees on future career prospects. This is particularly important for scientists, who can be employed on limited contracts over longer periods according to the Academic Fixed-Term Contract Law (“Wissenschaftszeitvertragsgesetz”). In order to fulfil this responsibility in an even more fundamental way, general principles for handling limited contracts were determined in 2014. They were transferred into the existing guidelines for the conversion of limited contracts into permanent employment relationships. Furthermore, these guidelines were combined for scientific and non-scientific personnel.

Balancing Responsibilities for Work and Family

At the AWI, reconciling career and family is an essential topic. There is a broad consensus at the institute that finding means to help balance family and career is an important goal, an attitude that is especially reflected in our day-to-day work. At the AWI there is an authentic culture of family friendliness.

AWI’s family office promotes the work and family balance through a range of initiatives. For example, the AWI runs an in-house day care centre with 20 places for children from the age of six months to three years and offers a vacation programme during Easter, summer and autumn holidays. During the working time of their parents children can experience exciting things in the holidays. In 2014 there were 37 days of vacation programme with an average of 12 to 13 participating children, corresponding to 500 participant days.

The family office is also a point of contact for new members of staff, providing individual support and advice as they

settle in. Further, the AWI employs one member of staff at the family office who is chiefly responsible for improving the reconciliation of work and caring for relatives - an issue of increasing societal relevance. In this field as well as in many others, there is a close collaboration with public authorities and other partners in the network of Bremerhaven.

Together with the communications department, the family office has also organised to show a travelling exhibition addressing the theme “DaSein - ein persönlicher Blick auf die Pflege” (“Being There - a Personal Perspective on Care”) from the German Federal Ministry of Health. All colleagues were able to get photographic insights into the daily common life of people in need of care and caretakers. Additionally the family office prepared an image film about its work in German and English language that transparently communicates various aspects of balancing career and family.

Gender Equality

With a share of 47 per cent of the total number of the 1,053 AWI employees in 2014 the percentage of female employees decreased by one percentage point compared to 2013. There were shifts within the different occupation groups: the number of female scientists slightly increased by one percentage point to 40 per cent of the 393 members of the scientific staff. The percentage of female PhD students decreased by five percentage points to 52 per cent. The quota of women amongst the

infrastructure personnel (administration and logistics) increased by one percentage point to 58 per cent. 49 per cent of the staff supporting science (technical assistants and engineers) was women, which means a decrease by five percentage points. There were 43 per cent female research assistant students in 2014; five percentage points less compared to the 48 per cent 2013. And last but not least the number of our female trainees reduced by three percentage points to 36 per cent.

Staff	2010	2011	2012	2013	2014
Trainees	36 44	35 43	41 41	41 39	42 36
Student research assistants	89 48	82 49	91 46	105 48	70 43
PhD students with AWI contract	152 59	157 55	152 53	123 57	118 52
Total assisted PhD students	n/a	n/a	180 59	195 60	200 54
Scientific support staff (technicians, engineers)	189 47	196* 48	167 53	166 54	184 49
Infrastructure staff (administration, logistics)	165 60	168 62	236* 59	236 57	246 58
Scientists	348 36	351 37	373 39	394 39	393 40
Total	979 47	989 48	1,060 48	1,065 48	1,053 47

No. of persons | Proportion of women [%]

* The percentage increase in the infrastructure personnel can be accounted for to some extent by restructuring measures for service personnel

Staff at the various AWI locations

Staff in No. of persons | Full-time equivalents

AWI in total	as of 31 December 2014
Permanent staff	502 476.80
Limited-term contract staff	551 460.20
Total	1,053 937
of these, third-party financed	277 234.67
of these, international	112 no data



Bremerhaven	79%
Permanent staff	409 387.87
Limited-term contract staff	425 359.20
Total	834 747.07
of these, third-party financed	213 183.02
of these, international	85 no data

Potsdam	11%
Permanent staff	36 35.02
Limited-term contract staff	79 65.41
Total	115 100.43
of these, third-party financed	45 37.38
of these, international	16 no data

Heligoland	7%
Permanent staff	41 39.25
Limited-term contract staff	29 22.41
Total	70 61.66
of these, third-party financed	7 5.50
of these, international	7 no data

Sylt	3%
Permanent staff	16 14.66
Limited-term contract staff	18 13.18
Total	34 27.84
of these, third-party financed	12 8.77
of these, international	6 no data

Technology transfer

The areas of knowledge and technology transfer (KTT) in publically funded research organisations, including those active in the field earth and environment, have become more and more important. For the knowledge transfer, topic 4 of the research programme PACES II "Research in science-stakeholder interactions" plays a particular role. Additionally an according KTT cross-section range was established at the AWI to further strengthen the performance and visibility of transferring scientific results into the society and the economy.

In 2014 important according concepts had been worked out and decisions had been taken in order to set up a cross-sectional KTT unit. In parallel the integration of the technology transfer-relevant IMARE groups "Bionics/Lightweight Construction" and "Aquaculture" was prepared. This measure shall ensure the further existence and development of these groups after the termination of funding of the EU and the local state Bremen. At the same time AWI's transfer activities shall be increased (e.g. via industry cooperations and contract research) by the integration of these groups.

During the reporting year a spin-off project previously funded by Helmholtz Enterprise was successfully finished with the official registration of the company Drift & Noise Polar Service GmbH in July 2014. The enterprise offers measurements, information systems and consultancy in the field of Arctic sea ice to academic and private party customers. After successful acquisition in 2013, another Helmholtz Enterprise started in summer 2014 to prepare the spin-off company SubSeaSpec GmbH which will offer technologies and services around underwater mass spectroscopy.

IP-related revenues for 2014 are expected to amount to approx. 128,000 Euro whereas earnings from industry cooperations and contract research add up to over 670,000 Euros.



From diatom to the road: Bionic researchers use examples from nature to develop lightweight, efficient and potentially cost-saving structures.

Budget

	CURRENT on 12/31/2013 (unit: thousands of EUR)				PLANNED 2014* (unit: thousands of EUR)			
	Bremerhaven	Heligoland Sylt	Potsdam	total	Bremerhaven	Heligoland Sylt	Potsdam	total
Operation								
Staff	34,249	4,303	3,416	41,968	32,760	5,460	3,780	42,000
Materials and Equipment	49,779	7,215	1,916	58,910	50,437	6,105	1,960	58,502
Investments								
Current investments	5,436	2,340	341	8,117	9,822	736	748	11,306
Investments > 2,5 Mio €	3,431	2,087	292	5,810	2,633	0	3,731	6,364
Investments > 15 Mio €					1,469			1,469
Income								
Revenues and profits	-4,722	-1,421	-18	-6,161	-1,500	-500	0	-2,000
Reserves*				773				
* Reserve T€773 not included in the actual result, because already revised.								
Gesamt	88,173	14,524	5,947	108,644	95,621	11,801	10,219	117,641
Third-party funding	18,070	936	1,548	20,554	17,500	1,000	1,500	20,000

Source of third-party funding	Helmholtz	BMBF	DFG	EU	others
(unit: thousands of €)	5,000	8,000	2,000	3,000	2,000

Major projects inaugurated in 2014 under AWI management or with AWI participation

FRAM
Frontiers in Arctic Marine Monitoring, Helmholtz strategic expansion investment
PI: Prof. Dr. Antje Boetius
Term: 2014 - 2019
Funding: 25,000,000 €

EISRADAR
Provision of an ultra-broadband ice radar for operation with the polar aircraft Polar 5 and Polar 6
PI: Professor Heinrich Miller
Term: 05/2014 - 04/2017
Funding: 2,380,790 €

SiGePAX
Paleo-climatological development of the Arctic and Subarctic Ocean since the last glacial period, scientific-technical cooperation with China funded by BMBF
PI: Professor Gerrit Lohmann
Term: 07/2014 - 06/2017
Funding: 526,113 €

CryoSat-2
Calibration and validation, BMBF-Network-Project
PI: Dr Veit Helm
Term: 01/2014 - 12/2016
Funding: 478,061 €

Climate driven Antarctic invasion?
Physiological impacts of temperature and hypoxia in life stages of reptant decapod crustaceans and implications for distribution shifts, DFG-Project
PI: Dr Daniela Storch
Term: 08/2014 - 06/2017
Funding: 287,482 €

Technical Support for the 2014 SMOSice campaign
in SE Svalbard funded by ESA
PI: Dr Stefan Hendricks
Term: 05/2014 - 12/2014
Funding: 209,627 €

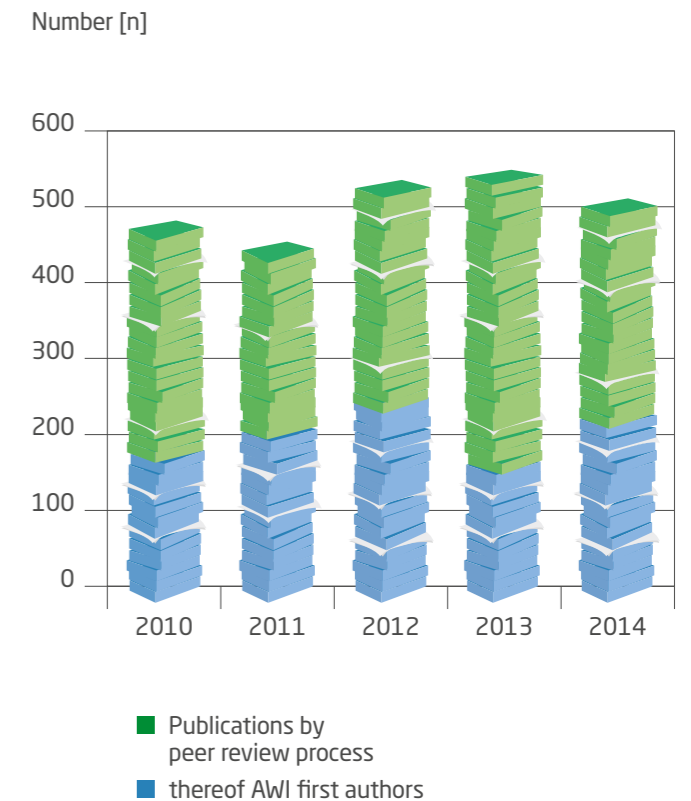
Scientific publications and awards of the "Friends of the AWI" (Förderverein)

The scientists of the Alfred Wegener Institute published 498 peer-reviewed items in the course of 2014 (source: Science Citation Index, Web of Science, 19 February, 2014). In 216 cases, AWI scientists were named as first author. Almost a quarter (24.2%) of all publications from 2014 have been acquired with the United States, therefore representing one of the most important international cooperation partners of the AWI. Further significant publication partners are the United Kingdom (18.1% of publications), Norway (10.6%) and France (8.6%). In 2014 the AWI published in collaboration with a total of 56 different partner countries.

A similar scenario emerges when examining a longer time period (2009-2014) (see also world-map, page 20/21, "International cooperation" - in dark red): The AWI published 2,778 joint items with a total of 70 partner countries worldwide in the last five years; most of them with the United States (540), the United Kingdom (474), France (289), Norway (231), Canada (211) and the Netherlands (208).

Free access to scientific publications (open access) is a major concern of both the AWI and the Helmholtz Association. The portion of AWI publications in open-access journals in 2014 accounted for 22%, which corresponds to almost a doubling since 2009 (12%).

The „Friends of the AWI“ awards three prizes each year. The AWI Science Prize (EUR 2,000) for the best scientific publication in 2014 was awarded to Cherkasheva et al., 2014¹. This interdisciplinary publication deals with the interaction between physical climate parameters and the primary production in the ocean. The AWI PhD Prize is awarded to young AWI scientists with outstanding research results during the course of their doctorate and who are additionally heavily involved in their groups and outreach activities. This year's prize - endowed with a total of EUR 3,000 - was shared by Dr Clara Hoppe (biologist) placed first and Dr Anja Diez (geophysicist) placed second. The so-called Silent Hero Award - a prize of EUR 2,000 awarded to colleagues who are absolutely necessary for scientific achievements and who support our scientists only in the background - was awarded to two colleagues: Nancy Lange, who outstandingly helps our scientists during project application, administration and execution and Ingrid Stimac who supported the section Marine Geochemistry far beyond the tasks of a technical assistant.



AWI scientific publications over the last five years.

¹ Cherkasheva, A., Bracher, A., Melsheimer, C., Köberle, C., Gerdes, R., Nöthig, E.M., Bauerfeind, E. and Boetius, A. (2014) Influence of the physical environment on phytoplankton blooms: a case study in the Fram Strait, Journal of Marine Systems, 132, 196-207.

Cooperation Partners

International cooperation

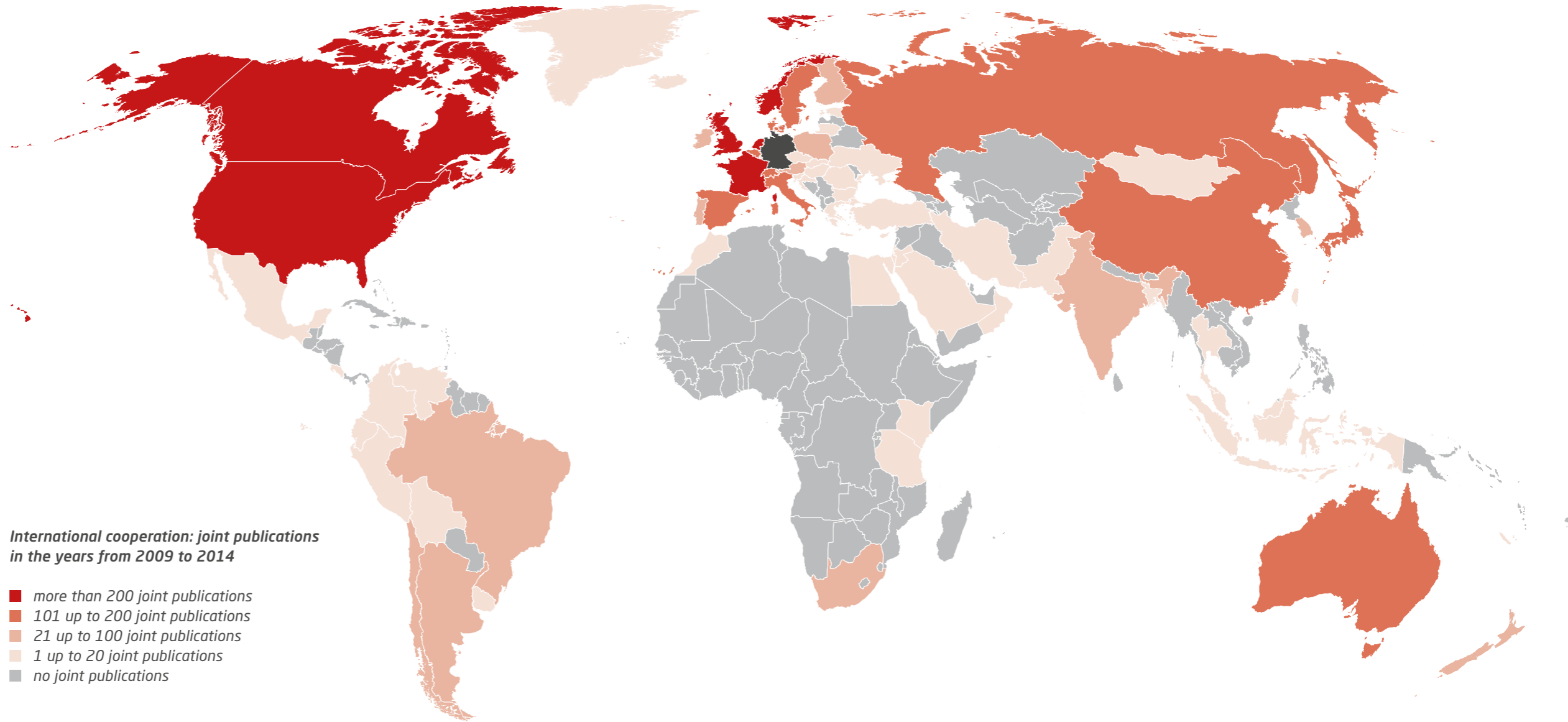
In 2014, three contractually regulated cooperation agreements were signed with foreign partners, including two Memoranda of Understanding (MoUs) with Finnish institutions: the Finnish Environment Institute (SYKE) and the Finnish Antarctic Research Programme at the Finnish Meteorological Institute (FINNARP), that includes in particular a logistical cooperation in Antarctica.

Important strategic partners of the AWI in the Arctic are Canadian research institutions. In August 2014, an expedition with RV Polarstern took place in the Arctic, which is an essential part of the new MoU with the Geological Survey of Canada. On this expedition geological and geophysical investigations in the Amundsen Basin and the Lomonosov Ridge were carried out. The Canadian colleagues are going to collect additional data in this area on two further expeditions on the CCGS Terry Fox and the CCGS Louis S. St-Laurent, which will then be analysed and published jointly.

Unfortunately, the long-planned participation of Canadian scientists of „ArcticNet“ on a Polarstern expedition in May 2014 could not take place, because the expedition had to be cancelled due to technical problems on the Polarstern.

The AWI is also a very interesting partner for Japanese institutions. In 2014, three high-level Japanese delegations visited the AWI. The highlight was a German-Japanese workshop, which was held on September 15 and 16 in the „Haus der Wissenschaft“ in Bremen. This workshop was conducted by the AWI together with the MARUM and should strengthen cooperation in the fields of deep-sea research and technology, biodiversity, climate and earthquake research.

The Japanese delegation consisted of ten scientists from the Japan Agency for Marine-Earth Science and Technology



(JAMSTEC) and the National Institute for Polar Research (NIPR) and two representatives of the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). On the German side, the Federal Ministry of Education and Research (BMBF) was represented.

Several research topics were defined which in the future shall be the core of

the cooperation. A follow-up meeting will take place in 2015 at the Arctic Science Summit Week, that is hosted by Japan. The meeting will be widened to European scientists. A broader bilateral workshop is planned in 2016 in Tokyo.

From 10 to 12 November 2014 a workshop between AWI scientists and

researchers from different CONICET institutions took place in Buenos Aires - CONICET is Argentina's National Council of Scientific and Technical Research. Its aim was to intensify cooperation and to initiate a common application for a larger project (e.g. DFG Research Training Group or Innovative Training Networks (ITN) of the EU) with which a closer cooperation

should be financed. The workshop was funded by the International Bureau of the BMBF and eleven AWI scientists participated.

On June 2 and 3, a German-Turkish Workshop on Antarctic Research took place in Istanbul. The AWI acted as a co-organizer of this workshop. Turkey has developed its own Antarctic

program and asks for advice from the AWI. The Scientific and Technological Research Council of Turkey (TUBITAK) has funded the participation of three AWI scientists in this workshop. An MoU with the Turkish polar research program called TuARK is in preparation in order to provide a basis for joint investigations in Antarctica.

National cooperation

The AWI is a member of the Helmholtz Association, the German Marine Research Consortium, the German consortium on climate research called Deutsches Klima-Konsortium e.V. and the so-called Northwest-Verbund Meeresforschung e.V. – Northwest consortium on marine research. Besides these memberships, universities and other research institutions form the research network of the AWI. Currently, there are 31 professors associated with universities by means of cooperative professorships; thereof 19 at the University of Bremen in the departments of Physics, Biology/Chemistry, Mathematics and Geosciences. In addition, there are twelve extraordinary professorships. The close cooperation with the University of Bremen has been promoting the future concept in the framework of the excellence initiative and is constantly evolving. The plan for creating an interdisciplinary Marine Research Centre, working on marine-related Earth System research on a global scale (Campus Alliance Marine Research and Marine Technology), continues to develop. A bridge professorship in „Marine Chemistry“ - raised in the framework of the excellence initiative - and the cooperation professorship „Physics of Sea Ice“ - raised in the framework of the Helmholtz Recruitment Initiative, strengthen the formation of a future regional cooperation cluster. The corresponding concept involves primarily the professional and interdisciplinary development of work areas in marine sciences, resulting in cooperation benefits and synergies for collaboration in research and teaching, as well as the sharing of infrastructures, resources and databases. The major objective is to achieve a higher efficiency and to integrate non-university research institutions and universities from Lower Saxony, in order to obtain a critical mass for attracting the lo-

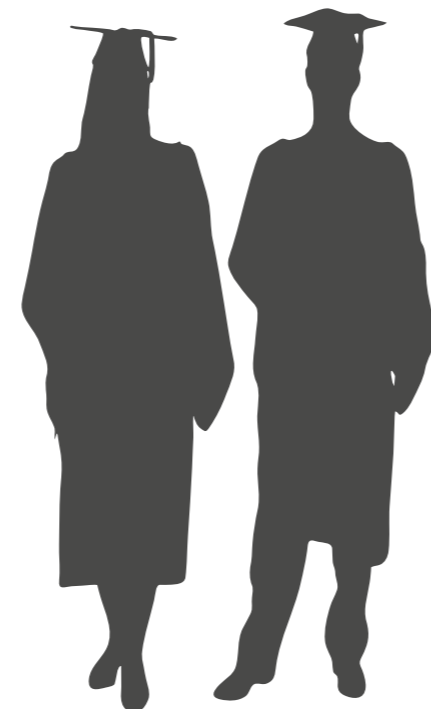
cation of Bremen/Bremerhaven to outstanding scientists and resulting in international leadership.

In October 2014 the international conference „Our Climate, Our Future - Regional perspectives on a global challenge“ was held with 320 participants from 28 countries. This was initiated by the Helmholtz Climate Initiative „Regional climate change“ - REKLIM. The result of the conference was an improved understanding of regional climate variability and change from observations and models. However, there are still many unresolved issues concerning the impact of regional climate change, which need to be addressed. A cooperation with the DEKRA University Berlin (television and film, journalism, media management) facilitated the conduct of a student media project on the issue of climate change and resulted in extensive publicity.

In May 2014, the AWI and the Federal Ministry for Economic Affairs and Energy hosted the forth Arctic Dialogue „Resources in the Arctic and opportunities of sustainable use“ at the economics ministry in Berlin. At the same time, the potential for the maritime economy and the 'National Master Plan for Maritime Technology' of the Federal Government of Germany was discussed. The series of Arctic Dialogues offers an ideal forum to make knowledge available for the development of policy to further assess the local and global impact of changes in the Arctic and to build a sound basis for sustainable development strategies at national and international levels.

In the autumn of 2014, scientists and engineers of the AWI started working on a long-term observatory with observation stations from the Norwegian Sea to the Arctic Ocean. In the coming years, AWI scientists

intend to upgrade their existing long-term observatories along this key climatological interface into a comprehensive research infrastructure and deploy a wide range of modern marine technologies. The overriding objective is to be able to observe changes in the ocean and its ecosystems year-round and in high resolution from the surface to the deep sea with the aid of the new FRAM observatory („FRontiers in Arctic Marine Monitoring“). The Helmholtz Association has approved this strategic investment, and the Federal Government as well as the State of Bremen are financing the establishment of this new platform with 25 million Euros over the next five years.



Ships and Stations

The Alfred Wegener Institute provides research vessels, research platforms and aircraft for German polar and marine research worldwide. The following charts and graphics show the supported expeditions. On August 26th, 2014 the RV Polarstern, while on expedition to examine geoscientific questions in the High Arctic, reached the North Pole for the 4th time since its commissioning.

The research vessels and cutters of the AWI are maintained to a high standard. In 2014 the renewal of the motori-

zation of RV Heincke was started. In future, next to the three new main engines, a new particle filter and a SCR cat will be installed to significantly reduce emissions. The spring shipyard time of RV Polarstern lasted longer than originally planned, resulting in a shortened Arctic season. During routine maintenance, signs of wear were discovered at the drive shaft bearings, which mandated replacement. In the project to replace the research and supply vessel Polarstern, the announcement of the tender for the shipyard took place, conducted by the BMBF.

Research vessels	Expeditions	Participants Germany	Participants abroad	Days of deployment harbour / docks	Man days (of which AWI)
RV Polarstern	8	281	67	286 (79)	13,111 (4,677)
RV Heincke	29	366	2	308 (57)	3,283 (998)

Stations	Projects	Participants Germany	Participants abroad	Days of deployment	Man days (of which AWI)
Arctic					
AWIPEV Research Base permanently manned	56	61	69	365	2,973 (1,395)
Samoylov Station summer station	17	38	25	169	1,774 (446)
Antarctic					
Neumayer Station III permanently manned	19	57	5	365	2,976 (232)
Kohnen Station summer station	2	22	3	74	280 (120)
Dallmann Laboratory at the Carlini Station (Argentina) summer operation	16	20	21	151	2,275 (723)

Equipment (provision of polar clothing, field equipment)	Projects	Participants Germany	Participants abroad
Ship expeditions	37	647	69
Station operations	110	198	123
Flight missions	11	23	4
Field missions	15	36	25

Field Expeditions

Field Expeditions	Projects	Participants Germany	Participants abroad	Days of deployment
Arctic	1	1	0	21
Alaska, Northslope, spring	1	1	0	14
Alaska, Northslope, summer	2	8	8	14
Russia, Sobo-Sise Lena delta, summer	2	5	2	15
Russia, Bykovsky peninsula, summer	2	4	5	22
Lena 2014 peninsula Buor-Khaya	2	4	7	30
Russia, Island B. Lyakhovski, spring	3	6	1	24
Russia, Island B. Lyakhovski, summer	17	38	25	169
Lena 2014 Station „Island Samoylov“				

Field Expeditions	Projects	Participants Germany	Participants abroad	Days of deployment
Antarctic				
EKSEIS	1	3	2	17
RECISL	1	4	0	22
Kohnen traverse NM to Kohnen	0	7	0	9
Kohnen traverse Kohnen to NM	0	7	0	7

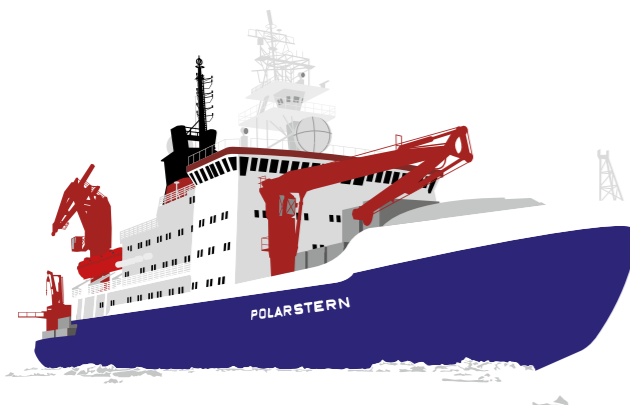
Aircraft Campaigns

Among the field campaigns with the research aircraft in 2014, the campaign investigating the atmosphere, “Radiation-Aerosol-Cloud Experiment in the Arctic Circle” (RACEPAC), is worth noting. For the first time since the commissioning of the Polar 6, both research aircraft were operated simultaneously. In RACEPAC, 40 scientists from seven German universities and research institutes as well as a French university were participating under the coordination of the University of Leipzig; the flight mission took place in the Canadian Arctic, in April and May 2014.

Along selected profiles, both aircraft were used in different flight levels and in formation. Thus, for the first time, by remote sensing, aerosol distribution was determined by one of the aircraft, while the second aircraft directly collected air samples for the determination of aerosol and trace gas characteristics in the previously measured air mass. The instrumentation of the aircraft was changed several times during the measurement campaign, according to current scientific questions and weather conditions respectively.

Aircraft	Projects	Flight hours scientific	Flight hours logistics incl. ferry	Total hours
Arctic				
Polar 5	4	102	82	184
Polar 6	1	46	47	93
Antarctic				
Polar 5	0	0	0	0
Polar 6	6	211	121	332

Native countries of international scientists on Polarstern expeditions in 2014 [%]



Routes and flight campaigns

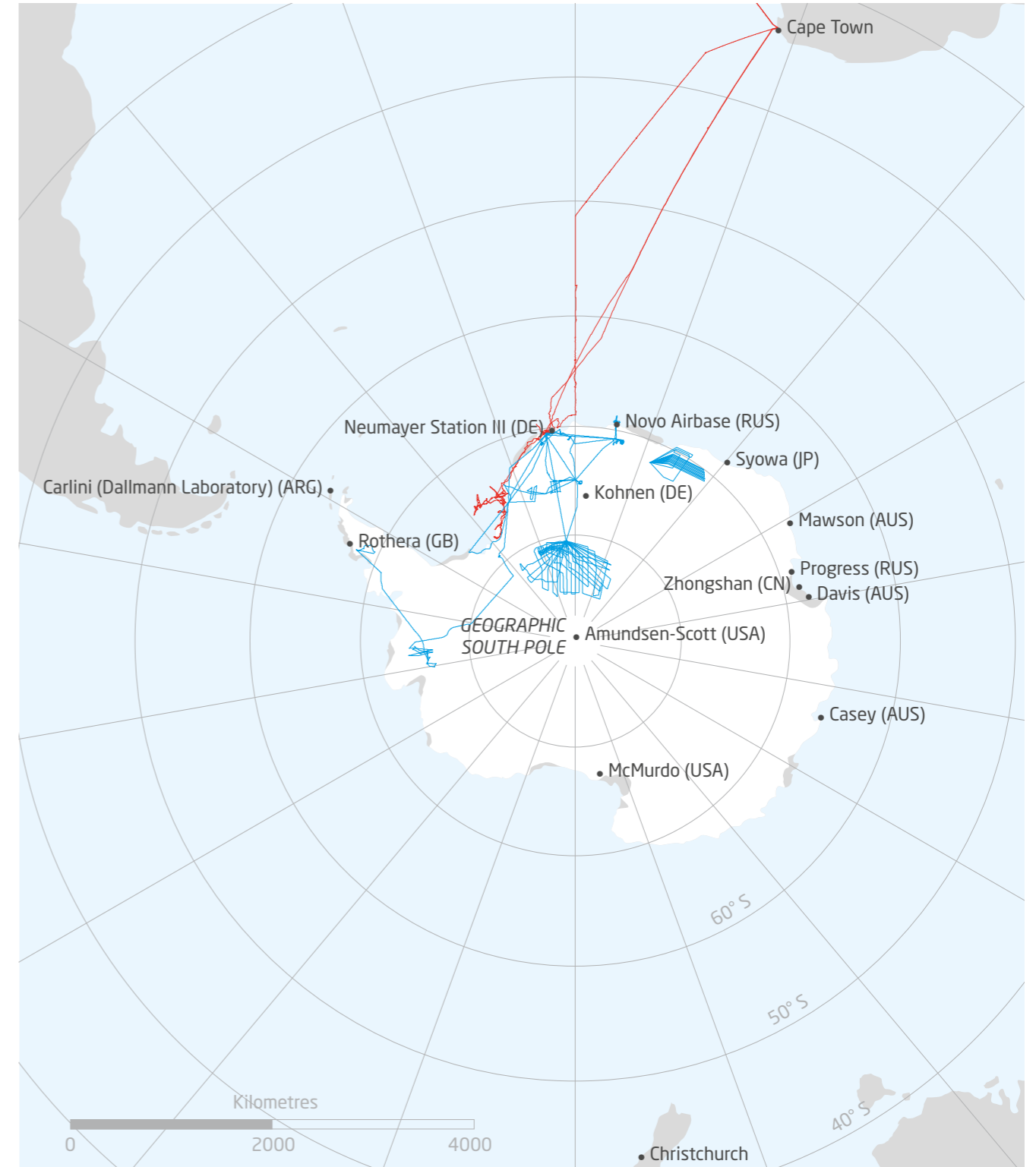
Scientific and logistical routes and flight campaigns in the North



Arktis

— Flight campaigns Polar 5 and Polar 6 — Research Vessel Polarstern — Research Vessel Heincke

Scientific and logistical routes and flight campaigns in the South



Antarktis

— Flight campaigns Polar 6 — Research Vessel Polarstern

Media Response

With over 8,700 news items in 2014, the Alfred Wegener Institute was once again extremely active in the German media. While the number of items was actually higher than in the previous year (2013: over 8,500), with more than 550 million readers, listeners and television viewers, the audience reached was significantly smaller (2013: 820 million).

A smaller audience, despite the consistently high number of news items, could be an indication of the current upheavals in the media system, as a result of which most classic media are now struggling with steadily declining subscriptions. Against this backdrop the AWI's communication staff faces the growing challenge of having to supplement classic media with an ever-broader mix of digital media and channels. At the same time, scientific editorial boards are becoming increasingly scarce, which means it will likely become more and more difficult to position scientific background topics in the media.

The Communications and Media Relations Department was quick to adapt to these developments, and currently uses (to the extent allowed by available staff) a broad me-

dia mix. For example, a fundamental relaunch of the AWI website began in 2014 and will be completed in 2015. Our Facebook page now has over 4,000 subscribers, and individual topics that were especially popular went viral, reaching over 100,000 readers. The AWI has its own YouTube channel and posts regularly on Twitter, while also taking advantage of more personal communications formats like guided tours, exhibitions and other public events - such as the "Open Ship", during which more than 3,500 visitors enjoyed a virtual expedition on board the Research Vessel Heincke as part of the 2014 European Maritime Day festivities in Bremen.

Thematically speaking, socially relevant topics enjoyed the most media success in 2014; namely ocean acidification and ocean warming, retreat of glaciers on Greenland, rubbish in the ocean and Arctic sea ice. Furthermore the media reported on consumer-relevant topics such as microplastics, caviar production and aquaculture. Among the scientific topics, those with a "spectacular" and hands-on focus were picked up especially often: the deep sea, iceberg scours on the ocean floor, overwintering in the Antarctic and a 3D atlas of trace elements.

Top 6 of AWI press releases according to coverage [print only]

Record decline of ice sheets: For the first time scientists map elevation changes of Greenlandic and Antarctic glaciers		43,022,778
Are there no European waters free of litter? A new study shows that all of Europe's deep seas investigated are polluted with litter		18,247,963
Pilot study reveals new findings about microplastics in wastewater		17,930,006
Megascale icebergs run aground: Finding the deepest iceberg scours to date provides new insights into the Arctic's glacial past		10,857,700
Current Sea Ice Situation: Ongoing retreat in the Arctic, new maximum in the Antarctic		9,437,918
Climate change: Earth warming already leads to significant changes in oceans		8,143,549

Imprint

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