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## **Linking Greenland to the Pacific northwest with the Khangar Tephra. First identification of cryptotephra from the Kamchatka Peninsula in a Greenland ice core.**

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Here we present a new Holocene cryptotephra in the NGRIP ice-core, Greenland, that is geochemically identical to the KHG tephra, a widespread marker deposit originating from the Khangar volcano in Kamchatka. This is the first identification of tephra from the Kamchatka Peninsula in Greenland ice and the first finding of the KHG tephra outside Kamchatka. The NGRIP KHG has an age of  $7872 \pm 50$  a BP (1950) and this date will help improve age models for Kamchatka, where existing age estimates of KHG are too young, thus highlighting the importance of locating long-range, low-concentration cryptotephra deposits in well-dated ice cores. In Greenland KHG is located close to the termination of the 8.2 ka BP cooling event that is also a climate feature in palaeo-records of Kamchatka. This tie-point therefore provides a unique opportunity to synchronise records of environmental change in distal locations.