***Supplementary figures to***

**Mercury in Sediment Core Samples from Deep Siberian Ice-Rich Permafrost**

Clara Rutkowski1,2, Josefine Lenz1,3, Andreas Lang2, Juliane Wolter1,4, Sibylle Mothes5, Thorsten Reemtsma5, Guido Grosse1,6, Mathias Ulrich7, Matthias Fuchs1, Lutz Schirrmeister1, Alexander Fedorov8, Mikhail Grigoriev9, Hugues Lantuit1,6 and Jens Strauss1\*

1Permafrost Research Section, Alfred Wegener Institute Helmholtz-Centre for Polar and Marine Research, Potsdam, Germany

2Department of Geography and Geology, Paris Lodron University Salzburg, Salzburg, Austria

3Water and Environmental Research Center, Institute of Northern Engineering, University of Alaska Fairbanks, Fairbanks, AK, United States

4Institute of Biochemistry and Biology, University of Potsdam, Potsdam, Germany

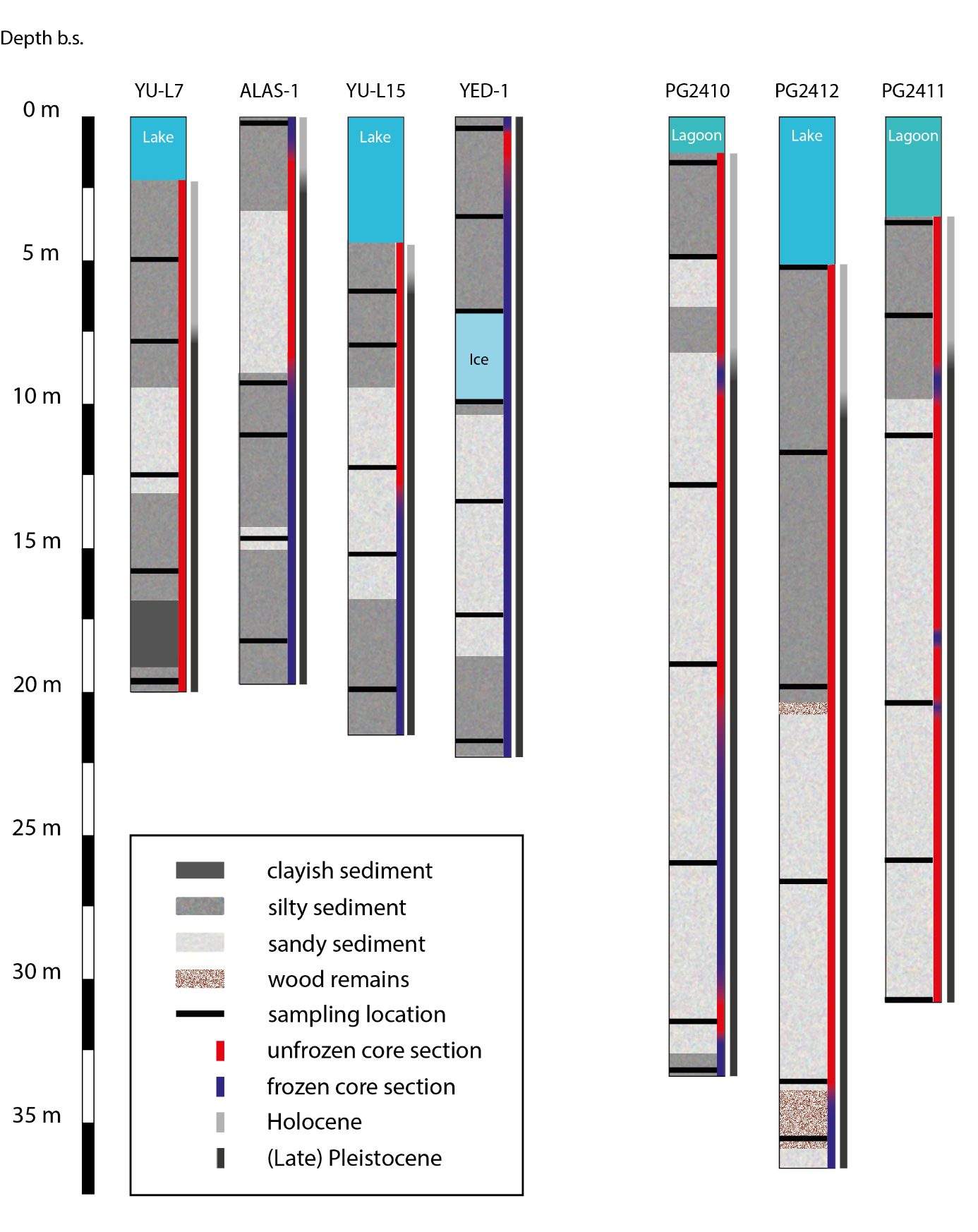
5Department of Analytical Chemistry, Helmholtz-Centre for Environmental Research – UFZ, Leipzig, Germany

6Institute of Geosciences, University of Potsdam, Potsdam, Germany

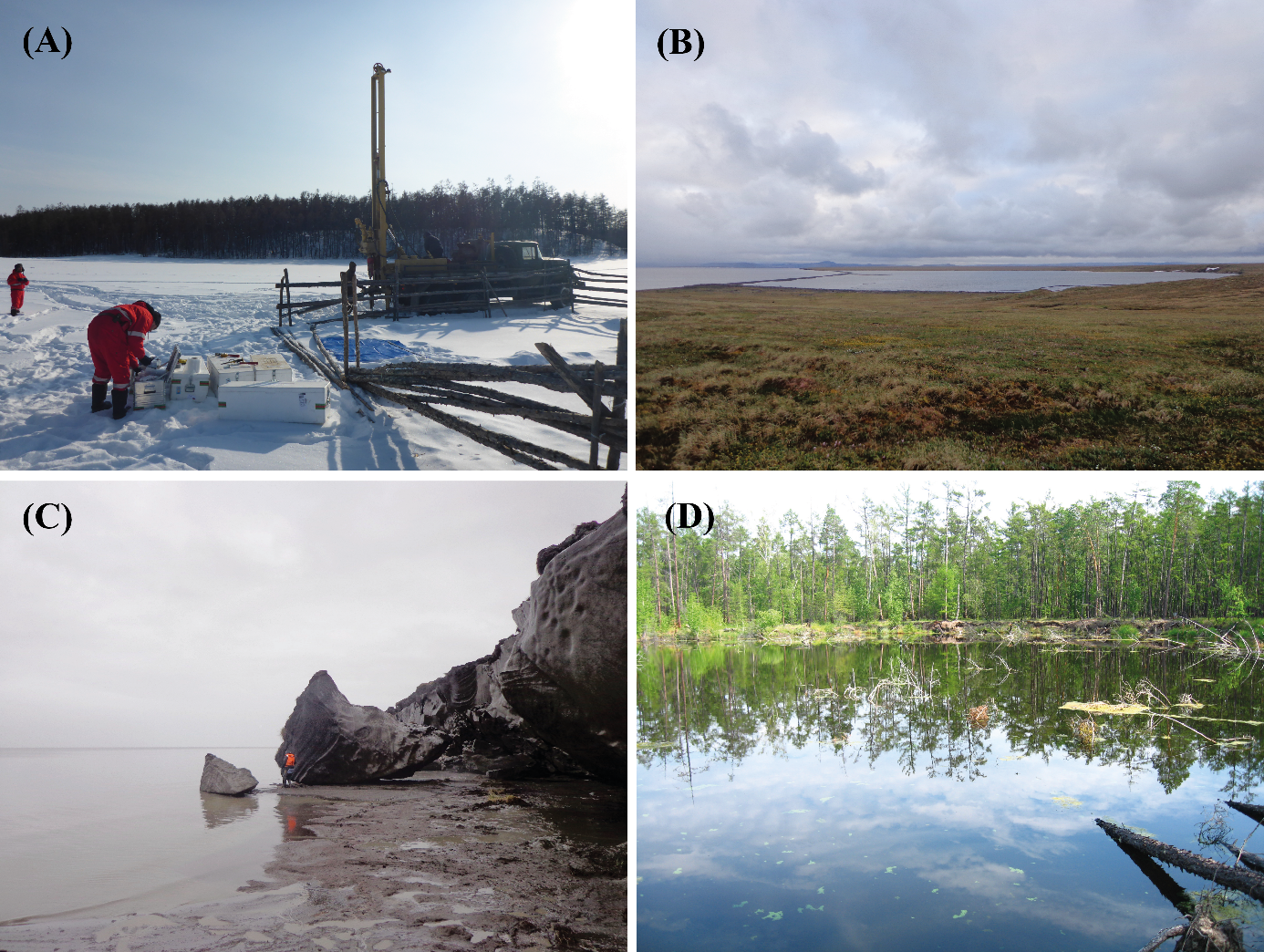
7Institute for Geography, Leipzig University, Leipzig, Germany

8Laboratory of Permafrost Landscapes, Melnikov Permafrost Institute Siberian Branch of the Russian Academy of Sciences, 677010 Yakutsk, Russia

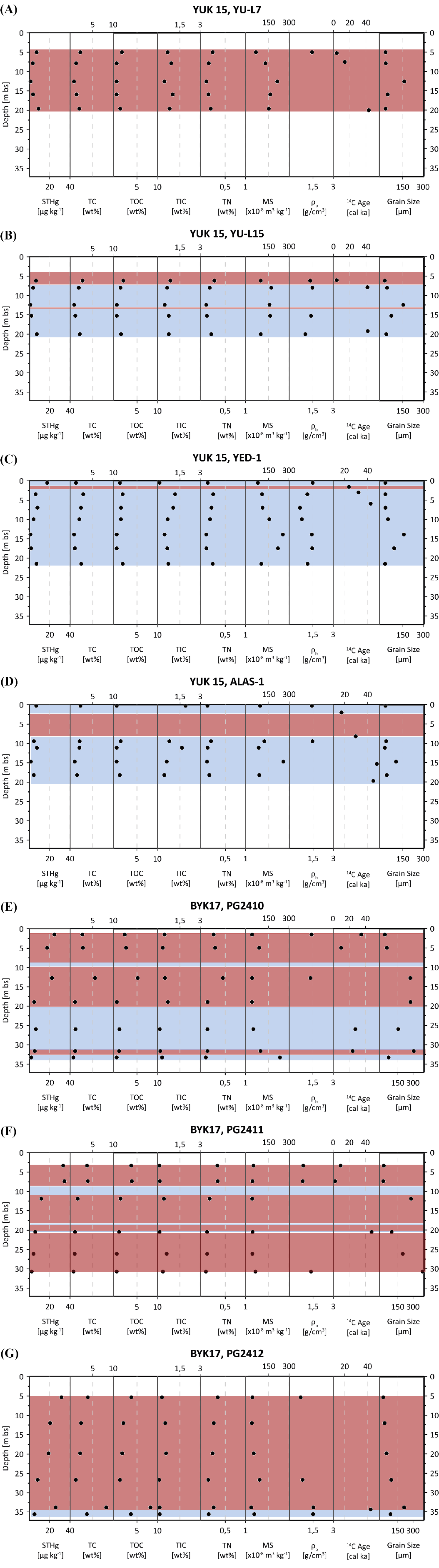
9Laboratory of General Geocryology, Melnikov Permafrost Institute Siberian Branch of the Russian Academy of Sciences, 677010 Yakutsk, Russia

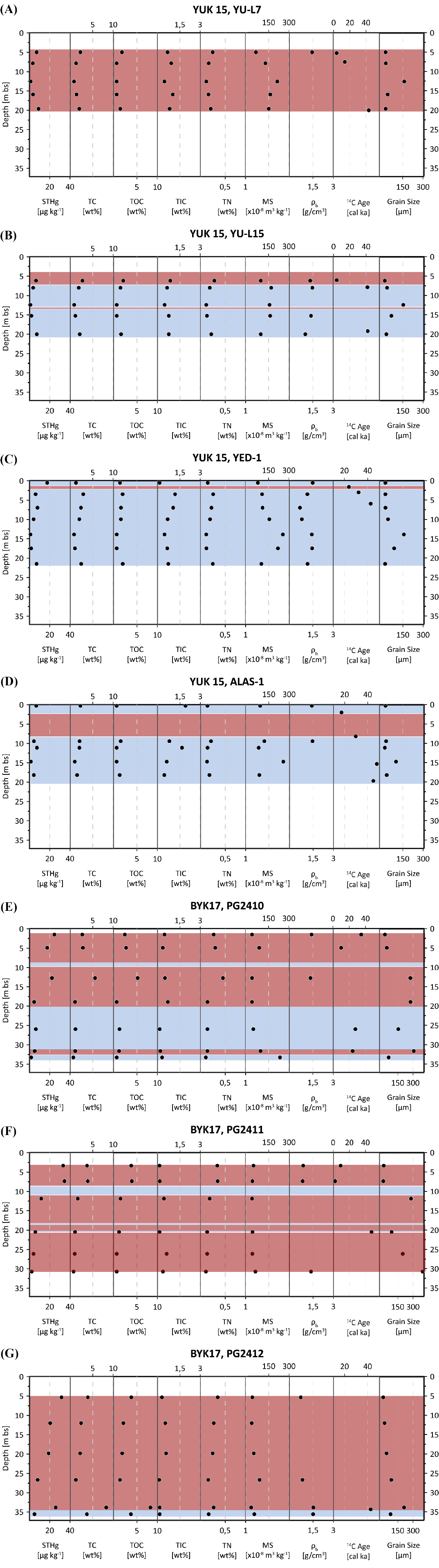
****

**Figure A.** Stratigraphic successions of the sediment cores investigated from Yukechi Alas and Bykovsky Peninsula.

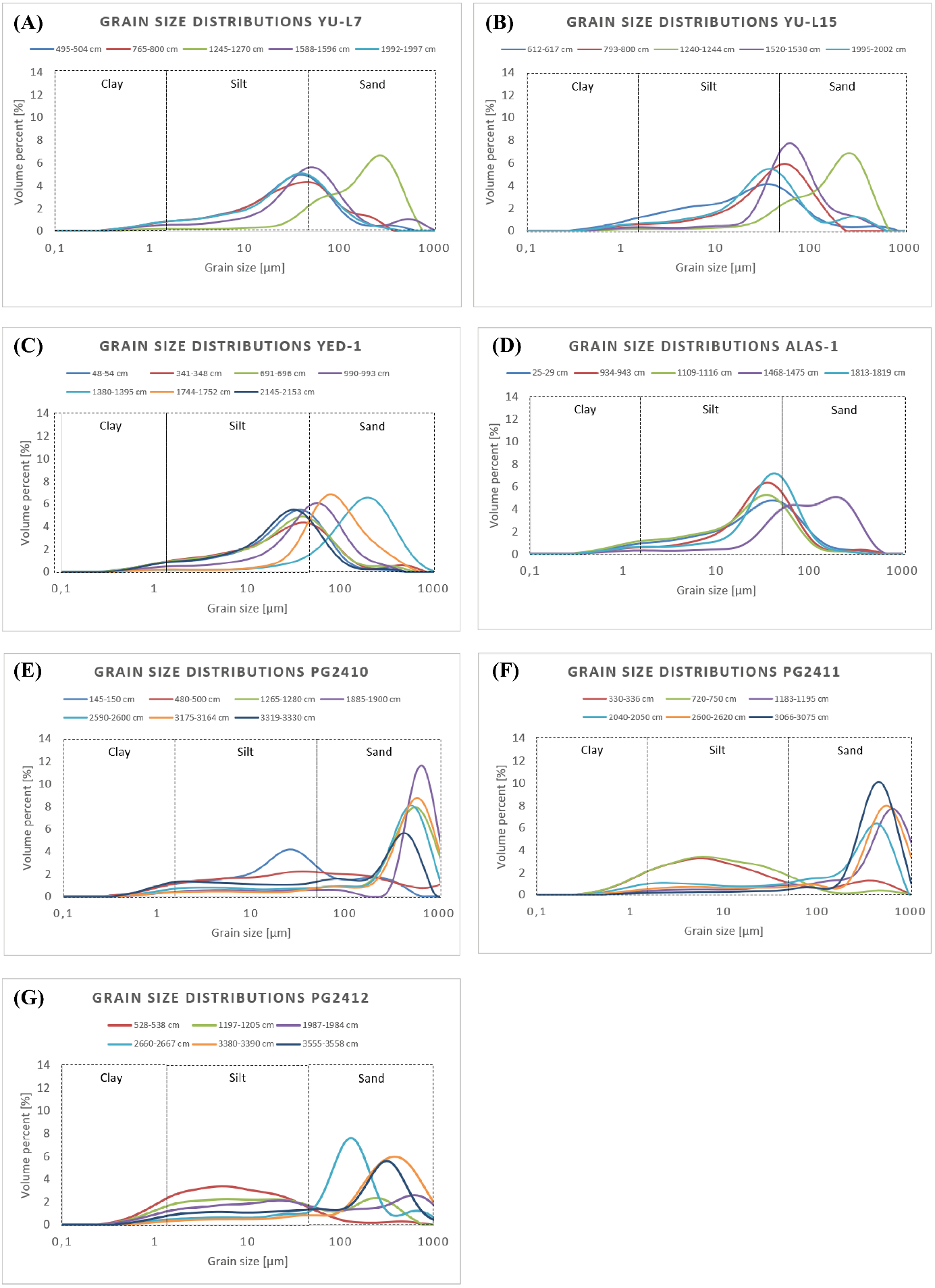
****

**Figure B.** **(A)** Drilling of the core Alas-1; **(B)** Uomullakh-Kyuel Lagoon; **(C)** degrading cliff on Bykovsky Peninsula; **(D)** Lake YU-L15 with degrading shoreline. Photos: M. Angelopoulos, Alfred Wegener Institute (**(B)** and **(C)**); M. Ulrich, Leipzig University (**(A)** and **(D)**).

****

****

**Figure C.** Multiplots per core. **(A)** to **(D)** show all measured parameters in the cores of Central Yakutia (Yukechi Alas) and **(E)** to **(G)** from Northern Yakutia (Bykovsky Peninsula). Frozen core sections are shown in blue, unfrozen ones in red. STHg = soil total mercury; TC = total carbon; TOC = total organic carbon; TIC = total inorganic carbon; TN = total nitrogen; MS = magnetic susceptibility; ρb = bulk density of water saturated samples. Grain size is shown as mean after the Folk and Ward Method (Blott & Pye, 2001).

****

**Figure D.** Grain-size distributions < 1 mm in a logarithmic scale for all cores. **(A)** to **(D)** show the distributions of all samples from the Yukechi Alas and **(E)** to **(G)** from the Bykovsky Peninsular.