



20 Annual Report

13 FACTS AND FIGURES





Contents

06

Foreword

07

Organization

10

Organization Chart

12

New Senior Members
of Staff

14

Staff

17

Technology Transfer

18

Scientific
Publications

Budget
19

Cooperation Partners
20

Media Response
23

Ship
Expeditions
24

Field and Air
Expeditions
25

Routes and
Flight Campaigns
26

Imprint
29

Foreword



Dr Heike Wolke

Prof. Karin Lochte

The Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), conducts excellence level interdisciplinary and long-term research in both polar regions as well as comparative research on coastal and North Sea waters. This Annual Report presents the key facts and figures relating to the AWI for 2013.

One of the most important items of our research work in 2013 concerned the winter experiment conducted in the Antarctic Weddell Sea using our research ship Polarstern. The scientists involved in the expedition were investigating two fundamental questions: "Why is the area of the Antarctic sea ice increasing slightly, whereas the Arctic sea ice is steadily shrinking?" and "What mechanisms begin to operate in the Antarctic Ocean that bring its ecosystem back to life after the long, cold and dark winter?"

Another important topic of the year was the expertise conducted on the PACES II research programme on ocean, coastal and polar systems by an international panel of experts. In the opinion of the experts, the programme ranks alongside others on a high international level and is of major relevance for polar and coastal regions. The experts rated the AWI's infrastructure

as being excellent. The positive conclusion of this expertise allows for more reliable planning in the funding period 2014-2018, so that the questions and hypotheses arising from PACES II can be addressed in more detail.

In addition to the new programme, there have also been new developments in the infrastructure. In August 2013, the research ship Mya II was commissioned at the Wadden Sea station on Sylt. Mya II is the smallest ship of the AWI fleet, but with its state-of-the-art technology it is very well equipped for coastal research. It even received the 'Blue Angel' environmental award on account of its environmentally friendly design. At the Biological Institute Helgoland, the first phase of the so-called Bluehouse/Greenhouse scheme has been completed with the inauguration of the newly constructed workshop. The aim is to establish a modern research complex with an energy balance as close to neutral as possible.

In December 2013 the Federal Minister for Research, Prof. Johanna Wanka welcomed ten stipendiaries to Germany. Each one of them comes from a different country. They began their ten-month extended education course to become marine experts under the auspices of the Centre of Excellence in Observational Oceanography. The Centre is supported by the Japanese Nippon Foundation and POGO (Partnership for Observation of the Global Oceans).

As a result of a survey conducted amongst the staff early in 2013, measures have been undertaken with the aim of improving workplace satisfaction, team cooperation, communication within the AWI, the work of the Directorate and the way expeditions are carried out. These measures will now be implemented in stages.

Please enjoy reading this report!

Prof. Karin Lochte
Director

Dr Heike Wolke
Administrative Director

Board of Governors

Chairman

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

Deputy Chairman

Staatsrat Gerd-Rüdiger Kück
Senator for Education, Science and Health, Bremen

Ministerialrat Gerd Conrad *)

Federal Ministry for Food, Agriculture and Consumer Protections
Section 613, Bonn

Ministerialdirigent Dr Peter Hoth *)

Federal Ministry for Economic Affairs and Energy, Berlin

Legation Councillor First Class

Dr Rainer Lassig
Foreign Office, Section 504, Berlin

Staatsrat Dietmar Strehl

Senator for Financial Affairs, Bremen

Ministerialrat Harald Topel

Ministry for Science,
Research and Culture, Potsdam

Dr Heide Ahrens

Ministry for Economics, Science and Transport of the Land of Schleswig-Holstein, Kiel

Michael Stark

Chief Executive of the Chamber for Industry and Commerce, Bremerhaven

Prof. Martin Claußen

(Chairman of the Scientific Board)
Max Planck Institute for Meteorology,
University of Hamburg

Silvia Schön

(Chairwoman of the Research Committee)
Bremen Parliament, Bremen

Prof. Joachim Treusch

Jacobs University Bremen

Prof. Eva-Maria Pfeiffer

University of Hamburg,
Institute for Soil Investigation

Prof. Sarah Jones

German Weather Service,
Research and Development

*) The representatives of these Federal Ministries participate in alternating 2-year cycles (Federal Ministry for Food and Agriculture represented since 1 January 2011)

As of: December 2013

Scientific Advisory Board

The President of the Max Planck Society

Prof. Peter Gruss
(since 14 June 2002)
Munich

Permanent representative

Prof. Rudolf Amann
(since 4 March 2011)
Max Planck Institute for Marine
Microbiology, Bremen

The President of the German Research Foundation

Prof. Peter Strohschneider
(since 1 January 2013)
Bonn

Permanent representative

Dr André Freiwald
(since 21 April 2008)
Senckenberg Research Institute and
Natural History Museum, Wilhelmshaven

The President of the Federal Institute for Geosciences and Natural Resources

Prof. Hans-Joachim Kumpel
(since 01 August 2007)
Federal Institute for Geosciences and
Natural Resources, Hanover

Permanent representative

Dr Christian Reichert
(since 1 October 2008)
Federal Institute for Geosciences and
Natural Resources, Hanover

The Director of the Federal Research Centre for Fisheries

(The post is vacant at present.)
(Prof. Cornelius Hammer until 01 January
2008)

Permanent representative

(The post is vacant at present.)

The Rector of the University of Bremen

Prof. Bernd Scholz-Reiter
(since 1 October 2012)

Permanent representative

Prof. Wilhelm Hagen
(since 1 February 2008)
University of Bremen

Chairman

Prof. Martin Claußen
(since 07 September 2012)
Max Planck Institute for Meteorology
Hamburg

Deputy Chairman

Prof. Konrad Steffen
(since 1 September 2009)
Swiss Federal Institute for Forest,
Snow and Landscape Research (WSL)
Switzerland

Prof. Peter Henry Burkill
(since 1 July 2007)
University of Plymouth
United Kingdom

Dr John Campbell
(since 1 July 2011)
International Association of
Oil & Gas Products (OGP)
United Kingdom

Prof. Michael P. Meredith
(since 1 January 2013)
British Antarctic Survey (BAS)
Leader, Polar Oceans Research
Programme
United Kingdom

Prof. Douglas W. R. Wallace
(since 1 July 2007)
Canada Excellence Research Chair
in Ocean Science and Technology (CERC)
Canada

Prof. Dorthe Dahl-Jensen
(until 1 July 2012)
Niels Bohr Institute
Denmark

Dr Leif Gunnar Anderson
(since 1 July 2007)
Göteborg University
Sweden

Prof. Vladimir E. Romanovsky
(since 1 January 2013)
University of Alaska Fairbanks
Geophysical Institute UAF
Alaska, USA

Scientific Council

Chairmen

Prof. Thomas Brey
Prof. Thomas Jung (Deputy)


Members

Dr Ragnhild Asmus (to 31 Sept. 2013)
Prof. Antje Boetius
Prof. Thomas Brey
Prof. Alan Cembella
Prof. Klaus Dethloff
Dr Bernhard Diekmann
Prof. Philipp Fischer
Prof. Rüdiger Gerdes
Dr Christian Hass
Dr Christoph Held
Prof. Wolfgang Hiller
Prof. Hans-Wolfgang Hubberten
Prof. Wilfried Jokat
Prof. Thomas Jung
Prof. Torsten Kanzow (since 1 Nov. 2013)
Dr Rainer Knust
Prof. Gerrit Lohmann
Dr Bettina Meyer
Prof. Hans-Otto Pörtner
Prof. Claudio Richter
Prof. Ursula Schauer
Prof. Michael Schlüter
Dr Michael Schröder
Prof. Ralf Tiedemann
Dr Ulrike Wacker
Prof. Karen Wiltshire
Prof. Dieter Wolf-Gladrow

Permanent guests

Dr Angelika Dummermuth
AWI's Equal Opportunities Officer
Dr Stefan Hain
Prof. Peter Lemke
Prof. Karin Lochte
Dr Uwe Nixdorf
Margarete Pauls
The AWI Staff Council
Ralf Röchert
Dr Eberhard Sauter
Dr Almut Schmengler
Dr Heike Wolke

Organization Chart

 ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG		
Scientific Advisory Board Prof. M. Claußen	International Offices	Board of Prof. K. Lochte <hr/> Prof. R. Tiedemann
	National Offices	
	User Boards for Large Equipment	Directora Dr A. Dum
		Staff

Scientific Divisions, Technologies and Services	
Geosciences Prof. R. Tiedemann	Biosciences Prof. D. Wolf-Gladrow
Geophysics Prof. W. Jokat	Polar Biological Oceanography Dr B. Meyer (acting)
Glaciology Prof. A. Humbert (acting)	Marine Biogeosciences Prof. D. Wolf-Gladrow
Periglacial Research Prof. H.-W. Hubberten	Functional Ecology Prof. T. Brey
Marine Geology and Palaeontology Prof. R. Tiedemann	Benthopelagic Processes Prof. C. Richter
Marine Geochemistry Prof. M. Schlüter	Integrative Ecophysiology Prof. H.-O. Pörtner
	Ecological Chemistry Prof. A. Cembella
	Shelf Sea System Ecology Prof. K. Wiltshire
	Coastal Ecology Prof. K. Wiltshire (acting)
	HGF-MPG Joint Research Group for Deep-Sea Ecology and Technology Prof. A. Boetius

Junior Research Groups			
Prof. O. Eisen	Prof. H. Lantuit	Dr H. Flores	Dr B. Rost
Prof. G. Mollenhauer	Dr V. Schlindwein	Dr M. Wegner	Dr K. Metfies
Dr G. Grosse	Prof. I. Weikusat	Prof. S. Trimborn	



Directors Dr H. Wolke Prof. K. Wiltshire	Internal Boards Scientific Council Ombudsman Equal Opportunities Officer Staff Council	Board of Governors MinDir Dr K. E. Huthmacher
Public Relations Office mermuth		
Units		

	Infrastructure / Administration
Climate Sciences Prof. P. Lemke	Logistics and Research Platforms Dr U. Nixdorf
Atmospheric Circulation Prof. K. Dethloff	Computing and Data Centre Prof. W. Hiller
Polar Meteorology Dr U. Wacker	Library M. Brannemann
Observational Oceanography Prof. T. Kanzow	Scientific Workshop E. Dunker
Climate Dynamics Prof. T. Jung	Human Resources C. Ruholl
Sea Ice Physics Prof. R. Gerdes	Corporate Finances C. Ungermann
Palaeoclimate Dynamics Prof. G. Lohmann	Purchasing Department J. Eilers
	Administration and Organization M. Bong
	Construction and Facility Management M. Krüger
	Technology and Environmental Protection G. Tautorat

Prof. A. Bracher Dr T. Laepple

New Senior Members of Staff



Prof. Torsten Kanzow has headed the Observational Oceanography section of the Climate Sciences Division since October 2013.



Marion Krüger was appointed Head of Construction and Facility Management in May 2013.



Carlo Ungermann has headed the Finance Department since March 2013.



Prof. Scarlett Trimborn has headed the ECOTRACE (Role of Trace Metals on Antarctic Phytoplankton Ecology) Helmholtz Junior Research Group that is located in the Biosciences Division in Bremerhaven.



Dr Thomas Laepple has headed the ECUS (Estimating Climate Variability by Quantifying Proxy Uncertainty and Synthesizing Information Across Climate Archives) Helmholtz Junior Research Group at the Potsdam research site since February 2013.

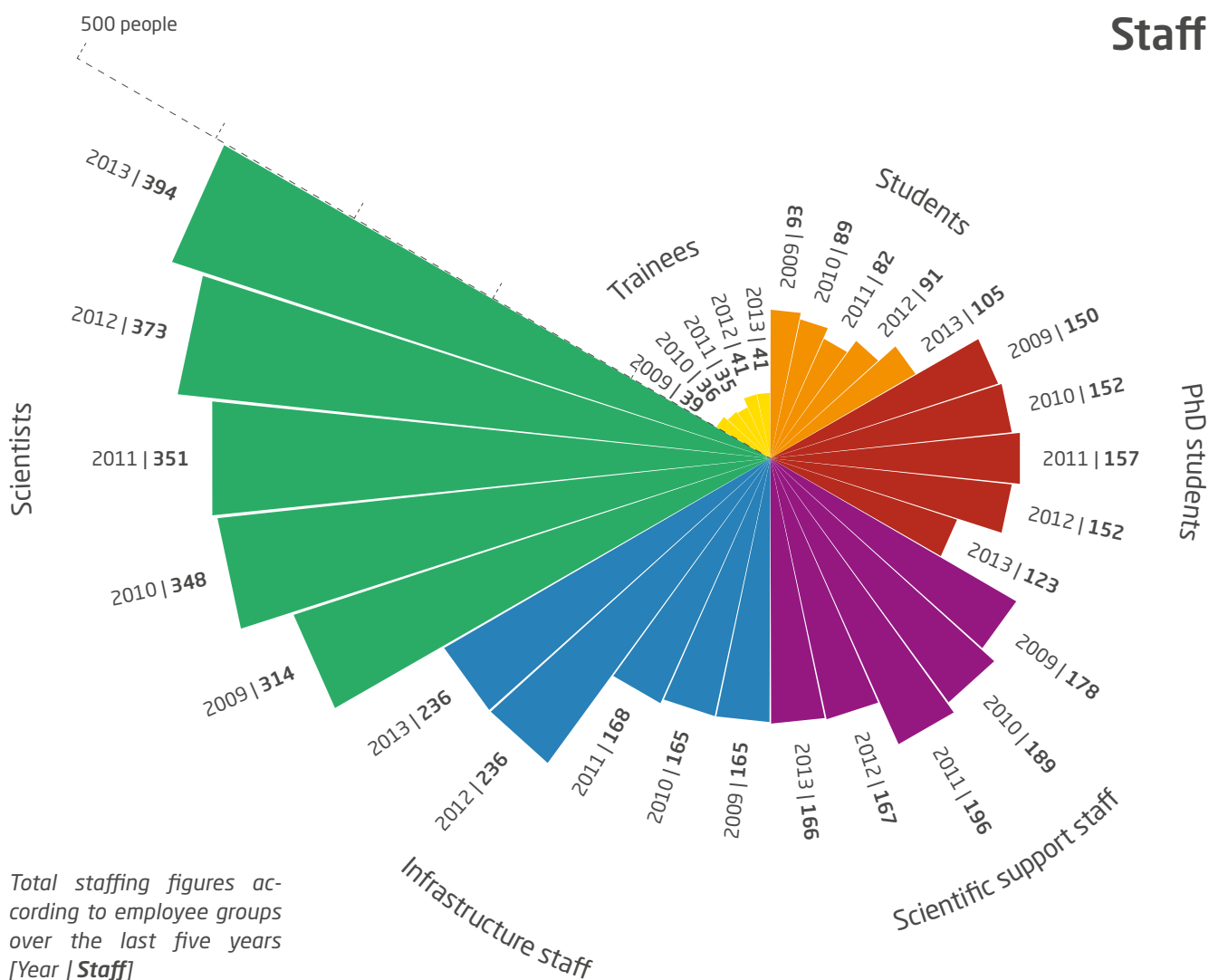


Dr Guido Grosse has headed the PETA-CARB (Rapid Permafrost Thaw in a Warming Arctic and Impacts on the Soil Organic Carbon Pool) ERC Junior Research Group at the Potsdam research site since November 2013.



Dr Mathias Wegner and his Emmy-Noether Group studying 'Coastal Ecological Genetics' joined the AWI in January 2013. The group is working at the Wadden Sea station in List on Sylt.

Staff



Total staffing figures according to employee groups over the last five years [Year | Staff]

	2009	2010	2011	2012	2013
Trainees	39 38	36 44	35 43	41 41	41 39
Students (Bachelor's, Master's, Diploma)	93 59	89 48	82 49	91 46	105 48
PhD students	150 60	152 59	157 55	152 53	123 57
Scientific support staff (technicians, engineers)	178 52	189 47	196* 48	167 53	166 54
Infrastructure staff (administration, logistics, support units)	165 59	165 60	168 62	236* 59	236 57
Scientists	314 34	348 36	351 37	373 39	394 39
Total	939 49	979 47	989 48	1,060 48	1,065 48

Total | Proportion of women [%]

* The percentage increase in the infrastructure personnel can be accounted for to some extent by restructuring measures for service personnel (e.g. divers, specialists in the computer centre)

Staff Development Measures

A broadly based staff survey was conducted in January and February 2013 which included providing staff members with the opportunity to express their views on a wide variety of topics: individual job satisfaction, cooperation in teams and across teams, communication, the work of the Directorate etc. The feedback was very good, with 66% of those invited to take part doing so. After the survey was completed, the results obtained from all sections and departments, as well as suggestions for improvement of the development areas that had been identified were discussed in workshops and meetings held on various levels. A concrete catalogue of measures is currently being devised in order to prioritize the measures, lay down the schedule for their implementation and determine responsibilities.

The AWI's further education programme was reorganized in 2013 and is now more closely integrated with the staff / senior staff talks. In-house further training is now more directly oriented towards the needs of individual members of staff and more often carried out in the form of small-group work or individual coaching.

A newly established task force for the recruitment of younger members of staff has completed a survey of conditions surrounding the furtherance of younger members of staff at the AWI. The task force has presented a comprehensive strategic plan for such furtherance that includes all individual measures, their entry requirements, aims and results. This now forms the basis for developing and evaluating future measures.

Balancing Responsibilities for Work and Family

The question as to how staff members can find a proper balance between their work and the needs of their families has become a central issue at the AWI. A broad consensus exists within the Institute as to the need for improvement here, and this is reflected particularly in the day-to-day work. This includes, amongst other things, the following individual measures on the part of the Families Office:

- In 2013, an average of 12 children took part in holiday programmes on 37 programme days, equivalent to 420 participant days.
- The organization's own day nursery that can accommodate 20 children.
- Individual help and advice for new employees.

As of September 2013, the AWI has a new member of staff in the Families Office who is responsible for the organization and implementation of various measures connected with balancing the responsibilities for work and looking after next-of-kin.

Employees from all divisions of the organization take advantage of the schemes being offered. The idea of 'family-friendliness' at the Alfred Wegener Institute is put into tangible practice thanks to the active participation of staff members and the support of the Directorate.



Equal Opportunities

The proportion of female members of staff remained unchanged in 2013 at 48%. Some minor shifts across the various employment groups took place: Amongst the PhD students, the proportion of female students increased by 4% to 57% compared with the previous year. This quota is matched in the infrastructure personnel figures. Here, however, the figure represents

a reduction of 2%. Of the scientific support personnel (technical assistants, engineers), 54% are now women, 1% more than in 2012. The number of female students increased from 46% in 2012 to 48% in 2013, whereas amongst the trainees it fell from 41% to 39%. There was no change in the percentage of women working as qualified scientists, namely 39%.

Staff at the various AWI locations

Staff in **No. of persons** | Full-time equivalents

AWI in total	as of 31 December 2013
Permanent staff	451 421.47
Limited-term contract staff	614 579.44
Total	1,065 1,000.91
of these, third-party financed	273 255.61
of these, international	108 no data



Bremerhaven	80%
Permanent staff	361 335,71
Limited-term contract staff	491 465,06
Total	852 800,77
of these, third-party financed	215 199,50
of these, international	83 no data

Potsdam	11%
Permanent staff	38 37
Limited-term contract staff	75 70.40
Total	113 107,40
of these, third-party financed	39 38.20
of these, international	16 no data

Heligoland	6%
Permanent staff	37 35,05
Limited-term contract staff	30 27,80
Total	67 62,85
of these, third-party financed	9 9
of these, international	4 no data

Sylt	3%
Permanent staff	15 13,71
Limited-term contract staff	18 16,18
Total	33 29,89
of these, third-party financed	10 8,91
of these, international	5 no data

Technology Transfer

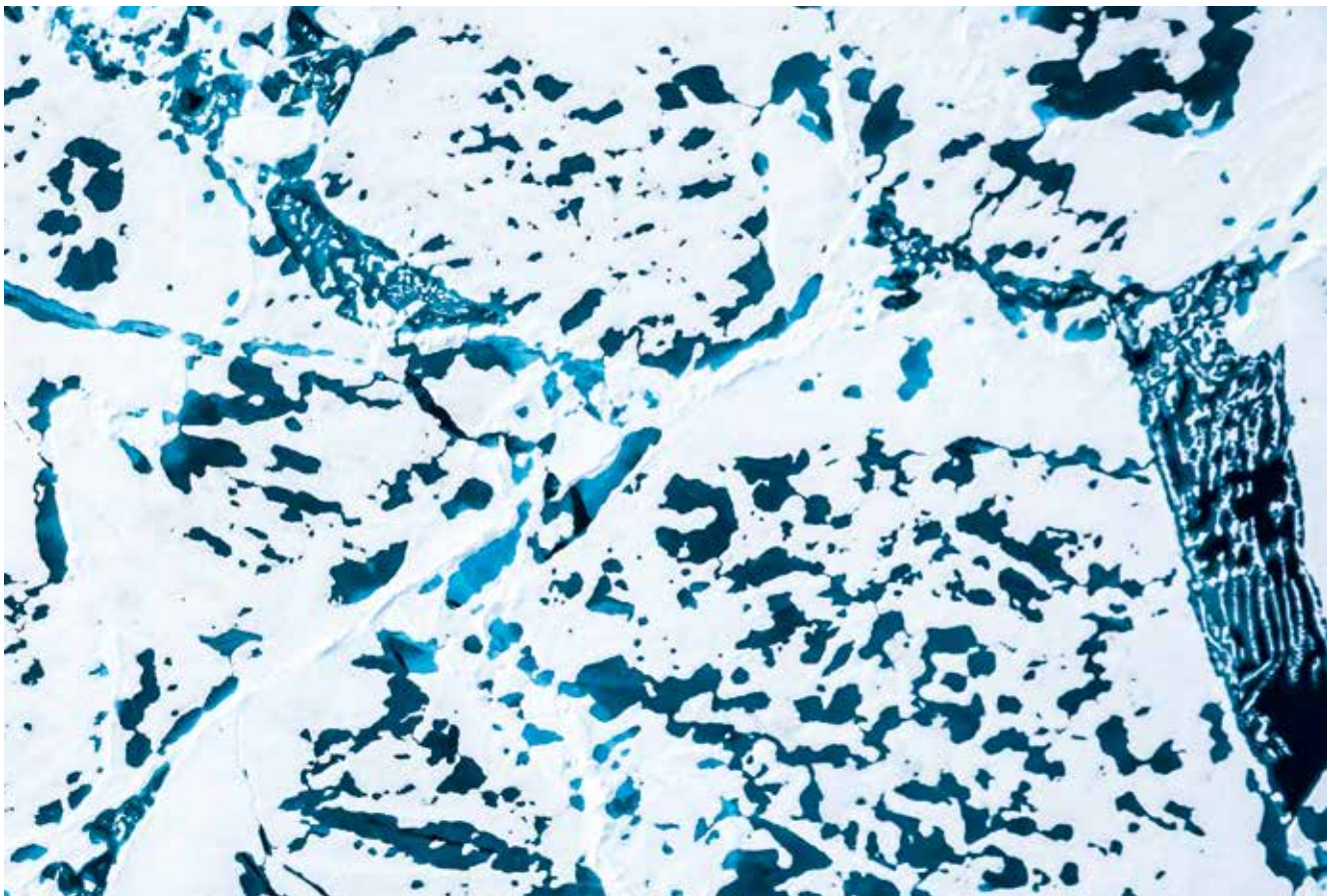
During the reporting period, the Technology Transfer staff unit continued to put most emphasis on the areas of bionic lightweight construction, natural marine materials and ice advisory services for the Arctic.

The 'MarNaS' (Marine Natural Substance Synthesis) pre-seed project conducted under the auspices of Helmholtz Enterprise ran according to schedule until the end of July. The aim was to achieve production of an initial basis material, i.e. the successful synthesis of Ageladine A, fluorescent pigment as an *in vivo* pH indicator. In parallel with this, market surveys were conducted and spin-offs planned. After the 5 founders (employed with AWI) had concluded a partnership agreement, MarNaS Biochemicals GmbH was officially registered on 27 September 2013.

The staff unit continues to promote the possibility of establishing 'Drift & Noise' as a company under the auspices of AWI. The sea ice group is planning to provide commercial services in the fields of ice dynamics,

ice thickness, on-site measurement and data evaluation. In cooperation with the marketing service provider engage AG, a successful Helmholtz Enterprise application was lodged following an initial market survey. The pre-seed project aimed at detailed structuring of the business model started in June 2013.

One important focal area of these efforts to achieve marketability is that of bionic lightweight construction being pursued by the ELiSE-AWI-IMARE Joint Research Group. In view of the present unreliable planning situation for offshore wind energy projects, a marketing campaign is to be launched in cooperation with the IMARE to draw up a marketing plan for the corresponding AWI property rights. The aim is to analyse the still extremely divergent value-added chains of relevant German and other European offshore wind energy plant manufacturers and energy suppliers in order to find suitable validation and/or exploitation partners. Going beyond this, intensive efforts are being undertaken to acquire reference projects for ELiSE engineering in the automotive, aerospace and architectural sectors.



Arctic Ocean: Melt ponds on the fragmented sea ice sheet

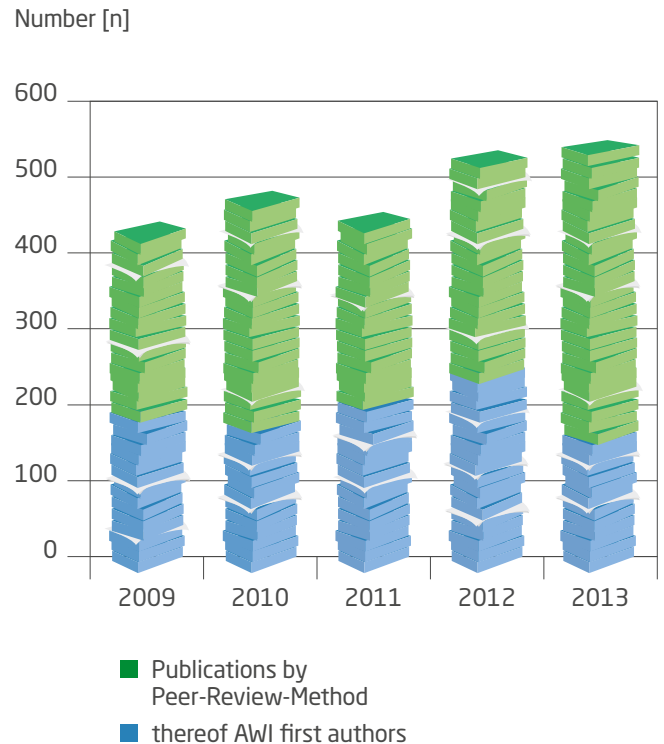
Scientific Publications

The scientists of the Alfred Wegener Institute published 538 items in the course of 2013 (source: Web of Science, 20 February 2014). In 254 cases, AWI scientists were named as the lead author. The countries with which the most intensive cooperative efforts were undertaken were the USA, the United Kingdom, France, Norway, Russia and Canada. Nearly ten percent of the publications were written in cooperation with the University of Bremen.

By way of ranking the AWI's published output on an international level, it was analysed in the Web of Science platform according to the subject foci 'Arctic', 'Antarctic', 'Coastal Research' and 'Marine Research'. Of the 2771 publications on the subject 'Arctic' that were published worldwide in 2013, 13% originated from German research institutes. This put Germany in fourth place after the USA, Canada and Norway. Within Germany itself, the AWI takes the lead regarding publications on the Arctic, cooperating in the majority of cases with Russia, Norway, the USA and Canada.

Of the 2700 publications on the subject 'Antarctic', 12% came from German research institutes. Here, Germany took third place after the USA and the UK. Only 8% of these publications overlap with the 'Arctic' category. Using the benchmark 'number of publications on the Antarctic per research institute', the AWI ranks number two after the British Antarctic Survey. On the national scale, the AWI published the most items on the 'Antarctic' subject complex. Cooperative publications were produced mainly together with the USA, the UK, France, Switzerland, Australia, Norway and Italy.

There were 27,151 publications on the subject of marine research in 2013, and of these German research institutes accounted for 8%, ranking fourth after the USA, China and the UK. In terms of the numbers of items published per research institute, the AWI takes first place within Germany by a small margin. The most important partner countries in the field of marine research were the USA, the UK, France, Norway, Canada, the Netherlands, Russia, Japan, Sweden and Switzerland. Of the 17,068 publications on the subject of coastal research, 7% came from German research institutes. Again, Germany ranked amongst the first four countries, with the USA, China and the UK. Of the German institutions, AWI and GEOMAR published the most items on coastal research. The most important partner countries in this field were the USA, the UK, Russia, Canada, France, Norway and the Netherlands. 93% of the coastal research publications overlap with those from the field of marine research.



AWI scientific publications over the last five years. In order to determine the number of lead authors, the analysis of the total publications was repeated retrospectively for 2009-2012. This explains why there are slight discrepancies between these figures and those given in previous reports.

Budget

	CURRENT on 31 Dec. 2012 (unit: thousands of €)				PLANNED 2013 (unit: thousands of €)			
	Bremerhaven	Helgoland Sylt	Potsdam	total	Bremerhaven	Helgoland Sylt	Potsdam	total
Operation								
Staff	30,131	3,946	3,128	37,205	27,120	4,609	3,034	34,763
Materials and Equipment	54,099	6,393	2,560	63,052	46,696	5,688	1,920	54,304
Investments								
Current investments	9,467	1,077	732	11,276	11,847	736	748	13,331
Investments > € 2.5 million	4,012	4,856	31	8,899	4,100	1,320	5,719	11,139
Income								
Revenues and profits	-5,267	-1,208	-13	-6,488	-1,500	-500	0	-2,000
Reserves								
Total	92,442	15,064	6,438	113,944	88,263	11,853	11,421	111,537
Third-party funding	17,475	938	1,576	19,989	18,000	1,000	1,000	20,000
Source of third-party funding								
	Helmholtz	BMBF	DFG		EU			others
(unit: thousands of €)	3,000	8,000	3,000		3,500			2,500

Major projects inaugurated in 2013 under AWI management or with AWI participation

IMCONet

Interdisciplinary Modelling of Climate Change in Coastal Western Antarctica - Network for Staff Exchange and Training, AWI coordinated EU joint project with 16 participants, international staff exchange; first project of this kind with Helmholtz Association participation

PI: Dr Doris Abele
 Term: Feb. 2013 - Jan. 2017
 Funding: €858,900
 (of these, AWI): €197,400

PolarTime

Biological Timing in a Changing Marine Environment, Helmholtz Virtual Institute

PI: Dr Bettina Meyer
 Term: Jan. 2013 - Dec. 2017
 Funding: €2,986,971

StratoClim

Stratospheric and Upper Tropospheric Processes for Better Climate Predictions, EU joint project with 28 participants

PI: Dr Markus Rex
 Term: Dec. 2013 - Mar. 2018
 Funding: €8,548,478
 (of these, AWI): €3,798,929

CARBOPERM

Carbon in Permafrost: Formation, Turnover and Release, Federal Ministry for Education and Research project, logistical coordination

PI: Prof. H.-W. Hubberten
 Term: Oct. 2013 - Sep. 2016
 Funding: €793,722

Cooperation Partners

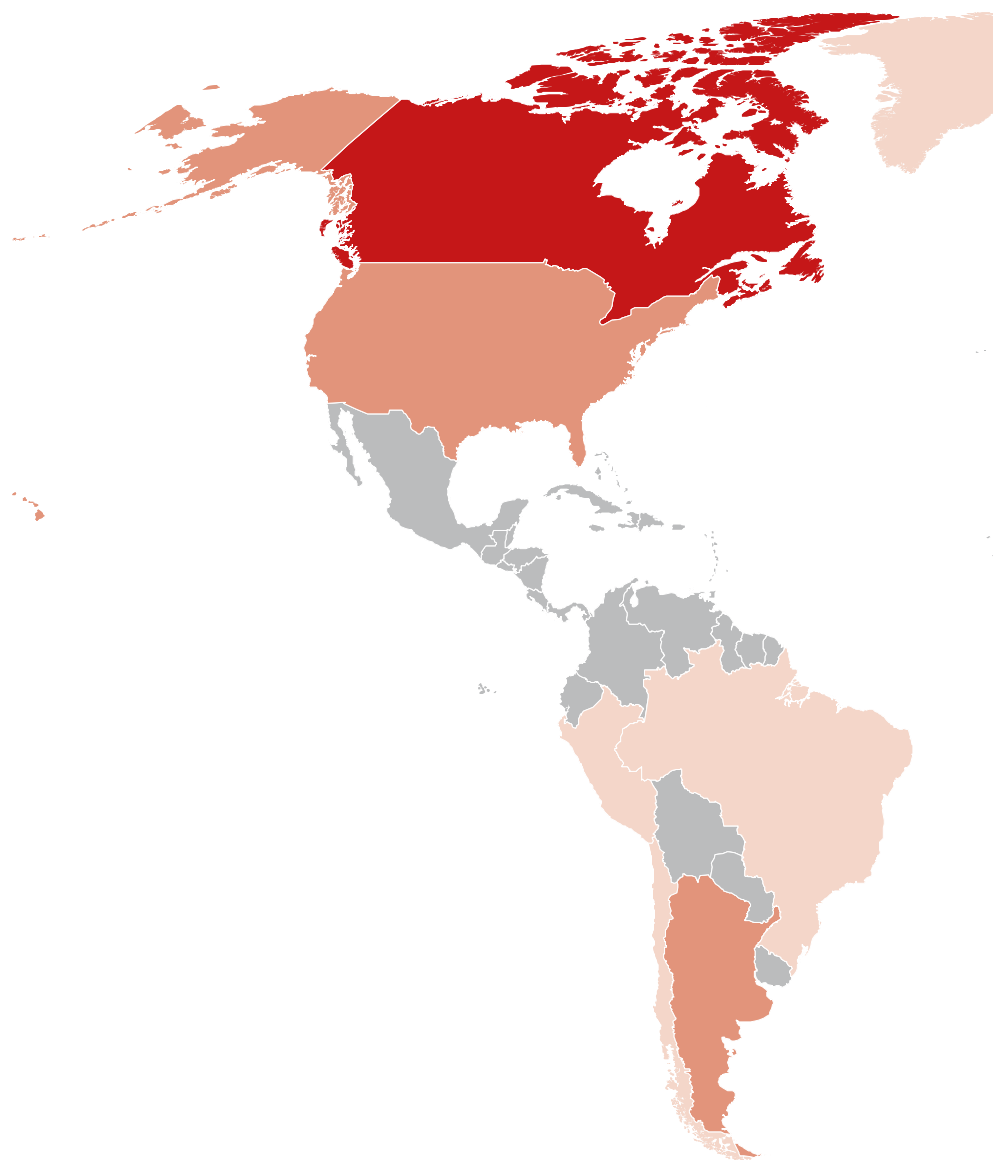
International cooperation

National and international cooperations with universities and other organizations are an important basis for scientific research. Cooperation promotes synergetic benefits and helps to network the best brains and ideas so as to be able to meet the greatest challenges of our time such as climate change.

During 2013, four cooperative schemes with foreign partners were either concluded or extended, including a superordinated Memorandum of Understanding (MoU) with the Royal Netherlands Institute for Sea Research (NIOZ). The aim of this agreement is to provide for a general intensification of the cooperation between these two institutions. The Netherlands have also expressed considerable interest in joining the present partnership between Germany and France in Ny-Ålesund at the AWIPEV Research Base. The AWI is very much in favour of Dutch participation, and negotiations are already being conducted.

In 2013, the AWIPEV Research Base on Spitsbergen celebrated the tenth anniversary of cooperation between the AWI and the French Institut Polaire 'Paul Emile Victor' (IPEV). As part of the celebrations the previous Director of the IPEV, Dr Gerard Jugie, was presented with the Order of Merit of the Federal Republic of Germany on 19 April in the German Embassy in Paris. The official AWIPEV celebrations were held on 27 April in Ny-Ålesund on Spitsbergen. Dr François-Xavier Lannuzel, Scientific Attaché at the French Embassy, was amongst the guests.

On 27 June the President of Iceland, Dr Ólafur Ragnar Grímsson, visited the AWI together with a delegation of 30 representatives from the areas of politics, economics and the sciences. After touring the Institute, President Grímsson discussed questions

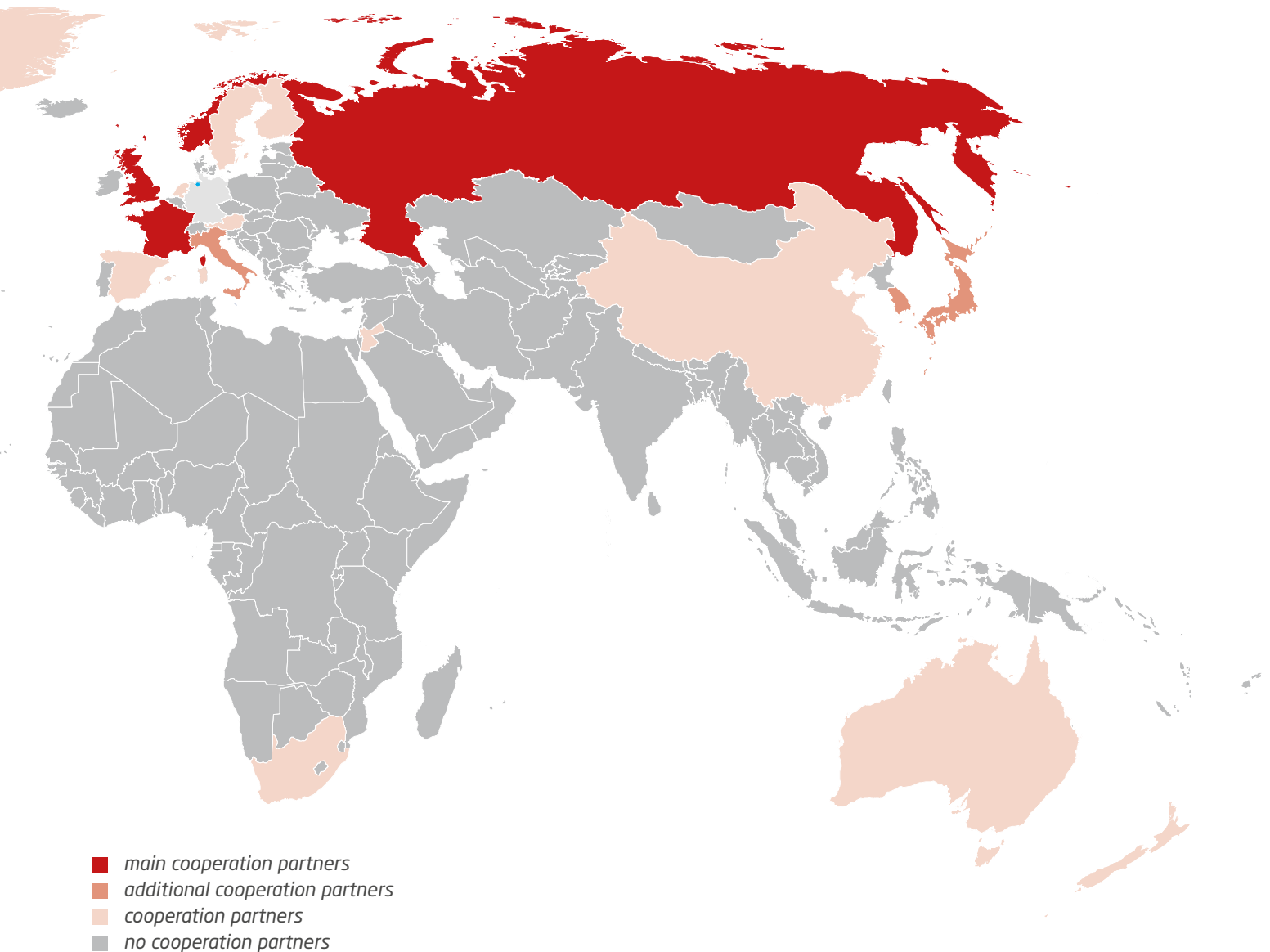


of changes in Arctic sea ice and the effects of climate change on fisheries with Prof. Karin Lochte and other AWI scientists.

Prof. Karin Lochte took part in a journey to Asia headed by the President of the Helmholtz Association, Prof. Jürgen Mlynek. The aim of the journey was to intensify cooperation with China, Japan and Korea. Amongst other things, an MoU was concluded with the National Institute of Polar Research (NIPR) in Tokyo. Currently,

a workshop is being planned for September 2014 that will be attended by the German institutions AWI, GEOMAR and MARUM and NIPR and JAMSTEC from Japan.

The AWI is continuing its intensive efforts to strengthen strategic cooperation with Canadian partner organizations. Between 26 May and 1 June, Prof. Lochte and a delegation consisting of eight AWI scientists visited various facilities and research institutes in Canada, together with Jennifer



Decker of the Canadian Embassy. The institutions visited included the Halifax Marine Research Institute at Dalhousie University, the Canadian Polar Commission in Ottawa, ArcticNet at Laval University in Quebec and the University of Manitoba in Winnipeg. As a cooperation partner, Canada is especially relevant for the AWI's Arctic research. After this journey was over, the AWI held an internal workshop to discuss and prioritize the regional and thematic focal points of future cooperation with Canada. As

a result of this, the most important Canadian partner is to be seen in ArcticNet, a Network of Excellence that runs mainly under the auspices of the Universities of Laval and Manitoba. On the basis of small-scale projects that are already under way, one or two major projects are to be initiated. This is expected to provide the basis for a period of long-term cooperation. As early as 2014, Canadian scientists from ArcticNet will participate in an expedition to the Arctic with RV Polarstern.

The AWI is also interested in strengthening ties with Norwegian organizations. Alongside France, Norway already represents AWI's most important European partner for Arctic research. A MoU is currently being prepared for conclusion with the newly founded University of the Arctic in Tromsø. Closer cooperation is also envisaged with the Bergen Research Cluster. One important common project is the Svalbard Integrated Observing System (SIOS) that is to be implemented on Spitsbergen as an ESFRI infrastructure.

National cooperation

The question of communicating research results to society at large is gaining steadily in relevance. The AWI has already responded to this need with the establishment of the 'Klimabüro' ('Climate Bureau') and 'Nordseebüro' ('North Sea Bureau'), and is also contributing to the Helmholtz 'Earth System Knowledge Platform' (ESKP) initiative. The aim of this initiative is to prepare and present research results for a variety of user groups. In the initial phase, the participating Helmholtz Centres are concentrating on the areas of 'effects of climate change', 'pollutants and how they are transported' and 'natural geological hazards / extreme meteorological events' according to their own specific areas of expertise.

In February 2013, the AWI hosted the first Arctic Workshop, inviting representatives from various Federal Ministries and subordinated authorities, as the first of a series under the heading of 'Arctic Dialogue'. The following German federal ministries and authorities are participating in the Arctic Dialogue: the Ministry of Education and Research, the Foreign Office, the Ministry of Economics and Energy, Ministry for the Environment, Ministry of Transport, Ministry of Defence, the Federal Agency for Nature Protection, the Johann Heinrich von Thünen Institute / Institute for Sea Fisheries, the Federal Institute for Geosciences and Natural Resources, the Institute for Advanced Sustainability Studies and the German Institute for International and Security Affairs. This forum for bringing together politics and science has already borne fruit, bringing about closer networking between the various organizations, more intensive common efforts and mutual exchange of information. The AWI has contributed to the latter aspect through the provision of an information platform on its web presence. Authorized users can access relevant documents here.

During 2013, the AWI was heavily involved in intensifying the existing cooperation with the Universities of Oldenburg and Bremen. Together with the Institute for Chemistry and Biology of the Marine Environment at the University of Oldenburg, it is planned to develop the long term focal research area of marine functional biodiversity. The AWI and the University of Oldenburg complement each other very well as far as their core areas of competence, their staffing and their infrastructural organization are concerned, and together they expect to achieve an outstanding position in this field. They have already begun to contribute to the 'Intergovernmental Platform on Biodiversity and Ecosystem Services' (IPBES) with their research activities, for instance through assessment of biodiversity and ecosystem services in coastal waters and the polar oceans, including deep sea regions.

The cooperative efforts between the AWI and the University of Bremen can already be seen in the form of 18 professorial chairs being held by AWI staff in the areas of physics, biology and chemistry and the geosciences. The aim is to intensify this cooperation further to include the social sciences and humanities as well. In order to do justice to the various aspects of marine research, we need to strengthen the ties between the natural scientific faculties and engineering, law, economics and the social sciences. This more holistic approach greatly increases the relevance of the research for society as a whole.

To this end, the AWI and the Zentrum für Marine Umweltwissenschaften (Centre for Marine Environmental Sciences, MARUM) have developed a concept for a 'Campus Alliance' for marine research and marine technology. The aim of the Campus Alliance is to create a unique research centre for marine sciences in order to be able to

conduct interdisciplinary, marine-related research on earth systems at a global scale. The Campus Alliance will represent a well-structured training and advancement architecture covering the whole range from initial studies to world-class research. In addition, the Alliance is to play a major international role in the operation and development of underwater technologies and data and information systems for marine earth system research.

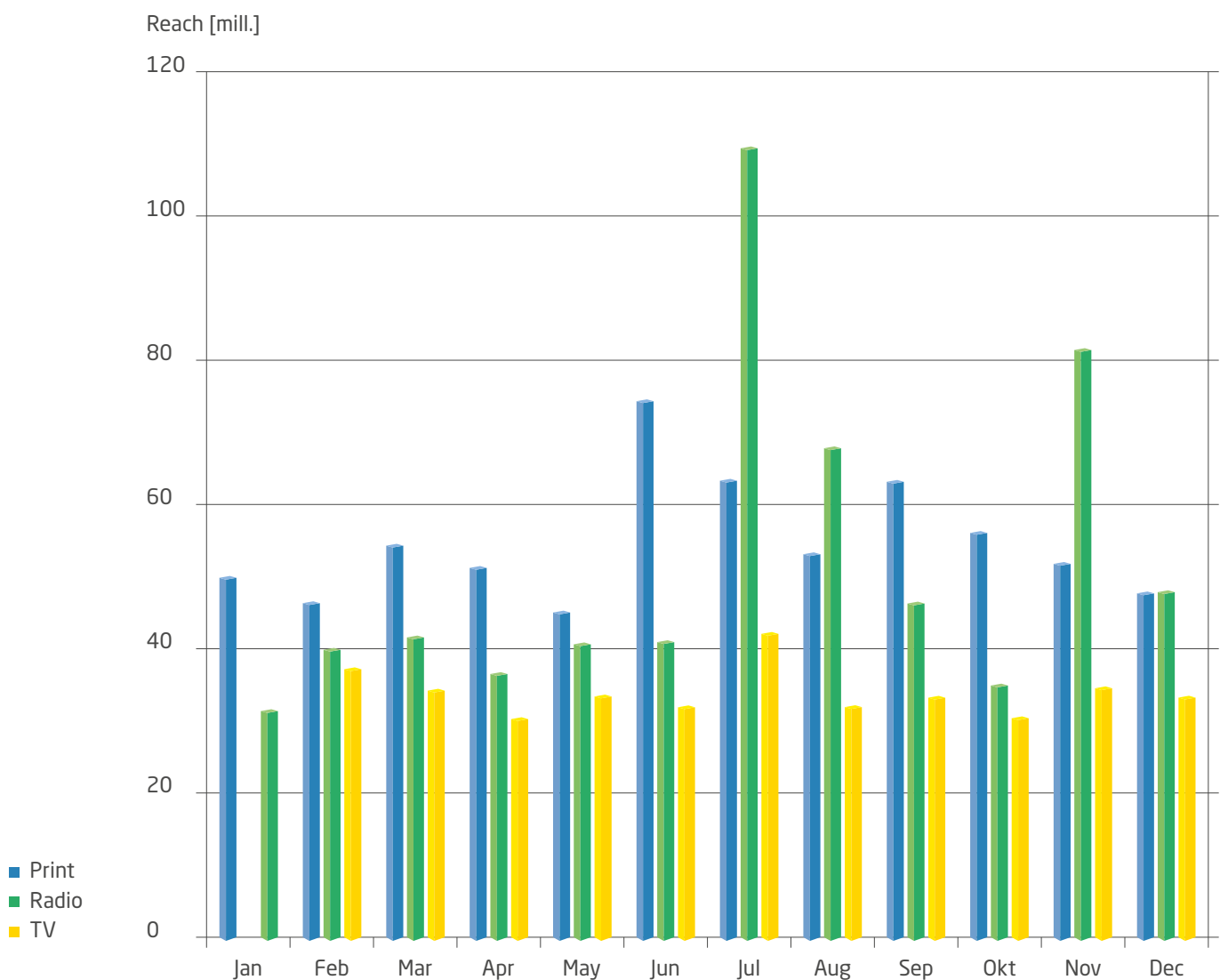
At present, the AWI is involved in over 90 contractually agreed scientific cooperation projects with German universities and other higher education institutions, as well as with non-university research facilities and public bodies. All the professorial chairs at the AWI are held in common with the University of Bremen, the Jacobs University Bremen and the Bremerhaven University of Applied Sciences, as well as the Universities of Potsdam, Kiel, Oldenburg and Göttingen. New networks are developing and existing ones are constantly being rejuvenated as young researcher groups, graduate programmes and science clusters evolve and grow.

Media Response 2013

During 2013, the Alfred Wegener Institute was mentioned in over 8,500 media items including radio, television and print media. An analysis of coverages and audience ratings revealed that over 822 million media contacts were established. In other words, every person in Germany heard, read or saw ten items about the Alfred Wegener Institute on a statistical average. The greatest coverage was given to the following topics (cf. figure): press releases in June on the ozone hole and the start of the Polarstern winter experiment; in July the CCAMLR meeting in Bremerhaven for talks on marine protection areas and a press release on glass sponges; in September, communications about temperature

increases in the Greenland Sea and the sea ice minimum extent, and in November, the debate about military research.

One highlight of the period covered by this report was the coverage provided by a ZDF film team that accompanied a Polarstern expedition from January to March 2013, reporting directly from on board ship on national television news-casts and morning and midday magazines, amongst others. The internet blog has attracted many positive comments from its readers (<http://blog.zdf.de/ice-blog/>). Two documentaries on the expedition rounded off the journalistic coverage.



Ship Expeditions

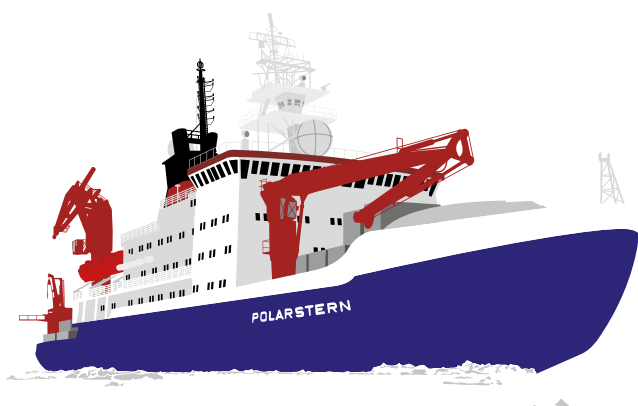
The Alfred Wegener Institute provides ships, stations and aircraft for German polar and marine research purposes. The following tables and figures show which expeditions received support. On 13 August 2013, a new research platform was inaugurated: In List on Sylt Schleswig-Holstein's Minister for Science, Prof. Waltraud Wende and representatives of the Federal

Ministry for Education and Research witnessed how the research ship Mya II entered service. After the ceremony, the ship was open to public viewing. As well as this, the project to provide a successor to the research and supply ship Polarstern being headed by the Federal Ministry for Education and Research made further progress during the reporting period.

Research vessels	Expeditions	Participants Germany	Participants Abroad	Days of deployment	Harbour/docks	Man days (of which AWI)
RV Polarstern	8	266	87	326	39	14,697 (5,721)
RV Heincke	31	400	0	265	100	2,578 (820)

Stations	Projects	Participants Germany	Participants Abroad	Days of deployment	Man days (of which AWI)
Arctic					
AWIPEV Research Base <i>permanently manned</i>	35	61	31	365	2,400 (1,052)
Samoylov Station <i>summer station</i>	16	31	7	157	1,167 (513)
Antarctic					
Neumayer Station III <i>permanently manned</i>	18	54	8	365	2,873 (90)
Kohnen Station <i>summer station</i>	2	22	4	65	769 (580)
Dallmann Laboratory at the Carlini Station (Argentina) <i>summer operation</i>	15	22	16	150	1,267 (85)

Native countries of international scientists on Polarstern expeditions in 2013 [%]



Field and Flight Expeditions

Field Expeditions	Projects	Participants Germany	Participants Abroad	Days of deployment
Arctic				
Yakutia	1	6		35
Pokhodsk, Yakutia	1	4		34
Khatanga, Krasnojarsk	1	5		51
Russia, Buor-Khaya	1	10		20
Russia, Muastach Island, Bykovsky	1	2		20
Greenland, inland ice	1	3		30
Johan Hijort (Norwegian ship), Barents Sea	1	1		22
Canada, Nettilling Lake	1	1		9
Canada, Yukon Coast	1	8		72

Aircraft	Projects	Flight hours Scientific	Flight hours Logistics incl. ferry	Total hours
Arctic				
Polar 5	4	224	96	320
Polar 6	0	0	0	0
Antarctic				
Polar 5	0	0	0	0
Polar 6	12	230	201	431

Equipment (provision of polar clothing, field equipment)	Projects	Participants Germany	Participants Abroad
Ship expeditions	39	666	87
Station operations	86	190	66
Flight missions	16	33	3
Field missions	9	40	0

Expedition to the Extreme - the 2013 Winter Experiment

In 2013, Polarstern's qualities as an icebreaker were thoroughly tested: The ship conducted two expeditions during the Antarctic winter. Only a few research ships in the entire world are equipped for such tasks. Not surprisingly, therefore, there was a great demand for places on board. 49 researchers from institutions in ten countries took part in the first part of the winter experiment, and on the second stage 51 scientists

from nine countries were involved. The ship and the people on board coped with temperatures of less than 30 degrees Celsius, icy winds and weeks of darkness during the polar night. The researchers are now hard at work analysing the raw data and the valuable samples obtained from this almost inaccessible part of the globe.

Routes and Flight Campaigns

Scientific and logistical routes and flight missions in the north



Arctic

Route map: Dr Christine Wesche

— Flight campaigns: Polar 5

— Research Vessel Heincke

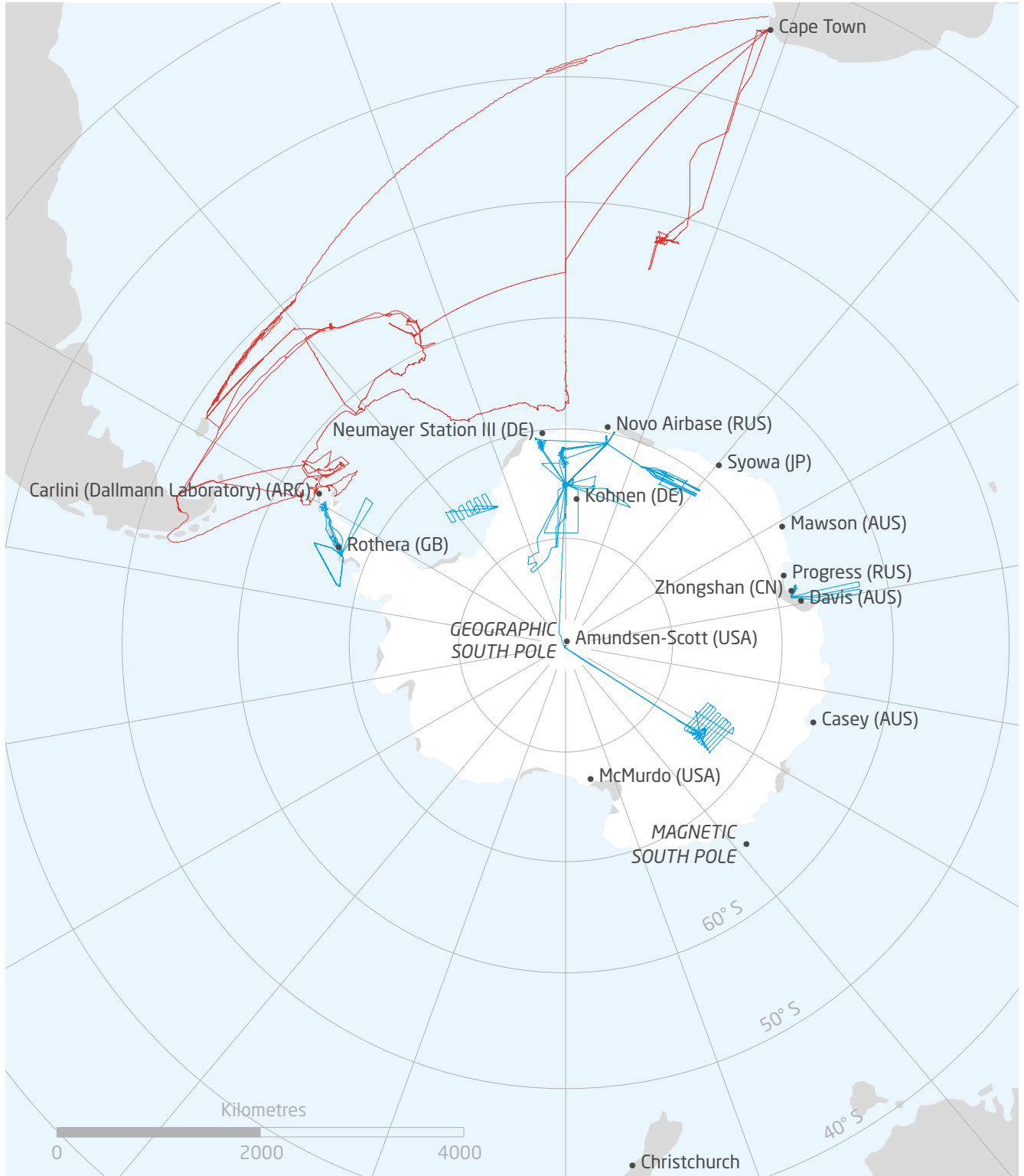


North Sea / German Bight

Route map: Dr Christine Wesche

— Research Vessel Heincke

Scientific and logistical routes and flight campaigns in the south



Antarctic

Route map: Dr Christine Wesche

— Flight campaigns: Polar 6

— Polarstern research and supply vessel

Imprint

Alfred Wegener Institute
Helmholtz Centre for Polar
and Marine Research

Am Handelshafen 12
27570 Bremerhaven
Germany
Telephone: +49 471 / 48 31 0
E-mail: info@awi.de
www.awi.de

Responsible according to press legislation:
Prof. Karin Lochte (Director)

Credits for photographs:
Stefan Hendricks (title image, p. 17)
Mario Hoppmann (cover image inside front),
Kerstin Rolfes (p. 6)
Yves Nowak (p. 12)
Kerstin Ergenzinger (p. 13)
Ulrike Grosse (p. 13)
Marieke Feis (p. 13)
Stefan Hendricks (p. 17)
Lars Grübner (cover image inside back)

Graphics:
Yves Nowak

Design: Yves Nowak, Alfred Wegener Institute
Editor: Dr Folke Mehrrens, Alfred Wegener Institute
Coordination: Claudia Pichler, Alfred Wegener Institute
Printed by: BerlinDruck GmbH, Achim

Copyright: 2014, Alfred Wegener Institute

In some cases specific inclusion of both genders within the text has been dispensed with in favour of ease of reading. Wherever this is the case, both genders are referred to with equal weighting.







BREMERHAVEN

Am Handelshafen 12
27570 Bremerhaven
Germany
Telephone +49 471 4831-0
Fax +49 471 4831-1149
www.awi.de

