Thermal springs in Baden-Baden

Multiple thermal springs are located in the city centre of Baden-Baden (SW Germany), which is well known for its spas since Roman times, as depicted by its name (“Baden” in German means baths).

Anomalies

Spring water in Baden-Baden varies in temperature from 28 to 66.8 °C (Göb et al., 2013; Hänel, 2020; Käβ and Käβ, 2008). This is significantly higher than the normally expected temperature of maximum 12 °C for surface water or shallow groundwater (<500 m). Different theories have been proposed for the thermal anomalies in Baden-Baden. Most likely, rain water infiltrates in the Bundsandstein and granitic rocks at the nearby Schwarzwaldhöhen, migrates till large depth and rises back to the surface through the Thermalhaupt-fissure (Käβ and Käβ, 2008).

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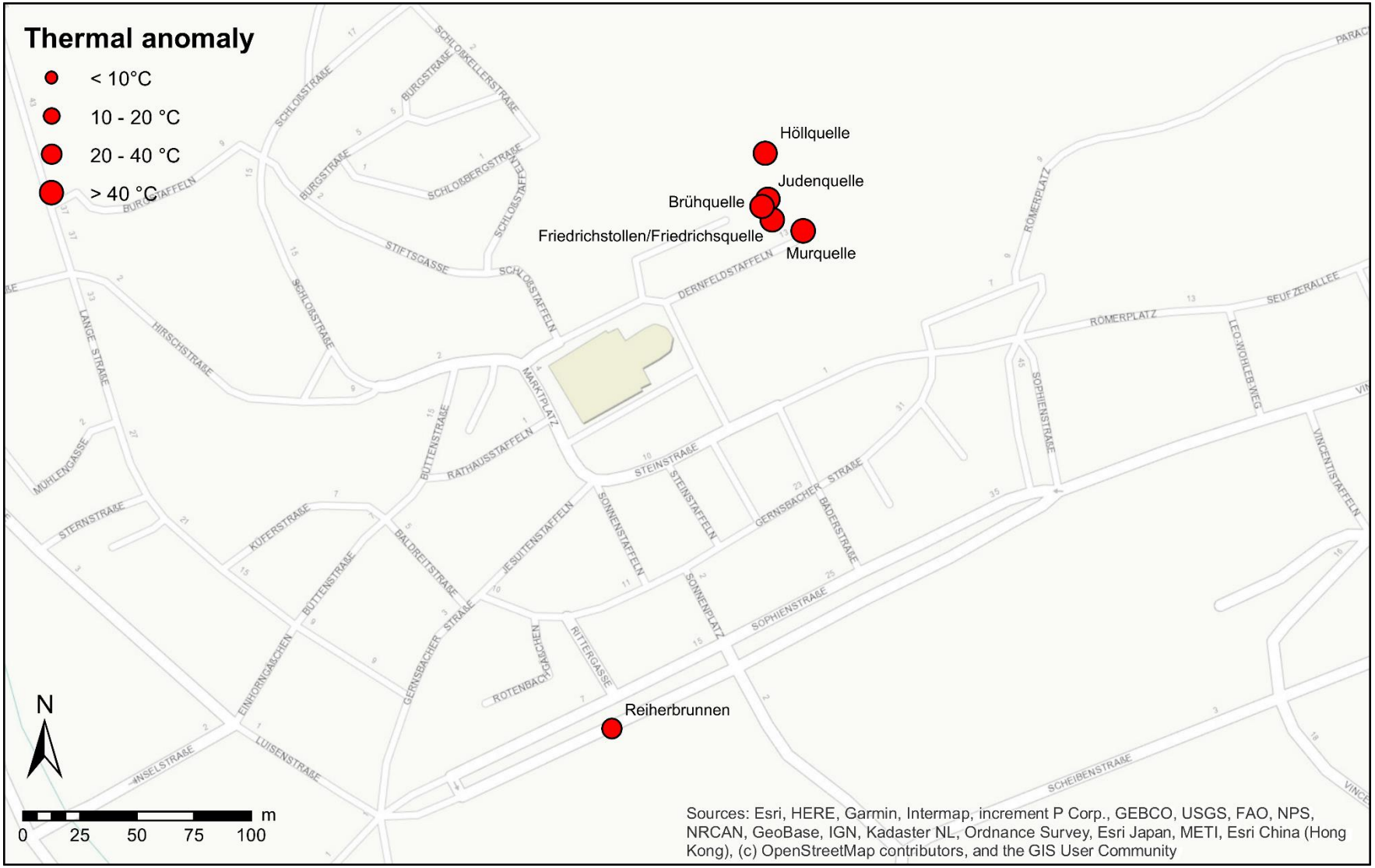

Figure 1: Thermal springs in Baden-Baden

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Data

ID	Coordinates	T	Depth	TDS°	Cl	Na	SO_4	Free CO_2	He	$^3He/^4He$	Analysis year	References
		°C	m	g/l	mg/l	mg/l	mg/l	mg/l	ppmv			
Friedrichstollen = Friedrichsquelle	48°45'49" North 08°14'32" East	65.5		2.7	1205	771	175	15.6			1998	Käβ and Käβ (2008)
		66.8		2.7	1650	802	173				2013	Göb et al. (2013)
					1230-1450	715-870	126-150				<1995	Hänel (2020)
Höllquelle	48°45'50" North 08°14'32" East	66.8			1500	810	156				2013	Göb et al. (2013)
Juden-/Brühquelle	48°45'49" North 08°14'32" East	65.3			1530	819	159				2013	Göb et al. (2013)
Murquelle	48°45'49" North 08°14'33" East									0.10	1992	Griesshaber et al. (1992)
		52.4			1760	830	180				2013	Göb et al. (2013)
Reiherbrunnen (Fettquelle)	48°45'41" North 08°14'29" East	42									1992	Hänel (2020)
		28									2012	

° TDS = Total Dissolved Solids

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