

ANNUAL REPORT ON GEOTRACES ACTIVITIES IN IRELAND (ÉIRE)
MAY 2014 – JUNE 2015

Meetings

- Meeting of the GEOTRACES Standards and Intercalibration committee was held in Galway from the 26-28 January, 2015 (organized by Peter Croot, NUIG).

New funding

- There is no direct funding of GEOTRACES activities in Ireland. However iCRAG, the Irish Centre for Research in Applied Geosciences (<http://icrag-centre.org>) is a new SFI (Science Foundation Ireland) research centre that began on the 1st of January 2015. iCRAG is co-funded (total funding 25 M€) by SFI, industry and the European Regional Development Fund (ERDF). Prof Peter Croot (NUIG) is a co-PI in iCRAG and is the co-Spoke leader for Marine Geosciences. Participation in the GEOTRACES process study UltraPac, as part of the Sonne expedition (SO245) to the South Pacific, forms part of this work.

National and international service

- Ireland is represented on the International GEOTRACES Standards and Intercalibration committee by Peter Croot.

New results

- Surface seawater within Galway Bay was sampled for the Radium quartet (^{223}Ra , ^{224}Ra , ^{226}Ra and ^{228}Ra) as part of investigations into submarine groundwater in this region during the Celtic Voyager expedition CV14010 (May 2014). This data is currently being written up for publication.

New publications (involving GEOTRACES researchers in Ireland)

- Baars, O., Abouchami, W., Galer, S.J.G., Boye, M., Croot, P.L., 2014. Dissolved cadmium in the Southern Ocean: Distribution, speciation, and relation to phosphate. *Limnol. Oceanogr.* 59, 385-399.
- Baars, O., Croot, P.L., 2015. Dissolved cobalt speciation and reactivity in the eastern tropical North Atlantic. *Marine Chemistry* 173, 310-319.
- Chever, F., Rouxel, O.J., Croot, P.L., Ponzevera, E., Wuttig, K., Auro, M., 2015. Total dissolvable and dissolved iron isotopes in the water column of the Peru upwelling regime. *Geochimica et Cosmochimica Acta* 162, 66-82.
- Heller, M.I., Croot, P.L., 2015. Copper speciation and distribution in the Atlantic sector of the Southern Ocean. *Marine Chemistry* 173, 253-268.
- Loescher, C.R., Groskopf, T., Desai, F.D., Gill, D., Schunck, H., Croot, P.L., Schlosser, C., Neulinger, S.C., Pinnow, N., Lavik, G., Kuypers, M.M.M., LaRoche, J., Schmitz, R.A., 2014. Facets of diazotrophy in the oxygen minimum zone waters off Peru. *ISME J* 8, 2180-2192.
- Pižeta, I., Sander, S.G., Hudson, R.J.M., Omanović, D., Baars, O., Barbeau, K.A., Buck, K.N., Bundy, R.M., Carrasco, G., Croot, P.L., Garnier, C., Gerringa, L.J.A., Gledhill, M., Hirose, K., Kondo, Y., Laglera, L.M., Nuester, J., Rijkenberg, M.J.A., Takeda, S., Twining, B.S., Wells, M., 2015. Interpretation of complexometric titration data: An intercomparison of methods for estimating models of trace metal complexation by natural organic ligands. *Marine Chemistry* 173, 3-24.

- Schubert, M., Knoeller, K., Rocha, C., Einsiedl, F., 2015. Evaluation and source attribution of freshwater contributions to Kinvarra Bay, Ireland, using ^{222}Rn , EC and stable isotopes as natural indicators. *Environmental Monitoring and Assessment* 187, 1-15.
- Simonella, L.E., Palomeque, M.E., Croot, P.L., Stein, A., Kupczewski, M., Rosales, A., Montes, M.L., Colombo, F., Garcia, M.G., Villarosa, G., Gaiero, D., 2015. Soluble iron inputs to the Southern Ocean through recent andesitic to rhyolitic volcanic ash eruptions from the Patagonian Andes. *Global Biogeochem. Cycles* (accepted).

Other activities

- Inaugural meeting of the COST Action TD1407 “Network on technology-critical elements - from environmental processes to human health threats”, (Brussels, Belgium, 15-16 April 2015). This network grew out of the earlier GEOTRACES related COST Action ES0801.
- Prof. Peter Croot is currently a member of the European Marine Board – Deep Sea Working Group – A report to the EU will be released in late 2015.
- Funding within iCRAG (see above) also supports new facilities (a quadrupole mass spectrometry and a laser ablation system) for the National Centre for Isotope Geochemistry located at UCD (Prof. Stephen Daly) and TCD (Prof. Balz Kamber). The National Centre for Isotope Geochemistry at UCD was set up in January 2009 and is located within the UCD School of Geological Sciences. The Centre facilitates interdisciplinary research in radiogenic and heavy stable isotope geochemistry by academics from UCD, TCD, NUIG and UCC, as well as international collaborators. Present equipment includes a Thermo Scientific Triton (TIMS) and a Thermo Scientific Neptune (MC-ICPMS) coupled with a New Wave Excimer laser ablation system.

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