

## Australia

### ***Meetings and workshops***

- GEOTRACES presentations by Australian scientists at the ASLO Aquatic Sciences meeting (New Orleans, February 2013), the 45th International Liège Colloquium on Ocean Dynamics (Liège, May 2013), and the Strategic Science in Antarctica - a joint Australian & New Zealand Conference (Hobart, June 2013).
- Participation in GEOTRACES particle intercalibration workshop led by Phoebe Lam (Hawaii, March 2013)
- Participation to the SCOR Workgroup 139 in New Orleans in February 2013.

### ***Cruises***

- Completion of the GEOTRACES Process Study SIPEX-2 (GIpr02; Project PI: Klaus Meiners), a multidisciplinary biogeochemistry experiment examining the role of Antarctic sea ice as a natural ocean fertilizer during the spring in the sea ice zone near Casey station, east Antarctica in Sep/Oct 2012.

### ***New funding***

- Shiptime funding from the Marine National Facility of a major 2-month research expedition in austral summer 2014-15. The project will investigate submarine volcanism/hydrothermalism and biospheric impacts around the Heard/McDonald Islands in the Southern Ocean. GEOTRACES parameters will be sampled and the project will be proposed as a GEOTRACES Process Study at the next SSC meeting.
- The Antarctic Climate & Ecosystems Cooperative Research Centre (ACE CRC) has been refunded for 5 more years from 2014-2019. Scientists at the ACE CRC have carried out several Australian GEOTRACES in the past 5 years. The planned research activities and fieldwork in the new ACE CRC are currently under discussion.
- Funding for GEOTRACES activities in Australia continues to be tight, with most projects carried out using small research grants. The major laboratories in Australia at the University of Tasmania and the Australian National University have applied for large grant funding (3-4 years) from the Australian Research Council (results known in October 2013). No dedicated national funds available for GEOTRACES activities. Recent departure of Christel Hassler to Europe has decreased the number of active GEOTRACES researchers in the region.

### ***New results***

- Results of the French-led GEOTRACES Process Study KEOPS-2 (GIpr01; Project PI Stephane Blain), a natural iron fertilisation experiment around the Kerguelen Islands in the Southern Ocean, are currently being prepared for a submission to a Biogeosciences special issue (manuscripts to be submitted in the period October-December 2013).
- Continuing analyses from GEOTRACES GP13 cruise (voyage ss2011\_v02), a zonal section in Southwest Pacific Ocean along approximately 30oS.
- Submission of data from Australian cruises GIPY2 (au0703), GIPY3 (au0701), GIPY6 (au0806) and GPpr02 (SS10\_v01 PINTS) to GDAC for the GEOTRACES Intermediate Data Product.
- Publication of results from GPpr02 (SS10\_v01 PINTS): Hassler C.S., Ridgway K., Bowie A.R., Butler E.C.V., Clementson L., Doblin M.A., Ellwood M., Ralph P., Davies D.M., van der Merwe P., Watson R., 2013. Primary productivity induced by iron and nitrogen in the Tasman Sea – An overview of the PINTS expedition. Submitted to Marine and Freshwater Research, 1 June 2013.

### ***New publications***

- Butler, ECV and O'Sullivan, JE and Watson, RJ and Bowie, AR and Remenyi, TA and Lannuzel, D, 'Trace metals Cd, Co, Cu, Ni, and Zn in waters of the subantarctic and Polar Frontal Zones south of Tasmania during the 'SAZ-Sense' project', *Marine Chemistry*, 148 pp. 63-76. ISSN 0304-4203 (2013)
- Cropp, RA and Gabric, AJ and Levasseur, M and McTainish, GH and Bowie, AR and Hassler, CS and Law, CS and McGowan, H and Tindale, N and Viscarra Rossel, R, 'The likelihood of observing dust-stimulated phytoplankton growth in waters proximal to the Australian continent', *Journal of Marine Systems*, 117-118 pp. 43-52. ISSN 0924-7963 (2013)
- C.S. Hassler, V. Schoemann, M. Boye, A. Tagliabue, Rozmarynowycz M, McKay, RML. Iron Bioavailability in the Southern Ocean. In: *Oceanography and Marine Biology: An Annual Review*. (eds) Gibson RN, Atkinson RJA, Gordon JDM, Hughes RN. CRC Press, London, 2012, 50, 1–64.
- Hassler C.S., Legiret F.-E., Butler, E.C.V. Measurement of iron chemical speciation in seawater at 4°C: the use of competitive ligand exchange - adsorptive cathodic stripping voltammetry. *Marine Chemistry*.149: 63-73. 2013.
- Morton, PL and Landing, WM and Hsu, S-C and Milne, A and Aguilar-Islas, AM and Baker, AR and Bowie, AR and Buck, CS and Gao, Y and Gichuki, S and Hastings, MG and Hatta, M and Johansen, AM and Losno, R and Mead, C and Patey, MD and Swarr, G and Vandermark, A and Zamora, LM, 'Methods for the sampling and analysis of marine aerosols: Results from the 2008 GEOTRACES aerosol intercalibration experiment', *Limnology and Oceanography: Methods*, 11 (FEB) pp. 62-78. ISSN 1541-5856 (2013)
- Smith, LV and McMinn, A and Martin, AR and Nicol, S and Bowie, AR and Lannuzel, D and Van Der Merwe, P, 'Preliminary investigation into the stimulation of phytoplankton photophysiology and growth by whale faeces', *Journal of Experimental Marine Biology and Ecology*, 446 pp. 1-9. ISSN 0022-0981 (2013)
- Bown, J and Boye, M and Laan, P and Bowie, AR and Park, Y-H and Jeandel, C and Nelson, DM, 'Imprint of a dissolved cobalt basaltic source on the Kerguelen Plateau', *Biogeosciences*, 9 (12) pp. 5279-5290. ISSN 1726-4170 (2012)
- Remenyi, T and Nesterenko, P and Bowie, A and Butler, E and Haddad, P, 'Reversed phase high performance liquid chromatographic determination of dissolved aluminium in open ocean seawater', *Limnology and Oceanography: Methods*, 10 pp. 832-839. ISSN 1541-5856 (2012)
- Sinoir, M and Butler, ECV and Bowie, AR and Mongin, M and Nesterenko, PN and Hassler, CS, 'Zinc marine biogeochemistry in seawater: A review', *Marine and Freshwater Research*, 63 (7) pp. 644-657. ISSN 1323-1650 (2012)

### ***Other activities***

The new Australian oceanographic research vessel *Investigator* will be delivered to Hobart (Australia) in late 2013, and the commissioning year will run through until mid-2014. The ship has improved facilities to undertake GEOTRACES science, including new clean container laboratories, a clean underway supply, aerosol samplers, in situ pumps and a new Seabird trace metal rosette system. Procurement of new equipment is currently underway and should be completed by end 2013.

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