Supplement to: Dye tracing of upward brine migration in snow

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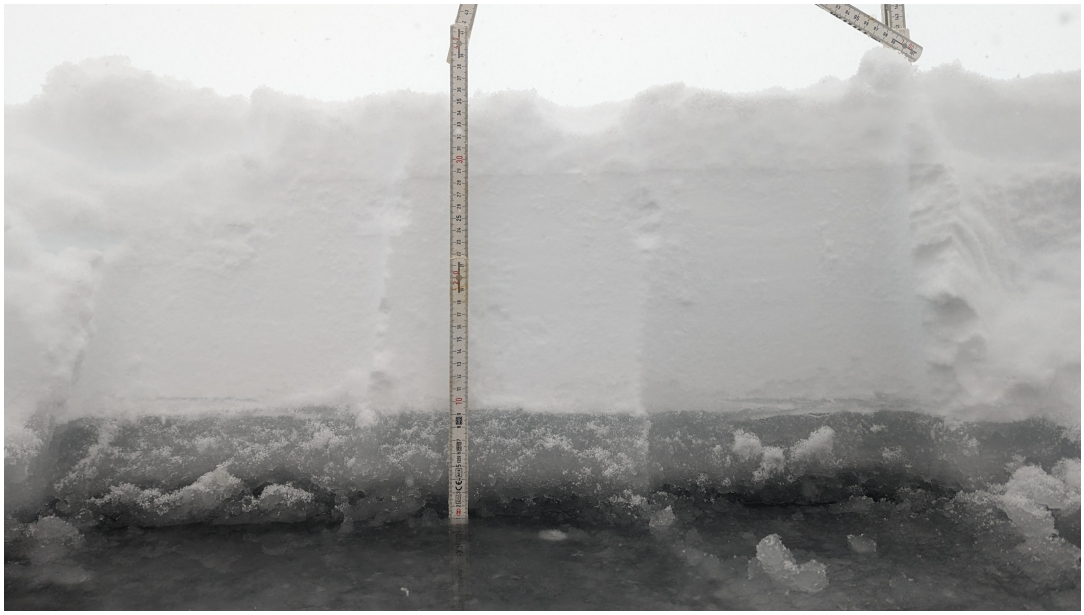

Fig. S1. Photograph of upward wicking of brine in snow over flooded sea ice taken by the authors in 2023. Snow was observed to be wet up to 9 cm above the ice, and 8 cm above the waterline. C.f. Figure 1c of the main manuscript.

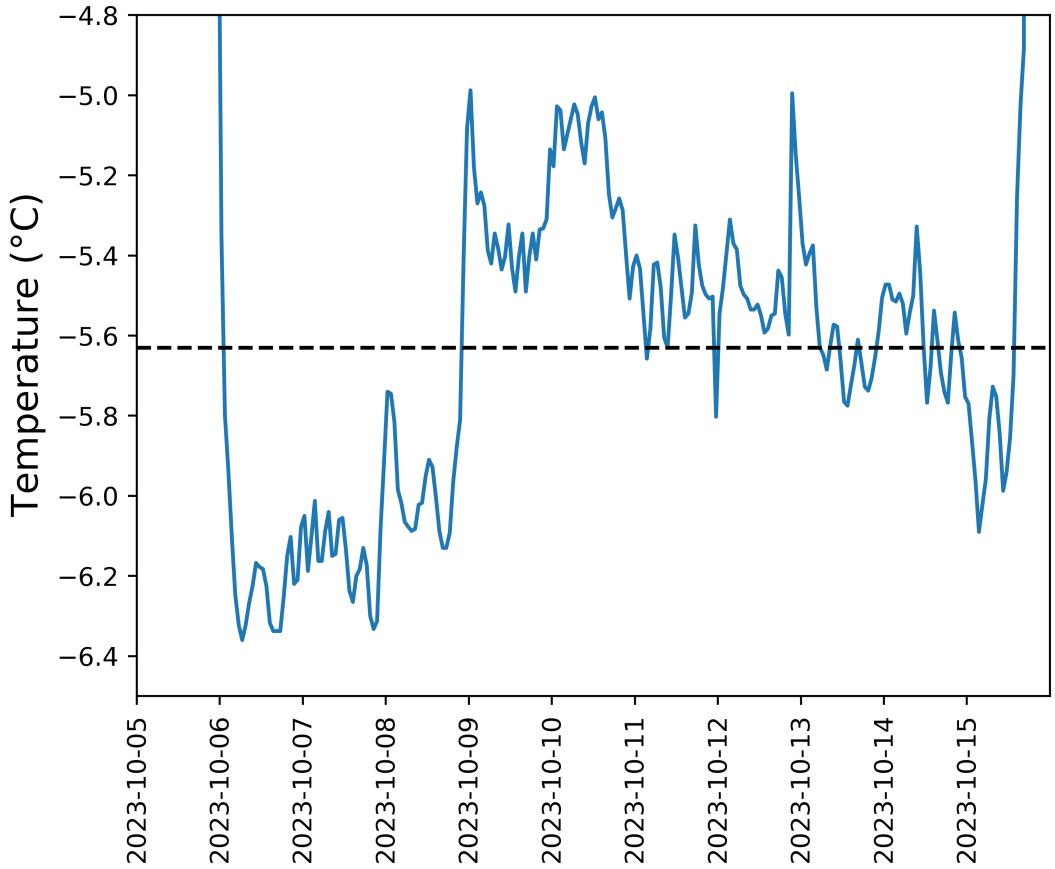

Fig. S2. Temperature fluctuations measured by a probe sandwiched inside a dummy snow sample within a PVC tube inside the freezer. Measurements began after one day in the second experimental round, in a tube that had had its sample disected. Mean temperature measured by the probe while inside the freezer indicated by black dashed line.

Fig. S3. Photograph showing the previous setup of the expeirment, where snow samples and their tubes 'shared' a brine supply. This led to preferential uptake from some samples and led to unreliable results.

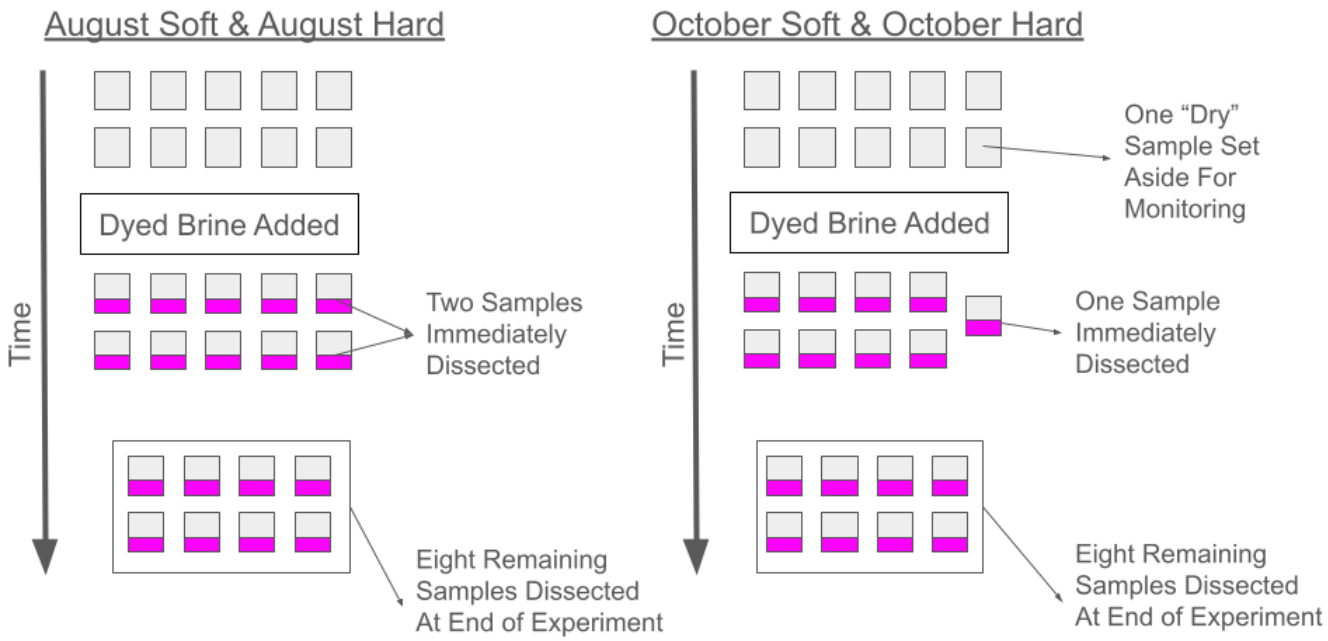

Fig. S4. Schematic of sample allocation strategy. Two dyed samples were immediately dissected in the August experiments. In October, one sample was set aside prior to brine addition so that its rate of settling could be monitored. That left one sample available for immediate dissection, while leaving the same number available for the main experiment.

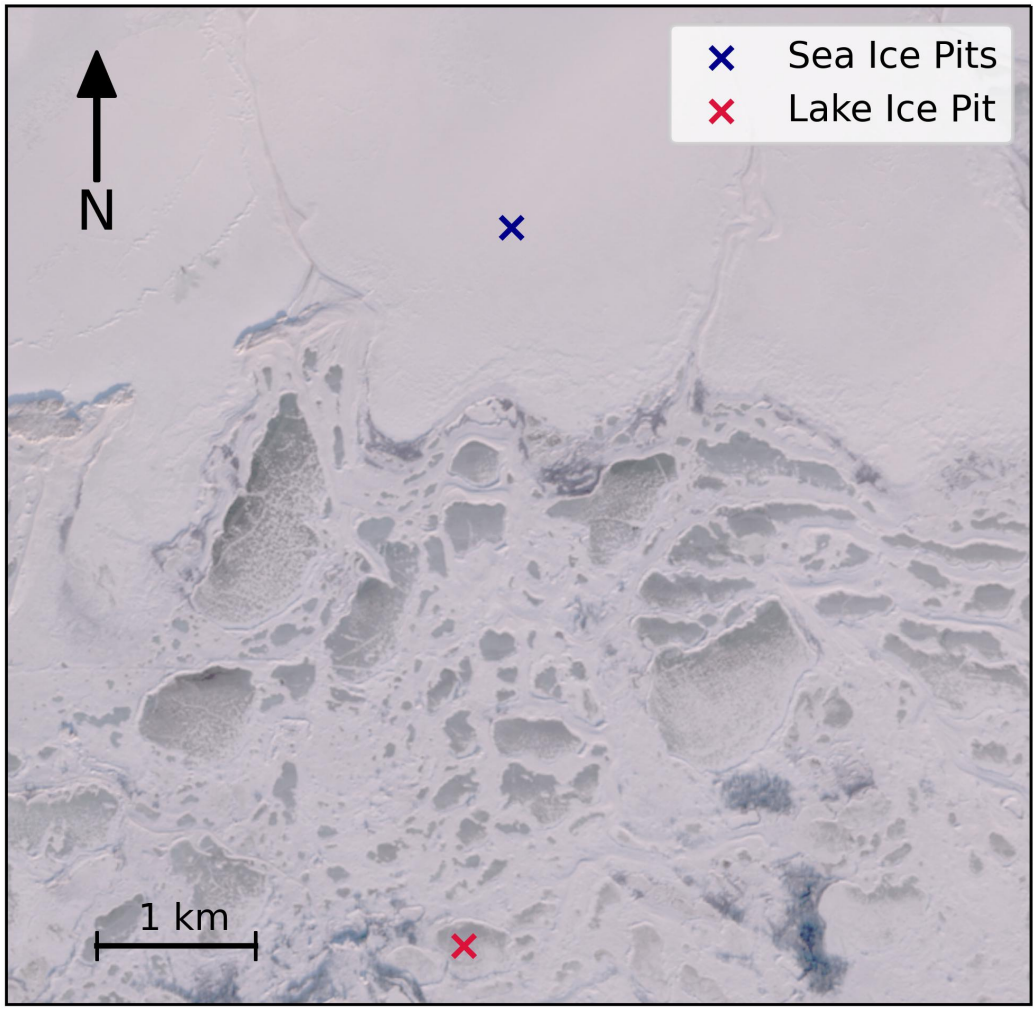

Fig. S5. Locations of the two sites used in the field experiments - blue cross indicates sea ice site on landfast ice, approximately five kilometres to the north of the lake ice site of the control experiment which was adjacent to the Churchill Northern Studies Centre.