CO_2-seeps around Duppach

The most remarkable geomorphological features in the area around Duppach, a small village situated ~10 km NW of Gerolstein, are the Duppacher maar and Eichholzmaar. Multiple CO_2-rich springs are present around these maars.

See also

Volcanism in the Eifel, CO_2-rich water in Gerolstein

Anomalies

As indicated by the term 'Drees' in the name of the springs around Duppach, their water is very enriched in CO_2. Mostly, this was determined by visual observation of small gas bubbles in the spring water. Quantitative data is only available for the Duppacher Drees: 3551 mg CO_2/l (Langguth and Plum, 1984). This is indeed almost 15 times higher than the threshold value of 250 mg/l to be qualified as Säuerling (Weertz and Weertz, 2007). As is the case in Gerolstein, the presence of CO_2-seeps in Duppach is linked to the nearby recent volcanism, of which, amongst others, the Döhmberg or the Duppacher Maar are relicts of. This is furthermore indicated by the high flux density of mantle carbon in the area (May, 2005). The springs are located in a groundwater discharge area, where water (and dissolved gas) flows upwards along fractures and joints in Lower Devonian rocks (Weyer et al., 2012). Likely, the CO_2-gas use the same faults in the Lower Devonian siliciclastic metasediments along which magma rose during the Quaternary (van Overmeeren, 2014).

This file is part of the GeoConnect³d project that has received funding by the European Union's Horizon 2020 research and innovation programme under grant agreement n.731166.

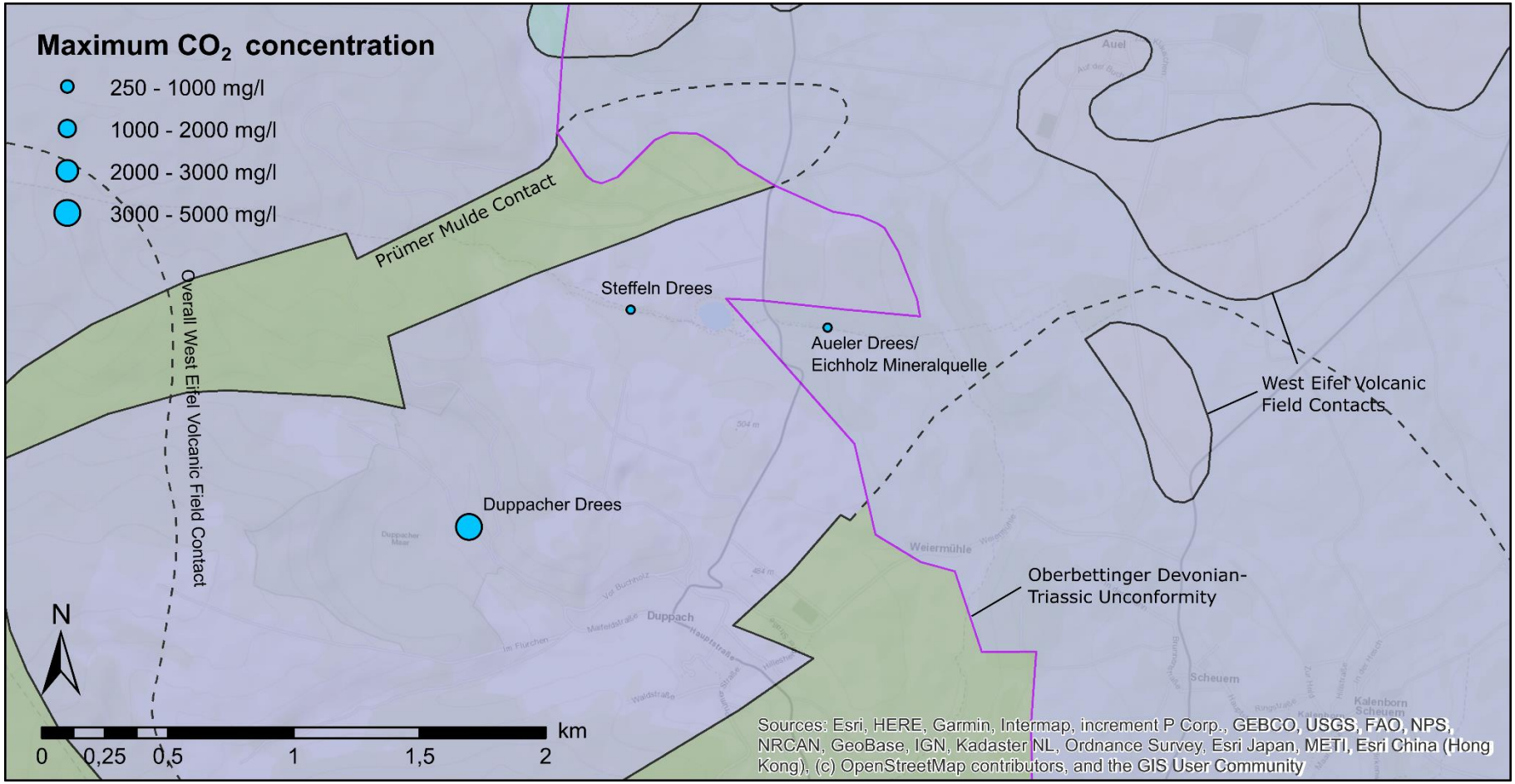

Figure 1: CO_2-seeps around Duppach

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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			
Steffeln Drees	50°16'20" North 06°33'36" East	8.2			7	15	4				2008	Hänel (2020)
		9.2									<2020	Eifel Tourismus (2020)
Duppacher Drees	50°15'50" North 06°33'05" East	8.9			11.2	219	0	3551			<1984	Langguth and Plum (1984)
												Datenbank der Kulturgüter in der Region Trier (2020)
Mineralquelle Eichholz/Aueler Drees	50°16'19" North 06°34'17" East	5.8			21	17	4				2012	Hänel (2020)

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