Spatial and temporal variation of ice age mega-floods in the Pacific Northwest: Sediment provenance using single-aliquot K/Ar dating

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Bulk K/Ar dates of fine silts and clays from a Marine Drilling core MD-02-2496 (48°58'47"N: 127°02'14"W; 2043m water depth) provide constraints on the timing and spatial variation of outburst floods during the late Pleistocene in the Pacific Northwest region of the United States and Canada. The combination of the geo-chemical tracer of K/Ar ages with well-mapped continental geology allows us to identify potential source regions for individual stratigraphic layers in the core. Ingrid Hendy has studied MD-02-2496 in detail. She has compiled radio-carbon ages of 36 foraminifera samples, which constrain depositional timing, and has created a down-core record of major element chemistry, which, in conjunction with K/Ar ages, provides further constraints on sedimentary source terranes. This flood-water provenance study aids in understanding sub-millennial ice sheet dynamics and melt-water pulse history to the Pacific Ocean.