IMOS Integrated Marine Observing System

IMOS Bulletin

Issue #61 January 2017

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.

From the IMOS Office

Happy new year to all of you. Below is a brief roundup of activity and engagement done through the IMOS Office over the last two months (December and January).

- Great Barrier Reef Integrated Monitoring and Reporting Program (RIMREP) Steering Committee meeting held in Brisbane on 28 November.
- National Marine Science Committee teleconference held on 1 December. The meeting report can be found here.
- IMOS presented the National Estuaries Network meeting in Canberra on 7 December. The intention was to seek input on how best to extend IMOS into coasts and estuaries, as recommended by the National Marine Science Plan and supported by the draft National Research Infrastructure Roadmap. The presentation generated lively discussion, with topics including coastal reference stations and microbial oceanography. IMOS and NEN will look to continue a dialogue during 2017 and beyond.
- A Node Steering Committee Meeting was held on 9 December, largely to seek node input to design of the agenda for the 11th IMOS Annual Planning Meeting to be held in Perth on 14-16 February – see here.
- A quarterly teleconference of the Global Ocean Observing System (GOOS) Regional Alliance Council was held on 15 December. IMOS is currently chair of the Council. The next biennial face to face meeting of the Council will be held in Singapore on 5-7 September.
- A consultation session on the Draft 2016 National Research Infrastructure Roadmap was held in Melbourne on 20 December, which we attended by videoconference. The IMOS submission to the Draft Roadmap was submitted on 13 January and can be found here.
- Regular meeting held with Parks Australia on 22 December. They will send a representative to the IMOS APM this year.
- IMOS is on the organising committee for the 3rd GEO Blue Planet Symposium to be held in Maryland, USA on 31 May to 2 June – see here. Regular teleconferences held through December and January.
- Hosted a visit by the Tasmanian Department of State Growth on 19 January. The Department has provided financial support to the IMOS Office since inception, and the visit provided an opportunity for senior officials to get a better understanding of what we do and how it benefits Tasmania and Australia.
- Hosted a visit by Tommy Bornman of the South African Environmental Observation Network (SAEON) on 20 January. We identified good opportunities for enhanced collaboration.

IMOS Data Reports

AODN adds new bathymetry data from NSW Office of Environment and Heritage

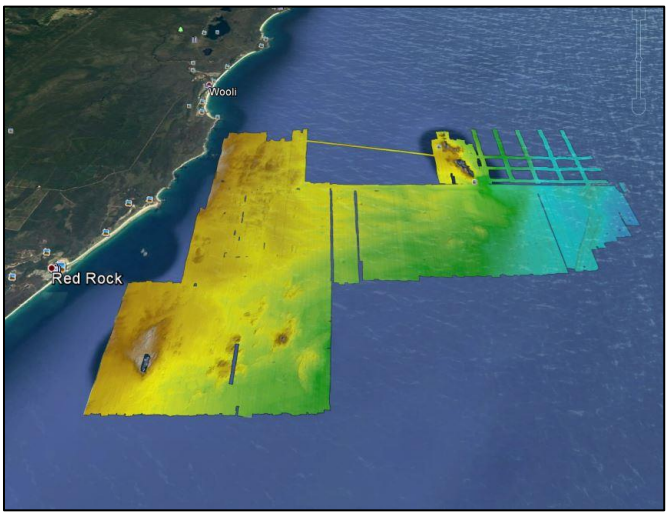
The IMOS facility 'Australian Ocean Data Network', in collaboration with the NSW Office of Environment and Heritage (OEH), has recently added the NSW OEH Bathymetry collection to the AODN portal.

Over a period of 4-5 months the AODN, working with Edwina Foulsham and Tim Ingleton (Co-Deputy Node Leader, NSW-IMOS), has created a pipeline for the flow of data from OEH to be processed and published by AODN. This makes this wealth of data publicly accessible for the first time, providing valuable data for a variety of applications such as coastal modelling.

Surveys were conducted in and around NSW Coastal and State Waters, using a mounted GeoAcoustics Geoswath 125KHZ Interferometric sidescan sonar system, by the HABMAP program. The HABMAP program, which was initiated to provide fine scale benthic habitat information for NSW State Waters, initiated surveys to provide a minimum of 5 x 5m bin scale bathymetric and backscatter layers for use in GIS applications.

Products include fine-scale bathymetric and relative acoustic backscatter data in several formats. For each survey there is also a 'scientific rigour' document describing the origin and processing of the data, and files showing the geographic coverage of the survey (ESRI shapefile and Google KMZ formats). OEH expects further data to be added indefinitely as long as their vessel is in operation and is equipped with sonar technology.

The data collection can be accessed via the AODN portal using the 'Organisation' tab, or by selecting Physical-Water > Depth under the Parameter tab. Alternatively, here is the direct link to the OEH Bathymetry Surveys.



NSW OEH Bathymetry survey data in kmz format can be viewed through Google Earth

The IMOS data holdings are detailed in a suite of reports generated by the AODN on a monthly basis. The summary reports for January 2017 can be downloaded directly via the IMOS website http://imos.org.au/datareports.html.

IMOS is a national collaborative research infrastructure, supported by Australian Government. It is led by University of Tasmania in partnership with the Australian marine & climate science community.

IMOS Activity Planning

Deployment and maintenance activities next month include:

- The Ocean glider facility will deploy Slocum gliders at Bass Strait, Bonney Coast and Two Rocks (Perth region)
- The Satellite altimetry calibration and validation facility, through CSIRO and UTAS, will remove instrumentation at Sentinel 3A altimeter Comparison Point (S3A CP) and install instrumentation at the S3B CP as well as deploy a GPS buoy in Bass Strait
- The National Mooring Network, through AIMS, will deploy a number of moorings from the RV *Solander* in the Indonesian Throughflow and Darwin region.
- The Animal Tracking facility will deploy CTDs on Elephant and Weddell seals in the Southern and Southern Indian Oceans.

Future activity planning for the IMOS Facilities is provided via the IMOS website (http://imos.org.au/imosactivityplanning.html). The activity plans contain details for all the planned deployment/recovery/servicing/sampling etc. activities for the 2016-17 period.

Paper of the month

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

Eric Oliver, Research Fellow in Physical Oceanography with Australian Research Council Centre of Excellence for Climate System Science (ARCCSS) and Institute for Marine and Antarctic Studies (IMAS) at the University of Tasmania (UTAS) was lead author of a paper published in Continental Shelf Research.

The paper develops a regional ocean model for eastern Tasmania and extensively uses IMOS data for model validation.

Researchers used a high-resolution (~2 km in the horizontal), three-dimensional ocean model for eastern Tasmania (ETAS) to examine the simulated mean state and seasonal cycle of temperature, salinity and three-dimensional flow field, and the evaluation of daily model outputs against in situ and remote observations for the 1993-2014 period. They also used the model to examine the roles of river input and tidal forcing. The model is evaluated against remotely-sensed sea surface temperature and in-situ observations of sea level and subsurface temperature, salinity, and currents.

Oliver, E. C. J., M. Herzfeld and N. J. Holbrook (2016), Modelling the shelf circulation off eastern Tasmania, *Continental Shelf Research*, 130, pp. 14-33, doi: 10.1016/j.csr.2016.10.005

The paper is available online through ScienceDirect.

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.

NSW-IMOS announces leadership change

Following a meeting on 11 January, the New South Wales node of IMOS (NSW-IMOS) announced that Justin Seymour, from the University of Technology Sydney (UTS) will take over leadership of the node.

Martina Doblin, from UTS and the Sydney Institute of Marine Science (SIMS), has stepped down as leader after several years in the position.

Tim Moltmann thanked Martina for her important contribution to IMOS and hopes to keep her engaged through our work at the nexus of ocean optics, remote sensing and microbial ecology.

Tim Ingleton from the NSW Office of Environment and Heritage will remain as the Deputy Leader.

See the IMOS news article on this announcement.

International link bears fruit

The Southern Ocean Carbon Processes (SOCarP) project (consisting of two sediment traps, one ADCP, two RCMs and 3 MicroCATs) has reported that it successfully deployed a sediment trap mooring at 40°S 58.5°E on 13 January.

The deployment was from the SA *Agulhas* as a part of its current Southern Ocean expedition. The mooring is programmed for two years although it may be retrieved next year.

Some time ago Tom Trull (IMOS Deepwater moorings facility) assisted the project by sending information to Dr P. V. Bhaskar from the Indian National Centre for Antarctic and Ocean Research (NCAOR) and later meeting with him at his lab and mooring shop in Hobart.

Tom hopes to explore the possibility of expanded links with NCAOR for both Southern Ocean moorings and BioArgo efforts.

Professor Tom Trull, ACE CRC/CSIRO and IMOS sub-facility leader

A new paper and video series teaches analysis and visualisation of ocean glider data

A new paper has been published in the journal 'Oceanography' on the use of 'Gliderscope' a software package developed for the analysis and visualisation of ocean glider data. The paper was developed as a hands-on activity with example data sets and video tutorials for ease of use. The activity and exercises were tested through the University of Western Australia ENVE 4615 Physical Oceanography undergraduate class.

Reference: Hanson, C.E., L.M. Woo, P.G. Thomson, and C.B. Pattiaratchi. 2016. Observing the ocean with gliders: Techniques for data visualization and analysis. *Oceanography* 30(2), https://doi.org/10.5670/oceanog.2017.210.

See the first video tutorial on YouTube

Also, Gliderscope version 6 has been released – it is now uploaded onto the IMOS website including an updated user manual. http://imos.org.au/gliderscope.html

Upcoming Events

- **30 January – 4 February** IOGOOS/IOP/SIBER/IRF Annual Meetings and 1st IIOE-2 Steering Committee Meeting and Bio-Argo Workshop, Perth Australia (by invitation) http://www.clivar.org/events/iogoosiopsiberirf-annual-meetings-and-1st-iioe-2-steering-committee-meeting-and-bio-argo
- **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
- **14 – 16 February 2017** 11th IMOS annual planning meeting, Perth, Australia (by invitation) http://imos.org.au/apm2017.html
- **31 May – 2 June 2017** Blue Planet Symposium: Oceans and Society, Maryland USA. http://symposium.geoblueplanet.com.
- **2 – 6 July 2017** AMSA Australian Marine Science Conference 2017, Darwin Australia http://events.amsaconference.net/home.html
- **25 – 27 July 2017** The Australian Forum for Operational Oceanography (FOO), Fremantle, Australia http://www.foo.org.au/forum/
- **5 – 7 September 2017** Eighth GOOS Regional Forum Meeting, Singapore http://goosocean.org/index.php?option=com_oe&task=viewEventRecord&eventID=1973

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.

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