

MONTHLY NEWSLETTER

7TH EDITION

CryoExchange Workshop, University of Edinburgh



Friday December 5th, 2025



Welcome...

to the seventh issue of the CryoExchange Newsletter!

As we come towards the end of 2025, we are delighted to bring you our final newsletter of the year and reflect on the activities of our members over recent months. It was wonderful to catch up with so many members (36!) at our latest workshop, and we would like to say a massive thank you to all those involved in organising a very successful day!

In this newsletter, you will be able to hear tales from fieldwork in California and Svalbard, learn about recent outreach undertaken at Dynamic Earth, and discover new member publications. We also provide details of an exciting opportunity to apply for a grant that could fund your next Arctic adventure...

We hope you all have a wonderful holiday, and can't wait to hear from you next year. As always, thank you to all those that contributed to this issue, and if you have any feedback, please reach out at: cryoexchange.sages@gmail.com

Happy reading!

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Remember, to add your profile to our new website, please complete the form below!

[Member Profile Form](#)

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Publications

Boyse, E., Clark, I., Carr, M., **Cook, A.**, Archambault, P., Holloway, J., Luo, Z., Milton, M., Roy, M., Daswon, J., & Peck, V. (2025) Expanding Monitoring Capacity for Potential Invasive Species in Arctic Canada With Environmental DNA Metabarcoding. *Global Change Biology*, 31, 9, e70452. <https://doi.org/10.1111/gcb.70452>

Slater, D. A., Johnstone, E., **Mas e Braga, M.**, Fraser, N. J., **Cowton, T.**, & Inall, M. (2025) FjordRPM v1. 0: a reduced-physics model for efficient simulation of glacial fjords. *Geoscientific Model Development*, 18(20), 7475-7500. <https://doi.org/10.5194/gmd-18-7475-2025>

Picton, H. & **Nienow, P.** (2025). Multi-year ice dynamics at Køge Bugt Central glacier controlled by bed topography. *Geophysical Research Letters*, 52, e2025GL116829. <https://doi.org/10.1029/2025GL116829>

Mas e Braga, M., Cowton, T., **Slater, D.**, Inall, M., Johnstone, E., & Fraser, N.(2025). Controls on fjord temperature throughout Greenland in a reduced-physics model. *Geophysical Research Letters*, 52, e2025GL116902. <https://doi.org/10.1029/2025GL116902>

Winter, K., Woodward, J., Dunning, S., Jordan, J., Graly, J., Westoby, M., **Henley, S.**, Raiswell, R. Thinning Antarctic glaciers expose high-altitude nunataks delivering more bioavailable iron to the Southern Ocean. *Nature Communications*, 16, 9994 (2025). <https://doi.org/10.1038/s41467-025-65714-y>

Harrison, S., Racoviteanu, A., Shannon, S., Jones, D., Anderson, K., Glasser, N., Knight, J., **Ranger, A.**, Mandal, A., Vishwakarma, B. D., Kargel, J. S., Shugar, D., Haritashya, U., Li, D., Koutroulis, A., Wyser, K., and Inglis, S. (2025) Will landscape responses reduce glacier sensitivity to climate change in High Mountain Asia?, *The Cryosphere*, 19, 4113-4124, <https://doi.org/10.5194/tc-19-4113-2025>

Unnsteinsson, T., **Spagnolo, M.**, **Rea, B.**, Girona, T., Barr, I., & Mullan, D. (2025) Volcanoes stunt nearby glaciers. *Nature Communications*, 16, 8099. <https://doi.org/10.1038/s41467-025-63332-2>

Harcourt, W., Shahin, M., Stearns, L., & Shankar, S (2025). Structural weaknesses in ice mélange revealed by high resolution ICEYE SAR imagery, *Journal of Glaciology*, 71, p. e108. <https://doi.org/10.1017/jog.2025.10085>

McLoughlin, J., Archer, S., Swan, A., Kurjanski, B., Buckley, F., **Rea, B.**, **Spagnolo, M.**, Burchell, M. (2025). The Paso Anomaly: shallow gas contained within Lower Pleistocene glaciogenic deposits in the Central North Sea. *Petroleum Geoscience*, 31 (3) <https://doi.org/10.1144/petgeo2024-07>

Kurjanski, B., **Rea, B.**, **Spagnolo, M.** (2025).The role of shallow banks and marine ice domes in marine-based ice-sheet deglaciation. *Boreas*, 54: 649-671. <https://doi.org/10.1111/bor.70012>

Congratulations, Dr McDonald!

CryoExchange member Neil McDonald recently successfully defended his PhD dissertation in the Division of Biological and Environmental Sciences at the University of Stirling!



Neil's PhD was entitled: "**Glaciomarine Sediment Archives – Integrating Traditional Approaches and Novel Techniques to Constrain Ice-Stream Collapse in The Minch, NW Scotland.**"

The first chapter of Neil's PhD is published in *Quaternary Science Advances*, and can be found at the link below. Well done, Dr McDonald!

<https://doi.org/10.1016/j.qsa.2021.100046>



Outreach

Thursday 27th November was “**Protecting Our Planet Day**” organised by STEM Learning. As part of this nationwide event, CryoExchange members **Pete Nienow** and **Sian Henley** took part in the “**Pop into the Poles**” session for primary schools and other learners, organised by **Dynamic Earth** in Edinburgh.

Pete and Sian joined Dynamic Earth’s **Chris George** for a lively discussion and displays on climate change and biodiversity of the Arctic and the Antarctic, and what it is like to live and work in these magnificent places.



The session included games, demonstrations, questions from the audience, and dressing up in toasty polar fieldwork gear! **Over 15,000 pupils** from across the UK signed up for our session, so we hope that at least some of them came away informed about polar change and why it is important, and maybe some were even inspired to consider a career in polar science or polar issues in the future!

CryoExchange on Tour!



Borebreen, Svalbard



Will Harcourt and **Morag Fotheringham** visited Svalbard in October to meet with stakeholders who will be the potential end-users of the Svalbard Cryosphere Digital Twin (**SvalbardDT**). Meetings were arranged with tourist companies, UNIS, logistics providers and Search and Rescue teams, with many useful insights gained. Will and Morag also conducted fieldwork at the actively surging **Borebreen glacier**, located ~3 hour boat ride from Longyearbyen. The team optimistically attempted to retrieve instruments deployed near the glacier during the summer and mostly succeeded. Beautiful conditions nonetheless – Svalbard in Autumn is stunning!

Sierra Nevada, California



Kora Ross, along with **Matteo Spagnolo**, **Brice Rea**, and her U.S. project partners (USGS, Yosemite, and Sequoia & Kings Canyon National Parks), completed a six-week field season in California’s **Sierra Nevada** over the summer. Kora sampled over 20 late glacial moraines in the most breathtaking landscape, in order to geochronologically constrain their ages using cosmogenic nuclide exposure dating. This will facilitate the reconstruction of 3D glacier geometries, which will be used to calculate the palaeoglacier equilibrium line altitudes which, in turn, will be combined with other, independent palaeoclimate proxies to provide a complete reconstruction of the climate during the deglaciation. Over the course of the trip, Kora hiked over 400 km on foot, gained a total of 12 km in elevation, and carried around 55 kg of granite samples out of the backcountry.



In early September, after flying over ice-choked fjords and the white expanse of the Greenland Ice Sheet, we stepped out of the plane into low cloud and heavy rain. Nuuk in September felt a lot like Scotland in November! We would be staying in Nuuk for the next 10 days to take part in the **Greenland Ice Sheet Ocean Science (GRISO)** summer school. With the topic of **“From Ice to Impact: Understanding Greenland’s Glaciers and Coastal Change”**, the summer school was focused on learning about the state of science and research techniques at Greenland’s coastal margins.

From the very first lecture, it was clear that this would not be a standard summer school. **Sara Olsvig**, Chair of the **Inuit Circumpolar Council (ICC)**, opened the programme with a powerful introduction to the ICC’s role in representing Inuit across the Arctic at the UN. Together with later lectures from institutions such as **Oceans North** and the **Greenland Research Council**, we gained valuable insight into the status of science in Greenland and were challenged to think more deeply about our responsibilities as researchers in this environment.

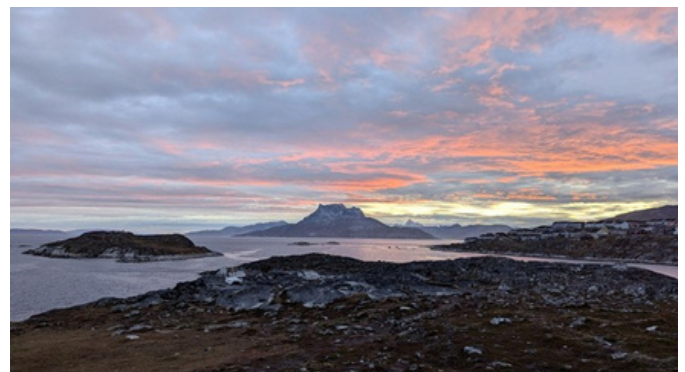


Another big part of the summer school were the sessions led by **KnowInnovation**, an organisation who teach creativity to scientists. “Creativity can be taught”, we were repeatedly told – and we both agree! Many of the workshops focussed on developing our creative problem solving skills, with an emphasis on building a scientifically creative work environment, and how to give kind and constructive feedback to each other to help improve our ideas.

One exercise involved working with sticky notes in rapidly changing groups. Every 20 minutes, we teamed up with new people and wrote down as many research project ideas as we could think of as a group. All the ideas were then stuck on a wall, discussed, and gradually consolidated. We repeatedly voted by moving the strongest ideas onto the next wall, and then the next, until only the most promising ideas remained. The main takeaway was that to have a good idea, you need to have lots of ideas!

These sessions led naturally onto collaborative group projects, which focused on fostering interdisciplinary collaboration across both the social and physical sciences. Emma’s project focused on making a podcast discussing how scientists can align their projects to the **Greenland National Science Strategy**, with the help of organisations such as **Arctic Hub**. The episode aimed to raise awareness of science fatigue, and the importance of taking care to consult local communities when conducting field work.

Emma’s research focuses on ship-borne measurements of fjord water properties, so this project was a great opportunity to learn about precautions that should be taken to minimise the impact and disruption of scientific cruises to local fisheries industries. The episode discussed different ways that scientists can also increase trust in science by reporting scientific results back to Greenlandic communities in an accessible format and platform (such as short videos on Facebook in Greenlandic).



The summer school gave us a unique opportunity to build connections across the breadth of the international ice-ocean community. As physical scientists, meeting other students from across the discipline, especially the social sciences, helped us broaden our understanding of the ice-ocean system and the societal implications of our research. Beyond this, we also had the chance to learn from the instructors about icebergs, subglacial hydrology, fjord dynamics and submarine melting.



Picking a highlight of the summer school would be so tough: the picturesque boat excursions down Nuuk Fjord (where Lokesh saw ice mélange for the first time!); the multiple sauna and hot tub nights (and the polar plunge!); seeing the Northern lights dance above Sermitsiaq; or the last night singing karaoke at the local pub until the early hours of the morning. We are both incredibly grateful to have had the opportunity to attend the GRISO summer school. From our experience, we are taking away a more profound knowledge of Greenland and its research landscape, an expanded research network of early career researchers and more established academics, and memories that will last a lifetime.

Scottish Arctic Expedition Fund



The **Scottish Arctic Club** was founded in 1970, and unites enthusiasts across Scotland with a common interest in the Arctic. The club are currently advertising their **Arctic Expedition Fund**, which encourages young people to explore the Arctic. In recent years, awards have ranged from £200 to £1000, with the fund maintained through donations by club members. The size and number of awards given is determined based on the relevance of the application, and the funds currently held.

The deadline for the next application is **31st January 2026**. If you would like to make an application to the fund, or simply learn more about the club, please visit their website:

<https://arcticclub.scot/>

Get Involved!

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 [CryoExchange - SAGES Forum](https://www.linkedin.com/company/cryoexchange)

PhD Opportunities

The **University of Aberdeen** are currently advertising two fully funded PhD projects in the School of Geosciences, as part of the **QUARTILES Doctoral Landscape Award**.

The first project is entitled '**Development and application of land-surface temperature index glacio-hydrological model**' and will be hosted by the Cryosphere and Climate Change Research Group. The second PhD project is entitled '**Shifting Sands: marine geomorphology, paleolandscapes and sediment mobility for energy transition**'.

The deadline for applications is **14th January 2026**. If you would like further details, please click below.

[Project 1](#)

[Project 2](#)



QUARTILES
DOCTORAL LANDSCAPE AWARD

Newsletter Editors

Clara Nyqvist (University of Edinburgh)

Hannah Picton (University of Edinburgh)

05/05



cryoexchange.sages@gmail.com



cryo-exchange.com

