

### POGO Capacity Building News

#### The first batch of scholars graduates from the new NF-POGO Centre of Excellence at the Alfred Wegener Institute



The ten scholars from the NF-POGO CofE successfully complete their training at AWI

On September 24 and 25, Trevor Platt attended the graduation ceremonies for the first year scholars in the new Nippon Foundation - POGO Centre of Excellence (CofE) at the Alfred Wegener Institute (AWI). The events were held at the excellent facilities

of the Erlebniszentrum Naturgewalten Sylt - a sea-themed discovery centre associated with AWI on the island of Sylt. On the evening of September 24, Mr. Ogiue of the Nippon Foundation hosted a thank-you dinner for those who had helped make the first year a success. The next afternoon was given over to a series of presentations by each of the ten scholars, based on the work they had done in their individual research projects. The set of talks made a very good impression. In the evening, the graduation dinner was held, which proved to be a memorable event. It was attended by the mayor of Sylt (Bürgermeister Wolfgang Strenger). The group was addressed by Mr. Ogiue, Karen Wiltshire and Trevor Platt. The distribution of diplomas marked the end of the formal part of the proceedings.

The NF-POGO CofE started its new phase at AWI in December 2013. The first half of the program was organized on the offshore island of Helgoland and the second half of the program was structured at the UNESCO reserve Wadden Sea island of Sylt. The main focus of the program on Helgoland was on open-ocean observations while at Sylt the primary emphasis was on coastal ocean studies. "The 10 month

course at AWI was a remarkable eye-opening call for all of the scholars, emphasizing the need for an interdisciplinary approach in ocean observations" commented Mathew Avarachen from India. "The CofE program covered topics on physical, chemical and biological oceanography together with remote sensing, statistics, numerical modelling, time series data management and climate change research. We felt that the highlight of the program was systematic training in core and soft skills development. The core skills included regular field work on board research vessels with hands-on training on analytical procedures. Periodic training to develop expertise in scientific presentations and writing comprised the soft skills. The courses led by international experts helped to mould their skills and encouraged the scholars to think outside the box giving a new dimension to their research. The independent research work carried out as part of the program provided an invaluable opportunity to apply all of the skills that we had learned."

"The 10 month period helped to develop a close coordination among each of us, which we would like to build on during our research careers. The unique opportunity that we all received to attend the NF-POGO Alumni Network for Oceans (NANO) meeting at Berlin, at the start of the program, enabled us to establish contacts with the alumni members and to understand their research carried out through the NANO regional projects. This facilitated the rationale for networking among the scholars to work together on programs to improve the research on ocean observations and measures to build up outreach programs to promote public awareness in the society about the need to save our oceans. We are extremely delighted to be part of this POGO vision through the NF-POGO CofE Program at AWI and wish all the success for the next batch of CofE scholars at AWI."

*This article was provided by Trevor Platt (POGO Secretariat), Gerry Plumley (AWI) and Mathew K. Avarachen (NF-POGO Scholar).*

#### POGO-AMT Fellow departs on 24th Atlantic Meridional Transect Cruise

Rafael Rasse sets off on the AMT Cruise from the UK to Chile



AMT-24 Cruise Track.  
Image Credit: POGO

The 24th Atlantic Meridional Transect (AMT) research cruise led by Plymouth Marine Laboratory (PML) departed from Immingham, UK, last month and will arrive in Punta Arenas, Chile, in early November stopping in South Georgia and the Falkland Islands. AMT is an interdisciplinary scientific programme that undertakes biological, chemical and physical oceanographic research during an annual voyage between the UK and destinations in the South Atlantic. This journey crosses a range of marine ecosystems from sub-polar to tropical and from shelf seas and upwelling systems to mid-ocean gyres.

Following a month of training and preparation at PML, this year's POGO-AMT fellow, Rafael Rasse from Instituto Venezolano de Investigaciones Cientificas, Venezuela is now on board the RRS James Clark Ross. This year's cruise has seven scientists from PML including Rafael's project supervisor Giorgio Dall'Olmo. POGO has funded a berth for a scientist from a developing country to join the expedition every year since 2008, to learn monitoring techniques aboard a large research vessel. AMT provides one of the few datasets that will be able to highlight significant shifts in the Atlantic's processes and functions as a result of climate change and other environmental stressors.



Rafael Rasse with Giorgio Dall'Olmo prepare a bio-Argo ahead of the AMT Cruise.  
Photo Credit: POGO

*This article was provided by Helen Murray (Plymouth Marine Laboratory) & Vikki Cheung (POGO Secretariat).*



## News from the POGO members

### Prototyping a national Ocean Observing System in Italy

Italian scientists present the implementation of the RITMARE Ocean Observing System, back-to-back with 7th EuroGOOS Conference

A meeting between key European and Italian leading scientists is being held in Lisbon (October 30-31 2014), back-to-back with 7th EuroGOOS conference, with the aim to present and discuss the development of the RITMARE ocean observing system (OOS) and its harmonization in the European landscape. RITMARE is the 80M€ Italian flagship project aimed at the advancement of science, technology and infrastructures in the marine and maritime sectors. The project, divided in 7 subprojects that include maritime and fishery technologies, Marine Spatial Planning, capacity building and ICT marine technologies, will end in 2016 and is run under the coordination of Fabio Trincardi (National Research Council, CNR).

The RITMARE OOS prototype can count on 15 real-time fixed-point in-situ platforms (buoys, poles), remote sensing infrastructures (visible, IR, HF and X-band radars), autonomous vehicles (drifters, gliders, wave-gliders) and models. Research and innovation transversally improve all the components of the system by developing and/or integrating new elements, such as new sensors (ship-borne Lidar, X-band coastal radars, directional wave optical detectors) products (e.g. daily-cycle resolved SST data), coastal and deep-sea observatories and enhanced coastal models.

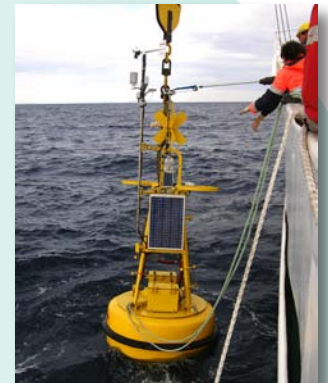
"For the first time we endeavor to integrate all the major observing platforms deployed in the Italian waters by implementing ROBIN, a crosscutting e-infrastructure able to collect, validate and disseminate real-time data " says

Alessandro Crise (OGS), head of RITMARE Observing System. "The major challenge is to keep the system running in line with the existing operational protocols and formats, while a parallel effort is carried out to demonstrate the potential of the emerging interoperability standards promoted by GEO and GEOSS" adds Paola Carrara (CNR), head of RITMARE ICT marine technology.

The RITMARE OOS aims to strengthen the national marine research to better value the Italian contribution to European and international operational systems (i.e. Copernicus Marine Services, EMODNET PP) and EC projects (FixO3, JERICO). Moreover the OOS will facilitate the open and free access to timely and qualified data to the major operational systems (i.e. Copernicus Marine Services) and EC projects, as well as to local and regional authorities (e.g. Civil Protection, ISPRA).

For more information see <http://www.ritmare.it/en/>.

*This article was provided by Alessandro Crise, OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale)*



OGS technicians are servicing the surface station of E2-M3A deep-sea observatory (South Adriatic Sea).

### New Oceans and Atmosphere Flagship at CSIRO



CSIRO Ocean and Atmosphere's Nick Hardman-Mountford testing one of the Bio Argo floats in Hobart. Photo credit: CSIRO

CSIRO has launched a new flagship research program focussed on providing the knowledge to manage Australia's marine estate and atmospheric environment, plan for and respond to weather- and climate-related natural hazards, and ensure sustainable coastal development and growth of marine industries.

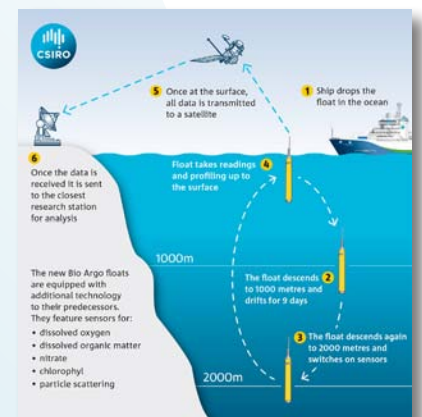
The Oceans and Atmosphere Flagship brings together staff and capability from several CSIRO business units amalgamated in July 2014: Marine and Atmospheric Research; Land and Water; Climate Adaptation Flagship; and Wealth from Oceans Flagship. Dr Ken Lee has been appointed as Director of the Oceans and Atmosphere Flagship. Research programs encompass Coastal Development and Management; Earth System Assessment; Marine Resources and Industries; Ocean and Climate Dynamics; and Engineering and Technology.

The Flagship provides the large-scale multidisciplinary science to inform environmentally, socially and economically sustainable outcomes across the broad range of users and uses of Australia's marine environment.

For example, a pilot project, led by CSIRO in collaboration with the Indian National Institute of Oceanography (CSIR-NIO) and the Indian National Centre for Ocean Information Services (INCOIS), will improve our understanding of cause and effect in the Indian Ocean's climate and ecosystems. As part of the pilot project, robotic floats armed with bio-optical sensors will be launched in the Indian Ocean to find out what makes the world's third largest ocean tick. The new Bio Argo floats will enhance the already successful Argo float technology to measure large-scale changes in the chemistry and biology of marine ecosystems below the Indian Ocean's surface.

The Bio Argo floats include additional sensors for dissolved oxygen, nitrate, chlorophyll, dissolved organic matter, and particle scattering. They target specific gaps in our understanding of Indian Ocean ecosystems of immediate concern to India and Australia, such as the Bay of Bengal and the waters of north Western Australia.

*This article was provided by Simon Torok, Communication Manager, Oceans and Atmosphere Flagship CSIRO*



How data is collected from a Bio Argo float. Image Credit: CSIRO

## News from the POGO members (cont'd)

### Earthquakes in the ocean: towards a better understanding of their precursors

*Study explains the seismic precursors of an underwater earthquake*



Investigations on earthquakes in the ocean  
Image credit: IFREMER

Published on 14 September in *Nature Geoscience*, the study conducted by researchers from several institutes, including IFREMER, CNRS and IFSTTAR, offers the first theoretical model that, based on fluid-related processes, explains the seismic precursors of an underwater earthquake. Using quantitative measurements, this innovative model established a link between observed precursors and the mainshock of an earthquake. The results open a promising avenue of research for guiding future investigations on detecting earthquakes before they strike.

The data used to construct the model presented in the article were collected from subsea observatories deployed in the North-East Pacific fracture zones. The researchers showed that the properties of the fluids that circulate in submarine fault zones change over time, during what is called the "seismic cycle". This term describes the cycle during which strain accumulates along a fault until it exceeds the frictional forces that prevent the fault from slipping. An earthquake results at the moment of rupture, due to the sudden release of built-up strain. A new cycle begins with strain accumulating and continues

until the next rupture occurs along the fault.

Due to their proximity to mid-ocean ridges, the fluids that circulate in the faults undergo tremendous pressure and extremely high temperatures. These fluids can reach the supercritical state. The physical properties of supercritical fluids (density, viscosity, diffusivity) are intermediate to those of liquids and gases. The compressibility of supercritical fluid varies greatly with pressure, and, according to the study's analysis, this change in compressibility may trigger an earthquake, occurring after a short period of foreshocks.

Seismic precursors are the early warning signs before an earthquake strikes. Many different types of earthquake precursors have been studied by the scientific community: ground movements, seismic signals, fluid or gas emissions, electrical signals, thermal signals, animal behaviour, etc. For an event as large as an earthquake, which releases a considerable amount of energy, there must be a preparatory phase. This problem in predicting earthquakes does not lie in the absence of precursors (hindsight observations are numerous), but in the capacity to detect these forerunners before the mainshock. The results of the model can help guide future research in the detection of seismic precursors with, ultimately, potential applications for earthquake prediction. Supercritical fluids require very specific conditions; they are also encountered on land in hydrothermal and volcanic areas, such as Iceland.

Under the effect of tectonic forces, two antagonistic effects are usually in play near transform faults. First, increasing shear stress tends to break rocks and weaken resistance in the transform fault. Second, decreasing pressure of the fluid contained in the fault results in an increase in the volume of the pore space between rock beds. This effect acts as a stabilising suction cup, counterbalancing the 'weakening' in the rock bed and delaying the triggering of an earthquake.

The efficiency of this counterbalancing mechanism depends on fluid compressibility. It is highest in the presence of fluids in the liquid state, whose low compressibility causes a dramatic decrease in fluid pressure in response to small increases in volume. Conversely, for gas-type fluids, which are highly compressible, the suction cup effect is nearly in-existent. When a change in the 'liquid-gas' state of the fluid occurs during a fault slip, the counterbalancing mechanism fails, allowing a major shock to be triggered. This transition occurs over several days and has numerous signs, including many small foreshocks.

*This article was provided by Thomas Isaak & Marion Le Foll, Communications IFREMER*

### Australian launch for Southern Ocean Marine Wildlife Atlas

The Biogeographic Atlas of the Southern Ocean had its Australian launch at the University of Tasmania in September, in Hobart which is Australia's Southern Ocean and Antarctic research hub.

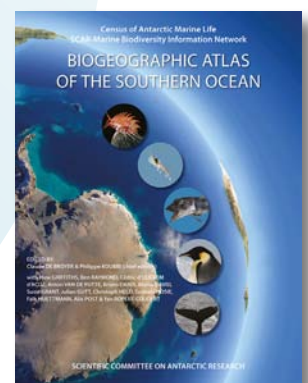
The Atlas is the culmination of four years work by an international team of marine biologists and oceanographers from 22 countries, including scientists from the Australian Antarctic Division, the Institute for Marine and Antarctic Studies and the Antarctic Climate and Ecosystems CRC.

Although launched internationally at the Scientific Committee on Antarctic Research meeting in New Zealand in late August, Wednesday's Australian launch featured eight reviews from Hobart-based contributors to the Atlas. These were given by Victoria Wadley, Ben Raymond, Andrew Constable, Klaus Meiners, Mark Hindell, Alexandra Post, Graham Hosie and Kerrie Swadling.

Other Hobart contributors included Michael Stoddart, Nerissa Bax, Louise Newman, Nathan Bindoff, So Kawaguchi, Andrew Meijers, Alex Fraser, Jennifer Ayers, Donna Roberts and Tony Press.

Details of the Atlas can be found here - <http://atlas.biodiversity.aq>

*This article was provided by Craig Macaulay, Communications, Institute for Marine and Antarctic Studies*



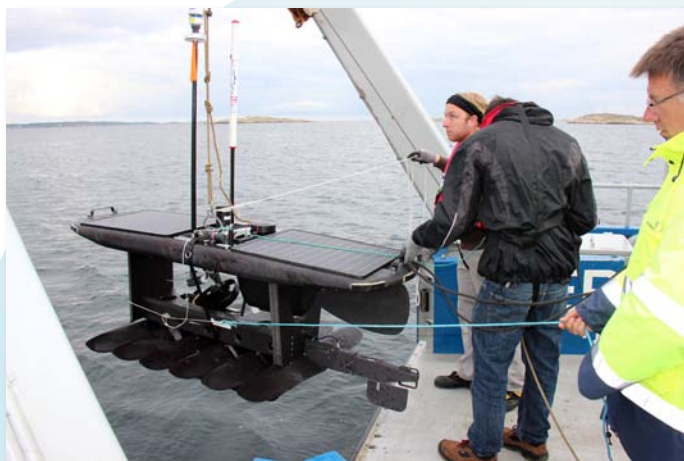


## News from the POGO members (cont'd)

### A surfboard for science

Storms, currents and boat traffic – the use of instruments in the open ocean is always a risky venture. Under controlled conditions and in sufficiently deep waters a team of researchers, headed by the marine chemists Prof. Dr. Arne Körtzinger and Dr. Björn Fiedler from GEOMAR Helmholtz Centre for Ocean Research Kiel, were able to test a so-called Wave Glider at the Sven Lovén Centre for Marine Sciences on the coast of Tjärnö, Sweden, during the beginning of September.

The appearance of the computer-operated instrument resembles a "high-tech surfboard" that floats on the sea surface and is equipped with solar panels, a weather station, a compass, chemical sensors and other kinds of tools. Seven meters below, an underwater unit with several movable wings is attached to the hull by a cable and uses the wave energy for the necessary drive. Thanks to the propulsion the device can be navigated precisely from land via satellites.



A wave-glider is tested by GEOMAR's scientists in Sweden.  
Photo Credit: A. Koertzinger, GEOMAR

Among other things, the Wave Glider allows marine chemists to study the gas exchange of carbon dioxide at the boundary surface between air and water with high spatial and temporal resolution. "Before, we always relied on the availability of research vessels for our measurements," says Dr. Fiedler. "With the new Wave Glider we are now in a position to carry out more flexible and cost-effective measurements." Another advantage of the new technique is its long service life, since wave energy permanently ensures propulsion and the sun provides the power for the gauges.

At the end of the experiment Professor Körtzinger and Dr. Fiedler were very pleased with the test results and the conditions in Sweden. "The location is ideal and offers the perfect setting for testing complex devices," says Professor Körtzinger. With 27.500 € the two-week project has been funded completely from the Royal Swedish Academy of Science.

*This article was provided by Jan Steffen, Media and Communications, GEOMAR*

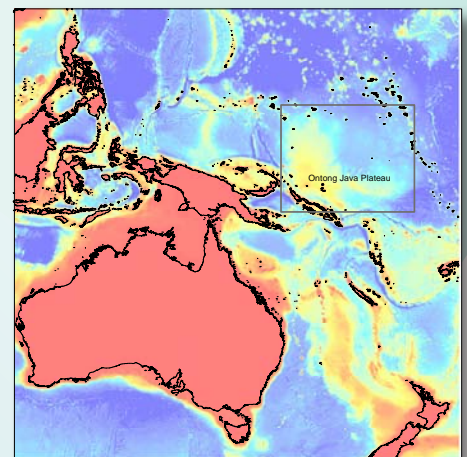
### Schmidt Pacific geoscience voyage

*Australian Scientists find increased incidence of coral disease at dredging sites*

Institute for Marine and Antarctic Studies, Tasmania, Director, Prof Mike Coffin, led a three-week voyage to the western Pacific Ocean submarine plateau north of the Solomon Islands during October, a region likely formed in the largest volcanic eruption in Earth's history 122 million years ago.

The voyage (<http://www.schmidtocean.org/story/show/2253>) mapped seafloor features of one of the world's great volcanic provinces in research that will improve understanding of regional tsunami risks.

The 35-kilometre thick Ontong Java Plateau is a submerged seafloor platform almost the size of Greenland. The shallowest point of the high plateau is approximately 1500 metres beneath the surface, and several atolls and islands surmount the submerged plateau. Mike has been studying the region since 1995 including four geophysical expeditions and one scientific ocean drilling expedition.



The Ontong Java Plateau  
Image credit: UTAS

The voyage on the Schmidt Ocean Institute (<http://www.schmidtocean.org/>) vessel, RV Falkor was a search for evidence that may help explain what happened following the plateau's main construction phase. They used advanced swath-mapping technologies to characterise the topography of the plateau.

"As marine geophysicists with a long interest in the formation and evolution of the Ontong Java Plateau, we were collaborating to produce seafloor maps that will improve tsunami predictions for people living on its surmounting younger atolls as well as provide the first information on development of a major submarine canyon incising the plateau."

Involving Australian, German, Japanese, Papua New Guinea, UK, and US researchers, the study will shed light on evolution of two Pacific atolls, now inhabited by about 2500 people. This will be achieved through mapping of the seafloor and the shallow sub-seafloor around the two atolls and a submarine canyon that appears to emanate from the atolls, all for the first time. The project is supported by the Australian Research Council, the UK's Natural Environment Research Council, and IMAS, while the Schmidt Ocean Institute is providing ship time.

*This article was provided by Craig Macaulay, Communications, Institute for Marine and Antarctic Studies*

## News from the POGO members (cont'd)

### Scientists Apply Biomedical Technique to Reveal Changes Within the Body of the Ocean

For decades, medical researchers have sought new methods to diagnose how different types of cells and systems in the body are functioning. Now scientists have adapted an emerging biomedical technique to study the vast body of the ocean.

In a study published Sept. 5 in the journal *Science*, a research team led by the Woods Hole Oceanographic Institution (WHOI) demonstrated that they can identify and measure proteins in the ocean, revealing how single-celled marine organisms and ocean ecosystems are operating.

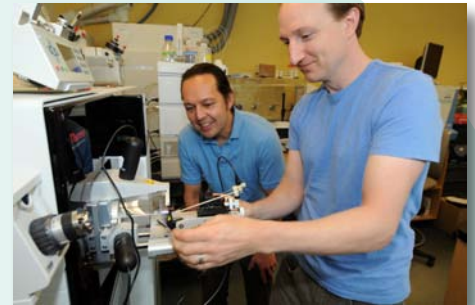
"Proteins are the molecules that catalyze the biochemical reactions happening in the organisms," said WHOI biogeochemist Mak Saito, the study's lead author. "So instead of just measuring what species are where in the ocean, now we can effectively look inside those organisms and see what biochemical reactions they are performing in the face of various ocean conditions. It's a potentially powerful tool we can use to reveal the inner biochemical workings of organisms within ocean ecosystems and to start diagnosing how the oceans are responding to pollution, climate change, and other shifts."

The emerging biomedical technique of measuring proteins—a field called proteomics—builds upon the more familiar field of genomics, which has allowed scientists to detect and identify genes in cells. The new study is an initial demonstration that proteomic techniques can be applied to marine environments not only to identify the presence of proteins, but for the first time, to precisely measure the amounts of individual proteins from individual species at various locations in the ocean.

The results painted a picture of what factors were controlling microbial photosynthesis and growth and how the microbes were responding to different conditions over a large geographic region of the ocean.

The study was funded by the Gordon and Betty Moore Foundation and the U.S. National Science Foundation.

*This article was provided by Lonny Lippsett, Woods Hole Oceanographic Institute.*



Mak Saito and Research Associate Matthew McIlvin use mass spectrometers to separate out individual proteins in the samples, identifying them by their peptide sequences.  
Image credit: Jayne Doucette, WHOI

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### Ocean Session at Science and Technology in Society (STS) forum, Kyoto, Japan

The 11th Annual Meeting of the Science and Technology in Society *forum* took place from October 5 to 7, with the participation of about 1,000 global leaders in science and technology, policy, business and media from approximately 100 countries, regions and international organizations who met to reflect on how to strengthen the "lights" and control the "shadows" of science and technology. Japanese Prime Minister Shinzo Abe addressed the inaugural session.



Speakers at the Ocean session  
Image Credit: JAMSTEC.

One of the breakout sessions "Ocean" was joined by almost 40 people who took the advantage of this opportunity to talk about marine conservation and biodiversity. Ocean session was chaired by Dr. Margaret Leinen (Director of Scripps Institution of Oceanography, University of California, San Diego and a member of POGO Executive Committee). Speakers of the session included: David Johnson (Coordinator of Global Ocean Biodiversity Initiative, and Director of Seascope Consultants Ltd.), Prof. Anne McDonald (Sophia University), Dr. Mamoru Mohri (Astronaut and Chief Executive Director of National Museum of Emerging Science and Innovation (Miraikan)) and Dr. Yoshihisa Shirayama (Executive Director of JAMSTEC, and a member of POGO Executive Committee).

The STS Statement 2014 contained a reference to the ocean: "The environment we live in and the ecosystem we are part of are not just the land mass we inhabit and the atmosphere that envelops us. By far the greatest part of our planet is covered by water: the oceans and the glaciers and the surface waters that replenish the moisture in the earth, in a hydrological cycle that allows life to exist. The oceans and their deep currents are central to the climate and the management of GHG emissions and the improved understanding of the oceans and the fresh waters of the earth are at the core of developing effective sustainable development futures for humans, with adequate energy, good health and a rich social life."

*This article was provided by Aska Vanroosebeke, International Affairs, JAMSTEC.*



## News from the POGO members (cont'd)

### Ocean Acidification: New Report of the Convention on Biological Diversity (CBD)

A new international report "An updated synthesis of the impacts of ocean acidification on marine biodiversity" shows beyond doubt that ocean acidification is an issue of serious environmental and policy concern.



Even fish as highly developed marine organisms can be sensitive to ocean acidification. The polar cod (*Boreogadus saida*), for example, might show a strong response when its habitat gets warmer and more acidic at the same time.  
Photo Credit: Hauke Flores, AWI

Ten years ago, only a handful of researchers were investigating the biological impacts of ocean acidification: whilst their results gave cause for concern, it was clear that a lot more measurements and experiments were needed. Around a thousand published studies later, it has now been established that many marine species will suffer in a high CO<sub>2</sub> world, with consequences for human society.

Evidence for such effects has been brought together by the Convention on Biological Diversity (CBD), the United Nations body committed to the conservation and sustainable use of all forms of life on Earth. An international team of thirty experts from twelve countries, including scientists from POGO member organisations Plymouth Marine Laboratory and the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine research (AWI), has concluded that ocean acidification is already underway – and it is now near-inevitable that it will worsen.

One of the major findings is definitely that acidic water not only harms the calcareous shells and skeletons of mussels and corals, but may also affect more highly developed ocean dwellers like fish. Moreover, every species reacts to acidic water very differently and some even profit from it, such as seagrasses, which utilise the additional carbon dioxide for photosynthesis.

The exact magnitude of the future ecological and financial costs is, however, still uncertain, due to complex interactions with other human-driven environmental changes. Risks to coral reefs are highlighted in the CBD report: in the tropics, these habitats help support the livelihoods of around 400 million people, and their loss could cause economic damage of a trillion dollars a year. In European seas, cold-water corals have high conservation value; they also provide nursery grounds for endangered species (e.g. deep-sea sharks) and some commercial fish.

Microscopic marine fossils show that global-scale ocean acidification has occurred before, due to natural causes, around 56 million years ago. "The speed of current ocean acidification is unprecedented" said Dr Carol Turley, contributing author of the report. "An ocean acidification event that happened millions of years ago occurred about ten times more slowly than what is happening today due to human activity, and it still resulted in some species becoming extinct. It is sobering to know that recovery in ocean chemistry back then took around 100,000 years."



Copepods show insignificant reactions to more acidic waters - even when the pH-level drops far below values scientists expect for the coming 200 years. Photo Credit: Nicole Hildebrandt, AWI

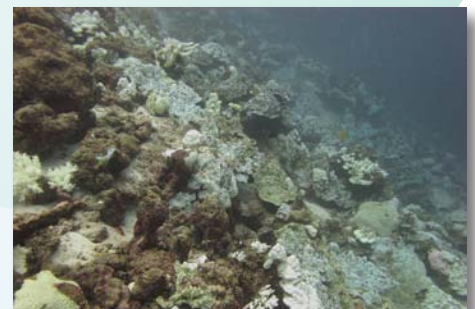
Dr. Felix Mark, an AWI biologist and one of the authors of the current CBD report commented "We are beginning to understand how individual species interact under the influence of ocean acidification, what the consequences are when a species disappears from the food web and whether animals can adapt over several generations."

The CBD report is intended to make ocean acidification and its impacts part of the international policy agenda to a

greater degree. However, here, too, a lot has happened in the last five years: for instance, the IPCC has treated the problem of increasingly acidic oceans for the first time on a comprehensive scale in its Fifth Assessment Report.

The Updated Synthesis of the Impacts of Ocean Acidification on Marine Biodiversity Report is available to read here: <http://www.cbd.int/doc/publications/cbd-ts-75-en.pdf>.

Content for this article was provided by Margarete Pauls (Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research) & Helen Murray (Plymouth Marine Laboratory).



Corals belong to those marine organisms that are very sensitive to ocean acidification - especially in combination with increasing water temperatures. Photo Credit: Gertraud Schmidt, AWI



Pteropod *Limacina helicina*, an important component of Arctic and sub-Arctic food webs, that may already be affected by ocean acidification.  
Photo credit: N Bednarek

**POGO Activities**

**New POGO Executive Director - Dr. Sophie Seeyave**

On October 1st 2014, Dr. Sophie Seeyave succeeded Prof. Trevor Platt as Executive Director of POGO. Sophie will continue to be based at the POGO Secretariat, hosted by Plymouth Marine Laboratory, and will be supported by Dr. Vikki Cheung (Scientific Coordinator) and Miss Laura Ruffoni (Administrative Assistant). Trevor Platt will continue to play an advisory role for a transition period. Dr Shubha Sathyendranath stepped down from the Secretariat and, in the same month, received the prestigious "Grande Medaille Albert 1er de Monaco" in recognition of her work on ocean colour remote sensing.



Sophie Seeyave

**NANO Coordination Meeting & World Research and Innovations Congress**

A NANO Coordination meeting took place between October 13-14 in Lisbon, Portugal, attended by 17 alumni from the NF-POGO Alumni Network for Oceans. The alumni presented progress on the four regional research proposals and the outreach project, then worked in groups on their proposals for continuation of the projects as well as a new proposal for a regional project in the Caribbean. The two-day meeting was followed by the World Research and Innovations Congress on Oceans where Trevor Platt was invited to speak in the session on Ocean Global Policy on the importance of "Ocean Partnerships". The alumni presented posters on their own research as well as the NANO research and outreach projects. There was also a NANO exhibit to disseminate information on Nippon Foundation-POGO efforts in capacity building for ocean science.



Trevor Platt speaking at the WRIC-Oceans in the Oceanarium, Lisbon

**POGO representation at other meetings**

**SCOR:** Sophie Seeyave attended the SCOR Annual Meeting in Bremen, Germany, on 15-16 September, where she gave a presentation on POGO. The meeting was a good opportunity to discuss collaboration with SCOR in various areas including the International Indian Ocean Expedition II, SCOR Working Groups and capacity building.

**GACS:** The following week (25 September), Sophie Seeyave attended the Meeting of the Board of Governance of the Global Alliance of CPR Surveys (GACS) at SAHFOS, Plymouth, to discuss collaboration between GACS and POGO (and Blue Planet). The group reviewed its progress over the last year and discussed possible sources of funding to continue its activities now that the NERC grant has expired. Of particular interest to POGO were the discussions about the possibility of SAHFOS providing access to its plankton image database for the Plankton App that is currently under development as a POGO contribution to GEO's Architecture Implementation Pilot (AIP-7), and ideas for a CPR training workshop to be held as a POGO-SCOR-PICES collaboration and contribution to IIOE-2, with the aim of enabling the establishment of a CPR survey in the Indian Ocean.

**PICES:** POGO was represented by Dr. Jae-Hak Lee (KIOST) at the North Pacific Marine Science Organisation (PICES) Annual Meeting held in Yeosu, Korea, from 16 to 26 October. He gave a presentation on POGO and discussed potential collaboration between POGO and PICES at the Science Board Meeting on 19 October, and also presented a POGO poster on 23 October. PICES is very interested in collaborating with POGO and SCOR in the area of capacity building, with a focus on training in CPR deployment and sample analysis.

**POGO-16 Meeting**

27-29 January 2015, Tenerife, Spain - Hosted by the Instituto Español de Oceanografía (IEO).



The agenda for the POGO-16 Meeting will soon be finalised and will be placed on the POGO website at <http://ocean-partners.org/meetings-and-workshops/pogo-meetings/pogo-16>. Delegates are advised to make their travel and accommodation bookings well in advance since rooms have not been block booked however preferential rates have been negotiated.

Attendees should register for the meeting using the online form by 31st October at [https://docs.google.com/a/sportenvironment.com/forms/d/10a54zi7cn\\_m\\_dnNfIGrzNMPH3UUdcclhmmreBwAxNYw/viewform](https://docs.google.com/a/sportenvironment.com/forms/d/10a54zi7cn_m_dnNfIGrzNMPH3UUdcclhmmreBwAxNYw/viewform).

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