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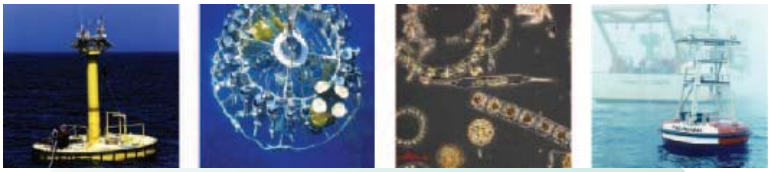


News from the POGO members

World-leading technology lifting the veil on abalone fishery

Four years after its adoption, a Tasmanian designed and manufactured innovation is providing unprecedented insights into the Australian State's abalone fishery, helping to improve sustainability and productivity in the lucrative industry valued at around $100 million annually.

IMAS researcher Dr Craig Mundy has unveiled the latest version of a small depth data logging device which has been worn by all Tasmanian abalone divers since 2012, providing invaluable data on their fishing efforts as well as the state of the fishery.

"The GPS and depth data logger system that we developed is world-leading technology that collects unique information on the abalone fishery," Dr Mundy said.

"It allows us to see when and where fishers dive, and how far and deep they need to swim to take the catch. Divers are happy to participate because we protect the confidentiality of their favourite fishing spots.

IMAS divers Jaime McAllister (left) and Sarah-Jane Pyke with Dr Craig Mundy, displaying the data logger. Photo credit: IMAS.

"In the past we relied on logbook records from divers which gave us location information on the scale of tens of kilometres. This new data is on the scale of tens of meters so we can start to monitor the health of individual reefs.

"It can help us to make judgements about the overall state of the abalone fishery. For example, we can tell that abalone stocks are healthier when divers travel more slowly over reefs and don't spend time moving their boat from one area to another.

"As we build a comprehensive picture of the fishery over time we can use this information to inform up to date harvest management strategies and quotas based on accurate, real time data," he said.

The project has been supported by the Tasmanian Abalone Council (TAC) and the Tasmanian Government, with funding from the Australian Government through the Fisheries Research and Development Corporation (FRDC).

This article was provided by Andrew Rhodes, Communications Manager, IMAS.

Lawnmowers of the Sea

Study analyzed reef fish grazing behaviors to understand coral reef health

Grazing on algae is a full-time job for a highly specialized group of coral reef fish.

In a new study, a research team led by scientists from Scripps Institution of Oceanography at the University of California San Diego, examined the unique grazing roles of algae-eating herbivores on coral reefs to learn more about how they help keep corals from being overgrown by seaweeds.

Scripps marine ecologist Emily Kelly and her research team recorded the feeding behaviors of 15 of the most common species of algae-eating fish, such as parrotfish and surgeonfish on a coral reef in Maui, Hawaii. The study, conducted over a four-year period, compared these observations to the stomach contents of several of the fish species as well as the habitat in which different fish were grazing.

Kelly's team discovered that despite large-scale similarities across all fish species in the consumption of "turf algae" (a group of algae comprised of a number of different species), a finer scale analysis revealed that individual fish species are actually selectively grazing on different types of algae and in different ways.

Scripps marine ecologist Emily Kelly studying reef fish at the Kahekili Herbivore Management Area in Hawaii. Photo credit: Don McLeish.

"These 'lawnmowers' on the reef are selective in the types of algae they consume and the impact of each bite," said Kelly, lead author of the study and a postdoctoral scholar in the Scripps Coral Reef Ecology Lab (https://scripps.ucsd.edu/labs/coralreefecology/)."These fish are in fact each a different type of gardening tool with a slightly different function in grazing."

A diverse community of herbivores is necessary to promote healthy reefs, and by understanding their algae-eating behaviors, this study can help better manage and protect coral reefs worldwide, according to the researchers.

"Understanding the role of individual fish species is important for knowing how the herbivore community as a whole can influence reef composition and reef health," said Kelly.

This article was provided by Annie Reisewitz, Communications and Marketing, SCRIPPS.

News from the POGO members (cont'd)

SAMS to draw on a range of research for Arctic answers

Artic Scenic. Photo credit: SAMS.

The impact of reducing Arctic sea ice cover on polar oceanography and ecosystems is being explored by researchers at the Scottish Association for Marine Science (SAMS) in 2017, a year in which the institute will host the UK Arctic Science Conference in Oban from September 19 – 21.

SAMS is reaffirming its commitment to Arctic research by leading two projects in the Natural Environment Research Council's (NERC) Changing Arctic Ocean research programme: Arctic PRIZE (www.sams.ac.uk/arctic-prize) and DIAPOD (www.sams.ac.uk/diapod) will rely on international collaborations to help understand rapid changes in the Arctic, focussing on climate, ocean properties, marine life and food stocks.

Arctic PRIZE aims to examine how reducing sea ice cover is affecting the productivity of the Arctic, while DIAPOD will focus on the role of *Calanus* as a crucial genus of the marine food web. The SAMS contribution to these projects includes autonomous robotic systems from its NERC-funded Scottish Marine Robotics Facility.

SAMS is also part of the international Blue Action project, which aims to improve descriptions, models and predictions of the weather and climate on seasonal to decadal time scales in the Arctic and over the northern hemisphere.

Dr Tom Brown recently joined the SAMS research team and is currently investigating how organic carbon derived from sea ice is used in polar environments. He has developed chemical biomarkers, including fatty acids, sterols and highly branched isoprenoids (HBIs) to understand how species might respond to decreasing sea ice cover, and potentially carbon supply, in the future.

The Arctic region has seen the most dramatic changes in climate over the past few decades, with ice melting at a quicker rate each year because of rapid warming. The average Arctic sea ice cover for November 2016 set a record low, leading to suggestions that sea ice cover could be at a tipping point, from which the region may not recover.

This article was provided by Euan Paterson, Media and Communications Officer, SAMS.

Newly developed small prototype AUV successfully captured images of sub-Arctic Sea

In the research expedition cruise carried out by the Oceanographic Research Vessel MIRAI from August to October of 2016, observations were made in the Arctic Sea by a small prototype autonomous underwater vehicle (AUV) named "Retrievable Arctic Icy edge observation Vehicle (RAIV)".

Retrievable Arctic Icy edge observation Vehicle (RAIV). Photo credit: JAMSTEC.

For the first time in Japan, the small prototype AUV has successfully operated autonomously under the Arctic Sea, measured conductivity and water temperature and recorded subsea images.

RAIV is a small prototype AUV developed since fiscal year of 2015 to accumulate knowledge and information for further developing AUVs specialised for Arctic Sea observations.

RAIV is 1.9 metres in length and weighs approximately 27 kilograms and can be deployed and recovered by two people.

RAIV is equipped with sensors capable of measuring water temperature, conductivity and depth and also equipped camera to capture images.

Sensors can be added to RAIV to measure its location, dissolved oxygen, illuminance, etc. RAIV's maximum operating depth is 200 metres and can operate up to 9 consecutive days.

Video clip of sub-arctic sea taken by RAIV can be viewed at the following link:

jamstecchannel

https://www.youtube.com/watch?v=6hgLgtDu5zQ

Underwater images taken at just below sea ice by RAIV. Comb jelly is visible at bottom right image. Photo credit: JAMSTEC.

This article was provided by Jin Tachihara, International Affairs Division, JAMSTEC.

News from the POGO members (cont'd)

FAU Harbor Branch researchers assess the health and abundance of Indian River Lagoon sharks and rays

Team assesses reproductive health of a large Spotted Eagle Ray. Image credit: Mote Marine Laboratory.

A new study by scientists at Florida Atlantic University's Harbor Branch Oceanographic Institute located in Fort Pierce, aims to find out more about the sharks and rays that inhabit the Indian River Lagoon (IRL). This estuary is of national significance on Florida's east coast and the study is the first of its kind in decades. The project will characterize and develop physiological baselines in an effort to better understand how anthropogenic factors like algal blooms and rain events affect these predators. Heading the study are Matt Ajemian, Ph.D., FAU Harbor Branch assistant research professor and principal investigator, and FAU Harbor Branch epidemiologist/co-principal investigator Adam Schaefer, MPH.

Sharks and rays, with their slow growth rate, late maturity and low fecundity, are among some of the most sensitive marine vertebrates to ecosystem shifts. This study allows scientists to evaluate the health of these sentinel species by measuring things like length and weight, taking blood and microbial swabs and utilizing acoustic transmitters to track movement.

"The IRL has lacked consistent sampling of sharks and rays over the years, preventing an understanding of how this impacted environment is potentially influencing these important species," said Ajemian. "Now that we've acoustically tagged these animals, we're able to find out where they go through the Florida Atlantic Coast Telemetry (FACT) network, a collaborative monitoring effort led by Florida Fish and Wildlife Conservation Commission and supported by other institutions to gain a better understanding of the movement patterns of a variety of aquatic species."

Over four months, the team was able to capture, sample and tag nearly 100 sharks and rays in the Indian River Lagoon, including two endangered smalltooth sawfish and several spotted eagle rays, a protected species. Ajemian and Schaefer are collaborating with Kim Bassos-Hull, Mote Marine Laboratory senior biologist, in Sarasota, Florida on spotted eagle ray sampling in the IRL, and the project will provide a multitude of other opportunities for scientific collaboration on both local and regional scales.

This article was provided by Kayla Egbert, Communication Coordinator, FAU.

Tagging 5,000 soles in the Eastern English Channel

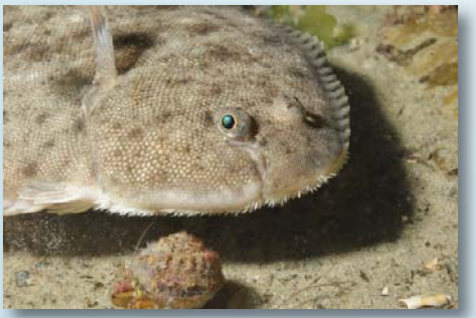


Photo credit: Olivier Dugornay/ © Ifremer

To improve knowledge on sole, the Ifremer-led sole fishery project SMAC plans to tag 5,000 fish by 2019. This project grew from the extensive collaboration between fishing professionals and Ifremer scientists and intervenes at a critical time: sole catch limits have undergone drastic reductions in the past three years.

The common or Dover sole (*Solea solea*) is one of most important commercial fish species in the Eastern English Channel. To set up sustainable management measures for the preservation of fish stocks, more information is needed on sole biology and ecology — particularly for incorporation in stock assessment models.

"Tagging is done during scientific cruises or on-board professional fishing boats with support from the crew," explains Marie Savina-Rolland, the SMAC project coordinator and researcher at the Fisheries Resources Laboratory in Boulogne-sur-Mer (Ifremer Channel-North Sea Centre). "We plan to tag up to 5,000 fish by 2019. The data recovered from professional or recreational catches of tagged fish will help better identify the exploited sole stocks and determine if they are isolated from one another. Ideally, we hope to recover specimens from across the largest area possible (UK, France, Netherlands, Belgium) to best discern the extent of this species' movements."

The first tagging operations were carried out in July 2016 on-board the R/V Cefas Endeavour during a scientific cruise led by the British Centre for Environment Fisheries and Aquaculture Science (CEFAS). Operations continued in the fall on-board two professional fishing boats: the ORCA and the P'tit Vox. In all, 743 sole have already been tagged and released as close as possible to their point of capture.

If you catch a tagged sole, please call Ifremer on +33 (0)643 040 511 or send an email to smac@ifremer.fr. Please report the tag number, the location, the date of capture and the total length of the fish.

For more information, visit our website and our Facebook page:

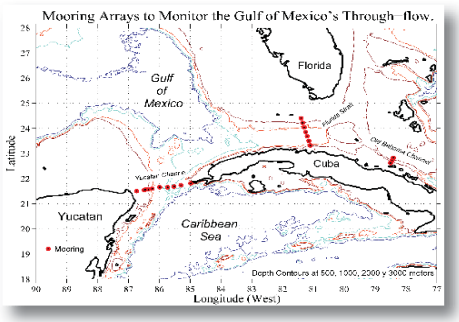
https://wwz.ifremer.fr/smac/

https://www.facebook.com/SMAC-1531339603836867/

This article was provided by Thomas Isaak, PR/Communications Officer, Ifremer.

News from the POGO members (cont'd)

Monitoring the through-flow in the Gulf of Mexico



Map showing the location of the mooring arrays across the Yucatan Channel, the Florida Strait and the Old Bahamas Channel. Figure credit: CICESE.

Starting in July 2012, CICESE's Canek Group installed for the first time in oceanographic history, simultaneous mooring arrays across the Yucatan Channel and the Strait of Florida (@ ~81° W longitude), the two only connections of the Gulf with the surrounding bodies of water, the Caribbean Sea and the Atlantic Ocean, respectively. The main objective of this effort is to monitor the flow through the Gulf of Mexico. This through-flow is an integral part of the North Atlantic Subtropical Gyre circulation, its variability is sensitive to, and therefore can have important implications in, global climatic changes. The simultaneous measurement of the flows though the two entrances to the Gulf of Mexico is key to understanding the Gulf's internal circulation and water mass transformation mechanisms.

Two years later, in July 2014, these arrays in the two Gulf's entrances were complemented with measurements across a section in the Old Bahama Channel, in order to quantify the significant contribution that the flow through in this channel might have on partly feeding the beginning of the Gulf Stream Current. All moorings in these arrays are densely instrumented to measure currents in the whole water column and temperature, salinity and pressure at specific depths. The deployments had been kept, with yearly maintenance, until now and will continue at least to the middle of 2018 to complete a 6 year-long monitoring time series. The Project was initiated with CICESE's Canek Group own funds and has recently received additional support from the CONACYT-SENER Hydrocarbons Fund (CIGoM project, POGO Newsletter, Oct 2016). This Project provides key support to other research activities in the Gulf of Mexico of the CIGoM Project and to the PEMEX-CICESE Project that has kept an array of moorings in the Western Gulf since 2007.

This article was provided by Julio Candela, Canek Group, Physical Oceanography Department, CICESE.

Microplankton response to experimental CO_2 enrichment from the Indian coastal waters

Ongoing increases in surface seawater CO_2 levels may have profound impacts on microplankton communities. Experiments investigating the responses of microplankton communities to elevated CO_2 levels have been noticeably increased recently; however, the studies from tropical waters are still meagre. Scientists from CSIR- National Institute of Oceanography and the Department of Zoology, Carmel College of Arts have conducted a number of high CO_2 enrichment microcosm experiments at different locations including estuary and coastal bays (both eastern and western Indian coastal water).

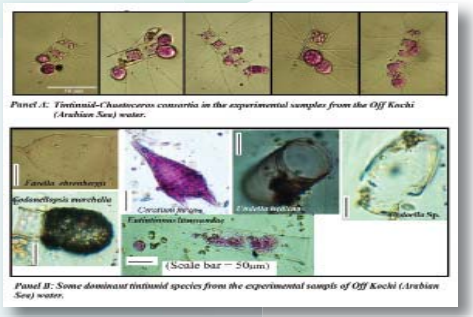


Image credit: Drs. Haimanti Biswas and Subhadra Devi Gadi.

The experimental phytoplankton communities were mostly diatom dominated and showed significant increase in photosynthetic oxygen evolution rates, the concentrations of Chl*a*, particulate organic carbon and nitrogen, biogenic silica, cellular carbohydrate and protein upon the supply of additional CO_2. Usually, a doubling of CO_2 levels from its ambient value resulted 20-50% increase in biomass production depending on the incubation and sampling time. The magnitude of responses remained unchanged irrespective of the numbers of generations incubated under elevated CO_2 levels. The phytoplankton communities seemed to operate a Carbon Concentration Mechanism (CCM) in the low CO_2 treatments as indicated by the values of $\delta^{13}C_{POC}$, HPLC pigment and Zn addition.

The phytoplankton community composition also showed significant modifications in the high CO_2 levels, and dissolved silicate seemed to play a key role. *Chaetoceros* (Panel A) was the one of the dominating diatom genera under the elevated CO_2 levels. Dominance of microzooplankton tintinnids in the high CO_2 treated cells was found (Panel B) in both eastern and western Indian coastal water experiments. Higher total bacterial count was noticed in the high CO_2 treated samples. The values of Biochemical Oxygen Demand (BOD) showed that the organic matter produced under the elevated CO_2 levels could be more labile than that of the ambient levels. The last few consequences may lead to quick recycling of CO_2 in the coastal waters of India under changing climate, and thus may have significant biogeochemical consequences.

This article was provided by Ranadhir Mukhopadhyay, NIO.

The authors of the original article are Haimanti Biswas, Debasmita Bandyopadhyay, Aziz Ur Rahman Shaik (CSIR,-NIO) and Subhadra Devi Gadi (Dept. of Zoology, Carmel College of Arts).

News from the POGO members (cont'd)

Climate change and its effects on marine life in Kongsfjorden

Benthic organisms in Kongsfjorden, Spitsbergen. Photo credit: Joe Haschek, AWI.

Kongsfjorden situated in western Spitsbergen is a mecca for marine biologists and climatologists. The consequences of global change become apparent fast and are clearly visible on a small scale. "As the fjord opens to the Fram Strait, it is exposed to inflow of relatively warm Atlantic water from the West Spitsbergen Current. At the same time, the cold water from the Arctic Sørkapp Current influences the water masses of the fjord. So, marine life in the fjord is constantly exposed to alternating climate signals and thus it is an exciting natural laboratory for us," explains Inka Bartsch, biologist at the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI).

She is part of an international team of 60 scientists who compiled the current knowledge on impact of climate change on marine life in Kongsfjorden over the past months and published it in two special issues of the journal Polar Biology, edited by the AWI Kongsfjorden expert Christian Wiencke and Haakon Hop of the Norsk Polarinstitutt.

The two special issues include papers on almost all processes important for the fjord ecosystem and major groups of organisms – including pelagic heterotrophic microbes and zooplankton, benthic micro- and macro-algae, macrozoobenthos, fish and seabirds. Some of the papers focus on the effects of global climate change on biological communities; others compare changes observed in Kongsfjorden with those in other, still colder fjords and by this way provide a perspective for future scenarios. Another major part of the papers cover sedimentation processes and provide insights into sediment pollution. "We very much hope that these new scientific insights provide a good starting point for future work," says editor Christian Wiencke.

Original Publications in the journal Polar Biology:

Special Issue on Ecosystem Kongsfjorden: New Views after more than a Decade of Research (Part 1)

Special Issue on Ecosystem Kongsfjorden: New Views after more than a Decade of Research (Part 2)

This article was provided by Sina Löschke, Press Officer, AWI.

New challenges with harmful algae renew interest in old techniques

Scientists have developed powerful new molecular and genetic tools to identify harmful algal bloom species during the last 20 years. With these advances, interest has steadily waned in the classic methods of identifying algae by examining them under a microscope, and the required skills have long seemed likely to disappear from labs across the country. However, increasing uncertainty due to climate change is breathing new life into this dying art.

Dr. Rita Horner assists students during a 10-day course on identification of harmful algal bloom species at Bigelow Laboratory for Ocean Sciences.
Photo credit: Bigelow Laboratory.

In August, Bigelow Laboratory for Ocean Sciences hosted a 10-day, NOAA-funded course designed to teach classic methods of microscopic identification to people responsible for monitoring harmful algal blooms around the country. The course was organized by two senior research scientists, Mike Lomas and Cynthia Heil, who enlisted the help of some of the country's foremost experts in phytoplankton taxonomy: Drs. Karen Steidinger, Rita Horner, and Carmelo Tomas.

States monitor their coastlines for blooms of toxic algae throughout the year, and the stakes are high. Missing a bloom can kill people. A false identification can have needless economic repercussions on seafood businesses. There are a lot of lives and money on the line when making these calls.

"It really takes the blending of the older, morphological techniques with the newer, molecular techniques to develop a profile in which you can have the highest confidence," Steidinger said. "One day, advanced molecular techniques may be able to stand on their own, but, at least for now, we really need to substantiate the molecular with the morphology."

The course was a mix of lectures, demonstrations, and hands-on time using microscopes to examine samples of harmful diatoms, flagellates, and dinoflagellates. The visual differences between toxic and non-toxic strains of these algae are often extremely subtle, but they can be seen by a carefully trained eye.

"It's fascinating that nature is so diverse, that something so small can have such a beautiful and intricate design," Steidinger said. "It still amazes me. Down to the smallest details, there are morphologic features that are miniscule but part of a pattern that's absolutely beautiful."

This article was provided by Steven Profaizer, Director of Communications, Bigelow Laboratory for Ocean Sciences.

Capacity Building updates

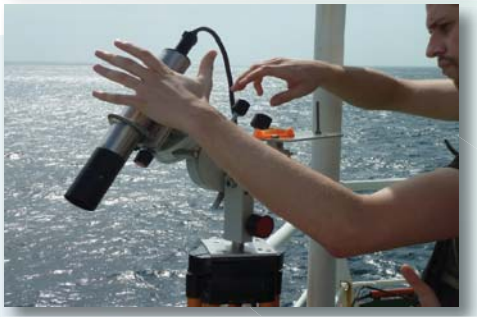
'Oceans know no boundaries'

On 12 December 2016, one month after its departure from Bremerhaven, the RV Polarstern arrived into Cape Town after the second NoSoAT training survey. Following the success of the programme last year, 25 scholars from 18 nations were selected to participate and receive practical training in ocean sampling and research methods.

Focusing on the theme of climate change, the scholars collected and analysed oceanographic and atmospheric data on route using a range of in-situ and remote sensing tools. Conductivity-Temperature-Depth (CTD) stations were carried out along the transect, profiling the water column from the surface to the deep abyss, sampling the shallow shelf waters of the North Sea through to the deep waters of the Canary Islands and the highly productive waters of upwelling areas off the coast of Namibia.

Daily atmospheric radio sonde data was matched with CTD data, creating a temperature profile reaching from the bottom of the ocean to the upper troposphere. After four weeks of training, the scholars were presented with a 'surprise station' and independently planned and executed their own sampling regime.

Group photo on board on *RV Polarstern*. Image credit: Andreas Winter.



Scholar taking atmospheric measurements. Photo credit: Carla Geisen.

"If you are going 2000 m deep, it is difficult to decide at what depths to fire the bottles and why. It was one of the most exciting things that I have ever tried" Walaa Thabet, a scholar from Egypt said.

In addition to the 'stationary data set', temperature data was collected by daily eXpendable Bathy Thermographs (XBTs) deployments from the ship as it was moving. Similar in operation to XBTs, an underway CTD was tested by the students during the survey "...we are using it to measure temperature and salinity in the water masses without having to stop. This was a fantastic learning experience for the scholars in deploying a new instrument with the crew" explained Chief scientist Prof. Karen Helen Wiltshire.

Throughout the survey this new generation of scientists used their new skills and the Polarstern as their research platform, to investigate topics including the influence of ENSO (El Niño Southern Oscillation) on the West African monsoon, distributions and changing heat and salt content of the Atlantic Ocean water masses. Changes in the heat distribution of the ocean can affect both ocean and terrestrial dynamics and productivity and we must understand the impacts of such climate changes.

This article was provided by Dr. Annette Wilson & Dr. Eva-Maria Brodte, Bioscience, Shelf Sea System Ecology, AWI.

Testimonials from POGO-SCOR Fellows 2016-2017

Tell us about your training

Jean-Baptiste: *"My training has focused on the characterization and monitoring of upwelling areas in Ivorian waters for fishery valorisation using remote sensing data."*

Fadzil: *"I was with the Sea Glider team in the University of East Anglia learning some important aspect of deployment methods and data management. At the same time I take the opportunity to explore the technology of Smart Buoy in CEFAS. Soon I realized that Ocean observation technology has grown so fast for the past few years and being able to work with these leading institutions in the UK was a very valuable experience for me."*

Jethan: **"***My fellowship has focused on data processing and management with particular focus on moored Conductivity, Temperature and Depth (CTD) and Argo floats"*

Ahon Jean-Baptiste Kassi

Fadzil Mohd Akhir

Jethan d'Hotman

How did you benefit from the programme?

Jean-Baptiste: *"During my visit at the Plymouth Marine Laboratory (PML), I have gained new skills to work with and analyse ocean-colour remote-sensing observations from the European Space Agency OC-CCI project, indices of phytoplankton phenology (bloom timing), and reanalysis of data products of wind to improve our understanding of the variability of catches of the fish species Sardinella aurita in Ivorian waters. I have also learned to use the ESA Bilko module to study phytoplankton seasonality based phenological metrics estimated from ocean-colour observations."*

Fadzil: **"***Although I have been working with gliders and buoys in Malaysia, learning from the experience of others has helped me to see things in a different perspective, especially when dealing with deployment planning and data management. These new inputs will allow me to improve some of our practices in the future. The program also has allowed me to meet many experts that share similar interest, exchanging ideas and establishing new networks."*

Capacity Building Updates (cont'd)

Jethan: "*This fellowship has significantly increased my general knowledge of data as well as provided an excellent base to further my career in oceanography. This training was extremely valuable and will feed into South Africa's mooring arrays as well as the growth of South Africa's Argo program."*

Your future aspirations

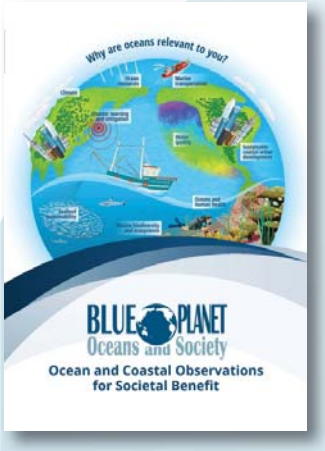
Jean-Baptiste: *"The results of the project are expected to help us to develop sustainable fishery activities in Ivorian waters. A publication about the results is currently being prepared for submission to a peer-reviewed journal. The fellowship has laid the foundation for the development of collaborations between the "Centre de Recherche et d'Application en Télédétection" (CURAT) and PML. Finally, as a lecturer at the Université Felix Houphouet-Boigny in Abidjan (Ivory Coast), I also plan to use Bilko lessons and tools to enrich the teaching program in Oceanography."*

Fadzil: "*In our institutions, we always knew that there is some improvement we can make on our ocean observation practices. Some of the experience I gained will allow me to improve our previous shortcomings, especially things related to deployment planning, methods and data managements system. Incorporating fresh ideas into the existing practices will hopefully make things more efficient and effective in our future research work."*

Jethan: "*South Africa's oceanographic research is expanding rapidly and as such I aspire to be an influential role player in this growth by providing technical support to both local and international oceanographic programmes."*

POGO Representation at International Meetings

GEO-XIII Plenary in St Petersburg, Russian Federation, 9-10 November 2016



The 2017-2019 Work Programme which includes Blue Planet as an Initiative, was adopted during the GEO-XIII Plenary. The slate of nominations for the Programme Board, which incorporated Sophie Seeyave as a member and representative of POGO and Blue Planet, was also approved.

During the Plenary Sophie highlighted the progress that had been made by Blue Planet in the last year (establishment of a Secretariat funded by NOAA/CSIRO, production of an Implementation Plan, new governance structure, new website, engagement with other international organisations).

A new brochure on Blue Planet was developed by a science communication consultant (funded by CSIRO) prior to the meeting, and displayed on the registration desk along with the POGO's Ocean Observations brochures and POGO's folders and DVDs.

G7 "Future of seas and oceans" Workshop, Southampton, UK, 29 November – 1 December 2016

The primary aim for the second G7 "Future of Oceans" Workshop was to agree and prioritise proposals for how G7 Governments and their marine science communities should take forward more effective international collaboration in 5 Action areas agreed at the Tsukuba Science Ministers Meeting held in May 2016.

Sophie Seeyave was invited to attend the workshop as a representative of both POGO and the GEO.

Overall, experts suggested that the G7 use this initiative to strengthen international collaboration, particularly on areas beyond national jurisdiction. To this end, the goal of the expert suggestions was to realize a more efficient and effective network of scientific ocean observing which supports the conservation and sustainable use of resources from the seas and oceans.

Following the workshop, the UK drafted a set of proposals according to the five Action areas that Ministers had asked experts to address.

POGO Representation at International Meetings (cont'd)

CommOCEAN international marine science communication conference, Bruges, Belgium, 6-8 December 2016

Sophie Seeyave giving a presentation at CommOCEAN.
Photo credit: VLIZ (Verhaeghe, Els).

The International Marine Science Communication Conference, CommOCEAN, focuses on a target audience of marine scientists and communicators who want to be trained in and/or share information and expertise regarding science communication skills. The organizers (VLIZ, EMB, EMBCP and UNESCO/IOC/IODE) developed an inspiring, innovative and interactive program consisting of two separate events: a 2-day conference in Bruges, followed by a 1-day training program in the InnovOcean facilities in Ostend.

Sophie Seeyave was invited to give a presentation on Ocean Communicators United, which is an initiative led by POGO as an extension of its News and Information Group, bringing together over 60 representatives of marine science organisations/ institutions who work in communications. Sophie also chaired a side meeting of Ocean Communicators United.

POGO Annual Meeting

POGO-18 Meeting hosted by Plymouth Marine Laboratory

The 18th POGO Annual Meeting took place from 24-26 January 2017 and was hosted by Plymouth Marine Laboratory, United Kingdom, who also hosts the POGO Secretariat office. Over 60 participants from 20 countries took part in the meeting.

In addition to reports on POGO activities from 2016 (e.g. reports on Working Groups and Training Initiatives led by POGO Members) presentations were given by partner organisations, members and NANO Alumni.

The agenda included Workshops on topics of interest to the Members and POGO community including the POGO Industry Liaison Council, Arctic Observations and Innovative Biological Sampling (including eDNA).

The Members had the opportunity to discuss future activities and POGO business during a 3-hour Partners' Meeting. Further information will be provided in the next issue of the POGO Newsletter.

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