MAP OF GEOCHEMICAL REACTIVITY OF ROCKS OF THE CZECH REPUBLIC

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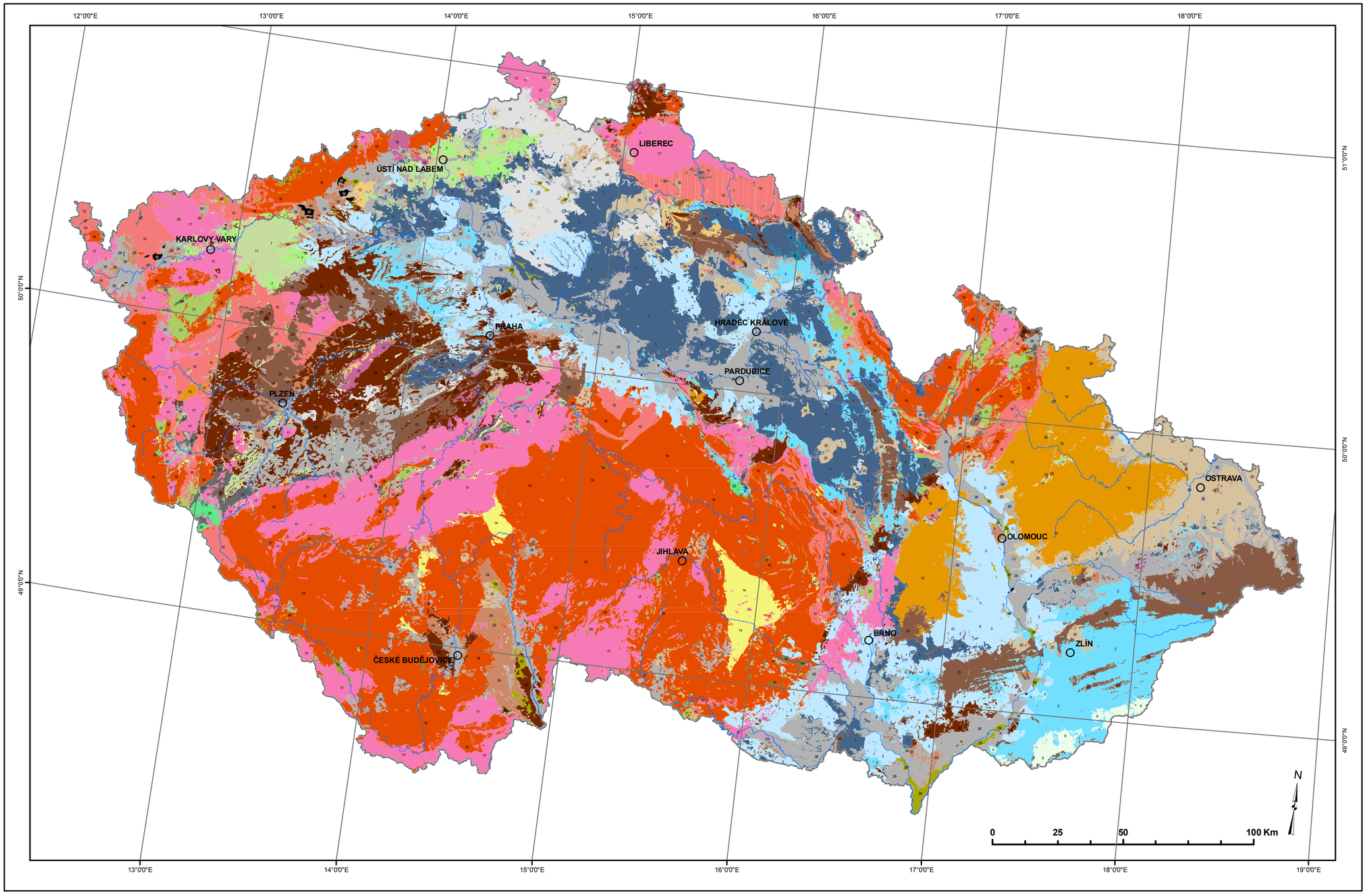


LEGEND

HIGH REACTIVITY

HIGH SUSCEPTIBILITY TO WEATHERING

- 1 rocks with CaCO3 content > 10%
- 2 rocks with CaCO3 content 1-10%
- 3 unconsolidated sediments with CaCO3 content 1-10%
- 4 rocks with CaMg(CO3)2 content >10 %
- 5 rocks with CaMg(CO3)2 content 1-10%
- 6 rocks with Ca-Mg-Fe-Mn(CO3) content 1-10 %
- 7 pyroclastics with high Calk (0.25-0.4)
- 8 pyroclastics with medium Calk (0.2-0.25)
- 9 pyroclastics with low Calk (0.1-0.2)

MEDIUM REACTIVITY

HIGH SUSCEPTIBILITY TO WEATHERING

- 10 metamorphites with low Calk (0.1-0.2) with K, Mg in phylosilicates

MEDIUM SUSCEPTIBILITY TO WEATHERING

- 11 volcanites with high Calk (0.25-0.4)
- 12 metamorphites with medium Calk (0.2-0.25)
- 13 volcanites with medium Calk (0.2-0.25)
- 14 plutonites with medium Calk (0.2-0.25)
- 15 consolidated sediments with low Calk (0.1-0.2)
- 16 volcanites with low Calk (0.1-0.2)
- 17 plutonites with low Calk (0.1-0.2)
- 18 metamorphites with low Calk (0.1-0.2)

LOW SUSCEPTIBILITY TO WEATHERING

- 19 rocks with very high Calk (> 0.4)
- 20 plutonites with high Calk (0.25-0.4)
- 21 metamorphites with high Calk (0.25-0.4)

LOW REACTIVITY

HIGH SUSCEPTIBILITY TO WEATHERING

- 22 aleuropelites with very low Calk (0.05-0.1)
- 23 psephites, psammites with very low Calk (0.05-0.1)
- 24 aleuropelites with extremely low Calk (<0.05)
- 25 unconsolidated sediments with extremely low Calk (<0.05)
- 26 psephites, psammites with extremely low Calk (<0.05)

MEDIUM SUSCEPTIBILITY TO WEATHERING

- 27 volcanites, plutonites and metamorphites with very-extremely low Calk (<0.1)

LOW SUSCEPTIBILITY TO WEATHERING

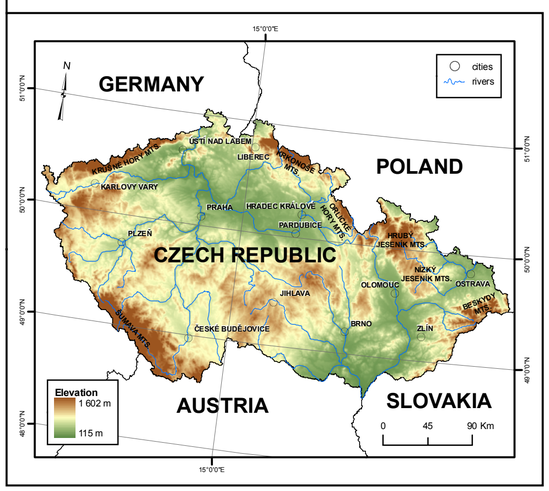
- 28 rocks with 95 % SiO2 and extremely low Calk (<0.05)

- 29 peat, coal, organic sediments
- 30 quarries and dumps

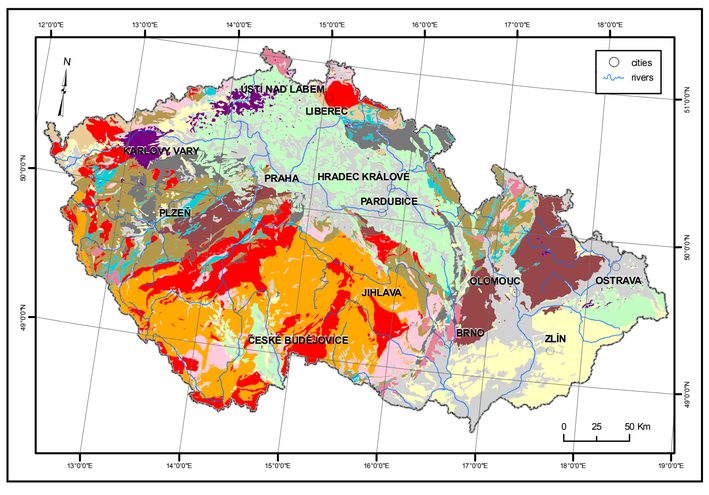
river — cities

Projected Coordinate System: S-JTSK / Krovak East North, Bassel ellipsoid, Krovak's conformal oblique conic projection, Reference scale of map 1:1.000.000

TOPOGRAPHICAL SETTING OF THE CZECH REPUBLIC



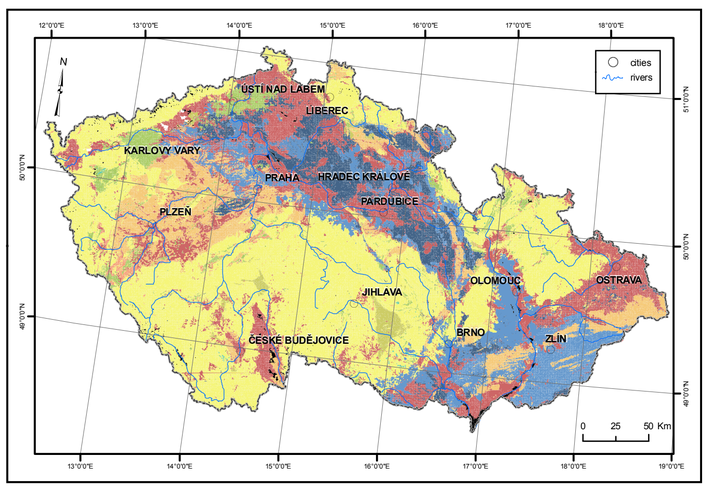
GEOLOGICAL SETTING OF THE CZECH REPUBLIC



LEGEND

- Quaternary sediments (sands, gravel, loess, loam)
- Paleogene and Neogene sediments (calcareous claystones, sandstones, sands, gravel, clays)
- Paleogene and Neogene volcanics (alkaline basalts and basanits, tephrites, foidites)
- Mesozoic sediments (claystones,marlstones, sandstones, rare conglomerates)
- Paleozoic sediments (Carboniferous and Permian sandstones, calcareous claystones, claystones, arkoses, conglomerates, coal beds)
- Paleozoic weakly metamorphosed rocks (shales, siltstones, sandstones, limestones)
- Paleozoic shales and phyllites, locally intercalated with marble and metavolcanics
- Precambrian and Paleozoic Volcanics and Metavolcanics (amphibolites, andesites, rhyolites)
- Precambrian and/or Paleozoic (Moldanubian) metamorphites (gneisses, migmatites, mica schists,locally intercalated with marble, calc-silicate rocks, skarns, amphibolites)
- Neoproterozoic shales, greywackes, gneisses, schists and metasediments
- Precambrian metamorphites (orthogneisses, granulites, migmatites, rare ultramafic rocks)
- Variscian Intrusives (granites, granodiorites, syenogranites)
- Intrusives of pre-variscan or unknown age often deformed and metamorphosed (granites and granodiorites, diorites, gabbros, metagabbros)

ALKALI AND ALKALI EARTH METALS CONTENT IN ROCKS (CALK)



LEGEND

- carbonate rocks (carbonates >10%)
- carbonate rocks (carbonates 1-10%)
- very high Calk
- high Calk
- medium Calk
- low Calk
- very low Calk
- very - extremely low Calk
- extremely low Calk

- peat, coal, organic sediments
- quarries and dumps

$$\text{Calk} = \frac{Na+K+Li+Ca+Mg+Ba+Sr}{Si+Ti+Al+Fe^{(2+)}+Fe^{(3+)}+Mn+Na+K+Li+Ca+Mg+Ba+Sr} \quad (\text{mol/kg})$$