Geochemical Atlas – Erzgebirge and Vogtland

Zirconium in stream sediments

Zirconium (Zr) shows a right skewed log distribution with two maxima at about 0.5 mg/kg and 1.5 mg/kg. The maximum concentration is 55 mg/kg, the minimum 0.25 mg/kg. The arithmetic average is 1.6 mg/kg versus a median of 1.0 mg/kg. Zr is controlled by lithology, mainly by Upper Carboniferous granitoids and metabasites. Parts of distinct granitoid intrusions show significant differences in Zr content. The overall highest levels were recorded at the Schellerhau granite and parts of the adjacent Teplice rhyolite within a 3 km NW trending zone of Zr > 10 mg/kg. The latter zone is surrounded by a fringe zone of Zr > 6.0 mg/kg covering the main parts of the Schellerhau intrusion. Zones with contents up to Zr > 4.0 mg/kg occur in sedimentary and volcanic rocks of Devonian units NW of Oelsnitz as well as in an area of the southern Eibenstock granite. The remaining parts of the Eibenstock massif as well as the Kirchberg granite do not indicate contrasts with their metasedimentary surroundings. Moreover, the Bergen and Fichtelgebirge plutons show even Zr minima. The northern Erzgebirge rim, including lower Paleozoic metasediments, shows only slight elevations of Zr > 1.6 mg/kg, interrupted by a narrow, NNE striking enrichment zone east of Hainichen. This zone is predominantly related to Proterozoic metavolcanics and Devonian volcanic rocks. The large area of low concentrations with Zr < 0.6 mg/kg in the eastern Erzgebirge corresponds to Neoproterozoic and lower Paleozoic gneisses.

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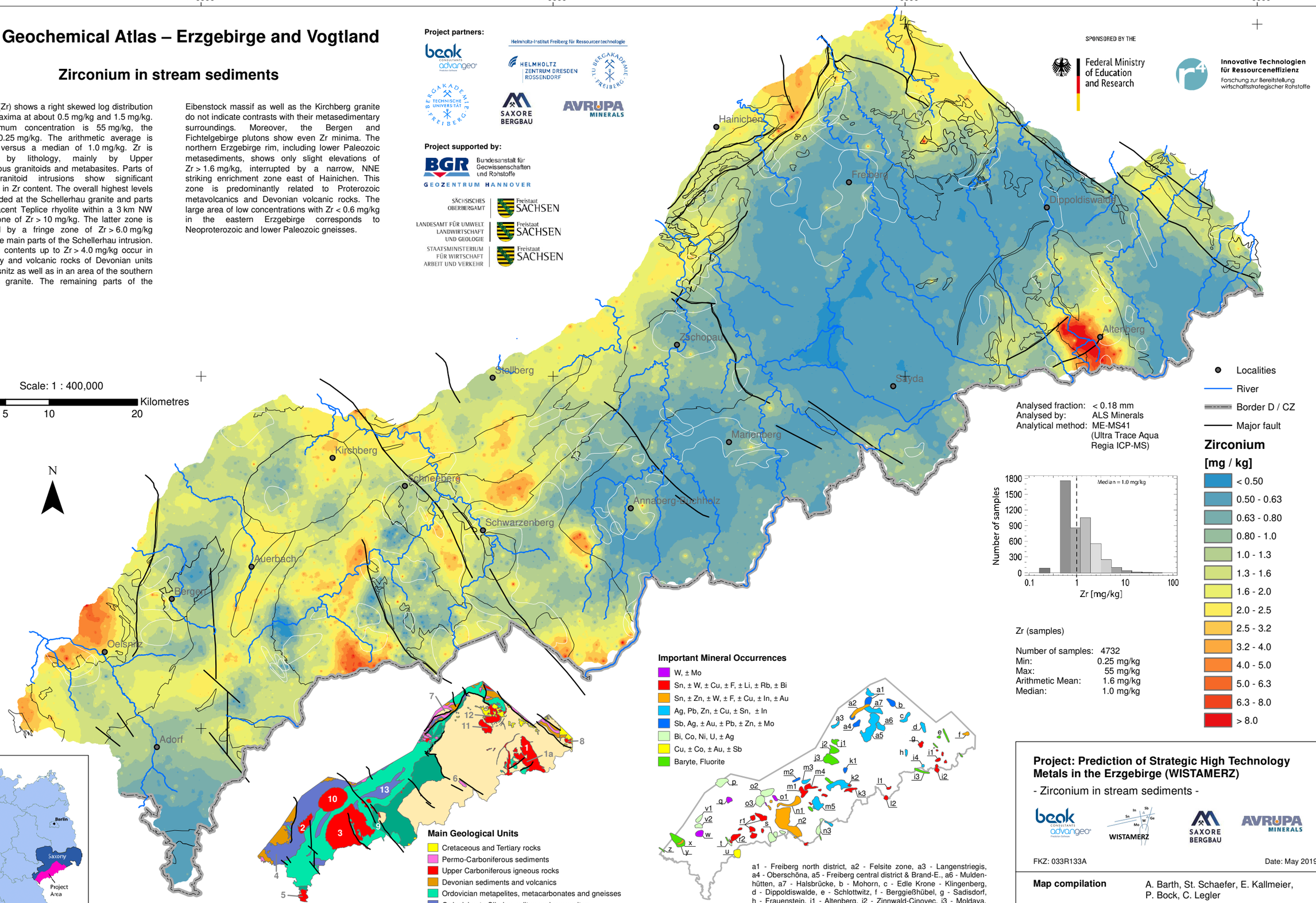

Project: Prediction of Strategic High Technology Metals in the Erzgebirge (WISTAMERZ)

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