

## IMOS Bulletin

Issue #58 September 2016

Welcome to the IMOS Bulletin. Please feel free to distribute this email bulletin to others. The Bulletin is also available for download from the website at <http://imos.org.au/bulletin.html>.

If you have any comments or questions regarding the IMOS Bulletin please contact IMOS Communications, [communication@imos.org.au](mailto:communication@imos.org.au).

### IMOS Data Reports

This month the first set of underway CO<sub>2</sub> data from the RV *Investigator* has been published on the AODN portal.

The IMOS Ships of Opportunity Underway CO<sub>2</sub> Measurements group is a research and data collection project working within the IMOS Ships of Opportunity Multi-Disciplinary Underway Network sub-facility. The CO<sub>2</sub> group samples critical regions of the Southern Ocean and the Australian shelf waters. These are regions where biogeochemical cycling is predicted to be particularly sensitive to a changing climate.

The pCO<sub>2</sub> Underway System measures the fugacity of carbon dioxide (fCO<sub>2</sub>) along with other variables such as sea surface salinity (SSS) and sea surface temperature (SST) using an automated system. The RV *Investigator*, covers shelf and offshore waters around Australia from the tropics to the sea-ice edge.

See the [SOOP underway CO<sub>2</sub> measurements data collection](#) (then filter by vessel)



**Stephen Thomas (MNF) shows Marian Wiltshire (IMOS) the pCO<sub>2</sub> equipment in the underway lab on the RV *Investigator***

The IMOS data holdings are detailed in a suite of reports generated by the AODN on a monthly basis. The summary reports for July 2016 can be downloaded directly via the IMOS website <http://imos.org.au/datareports.html>.

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## IMOS Activity Planning

The 2016-17 Activity planning calendars have now been completed and are live on the IMOS website <http://imos.org.au/imosactivityplanning.html>

Each spreadsheet contains details on; planned activity dates, vessels, nodes, facilities, sub-facilities, operators, organisations involved, recovery dates, regions and data availability.

Among other activities planned for October, IMOS will be making observations as part of the Ships of Opportunity Facility from two icebreakers in the Southern Ocean.



**AAD's *Aurora Australis* is utilised by the Ships of Opportunity Facility**

CSIRO's Bronte Tilbrook will be taking measurements of CO<sub>2</sub> for the Biogeochemical sub-facility from the *Aurora Australis*, in collaboration with Australian Antarctic Division (AAD).

Eric Shultz, from The Bureau of Meteorology, is also utilising AAD's *Aurora Australis* and will be taking Air-Sea flux measurements in the Southern Ocean.

Ann Thresher's (CSIRO) Expendable Bathythermograph sub-facility will use the vessel *L'Astrolabe* from French oceanographic institution IFREMER (The Institut français de recherche pour l'exploitation de la mer) to launch XBTs in the Southern Ocean.

Future activity planning for the IMOS Facilities is provided via the IMOS website (<http://imos.org.au/imosactivityplanning.html>). The plans contain details for all the planned deployment/recovery/servicing/sampling etc. activities for the NCRIS 2016 funding period.

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## Paper of the month

This month we'd like to highlight the following paper that references IMOS data:

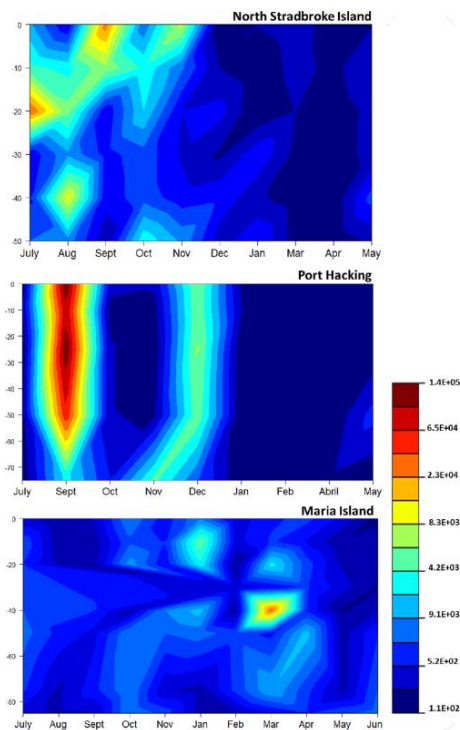
Bibiloni-Isaksson, J., Seymour, J. R., Ingleton, T., van de Kamp, J., Bodrossy, L. and Brown, M. V. (2016), **Spatial and temporal variability of aerobic anoxygenic phototrophic bacteria along the east coast of Australia**. *Environ Microbiol.* doi:10.1111/1462-2920.13436

Aerobic Anoxygenic Phototrophic Bacteria (AAnPB) are ecologically important microorganisms, widespread in oceanic photic zones. However, the key environmental drivers underpinning AAnPB abundance and diversity are still largely undefined. Network analysis revealed that discrete AAnPB populations exploit specific niches defined by varying temperature, light and nutrient conditions in the Tasman Sea system, with evidence for both niche sharing and partitioning amongst closely related operational taxonomic units.

Authors of this paper include co-leaders of the IMOS Australian Marine Microbial Biodiversity Initiative (AMMBI), Justin Seymour (UTS), Lev Bodrossy (CSIRO) and Mark Brown (UNSW) and NSW-IMOS Deputy Node leader, Tim Ingleton (NSW OEH).

This paper is particularly significant in that it is the first to come out of the IMOS AMMBI program, which commenced in 2012 with the collection of microbial samples at three National Reference Stations on the east coast of Australia. It was expanded in May 2014 to include all seven National Reference Stations. In mid-2015 a [joint project with Bioplatforms Australia](#) commenced to perform DNA sequencing and generate the large-scale datasets scientists require to understand fundamental marine processes and have a more complete understanding of marine microbial diversity and function.

Full text of the paper is available in the [Wiley Online Library](#).



**Contour maps displaying *pufM* copy number (genes) ml<sup>-1</sup> at each depth sampled at each of the three stations**

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## Did you know?

This section features news from the marine science community and highlights various ways in which you can discover, access and use IMOS data.

## IMOS in a nutshell

If you're ever asked 'What is IMOS and why do we need it?' you now have the perfect resource for providing a concise answer to that question.

In the sixth and final episode of this series of our '[IMOS in MOcean](#)' videos, Tim Moltmann gives an overview of what IMOS is and why Australia (and the world) needs it. He explains how IMOS is a unique collaboration of Australia's leading research organisations, deploying a network of advanced technologies to deliver data about Australia's oceans.

Tim explains how IMOS undertakes systematic, sustained, and scientifically-robust observations of Australia's vast and valuable ocean estate and converts these observations into data, time series, products and analyses that can be used and reused for broad societal benefit.

[Check out the other videos in this series.](#)



Screen shot from the video 'What is IMOS and why do we need it?'

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## Copernicus Workshop in Brisbane

Learn how your agency, company or activity can engage with Copernicus.

The Copernicus Program is the most comprehensive long-term operational Earth-Observing mission ever conceived, and implementation is well under way. Four of the dedicated *Sentinel* satellites are now on-orbit, with many more to come, and data is already flowing to Australia's Regional Copernicus Data Access/Analysis Hub.

Copernicus is being delivered by the European Commission (EC) in partnership with the European Space Agency (ESA), EUMETSAT and other partners ... including only two international partners: The United States and Australia.

The workshop will provide you with the most up-to-date info on the status and plans of Copernicus, and include interactive sessions aimed at:

- Discussing the Australia-European Union partnership on Copernicus
- Identifying opportunities for projects that support the goals of Copernicus
- Providing feedback that may inform future evolution of Copernicus and the Australia-European Union partnership

Participants for this workshop would be representatives from industry, state/territory government, research community, non-government and those people familiar with working in the South-East Asia/South Pacific region.

Numbers for this event are limited so **if you wish to attend** please contact Alla Metlenko ([Alla.Metlenko@ga.gov.au](mailto:Alla.Metlenko@ga.gov.au)).

**When:** 4 November, 08:30AM to 2:30PM, Lunch included.

**Where:** Brisbane Convention and Exhibition Centre

## Free 5-week, online course on using satellite data to monitor the health of the oceans.

EUMETSAT is offering a free, five-week massive open online course (MOOC) from 24 October to anyone interested in learning more about using satellite data to monitor the health of the oceans.

The course is timed to coincide with the stream of satellite data and products from the Sentinel-3A satellite, which was launched in February and is part of the EU's flagship Copernicus Programme for monitoring the environment from space.

The course will run for three hours per week and provide an interactive learning environment through entertaining lecture videos with leading scientists, tutorials, quizzes and learning apps. The MOOC will explain how to access and use marine Earth observation data and information from Copernicus/EUMETSAT missions and the Copernicus Marine Environment Monitoring Service.

Further information can be found in the following trailer: <https://youtu.be/p8hKomGzZ68>

Registration is now open: [http://www.eumetsat.int/website/home/News/DAT\\_3171181.html](http://www.eumetsat.int/website/home/News/DAT_3171181.html)

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## Upcoming Events

- **11-12 October 2016** Australian Coastal and Oceans Modelling and Observations Workshop (ACOMO) 2016, Shine Dome, Canberra. <http://imos.org.au/acomo2016.html>
- **11–13 October 2016** International Conference on Marine Data and Information Systems (IMDIS) 2016, Gdansk, Poland. <http://imdis2016.seadatanet.org/>
- **18-20 October 2016** Australian Ocean Renewable Energy Symposium, Melbourne, Australia. <https://events.csiro.au/Events/2015/December/18/Australian-Ocean-Renewable-Energy-Symposium>
- **14–16 November 2016** International Conference on the Marine Environment of the Red Sea (ICMERS 2016), Thuwal, Saudi Arabia <https://icmers2016.kaust.edu.sa/home>
- **7-10 February 2017** Australian Meteorological and Oceanographic Society (AMOS) and Meteorological Society of New Zealand (MSNZ) joint conference in conjunction with the Australian/New Zealand Climate Forum (ANZCF), Canberra, Australia [http://www.amos.org.au/Main/Upcoming\\_Events/amos2017.aspx](http://www.amos.org.au/Main/Upcoming_Events/amos2017.aspx)

For a full list of upcoming conferences please visit the Calendar page at <http://imos.org.au/calendar.html>. If you would like an event or conference featured on our website calendar please contact [communication@imos.org.au](mailto:communication@imos.org.au).