Geochemical Atlas – Erzgebirge and Vogtland

Antimony in stream sediments

Antimony (Sb) concentrations in stream sediments show a slightly right skewed log-distribution. The arithmetic average is 1.6 mg/kg, the median value 0.9 mg/kg. The overall maximum concentration amounts to 74 mg/kg, the minimum to 0.05 mg/kg. A 2 km wide area with concentrations up to Sb > 10 mg/kg is located SE of Freiberg, coinciding with elevated Pb, Zn and Ag levels. The latter area merges into a zone of Sb > 4 mg/kg including the entire Freiberg mining district with an N-S-extension of approx. 17 km. Furthermore, a NE-SW striking zone with similar Sb levels occurs close to Hainichen. Here the Sb enrichment can be partially assigned to known Sb-mineralisation additionally coinciding with strongly elevated Hg. Areas of elevated Sb levels in the central Erzgebirge accompany the known Sb occurrence of Hormersdorf SE of Stollberg. In the western part of the study area Sb levels up to > 10 mg/kg occur at a 12 km NE elongated area NW of the Kirchberg Granite in faulted Ordovician and Devonian metapelites.

Additionally, the latter area is characterised by elevated Au and Hg levels and hosts the Neumark U deposit. Areas with Sb > 2.5 mg/kg include a 30 km zone extending from the Silurian Lößnitz-Zwönitz syncline up to the Gera-Jachymov fault zone near Schneeberg and Schwarzenberg. Areas with lower levels (Sb > 1.0 mg/kg) also extend far beyond the Hormersdorf Sb occurrence up to areas within gneisses and phyllites near to the fluorite-baryte deposits of Augustusburg and Grünberg. Further spots with Sb > 2.5 mg/kg occur arranged in a half-circle around the Klingenthal-Kraslice Cu deposit. The northernmost location is related to the Sn greisen deposits of Gottesberg-Mühlleithen, whereas the western locations coincide with Ordovician metapelites where elevated Mo, Hg, Cd, As and Se were detected. The areas with the lowest concentrations (Sb < 0.4 mg/kg) are predominantly bound to the granite plutons of Eibenstock and Bergen, to Cambro-Ordovician metapelites south of Adorf and to Neoproterozoic gneisses east and northeast of Marienberg.

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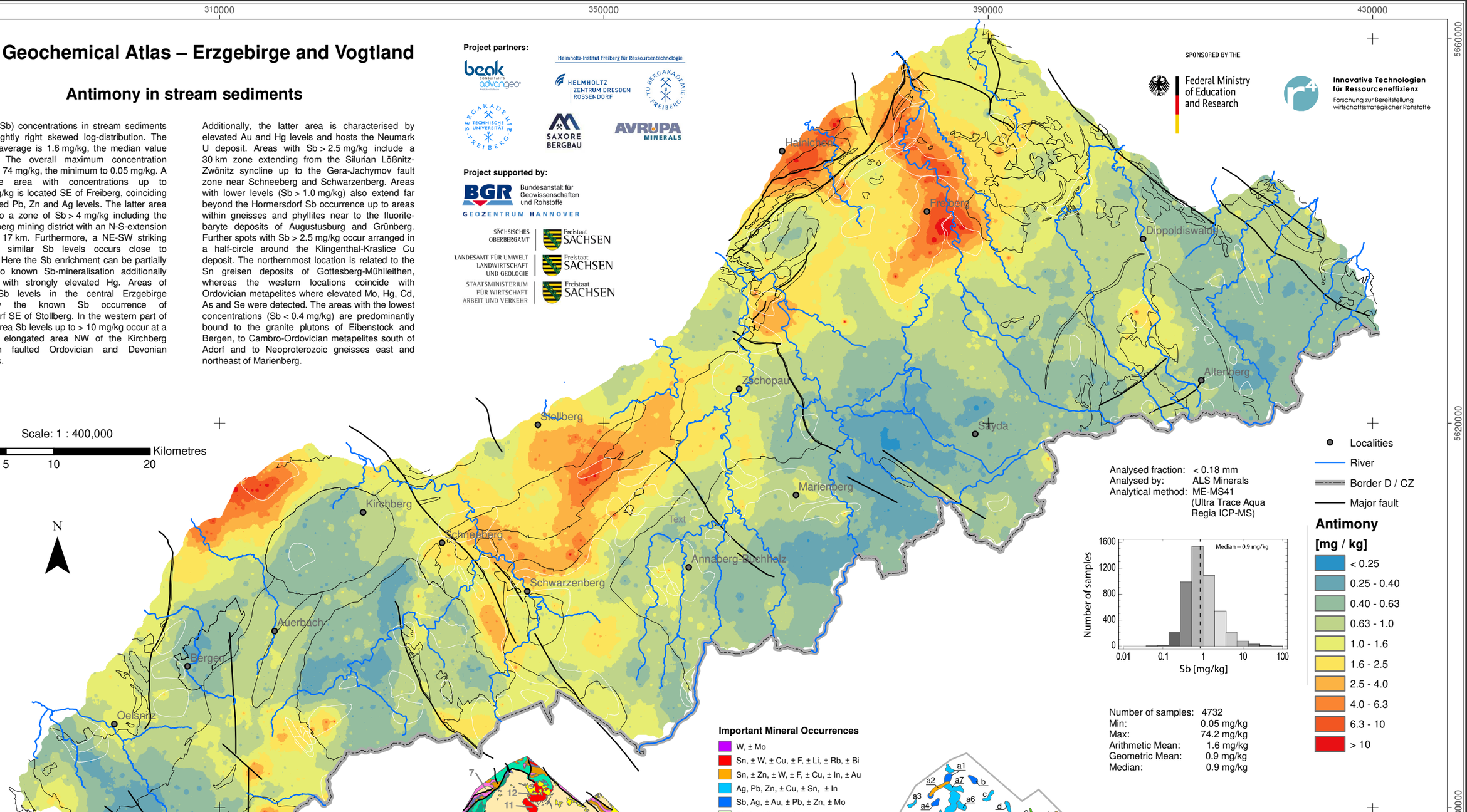

Project: Prediction of Strategic High Technology Metals in the Erzgebirge (WISTAMERZ)

- Antimony in stream sediments -

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