

## ANNUAL REPORT ON GEOTRACES ACTIVITIES IN ...

May 1st, 2024 to April 30th, 2025

### ***GEOTRACES or GEOTRACES relevant cruises***

- Prof Peter Croot (University of Galway) participated in AMT31 (JC272) on the RSS James Cook from Southampton, UK to Montevideo, Uruguay from 27/11/2025 until 30/12/2024.
- Delon Earle from the University of Galway was a participant during the 2025 occupation of the GO-SHIP P04W transect in the Western Pacific onboard the RV Mirai (MR25-02) from April-May 2025.

### ***New projects and/or funding***

- There were no new projects or funding initiated during the reporting period. A pre-proposal had been submitted (Dec 2023) to SFI for a new SFI centre focused on the Marine Environment (FORCE – Future Ocean Research CEntre), in June 2024, SFI announced that they were delaying making a decision on this until later in 2024. Currently iCrag is funded until the end of 2026.

### ***GEOTRACES workshops and meetings organised***

- There were no GEOTRACES specific workshops run in Ireland during the reporting period.

### ***Outreach activities conducted (please list any outreach/educational material available that could be shared through the GEOTRACES web site) (We are particularly interested in recordings from webinars from GEOTRACES research)***

- There were no specific GEOTRACES outreach activities conducted during the reporting period.

### ***Other GEOTRACES activities***

- Prof. Croot is a member of the Chemical Speciation Group – Joint Committee on the Properties of Seawater (2023-present).
- Prof. Croot is an associate member of SCOR Working Group 167 - Reducing Uncertainty in Soluble aerosol Trace Element Deposition (RUSTED) (2022 – present).
- Prof. Croot attended the annual SCOR meeting, held in Qingdao, China in October 2024, in his role as Secretary of the SCOR Executive Committee.

### ***New GEOTRACES or GEOTRACES-relevant publications (published or in press) (If possible, please identify those publications acknowledging SCOR funding)***

- Bernal, C., Teira, E., Calvo-Martin, E., Justel-Diez, M., Álvarez-Salgado, X.A., Rocha, C., de la Paz, M., Álvarez, M., Ibáñez, J.S.P., 2025. Exploring the land-ocean biogeochemical and microbial connectivity in the Ría de Vigo (NW Iberian Peninsula) through submarine groundwater discharge. *Estuarine, Coastal and Shelf Science* 322, 109339. <https://doi.org/10.1016/j.ecss.2025.109339>

- Krug, L.A., Beckman, F., Rees, A.P., Dummermuth, A., Stymiest, C., Brodte, E.-M., Wiltshire, K.H., Croot, P., Seeyave, S., 2025. All aboard! Providing shipboard technical skills while building capacity in ocean observations. *Oceanography* 38. <https://doi.org/10.5670/oceanog.2025.123>
- Liu, X., Bian, Z., Hu, S., Dickinson, C.F., Benjamin, M.M., Jia, J., Tian, Y., Place, A., Hanna, G.S., Luesch, H., Croot, P., Reddy, M.M., Thomas, O.P., Hardiman, G., Puglisi, M.P., Yang, M., Zhong, Z., Lemasters, J.J., Korte, J.E., Waters, A.L., Heltzel, C.E., Williamson, R.T., Strangman, W.K., Valeriote, F., Tius, M.A., DiTullio, G.R., Ferreira, D., Alekseyenko, A., Wang, S., Hamann, M.T., Wang, X., 2024. The Chemistry of Phytoplankton. *Chemical Reviews*. <https://doi.org/10.1021/acs.chemrev.4c00177>
- Turner, D.R., Croot, P.L., Dickson, A.G., Gledhill, M., 2025. Physicochemical controls on seawater, Reference Module in Earth Systems and Environmental Sciences. Elsevier. <https://doi.org/10.1016/B978-0-323-99762-1.00035-8>
- Xu, H., Hu, P., Wang, H., Croot, P., Li, Z., Li, C., Xie, S., Zhou, H., Zhang, C., 2025a. Identification of the pollution sources and hidden clustering patterns for potentially toxic elements in typical peri-urban agricultural soils in southern China. *Environmental Pollution* 370, 125904. <https://doi.org/10.1016/j.envpol.2025.125904>
- Xu, H., Wang, H., Croot, P., Liu, J., Li, Y., Beiyuan, J., Li, C., Singh, B.P., Xie, S., Zhou, H., Zhang, C., 2025b. Investigation of spatially varying relationships between cadmium accumulation and potential controlling factors in the topsoil of island of Ireland based on spatial machine learning approaches. *Environmental Research* 275, 121466. <https://doi.org/10.1016/j.envres.2025.121466>

***Please indicate if there is any forthcoming or planned GEOTRACES special issue publication***

- There are no forthcoming or planned GEOTRACES special issue publications.

***Completed GEOTRACES PhD or Master theses (please include the URL link to the pdf file of the thesis, if available)***

- No GEOTRACES related PhD or Master theses were completed during the reporting period.

***GEOTRACES presentations in international conferences***

- Pro. Croot made a presentation to the GESAMP WG 38 meeting in Heraklion, Crete, Greece (April 6-10, 2025), which introduced the SCOR projects of relevance to the meeting focus on “Research priorities for improving global flux estimates of atmospheric chemical deposition to the ocean”. This included an introduction to GEOTRACES and SOLAS work related to this topic.

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