Geochemical Atlas – Erzgebirge and Vogtland

Rubidium in stream sediments

The histogram of Rubidium (Rb) shows two distinctive maxima: The more prominent one coincides with the median of 16 mg/kg, the second one relates to a set of higher concentrations between 100 and 250 mg/kg. At 33 mg/kg, the arithmetic average is twice as high as the median. The overall maximum is 480 mg/kg and the minimum is 1.9 mg/kg. Areas with Rb > 160 mg/kg are limited to the Eibenstock granite and to a few spots at the Schellerhau granite west of Altenberg. The area of Rb > 60 mg/kg includes the main part of the Schellerhau granite and the south-adjacent Teplice rhyolite up to the Czech border, including the Sn-greisen deposit of Zinnwald-Cinovec. At the Eibenstock granite, the outer contours are characterized by concentric areas of similar concentrations. Furthermore, the Markersbach granite and an area including a rhyolite stock north of Freiberg show concentrations of Rb > 40 mg/kg.

Other large regions are characterized by lower Rb grades of Rb > 25 mg/kg, such as the granite massifs of Kirchberg and Bergen as well as an extended zone between the Freiberg north area and the Annaberg-Buchholz polymetallic mining district. The latter zone is oriented roughly along the western rim of the Neoproterozoic gneiss unit of the eastern Erzgebirge. The delimitation of the phyllites of the northern Erzgebirge rim is sharp. For example, the Lößnitz-Zwönitz syncline contains very low concentrations of Rb < 10 mg/kg. Rb shows significant correlation with Li enrichments across the study area. Furthermore, Rb elevated areas correlate well to areas with elevated granitophile elements such as Sn, W and Cs, and regionally with Ti and Nb.

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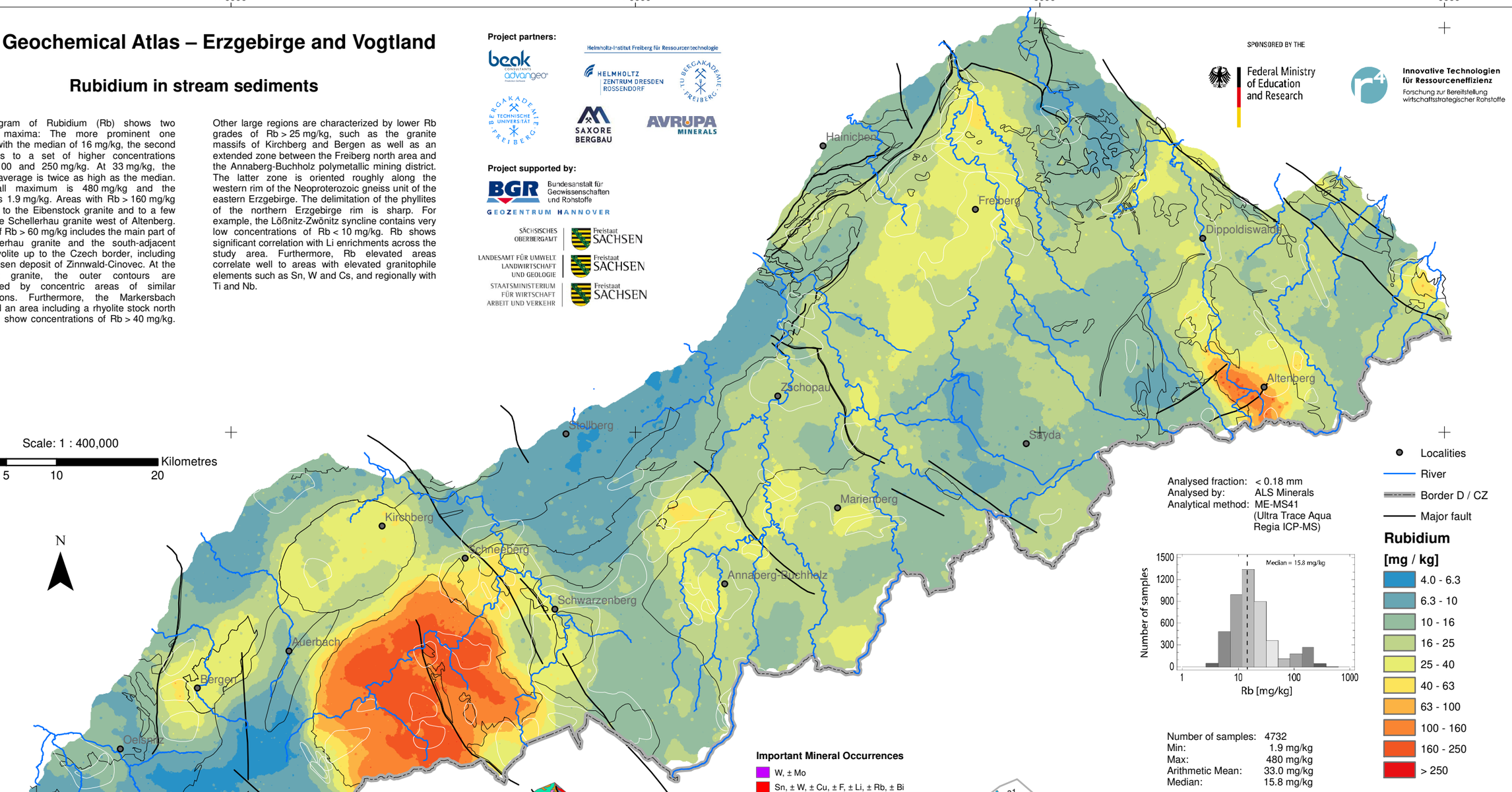

1 – Altenberg-Teplice-Caldera (incl. 1a - Schellerhau granite), 2 – Bergen Pluton 3 – Eibenstock Pluton, 4 – Eichigt Pluton (concealed), 5 – Fichtelgebirge Pluton, 6 – Flöha Fault Zone, 7 – Frankenberg Crystalline Complex, 8 – Markersbach Pluton, 9 – Gera-Jachymov Fault Zone, 10 – Kirchberg Pluton, 11 – Niederbobritzsch Pluton, 12 – Tharandt Volcanic Complex, 13 – Lößnitz-Zwönitz Syncline

a1 - Freiberg north district, a2 - Felsite zone, a3 - Langenstriegis, a4 - Oberschöna, a5 - Freiberg central district & Brand-E., a6 - Muldenhütten, a7 - Halsbrücke, b - Mohorn, c - Edle Krone - Klingenberg, d - Dippoldiswalde, e - Schlottwitz, f - Berggießhübel, g - Sadisdorf, h - Frauenstein, i1 - Altenberg, i2 - Zinnwald-Cinovec, i3 - Moldava, i4 - Rehefeld, j1 - Grünberg, j2 - Augustusburg, j3 - Zschopau k1 - Lengefeld, k2 - Marienberg - Wolkenstein, k3 - Pobershau, l1 - Seiffen, l2 - St. Katharinaberg, m1 - Geyer, m2 - Hormersdorf, m3 - Thum, m4 - Ehrenfriedersdorf, m5 - Annaberg-B., n1 - Lauter-Elterlein, n2 - Westerzgebirge complex deposit, n3 - Niederschlag-Bärenstein, o1 - Aue-Bärengrund, o2 - Bad Schlema-Alberoda, o3 - Schneeberg, p - Neumark (U), q - Pechtelsgrün, r1 - Sn Deposits of the Eibenstock Granite, r2 - Gottesberg-Mühlleiten, s - Johanngeorgenstadt, t - Brunndöbra & Schneckenstein, u - Klingenthal-Kraslice, v1 - Zobes, v2 - Bergen, w - Tirpersdorf, x - Oelsnitz, y - Schönbrunn, z - Wiedersberg

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

- Rubidium in stream sediments -

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