

Supplementary document 1. Published site records (populations) of caudate species from Germany in which *Bsal* was detected until 2018. Data mostly summarized from SPITZEN-VAN DER SLUIJS et al. (2016), DALBECK et al. (2018), LÖTTERS et al. (2018), SCHULZ et al. (2018) and WAGNER et al. (2019a). In addition, new findings from the ongoing laboratory testing (especially quality assurance) of samples collected in same time frame were also included, so that some entries differ from those in the mentioned articles. Specimens tested positive for *Bd/Bsal* and negative for only *Bd* are indicated under remarks. Legend: † = dead specimen(s); + = ‘low’ infection load (1–10 GE); ++ = ‘medium’ infection load (> 10–100 GE); +++ = ‘high’ infection load (> 100 GE); CI = credible interval per year.

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	N samples tested Bsal-positive	Infection loads	Prevalence per year	95% Bayesian CI	Remarks
Northern Eifel										
North Rhine-Westphalia, Belgenbach	StädteRegion Aachen	50.578169, 6.278448	Fire salamander, <i>Salamandra salamandra</i>	2015	22 (of which 16 †)	21 (of which 16 †)		96%	79–99%	mass mortality, 8 of 16 specimens had <i>Bd/Bsal</i> co-infections
			Fire salamander, <i>Salamandra salamandra</i>	2017	12 larvae	0	0	0%	0–26%	
North Rhine-Westphalia, Brockenberg	StädteRegion Aachen	50.746724, 6.232078	Northern crested newt, <i>Triturus cristatus</i>	2015	2	0	0	0%	0–70%	
			Northern crested newt, <i>Triturus cristatus</i>	2016	3	0	0	6%	2–24%	
			Smooth newt, <i>Lissotriton vulgaris</i>		15	1	++'			
			Northern crested newt, <i>Triturus cristatus</i>	2017	3	3	+++'	93%	83–97%	
			Smooth newt, <i>Lissotriton vulgaris</i>		43	40	+' to '++'			
			Palmate newt, <i>Lissotriton helveticus</i>		7	6	+' to '++'			
North Rhine-Westphalia, Fischbach	StädteRegion Aachen	50.735368, 6.294149	Northern crested newt, <i>Triturus cristatus</i>	2018	1 (of which 1 †)	1 (of which 1 †)	+++'	6%	2–38%	<i>Bd/Bsal</i> co-infection, no other specimens than one dead-found
			Smooth newt, <i>Lissotriton vulgaris</i>		16	0	0			
			Fire salamander, <i>Salamandra salamandra</i>	2014	26	0	0	0%	0–13%	
			Fire salamander, <i>Salamandra salamandra</i>	2015	59 (of which 1 †)	1 (of which 1 †)	+++'	2%	1–9%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	30 (of which 2 †)	4 (of which 2 †)	+' to '+++'	13%	1–30%	both dead-found specimens with medium infection loads, but both already decayed, all <i>Bd</i> -negative
			Fire salamander, <i>Salamandra salamandra</i>	2017	23	0	0	0%	0–14%	
North Rhine-Westphalia, Solchbach	StädteRegion Aachen	50.70178, 6.270098	Fire salamander, <i>Salamandra salamandra</i>	2018	43	0	0	0%	0–8%	22 swabbed in spring, 21 in autumn
			Palmate newt, <i>Lissotriton helveticus</i>	2018	1	0	0			
			Fire salamander, <i>Salamandra salamandra</i>	2014	26	0		0%	0–13%	
			Fire salamander, <i>Salamandra salamandra</i>	2015	20 (of which 1 †)	1 (of which 1 †)	+'	5%	1–25%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	5	0		0%	0–31%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	45	2	+'	4%	2–15%	
North Rhine-Westphalia, Vichtbach	StädteRegion Aachen	50.676448, 6.198452	Fire salamander, <i>Salamandra salamandra</i>	2018	50	1	+++'	2%	1–11%	25 swabbed in spring, 25 in autumn
			Alpine newt, <i>Ichthyosaura alpestris</i>		1	0	0			
			Palmate newt, <i>Lissotriton helveticus</i>		1	0	0			
			Fire salamander, <i>Salamandra salamandra</i>	2017	16 adults, 15 larvae	0	0	0%	0–11%	mass mortality in 2004, <i>Bsal</i> -record in 2 formalin-fixed specimen (see text)
			Fire salamander, <i>Salamandra salamandra</i>	2018	29	0	0	0%	0–11%	23 swabbed in spring, 6 in autumn, all <i>Bd</i> -negative

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Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	N samples tested Bsal- positive	Infection loads	Prevalence per year	95% Bayesian CI	Remarks
North Rhine-Westphalia, Rote Wehe	Düren	50.726667, 6.323306	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	30	1	+	1%	0–6%	
			Palmate newt, <i>Lissotriton helveticus</i>		57	0	0			
			Alpine newt, <i>Ichthyosaura alpestris</i>	2018	38	0	0	0%	0–6%	
			Palmate newt, <i>Lissotriton helveticus</i>		20	0	0			
North Rhine-Westphalia, Simonskall	Düren	50.664329, 6.358932	Fire salamander, <i>Salamandra salamandra</i>	2016	1 (of which 1 †)	1 (of which 1 †)	++	100%		all <i>Bd</i> -negative
North Rhine-Westphalia, Teufelspütz	Düren	50.747069, 6.366387	Alpine newt, <i>Ichthyosaura alpestris</i>	2016	23	0	0	0%	0–7%	
			Palmate newt, <i>Lissotriton helveticus</i>		24	0	0			
			Alpine newt, <i>Ichthyosaura alpestris</i>	2017	20	0	0	0%	0–9%	
			Palmate newt, <i>Lissotriton helveticus</i>		20	0	0			
			Smooth newt, <i>Lissotriton vulgaris</i>	2018	2	0	0	3%	1–11%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		30	2	+			
			Palmate newt, <i>Lissotriton helveticus</i>		30	0	0			
North Rhine-Westphalia, Weberbach	Düren	50.735089, 6.359651	Fire salamander, <i>Salamandra salamandra</i>	2017	23	0	0	21%	14–32%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		17	13	+ to '+++'			
			Palmate newt, <i>Lissotriton helveticus</i>		30	2	+			
			Fire salamander, <i>Salamandra salamandra</i>	2018	32 (of which 1 †)	6 (of which 1 †)	+ to '+++'	9%	5–17%	dead fire salamander highly infected, all <i>Bd</i> -negative
			Alpine newt, <i>Ichthyosaura alpestris</i>		31	3	+			
			Palmate newt, <i>Lissotriton helveticus</i>		33	0	0			
North Rhine-Westphalia, Weiße Wehe	Düren	50.717116, 6.345695	Fire salamander, <i>Salamandra salamandra</i>	2015	11	2	+	18%	5–50%	all <i>Bd</i> -negative
			Alpine newt, <i>Ichthyosaura alpestris</i>	2016	6	1	+	30%	11–61%	
			Palmate newt, <i>Lissotriton helveticus</i>		4	2	+			
			Alpine or palmate newt	2017	41	0	0	0%	0–8%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	2018	15	0	0	0%	0–11%	
			Palmate newt, <i>Lissotriton helveticus</i>		15	0	0			
North Rhine-Westphalia, Zweifallshammer	Düren	50.684688, 6.412117	Fire salamander, <i>Salamandra salamandra</i>	2015	37	0	0	0%	0–9%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	14	0	0	0%	0–20%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	15	0	0	0%	0–19%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	25 (of which 2 †)	2 (of which 1 †)	++'-+++'	8%	2–25%	1 dead salamander from spring highly infected

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North Rhine-Westphalia, Haftenbach	Nationalpark Eifel	50.613929, 6.431371	Fire salamander, <i>Salamandra salamandra</i>	2015	46	0	0	0%	0–8%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	23	0	0	0%	0–14%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	31	3	+' and '++++'			all <i>Bd</i> -negative
			Fire salamander, <i>Salamandra salamandra</i> Palmate newt, <i>Lissotriton helveticus</i>	2018	15 19	0 0	0 0	0%	0–11%	7 swabbed in spring, 12 in autumn
North Rhine-Westphalia, NP Helingsbach Amphibienteich	Nationalpark Eifel	50.570040, 6.430098	Smooth newt, <i>Lissotriton vulgaris</i>	2017	3	2	++' to '++++'	40%	11–77%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		2	0				
North Rhine-Westphalia, NP Helingsbach Arten- schutz- und Quellteich	Nationalpark Eifel	50.555410, 6.436180	Northern rested newt, <i>Triturus cristatus</i>	2016	10	0	0	0%	0–8%	
			Smooth newt, <i>Lissotriton vulgaris</i>		11	0	0			
			Alpine newt, <i>Ichthyosaura alpestris</i>		10	0	0			
			Northern crested newt, <i>Triturus cristatus</i>	2017	15	14	+' to '++++'	74%	52–88%	
			Smooth newt, <i>Lissotriton vulgaris</i>		3	0	0			
			Alpine newt, <i>Ichthyosaura alpestris</i>		1	0	0			
			Northern crested newt, <i>Triturus cristatus</i>	2018	11	11	+' to '++++'	88%	64–96%	
North Rhine-Westphalia, Sauerbach	Nationalpark Eifel	50.574681, 6.401072	Alpine newt, <i>Ichthyosaura alpestris</i>		2	1	+'			
			Alpine newt, <i>Ichthyosaura alpestris</i>		3	2	+'			
			Fire salamander, <i>Salamandra salamandra</i>	2015	23	0	0	0%	0–14%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	24	0	0	0%	0–15%	
			Fire salamander, <i>Salamandra salamandra</i> Northern crested newt, <i>Triturus cristatus</i>	2017 2018	9 1	2 1	+++ +++	22% 100%	7–55%	all <i>Bd</i> -negative
Southern Eifel										
Rhineland-Palatinate, Alfbach	Bitburg-Prüm	50.266170, 6.341554	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	6	0	0	7%	2–29%	
			Palmate newt, <i>Lissotriton helveticus</i>		9	1	+'			
Rhineland-Palatinate, Plütscheid	Bitburg-Prüm	50.073109, 6.431563	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	3	1	+++	33%	8–82%	
Rhineland-Palatinate, Schwarzer Mann	Bitburg-Prüm	50.266283, 6.359239	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	2	0	0	0%	0–70%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	2018	5	1	+'	7%	2–29%	
Rhineland-Palatinate, Sellerich	Bitburg-Prüm	50.237990, 6.366980	Palmate newt, <i>Lissotriton helveticus</i>		10	0	0			
			Alpine newt, <i>Ichthyosaura alpestris</i>	2018	16	1	+'	4%	7–20%	
			Palmate newt, <i>Lissotriton helveticus</i>		8	0	0			

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Rhineland-Palatinate, Dreisbach	Vulkaneifel	50.269520, 6.523619	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	14	1	++'	5%	2–19%	
			Palmate newt, <i>Lissotriton helveticus</i>		23	1	+'			
Ruhr area and vicinities										
North Rhine-Westphalia, Dahlhausen	Bochum	51.435, 7.1385	Fire salamander, <i>Salamandra salamandra</i>	2018	1 (of which 1 †)	1 (of which 1 †)	+++'	100%		all <i>Bd</i> -negative
North Rhine-Westphalia, Hiltrop	Bochum	51.52021, 7.26652	Fire salamander, <i>Salamandra salamandra</i>	2018	1 (of which 1 †)	1 (of which 1 †)	+++'	100%		found in summer
North Rhine-Westphalia, Kalwes	Bochum	51.443396, 7.272145	Fire salamander, <i>Salamandra salamandra</i>	2018	2	1	+++'	50%	9–88%	all <i>Bd</i> -negative
North Rhine-Westphalia, Querenburg	Bochum	51.441398, 7.264886	Fire salamander, <i>Salamandra salamandra</i>	2018	22	1	+++'	5%	1–21%	infected juvenile, <i>Bd</i> -negative
North Rhine-Westphalia, Lottental	Bochum	51.437, 7.257333	Fire salamander, <i>Salamandra salamandra</i>	2018	6	1	++'	25%	5–71%	all <i>Bd</i> -negative
North Rhine-Westphalia, Fulerum Südwestfriedhof	Essen	51.431025, 6.968945	Fire salamander, <i>Salamandra salamandra</i>	2018	8	8	+' to +++'	100%		over 60 dead-found salamanders during mass mortality event (not sampled), all <i>Bd</i> -negative
North Rhine-Westphalia, Ruthertal	Essen	51.382679, 6.972078	Fire salamander, <i>Salamandra salamandra</i>	2016	10	0	0	0%	0–31%	strong decayed, observed mass mortality
			Fire salamander, <i>Salamandra salamandra</i>	2018	23	1	+++'	4%	1–22%	3 swabbed in spring, 20 in autumn, positive specimen from autumn
North Rhine-Westphalia, Essen Stadtwald	Essen	51.423306, 7.033296	Fire salamander, <i>Salamandra salamandra</i>	2017	97	8	++' to '+++'	8%	1–15%	all <i>Bd</i> -negative
			Alpine newt, <i>Ichthyosaura alpestris</i>		1	0	0			
North Rhine-Westphalia, Stadtwald, Garten	Essen	51.423306, 7.033296	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	27	1	+' and '++'	4%	1–18%	22 swabbed in spring, 5 in autumn, positive specimen from spring
North Rhine-Westphalia, Rottbachtal	Mülheim an der Ruhr	51.375838, 6.833334	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0	0	0%	0–11%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	3	1	+++'	50%	9–88%	swabbed in autumn
			Alpine newt, <i>Ichthyosaura alpestris</i>		1	1	+'			swabbed in autumn
North Rhine-Westphalia, Heiligenhaus	Mettmann	51.358604, 6.990914	Fire salamander, <i>Salamandra salamandra</i>	2018	2 (of which 2 †)	2 (of which 2 †)	++' and '+++'	100%	26–99%	found in summer
North Rhine-Westphalia, Velbert Deilbach	Mettmann	51.343183, 7.077412	Fire salamander, <i>Salamandra salamandra</i>	2018	2 (of which 2 †)	1 (of which 1 †)	++'	50%	9–88%	
Others										
North Rhine-Westphalia, Erkelenz	Heinsberg	51.049363, 6.298195	Fire salamander, <i>Salamandra salamandra</i>	2018	7 (of which 1 †)	1 (of which 1 †)	+'	25%	7–61%	from outdoor enclosures, dead positive salamander swabbed in spring, the rest in autumn
			Smooth newt, <i>Lissotriton vulgaris</i>		1	1	+'			from a garden pond
				Totally tested	1760	188				

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Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	95% Bayesian CI	Remarks
Northern Eifel							
North Rhine-Westphalia, Binsfeldhammer	StädteRegion Aachen	50.756521, 6.243033	Smooth newt, <i>Lissotriton vulgaris</i>	2018	3	0–61%	
North Rhine-Westphalia, Döppeskaul	StädteRegion Aachen	50.509209, 6.295323	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	8	0–16%	
			Palmate newt, <i>Lissotriton helveticus</i>		12		
North Rhine-Westphalia, Himmelsleiter	StädteRegion Aachen	50.676496, 6.171786	Palmate newt, <i>Lissotriton helveticus</i>	2018	19	0–18%	
North Rhine-Westphalia, Holderbach	StädteRegion Aachen	50.548397, 6.292036	Fire salamander, <i>Salamandra salamandra</i>	2017	3	0–61%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	2	0–70%	
North Rhine-Westphalia, Kallerbach	Düren	50.707151, 6.391554	Fire salamander, <i>Salamandra salamandra</i>	2015	24	0–15%	adult <i>Bd</i> -negative
			Fire salamander, <i>Salamandra salamandra</i>	2016	1 adult, 3 larvae	0–30%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		5		
			Fire salamander, <i>Salamandra salamandra</i>	2017	2	0–51%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		2		
North Rhine-Westphalia, Kitzenhausen	StädteRegion Aachen	50.692644, 6.199071	Fire salamander, <i>Salamandra salamandra</i>	2017	8	0–31%	
North Rhine-Westphalia, Konzen	StädteRegion Aachen	50.595878, 6.266865	Smooth newt, <i>Lissotriton vulgaris</i>	2018	1	0–16%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		8		
			Palmate newt, <i>Lissotriton helveticus</i>		11		
North Rhine-Westphalia, Lamersiefen	StädteRegion Aachen	50.756932, 6.321338	Fire salamander, <i>Salamandra salamandra</i>	2014	17	0–19%	
			Fire salamander, <i>Salamandra salamandra</i>	2015	32	0–11%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	8	0–31%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	26	0–13%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	7	0–36%	
North Rhine-Westphalia, Lensbach	StädteRegion Aachen	50.672648, 6.230209	Fire salamander, <i>Salamandra salamandra</i>	2017	3	0–61%	all <i>Bd</i> -negative
			Fire salamander, <i>Salamandra salamandra</i>	2018	1		
North Rhine-Westphalia, NRW Stiftungsteich	StädteRegion Aachen	50.508012, 6.245711	Palmate newt, <i>Lissotriton helveticus</i>	2018	10	0–31%	
North Rhine-Westphalia, Omerbach	StädteRegion Aachen	50.754140, 6.307838	Fire salamander, <i>Salamandra salamandra</i>	2018	9	0–9%	<i>Bsal</i> -infected newts in 2019
			Alpine newt, <i>Ichthyosaura alpestris</i>		2		
			Palmate newt, <i>Lissotriton helveticus</i>		27		
North Rhine-Westphalia, Palsen Mützenich	StädteRegion Aachen	50.568565, 6.202638	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	12	0–18%	
			Palmate newt, <i>Lissotriton helveticus</i>		6		
North Rhine Westphalia, Peterbach	StädteRegion Aachen	50.657733, 6.323633	Alpine newt, <i>Ichthyosaura alpestris</i>	2014	4	0–20%	
			Palmate newt, <i>Lissotriton helveticus</i>		12		
			Alpine newt, <i>Ichthyosaura alpestris</i>	2018	2	0–51%	
			Palmate newt, <i>Lissotriton helveticus</i>		2		

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North Rhine-Westphalia, Rothsiefen	StädteRegion Aachen	50.734514, 6.30931	Fire salamander, <i>Salamandra salamandra</i>	2017	25	0–13%	
North Rhine-Westphalia, Schlangenberg	StädteRegion Aachen	50.738106, 6.252416	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	1	0–36%	
			Palmate newt, <i>Lissotriton helveticus</i>		6		
North Rhine-Westphalia, Asselbach	Düren	50.71486, 6.34355	Fire salamander, <i>Salamandra salamandra</i>	2017	3	0–61%	
North Rhine-Westphalia, Billerbach	Düren	50.619605, 6.494605	Fire salamander, <i>Salamandra salamandra</i>	2018	10	0–31%	
North Rhine-Westphalia, Brück	Düren	50.692652, 6.476640	Fire salamander, <i>Salamandra salamandra</i>	2018	2	0–70%	
North Rhine-Westphalia, Dresbach	Düren	50.702770, 6.417944	Fire salamander, <i>Salamandra salamandra</i>	2015	9	0–30%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	2	0–51%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	5	0–44%	
North Rhine-Westphalia, Drover Heide	Düren	50.722971, 6.533593	Northern crested newt, <i>Triturus cristatus</i>	2018	8	0–22%	
			Smooth newt, <i>Lissotriton vulgaris</i>		4		
			Palmate newt, <i>Lissotriton helveticus</i>		1		
North Rhine-Westphalia, Hasselbach	Düren	50.681882, 6.428362	Fire salamander, <i>Salamandra salamandra</i>	2016	6	0–43%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	6	0–43%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	5	0–44%	
North Rhine-Westphalia, Heimbach Waschbendchen	Düren	50.637806, 6.449917	Fire salamander, <i>Salamandra salamandra</i>	2018	1 (of which 1 †)		
North Rhine-Westphalia, Rosbach	Düren	50.692512, 6.435706	Fire salamander, <i>Salamandra salamandra</i>	2015	47	0–7%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	1		
			Fire salamander, <i>Salamandra salamandra</i>	2017	24	0–15%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	10	0–31%	all <i>Bd</i> -negative
North Rhine-Westphalia, Sandkaulsiefen	Düren	50.789973, 6.375219	Fire salamander, <i>Salamandra salamandra</i>	2018	4	0–51%	
North Rhine-Westphalia, Thönbach	Düren	50.747069, 6.366387	Fire salamander, <i>Salamandra salamandra</i>	2019	1	0–8%	
			Smooth newt, <i>Lissotriton vulgaris</i>		1		
			Alpine newt, <i>Ichthyosaura alpestris</i>		19		
North Rhine-Westphalia, Ursprungsbach	Düren	50.764144, 6.371654	Palmate newt, <i>Lissotriton helveticus</i>		20		
			Fire salamander, <i>Salamandra salamandra</i>	2018	20	0–16%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	12	0–26%	
North Rhine-Westphalia, Wollebach	Düren	50.737227, 6.413199	Fire salamander, <i>Salamandra salamandra</i>	2018	24	0–15%	<i>Bsal</i> -infected European fire salamander in 2019
North Rhine-Westphalia, Biberteiche Schafbach Nationalpark Eifel		50.593152, 6.512388	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	1	0–61%	
			Palmate newt, <i>Lissotriton helveticus</i>		2		
			Palmate newt, <i>Lissotriton helveticus</i>	2018	1		
North Rhine-Westphalia, Burg Vogelsang	Nationalpark Eifel	50.589495, 6.448526	Fire salamander, <i>Salamandra salamandra</i>	2018	3	0–61%	
North Rhine-Westphalia, Härtgessief	Nationalpark Eifel	50.550369, 6.358216	Fire salamander, <i>Salamandra salamandra</i>	2014	15	0–19%	since 2015, no more European fire salamanders found
North Rhine-Westphalia, Helingsbach Stauteich Nationalpark Eifel		50.555043, 6.426633	Smooth newt, <i>Lissotriton vulgaris</i>	2018	1	0–51%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		3		

Supplementary document 2 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	95% Bayesian CI	Remarks
North Rhine-Westphalia, Neffesgesbach	Nationalpark Eifel	50.583735, 6.440269	Smooth newt, <i>Lissotriton vulgaris</i>	2016	1 (of which 1 †)		
North Rhine-Westphalia, Vogelsang Tem- porärgewässer	Nationalpark Eifel	50.575314, 6.440184	Alpine newt, <i>Ichthyosaura alpestris</i>	2016	11	0–18%	
			Palmate newt, <i>Lissotriton helveticus</i>		7		
North Rhine-Westphalia, Walbigbach	Nationalpark Eifel	50.624289, 6.502341	Fire salamander, <i>Salamandra salamandra</i>	2018	12	0–26%	
North Rhine-Westphalia, Bad Münstereifel	Euskirchen	50.525597, 6.787115	Fire salamander, <i>Salamandra salamandra</i>	2018	20	0–16%	
North Rhine-Westphalia, NSG Nonnenbachtal	Euskirchen	50.429958, 6.515382	Northern crested newt, <i>Triturus cristatus</i>	2018	2	0–70%	
North Rhine-Westphalia, Oberschömbach	Euskirchen	50.400182, 6.593637	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	3	0–44%	
			Palmate newt, <i>Lissotriton helveticus</i>		2		
Southern Eifel							
Rhineland-Palatinate, Arzfeld	Bitburg-Prüm	50.095484, 6.251196	Fire salamander, <i>Salamandra salamandra</i>	2016	3	0–43%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		3		
			Palmate newt, <i>Lissotriton helveticus</i>	2017	2	0–70%	
Rhineland-Palatinate, Bitburg	Bitburg-Prüm	49.976417, 6.474156	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	16	0–12%	
			Palmate newt, <i>Lissotriton helveticus</i>		12		
			Alpine newt, <i>Ichthyosaura alpestris</i>	2018	15	0–14%	
			Palmate newt, <i>Lissotriton helveticus</i>		8		
Rhineland-Palatinate, Bollendorf	Bitburg-Prüm	49.849103, 6.326625	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	29	0–6%	
			Palmate newt, <i>Lissotriton helveticus</i>		30		
			Alpine newt, <i>Ichthyosaura alpestris</i>	2018	3	0–43%	
			Palmate newt, <i>Lissotriton helveticus</i>		3 (of which 1 †)		
Rhineland-Palatinate, Daleiden	Bitburg-Prüm	50.073971, 6.163864	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	1	0–44%	
			Palmate newt, <i>Lissotriton helveticus</i>		4		
Rhineland-Palatinate, Ernzen Gutenbach	Bitburg-Prüm	49.828069, 6.403899	Fire salamander, <i>Salamandra salamandra</i>	2015	4	0–51%	
			Fire salamander, <i>Salamandra salamandra</i>	2016	16	0–20%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	6	0–43%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	1		
Rhineland-Palatinate, Fleissbach	Bitburg-Prüm	49.880861, 6.338427	Fire salamander, <i>Salamandra salamandra</i>	2017	4	0–51%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	5	0–44%	
Rhineland-Palatinate, Fuhrbach	Bitburg-Prüm	50.039648, 6.417938	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	2	0–51%	strong decline of European fire salamander larvae 2015- 2019, no more adults found in 2019
			Palmate newt, <i>Lissotriton helveticus</i>		2		
Rhineland-Palatinate, Gentingen	Bitburg-Prüm	49.902448, 6.243511	Fire salamander, <i>Salamandra salamandra</i>	2016	6	0–43%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	3	0–61%	

Supplementary document 2 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	95% Bayesian CI	Remarks
Rhineland-Palatinate, Großkampfenberg	Bitburg-Prüm	50.166200, 6.191891	Alpine newt, <i>Ichthyosaura alpestris</i>	2015	4	0–44%	
			Palmate newt, <i>Lissotriton helveticus</i>		1		
			Alpine newt, <i>Ichthyosaura alpestris</i>	2017	4	0–31%	
			Palmate newt, <i>Lissotriton helveticus</i>		4		
Rhineland-Palatinate, Habscheid	Bitburg-Prüm	50.193284, 6.306951	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	1		
Rhineland-Palatinate, Hauchenbach	Bitburg-Prüm	49.919317, 6.405269	Fire salamander, <i>Salamandra salamandra</i>	2016	22	0–15%	
Rhineland-Palatinate, Heisdorf	Bitburg-Prüm	50.129688, 6.429261	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	3	0–43%	
			Palmate newt, <i>Lissotriton helveticus</i>		3		
Rhineland-Palatinate, Holsthum	Bitburg-Prüm	49.884984, 6.409135	Palmate newt, <i>Lissotriton helveticus</i>	2017	1		
Rhineland-Palatinate, Hütten	Bitburg-Prüm	50.011122, 6.244127	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	2	0–51%	
			Palmate newt, <i>Lissotriton helveticus</i>		2		
Rhineland-Palatinate, Idenheim	Bitburg-Prüm	49.890914, 6.590448	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	12	0–16%	
			Palmate newt, <i>Lissotriton helveticus</i>		4		
Rhineland-Palatinate, Ingendorf	Bitburg-Prüm	49.920602, 6.435246	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	1		
Rhineland-Palatinate, Irrel	Bitburg-Prüm	49.856404, 6.448138	Alpine newt, <i>Ichthyosaura alpestris</i>	2015	1		
			Fire salamander, <i>Salamandra salamandra</i>	2016	16	0–20%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	15	0–19%	
			Palmate newt, <i>Lissotriton helveticus</i>		2		
Rhineland-Palatinate, Körperich	Bitburg-Prüm	49.925429, 6.284984	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	16	0–18%	
			Palmate newt, <i>Lissotriton helveticus</i>		2		
Rhineland-Palatinate, Läuskopfbach	Bitburg-Prüm	50.057222, 6.434027	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	7	0–14%	strong decline of European fire salamander larvae 2015-2019, no more adults found in 2019
			Palmate newt, <i>Lissotriton helveticus</i>		16		
			Alpine newt, <i>Ichthyosaura alpestris</i>	2018	4	0–16%	
			Palmate newt, <i>Lissotriton helveticus</i>		17		
Rhineland-Palatinate, Lichtenborn	Bitburg-Prüm	50.113526, 6.280058	Fire salamander, <i>Salamandra salamandra</i>	2016	1 (of which 1 †)	0–15%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		10		
			Palmate newt, <i>Lissotriton helveticus</i>		11		
			Fire salamander, <i>Salamandra salamandra</i>	2018	31	0–6%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		17		
			Palmate newt, <i>Lissotriton helveticus</i>		14		
Rhineland-Palatinate, Lindscheid	Bitburg-Prüm	50.278656, 6.292373	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	1		
Rhineland-Palatinate, Lützkampen	Bitburg-Prüm	50.152251, 6.170181	Alpine newt, <i>Ichthyosaura alpestris</i>	2015	8	0–31%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	2017	13	0–19%	
			Palmate newt, <i>Lissotriton helveticus</i>		2		

Supplementary document 2 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	95% Bayesian CI	Remarks		
Rhineland-Palatinate, Luppertsseifen	Bitburg-Prüm	50.035977, 6.372919	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	15	0–16%			
			Palmate newt, <i>Lissotriton helveticus</i>		16				
Rhineland-Palatinate, Neuendorf	Bitburg-Prüm	50.296815, 6.462875	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	10	0–16%			
			Palmate newt, <i>Lissotriton helveticus</i>		10				
Rhineland-Palatinate, Nimshuscheid	Bitburg-Prüm	50.081105, 6.474474	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	8	0–26%			
			Palmate newt, <i>Lissotriton helveticus</i>		3				
Rhineland-Palatinate, Obermehlen	Bitburg-Prüm	50.239439, 6.396522	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	3	0–44%			
			Palmate newt, <i>Lissotriton helveticus</i>		2				
Rhineland-Palatinate, Obersgegen	Bitburg-Prüm	49.943828, 6.236489	Palmate newt, <i>Lissotriton helveticus</i>	2017	9	0–30%			
			Palmate newt, <i>Lissotriton helveticus</i>		1				
Rhineland-Palatinate, Olmscheid, Hof Klingendell	Bitburg-Prüm	50.053375, 6.213533	Fire salamander, <i>Salamandra salamandra</i>	2016	4	0–51%			
Rhineland-Palatinate, Prümzurley	Bitburg-Prüm	49.880094, 6.426085	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	26	0–11%			
			Palmate newt, <i>Lissotriton helveticus</i>		6				
Rhineland-Palatinate, Ralingen	Bitburg-Prüm	49.810117, 6.530386	Fire salamander, <i>Salamandra salamandra</i>	2016	3 (of which 1 †)	0–61%			
Rhineland-Palatinate, Reiff	Bitburg-Prüm	50.102032, 6.179619	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	14	0–20%			
			Palmate newt, <i>Lissotriton helveticus</i>		2				
Rhineland-Palatinate, Sefferweich	Bitburg-Prüm	50.045353, 6.53039	Smooth newt, <i>Lissotriton vulgaris</i>	2017	3	0–44%			
			Alpine newt, <i>Ichthyosaura alpestris</i>		1				
			Palmate newt, <i>Lissotriton helveticus</i>		1				
Rhineland-Palatinate, Spielmannsholz	Bitburg-Prüm	50.14179, 6.284316	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	4	0–43%			
			Palmate newt, <i>Lissotriton helveticus</i>		2				
Rhineland-Palatinate, Steinmehlen	Bitburg-Prüm	50.209456, 6.346912	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	1				
Rhineland-Palatinate, Mauel, Steuenbach	Bitburg-Prüm	50.080676, 6.390217	Fire salamander, <i>Salamandra salamandra</i>	2016	7	0–36%	strong decline of European fire salamander larvae 2015–2019, no more adults found in 2019		
Rhineland-Palatinate, Watzbach	Bitburg-Prüm	50.215607, 6.328830	Fire salamander, <i>Salamandra salamandra</i>	2016	2	0–44%	<i>Bsal</i> -infected European fire salamanders in 2019		
			Alpine newt, <i>Ichthyosaura alpestris</i>		3				
			Fire salamander, <i>Salamandra salamandra</i>		2017			33	0–10%
			Alpine newt, <i>Ichthyosaura alpestris</i>		2018			2	0–32%
Rhineland-Palatinate, Weilerbach	Bitburg-Prüm	49.845261, 6.389539	Fire salamander, <i>Salamandra salamandra</i>	2015	27	0–32%			
			Alpine newt, <i>Ichthyosaura alpestris</i>		5				
			Alpine newt, <i>Ichthyosaura alpestris</i>		2015			2	0–31%
			Palmate newt, <i>Lissotriton helveticus</i>		8				
			Alpine newt, <i>Ichthyosaura alpestris</i>		2017			6	0–26%
Palmate newt, <i>Lissotriton helveticus</i>	6								
Palmate newt, <i>Lissotriton helveticus</i>	2018	4	0–51%						

Supplementary document 2 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	95% Bayesian CI	Remarks
Rhineland-Palatinate, Wiesbaum	Bitburg-Prüm	50.326250, 6.670817	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	5	0–44%	no European fire salamander larvae found in 2019
Rhineland-Palatinate, Winterscheid	Bitburg-Prüm	50.248808, 6.227066	Alpine newt, <i>Ichthyosaura alpestris</i> Palmate newt, <i>Lissotriton helveticus</i>	2017	11 2	0–22%	
Rhineland-Palatinate, Winterspelt	Bitburg-Prüm	50.213135, 6.190452	Palmate newt, <i>Lissotriton helveticus</i>	2017	1		
Rhineland-Palatinate, Wolfsschlucht Prüm	Bitburg-Prüm	50.225602, 6.434867	Palmate newt, <i>Lissotriton helveticus</i>	2018	32	0–11%	
Rhineland-Palatinate, Bodenbach	Vulkaneifel	50.304250, 6.863183	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	2	0–70%	no European fire salamander larvae found in 2019
Rhineland-Palatinate, Borler	Vulkaneifel	50.304050, 6.837533	Palmate newt, <i>Lissotriton helveticus</i>	2018	1		
Rhineland-Palatinate, Essingen	Vulkaneifel	50.257928, 6.734642	Alpine newt, <i>Ichthyosaura alpestris</i> Palmate newt, <i>Lissotriton helveticus</i>	2018	12 2	0–20%	
Rhineland-Palatinate, Jünkerath	Vulkaneifel	50.342486, 6.560344	Alpine newt, <i>Ichthyosaura alpestris</i> Palmate newt, <i>Lissotriton helveticus</i>	2018	28 6	0–11%	
Rhineland-Palatinate, Lindenquelle	Vulkaneifel	50.189603, 6.632222	Smooth newt, <i>Lissotriton vulgaris</i>	2018	5	0–44%	
Rhineland-Palatinate, Nohn	Vulkaneifel	50.327002, 6.800583	Palmate newt, <i>Lissotriton helveticus</i>	2018	6	0–43%	
Rhineland-Palatinate, Prümquelle	Vulkaneifel	50.3147510, 6.4617130	Alpine newt, <i>Ichthyosaura alpestris</i> Palmate newt, <i>Lissotriton helveticus</i>	2017	16 9	0–13%	
			Alpine newt, <i>Ichthyosaura alpestris</i> Palmate newt, <i>Lissotriton helveticus</i>	2018	8 14	0–15%	
Rhineland-Palatinate, Zermüllen	Vulkaneifel	50.303933, 6.935633	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	2	0–70%	
Ruhr area and vicinities							
North Rhine-Westphalia, Siepental	Bochum	51.437833, 7.2525	Fire salamander, <i>Salamandra salamandra</i>	2018	9	0–30%	
North Rhine-Westphalia, Stiepel	Bochum	51.418056, 7.250944	Fire salamander, <i>Salamandra salamandra</i>	2018	2	0–70%	
North Rhine-Westphalia, Byfang	Essen	51.392093, 7.112520	Alpine newt, <i>Ichthyosaura alpestris</i> Palmate newt, <i>Lissotriton helveticus</i>	2018	3 1	0–51%	
North Rhine-Westphalia, Bredeneu	Essen	51.403281, 6.995988	Fire salamander, <i>Salamandra salamandra</i>	2018	30	0–11%	swabbed in summer and autumn
North Rhine-Westphalia, Fischlaken	Essen	51.378457, 7.057662	Fire salamander, <i>Salamandra salamandra</i>	2017	1 (of which 1 †)		
North Rhine-Westphalia, Schellenberg	Essen	51.413459, 7.043988	Fire salamander, <i>Salamandra salamandra</i>	2018	12	0–26%	swabbed in autumn
North Rhine-Westphalia, Rumbachtal	Mülheim an der Ruhr	51.418650, 6.930562	Fire salamander, <i>Salamandra salamandra</i>	2017	7	0–36%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	2	0–70%	swabbed in summer
North Rhine-Westphalia, Hattingen Deilbach	Ennepe-Ruhr-Kreis	51.401582, 7.126877	Alpine newt, <i>Ichthyosaura alpestris</i> Palmate newt, <i>Lissotriton helveticus</i>	2018	3 (of which 3 †) 1	0–51%	
North Rhine-Westphalia, Hagen	Hagen	51.387469, 7.463797	Alpine newt, <i>Ichthyosaura alpestris</i>	2018	2 (of which 2 †)	0–70%	
North Rhine-Westphalia, Vonderort	Oberhausen	51.505806, 6.902312	Fire salamander, <i>Salamandra salamandra</i>	2018	7	0–36%	swabbed in autumn
North Rhine-Westphalia, Ratingen	Mettmann	51.321740, 6.858843	Fire salamander, <i>Salamandra salamandra</i>	2017	22	0–15%	
			Fire salamander, <i>Salamandra salamandra</i>	2018	10	0–31%	3 swabbed in spring, 7 in autumn

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Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	95% Bayesian CI	Remarks
North Rhine-Westphalia, Velbert Bleibergquelle	Mettmann	51.343183, 7.077412	Fire salamander, <i>Salamandra salamandra</i>	2018	1 (of which 1 †)		
North Rhine-Westphalia, Selm Funne	Unna	51.666870, 7.551980	Fire salamander, <i>Salamandra salamandra</i>	2018	23	0–14%	
North Rhine-Westphalia, Selm Gerlingsbach	Unna	51.656975, 7.550057	Fire salamander, <i>Salamandra salamandra</i> Alpine newt, <i>Ichthyosaura alpestris</i>	2018	3 1	0–51%	
North Rhine-Westphalia, Selm Paßbach	Unna	51.669187, 7.525273	Fire salamander, <i>Salamandra salamandra</i>	2018	23	0–14%	
North Rhine-Westphalia, Barmen	Wuppertal	51.247764, 7.168684	Fire salamander, <i>Salamandra salamandra</i> Alpine newt, <i>Ichthyosaura alpestris</i>	2018	11 3	0–20%	1 specimen <i>Bd</i> -positive
Additional sites (various federal states)							
Baden-Wuerttemberg, Heidelberg	Heidelberg	not available	Fire salamander, <i>Salamandra salamandra</i>	2016	4	0–51%	
Baden-Wuerttemberg, Heilbronn	Heilbronn	49.126126, 9.255500	Fire salamander, <i>Salamandra salamandra</i>	2017	10	0–30%	
Baden-Wuerttemberg, Stuttgart	Stuttgart	48.772791, 9.115469	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
Bavaria, Pottenstein	Bayreuth	49.778186, 11.413166	Fire salamander, <i>Salamandra salamandra</i>	2017	40	0–9%	
Bavaria, Wiesthal	Main-Spessart	50.037548, 9.428539	Fire salamander, <i>Salamandra salamandra</i>	2017	10	0–30%	
Bavaria, Hersbrucker Alb	Nürnberger Land	49.525000, 11.437374	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
Bavaria, Obernzell Donauleiten	Passau	48.525530, 13.722739	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
Hesse, Felsenmeer, Lauertal	Bergstraße	49.71231, 8.692314	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
Hesse, Darmstadt	Darmstadt	49.869167, 8.678889	Fire salamander, <i>Salamandra salamandra</i>	2018	1 (of which 1 †)		
Hesse, Marburg	Marburg-Biedenkopf	50.826739, 8.781213	Fire salamander, <i>Salamandra salamandra</i>	2017	17	0–19%	
Hesse, Idstein	Rheingau-Taunus-Kreis	50.217173, 8.265894	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
Lower Saxony, Kleiwiesen	Braunschweig	52.32964, 10.58211	Northern crested newt, <i>Triturus cristatus</i> Smooth newt, <i>Lissotriton vulgaris</i> Alpine newt, <i>Ichthyosaura alpestris</i>	2015	27 117 27	0–2%	
Lower Saxony, Bad Harzburg	Goslar	51.898946, 10.646149	Fire salamander, <i>Salamandra salamandra</i>	2017	5	0–44%	
Lower Saxony, Clausthal-Zellerfeld	Goslar	51.762997, 10.445509	Fire salamander, <i>Salamandra salamandra</i>	2017	39	0–9%	
Lower Saxony, Wolfshagen	Goslar	51.923595, 10.303128	Fire salamander, <i>Salamandra salamandra</i>	2017	26	0–13%	
Lower Saxony, Lelm	Helmstedt	52.21327, 10.83035	Northern crested newt, <i>Triturus cristatus</i> Smooth newt, <i>Lissotriton vulgaris</i> Alpine newt, <i>Ichthyosaura alpestris</i> Palmate newt, <i>Lissotriton helveticus</i>	2015	29 16 57 6	0–3%	
Lower Saxony, Mühlenberg	Holzminden	51.795175, 9.514919	Fire salamander, <i>Salamandra salamandra</i>	2017	50	0–7%	
Lower Saxony, Negenborn	Holzminden	51.894474, 9.595518	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
Lower Saxony, Shilo Ranch	Holzminden	51.891693, 9.604916	Fire salamander, <i>Salamandra salamandra</i>	2017	50	0–7%	
Lower Saxony, Kreis Lippe	Lippe	not available	Fire salamander, <i>Salamandra salamandra</i>	2016	2	0–70%	
Lower Saxony, Solling (various sub-sites)		51.80-51.89, 9.49-9.60	Fire salamander, <i>Salamandra salamandra</i>	2015	23	0–14%	all <i>Bd</i> -negative
				2017	45	0–8%	
North Rhine-Westphalia, Bielefeld Botanischer Garten	Bielefeld	52.014698, 8.511353	Fire salamander, <i>Salamandra salamandra</i>	2017	22	0–15%	

Supplementary document 2 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	95% Bayesian CI	Remarks
North Rhine-Westphalia, Kottenforst (various sub-sites)	Bonn	50.65-50.69, 7.06-70.12	Fire salamander, <i>Salamandra salamandra</i>	2015	51	0–7%	all <i>Bd</i> -negative
			Fire salamander, <i>Salamandra salamandra</i>	2017	24	0–15%	
North Rhine-Westphalia, Rhede	Borken	51.870503, 6.761849	Fire salamander, <i>Salamandra salamandra</i>	2017	20	0–16%	
North Rhine-Westphalia, Baumberge	Coesfeld	51.990031, 7.350149	Fire salamander, <i>Salamandra salamandra</i>	2017	32	0–11%	
North Rhine-Westphalia, Billerbeck	Coesfeld	51.9860, 7.3330	Fire salamander, <i>Salamandra salamandra</i>	2017	4	0–51%	all <i>Bd</i> -negative
North Rhine-Westphalia, Coesfeld	Coesfeld	51.914888, 7.231555	Fire salamander, <i>Salamandra salamandra</i>	2017	34	0–11%	
North Rhine-Westphalia, Kirchdornberg	Dornberg	52.029909, 8.441465	Fire salamander, <i>Salamandra salamandra</i>	2017	25	0–13%	
North Rhine-Westphalia, Borgholzhausen	Gütersloh	52.088711, 8.317183	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
North Rhine-Westphalia, Blumenphul	Heinsberg	51.174364, 6.162144	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	13	0–11%	
			Palmate newt, <i>Lissotriton helveticus</i>		19		
			Smooth newt, <i>Lissotriton vulgaris</i>		9		
North Rhine-Westphalia, Effelder Wald	Heinsberg	51.141144, 6.150484	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	2	0–11%	
			Palmate newt, <i>Lissotriton helveticus</i>		19		
			Smooth newt, <i>Lissotriton vulgaris</i>		16		
North Rhine-Westphalia, Dalheim	Heinsberg	51.148773, 6.197970	Alpine newt, <i>Ichthyosaura alpestris</i>	2017	18		
			Palmate newt, <i>Lissotriton helveticus</i>		25		
			Smooth newt, <i>Lissotriton vulgaris</i>		6		
North Rhine-Westphalia, Gangelter Bruch	Heinsberg	50.982539, 5.989102	Smooth newt, <i>Lissotriton vulgaris</i>	2017	6	0–18%	1 sample near detection limit (0.9 GE)
North Rhine-Westphalia, Teverener Heide	Heinsberg	50.947346, 6.027223	Palmate newt, <i>Lissotriton helveticus</i>	2017	13	0–6%	
			Northern crested newt, <i>Triturus cristatus</i>		3		
			Smooth newt, <i>Lissotriton vulgaris</i>		25		
			Alpine newt, <i>Ichthyosaura alpestris</i>		21		
			Palmate newt, <i>Lissotriton helveticus</i>		10		
North Rhine-Westphalia, Wassenberger Wald	Heinsberg	51.099426, 6.167827	Smooth newt, <i>Lissotriton vulgaris</i>	2017	4	0–11%	
			Alpine newt, <i>Ichthyosaura alpestris</i>		17		
			Palmate newt, <i>Lissotriton helveticus</i>		9		
North Rhine-Westphalia, Helminghausen	Hochsauerlandkreis	51.386061, 8.759663	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
North Rhine-Westphalia, Detmold	Lippe	51.923554, 8.871985	Fire salamander, <i>Salamandra salamandra</i>	2017	20	0–16%	
North Rhine-Westphalia, Wolbecker Tiergarten	Münster	51.910658, 7.745656	Fire salamander, <i>Salamandra salamandra</i>	2017	14	0–20%	
North Rhine-Westphalia, Remscheid	Remscheid	51.1541, 7.1763	Fire salamander, <i>Salamandra salamandra</i>	2016	5	0–44%	all <i>Bd</i> -negative
			Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
North Rhine-Westphalia, Hennef	Rhein-Sieg-Kreis	50.755387, 7.357836	Fire salamander, <i>Salamandra salamandra</i>	2017	10	0–30%	
Rhineland-Palatinate, Niederhausen	Bad Kreuznach	49.803681, 7.789785	Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
Rhineland-Palatinate, Wittlich	Bernkastel-Wittlich	50.009568, 6.888018	Fire salamander, <i>Salamandra salamandra</i>	2018	20	0–16%	swabbed in autumn
Rhineland-Palatinate, Altlayer Bachtal	Cochem-Zell	49.993891, 7.292991	Fire salamander, <i>Salamandra salamandra</i>	2017	29	0–11%	
Rhineland-Palatinate, Schmidtenhöhe	Koblenz	50.349104, 7.678652	Northern crested newt, <i>Triturus cristatus</i>	2015	1		

Supplementary document 2 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	95% Bayesian CI	Remarks
Rhineland-Palatinate, Haardt	Neustadt a.d.W.	49.370101, 8.144377	Fire salamander, <i>Salamandra salamandra</i>	2017	7	0–36%	
Rhineland-Palatinate, Rheinbay	Rhein-Hunsrück-Kreis	50.173356, 7.62397	Fire salamander, <i>Salamandra salamandra</i>	2014	9	0–30%	
			Fire salamander, <i>Salamandra salamandra</i>	2017	30	0–11%	
Rhineland-Palatinate, Trier, Mattheiser Wald	Trier	49.719908, 6.652989	Northern crested newt, <i>Triturus cristatus</i>	2016	1		
Rhineland-Palatinate, Trier, Sirzenicher Bach	Trier	49.763169, 6.611662	Fire salamander, <i>Salamandra salamandra</i>	2014	3	0–61%	
Saxony, Ehrenberg, Kriebstein	Mittelsachsen	51.0375, 13.0167	Fire salamander, <i>Salamandra salamandra</i>	2017	25	0–13%	all <i>Bd</i> -negative
Saxony, Tharandt	Sächsische Schweiz-Osterzgebirge	50.9701, 13.5824	Fire salamander, <i>Salamandra salamandra</i>	2017	25	0–13%	all <i>Bd</i> -negative
Saxony, Hartenstein	Zwickau	50.661939, 12.671357	Fire salamander, <i>Salamandra salamandra</i>	2017	15	0–19%	
Saxony-Anhalt, Ilseburg	Harz	51.8405, 10.6434	Fire salamander, <i>Salamandra salamandra</i>	2015	8	0–31%	all <i>Bd</i> -negative
			Fire salamander, <i>Salamandra salamandra</i>	2017	5	0–44%	
Saxony-Anhalt, Meisdorf	Harz	51.709798, 11.269965	Fire salamander, <i>Salamandra salamandra</i>	2017	31	0–11%	
Saxony-Anhalt, Siebigerode	Mansfeld-Südharz	51.562173, 11.418255	Fire salamander, <i>Salamandra salamandra</i>	2017	20	0–16%	
Thuringia, Closewitz	Jena	50.96, 11.57	Northern crested newt, <i>Triturus cristatus</i>	2015	23	0–14%	
Thuringia, Waldecker Schlossgrund	Saale-Holzland-Kreis	50.9139, 11.7769	Fire salamander, <i>Salamandra salamandra</i>	2015	22	0–15%	all <i>Bd</i> -negative
			Fire salamander, <i>Salamandra salamandra</i>	2017	15	0–19%	
Taunus	Wispertal	not available	Fire salamander, <i>Salamandra salamandra</i>	2017	14	0–20%	
Rhön		not available	Fire salamander, <i>Salamandra salamandra</i>	2017	22	0–15%	
Bergisches Land		not available	Fire salamander, <i>Salamandra salamandra</i>	2017	4	0–51%	
Bergisches Land		not available	Fire salamander, <i>Salamandra salamandra</i>	2017	9	0–30%	
Südschwarzwald	Schramberg	not available	Fire salamander, <i>Salamandra salamandra</i>	2017	16	0–20%	
Schwäbische Alb	Reutlingen	not available	Fire salamander, <i>Salamandra salamandra</i>	2017	10	0–30%	
Schwäbisch-Fränkischen Waldberge	Rudersberg	not available	Fire salamander, <i>Salamandra salamandra</i>	2017	12	0–26%	
				Totally tested	3454		

Supplementary document 3. *Bsal*-positive sites (populations) of caudate species from Germany from 2019 and early 2020. Specimens tested positive or negative for *Bd* are indicated. Legend as in Table 1.

Site	District	Coordinates (latitude, longitude)	Species	N samples	N samples <i>Bsal</i> -positive	Infection loads	Prevalence per year	95% Bayesian CI	N samples also <i>Bd</i> -positive (with GE)	Remarks
Northern Eifel										
North Rhine-Westphalia, Brockenberg	StädteRegion Aachen	50.746724, 6.232078	Northern crested newt, <i>Triturus cristatus</i>	3	1	+	10%	2–43%	0	<i>Bsal</i> -infected northern crested newts 2017-2019
			Smooth newt, <i>Lissotriton vulgaris</i>	7	0	0	not tested		<i>Bsal</i> -infected smooth newts in 2016, 2017	
North Rhine-Westphalia, Münsterbusch	StädteRegion Aachen	50.770778, 6.204713	Smooth newt, <i>Lissotriton vulgaris</i>	2	0		10%	2–43%	not tested	first <i>Bsal</i> -record in 2019
			Alpine newt, <i>Ichthyosaura alpestris</i>	8	1	++' to '+++'	10%		2–43%	0
North Rhine-Westphalia, Omerbach	StädteRegion Aachen	50.754140, 6.307838	Fire salamander, <i>Salamandra salamandra</i>	2	0	0	29%	19–42%	not tested	first <i>Bsal</i> -record in 2019
			Smooth newt, <i>Lissotriton vulgaris</i>	2	0	0	0			
			Alpine newt, <i>Ichthyosaura alpestris</i>	26	7	+' to '+++'	1 (1 GE)			
			Palmate newt, <i>Lissotriton helveticus</i>	32	11	+' to '+++'	0			
North Rhine-Westphalia, Thönbach	Düren	50.747069, 6.366387	Fire salamander, <i>Salamandra salamandra</i>	11	0	0	4%	2–8%	not tested	first <i>Bsal</i> -record in 2019
			Alpine and palmate newts	132	5	+' to '++'	0			
North Rhine-Westphalia, Teufelspütz	Düren	50.747069, 6.366387	Alpine and palmate newts	171	36	+' to '+++'	21%	15–28%	0	<i>Bsal</i> -infected Alpine newts in 2018
North Rhine-Westphalia, Weberbach	Düren	50.735089, 6.359651	Fire salamander, <i>Salamandra salamandra</i>	10	2	+' to '+++'	3%	1–9%	0	<i>Bsal</i> -infected fire salamanders in 2017
			Alpine newt, <i>Ichthyosaura alpestris</i>	33 (of which 2 †)	0	0	not tested		<i>Bsal</i> -infected alpine newts in 2017, 2018	
			Palmate newt, <i>Lissotriton helveticus</i>	31	0	0	not tested		<i>Bsal</i> -infected palmate newts in 2017	
North Rhine-Westphalia, Wollbach	Düren	50.737227, 6.413199	Fire salamander, <i>Salamandra salamandra</i>	26	1	+++	4%	1–19%	0	
North Rhine-Westphalia, Helingsbach Artenschutz- und Quellteich	NP Eifel	50.555410, 6.436180	Smooth newt, <i>Lissotriton vulgaris</i>	12	0		2%	1–11%	not tested	<i>Bsal</i> -infected northern crested newts 2017-2018
			Alpine newt, <i>Ichthyosaura alpestris</i>	29	1	+'	1 (3 GE)		<i>Bsal</i> -infected smooth and Alpine newts in 2018	
			Palmate newt, <i>Lissotriton helveticus</i>	7	0		not tested			

Supplementary document 3 continued

Site	District	Coordinates (latitude, longitude)	Species	N samples	N samples Bsal-positive	Infection loads	Prevalence per year	95% Bayesian CI	N samples also Bd-positive (with GE)	Remarks
North Rhine-Westphalia, Winkelenberg	NP Eifel	50.596940, 6.420544	Northern crested newt, <i>Triturus cristatus</i>	40	3	+’ to ‘+++’	6%	2–15%	0	
			Smooth newt, <i>Lissotriton vulgaris</i>	3	0				not tested	
			Alpine newt, <i>Ichthyosaura alpestris</i>	6	0				not tested	
			Palmate newt, <i>Lissotriton helveticus</i>	5	0				not tested	
Southern Eifel										
Rhineland-Palatinate, Sellerich	Bitburg-Prüm	50.237990, 6.366980	Alpine newt, <i>Ichthyosaura alpestris</i>	24	2	+’ to ‘++’	3%	1–12%	0	
			Palmate newt, <i>Lissotriton helveticus</i>	34	0	0			not tested	
Rhineland-Palatinate, Watzbach	Bitburg-Prüm	50.215607, 6.328830	Fire salamander, <i>Salamandra salamandra</i>	63	11	+++’ to ‘+++’	18%	10–28%	0	7 infected in spring, 4 in autumn, with typical skin lesions
			Alpine newt, <i>Ichthyosaura alpestris</i>	1	0	0			not tested	
Rhineland-Palatinate, Gerolstein	Vulkaneifel	50.209914, 6.658375	Alpine newt, <i>Ichthyosaura alpestris</i>	10	1	+’ to ‘++’	10%	2–43%	0	at least 5 dead-found fire salamanders reported in spring, not sampled
			Palmate newt, <i>Lissotriton helveticus</i>	1	0				not tested	
Ruhr area and vicinities										
North Rhine-Westphalia, Lottental	Bochum	51.437, 7.257333	Fire salamander, <i>Salamandra salamandra</i>	20	1	++’	5%	2–24%	not tested	infected from spring, 3 swabbed in autumn,
			Alpine newt, <i>Ichthyosaura alpestris</i>	1					not tested	<i>Bsal</i> -infected European fire salamander in 2018
North Rhine-Westphalia, Dellwiger Bachtal	Dortmund	51.511440, 7.336399	Fire salamander, <i>Salamandra salamandra</i>	2 (of which 2†)	2 (of which 2†)	+++’ to ‘+++’	100%	26–99%	not tested	
North Rhine-Westphalia, Solingen	Solingen	51.199496, 7.104182	Fire salamander, <i>Salamandra salamandra</i>	6 (of which 6†)	3 (of which 3†)	+’ to ‘+++’	50%	19–81%	not tested	mass mortality in more than 8 dead European fire salamanders
North Rhine-Westphalia, Bergerhausen	Essen	51.436599, 7.048501	Smooth newt, <i>Lissotriton vulgaris</i>	17	6	+++’ to ‘+++’	33%	17–54%	not tested	
			Alpine newt, <i>Ichthyosaura alpestris</i>	5	2	+++’ to ‘+++’			not tested	
			Palmate newt, <i>Lissotriton helveticus</i>	2	0				not tested	
North Rhine-Westphalia, Bredeney	Essen	51.403281, 6.995988	Fire salamander, <i>Salamandra salamandra</i>	331 (of which 8 †)	74 (of which 8 †)	+’ to ‘+++’	22%	18–27%	not tested	25 European fire salaman- ders had skin lesions
North Rhine-Westphalia, Fulerum Südwestfriedhof	Essen	51.431025, 6.968945	Fire salamander, <i>Salamandra salamandra</i>	4	1	+++’	2%	0.4–8%	not tested	reported mass mortality of European fire salamanders in 2018
			Smooth newt, <i>Lissotriton vulgaris</i>	10	0	0			not tested	
			Alpine newt, <i>Ichthyosaura alpestris</i>	21	0	0			not tested	
			Palmate newt, <i>Lissotriton helveticus</i>	5	0	0			not tested	

Supplementary document 3 continued

Site	District	Coordinates (latitude, longitude)	Species	N samples	N samples Bsal-positive	Infection loads	Prevalence per year	95% Bayesian CI	N samples also Bd-positive (with GE)	Remarks
North Rhine-Westphalia, Ruthertal	Essen	51.382679, 6.972078	Fire salamander, <i>Salamandra salamandra</i>	3 (of which 3 †)	3 (of which 3 †)	++' to '+++'	100%	42–100%	not tested	
North Rhine-Westphalia, Essen Stadtwald	Essen	51.423306, 7.033296	Fire salamander, <i>Salamandra salamandra</i>	1	0	0	33%	4–57%	not tested	
North Rhine-Westphalia, Stadtwald, Garten	Essen	51.423306, 7.033296	Alpine newt, <i>Ichthyosaura alpestris</i>	5	1	++'			not tested	
			Alpine newt, <i>Ichthyosaura alpestris</i>	50	2	++'	4%	1–13%	not tested	
North Rhine-Westphalia, Wolfsbachtal	Essen	51.404382, 6.973143	Fire salamander, <i>Salamandra salamandra</i>	15 (of which 1 †)	6 (of which 1 †)	+' to '+++'	44%	23–68%	not tested	
			Alpine newt, <i>Ichthyosaura alpestris</i>	1	1	+++'			not tested	
North Rhine-Westphalia, Rottbachtal	Mülheim an der Ruhr	51.375838, 6.833334	Fire salamander, <i>Salamandra salamandra</i>	13	3	+++'	24%	10–48%	not tested	infected common frog at this site
			Smooth newt, <i>Lissotriton vulgaris</i>	1	0	0			not tested	
			Alpine newt, <i>Ichthyosaura alpestris</i>	3	1	+++'			not tested	
North Rhine-Westphalia, Rottbachtal, Gartenteich	Mülheim an der Ruhr	51.401709, 6.856205	Smooth newt, <i>Lissotriton vulgaris</i>	17	0		4%	1–13%	not tested	decayed alpine newts in pond
			Alpine newt, <i>Ichthyosaura alpestris</i>	33	2	++' to '+++'			not tested	
North Rhine-Westphalia, Hattingen Deilbach	Ennepe-Ruhr- Kreis	51.401582, 7.126877	Fire salamander, <i>Salamandra salamandra</i>	3 (of which 3 †)	2 (of which 2 †)	+' to '+++'	67%	20–93%	not tested	
North Rhine-Westphalia, Hattingen Höhenweg	Ennepe-Ruhr- Kreis	51.326008, 7.171701	Fire salamander, <i>Salamandra salamandra</i>	8 (of which 8 †)	3 (of which 3 †)	+++'	38%	14–70%	not tested	
North Rhine-Westphalia, Witten	Ennepe-Ruhr- Kreis	51.429405, 7.387315	Fire salamander, <i>Salamandra salamandra</i>	13 (of which 13 †)	11 (of which 11 †)	++' to '+++'	85%	57–95%	not tested	a total of 18 European fire salamanders that had left their wintering grounds and died, 13 sampled
North Rhine-Westphalia, Velbert Deilbach	Mettmann	51.337388, 7.142683	Fire salamander, <i>Salamandra salamandra</i>	2 (of which 2 †)	1 (of which 1 †)	++'	50%	9–88%	not tested	
Others										
North Rhine-Westphalia, Biener Altrhein	Kleve	51.771382, 6.354609	Northern crested newt, <i>Triturus cristatus</i>	1	1	+++'	17%	6–38%	not tested	
			Smooth newt, <i>Lissotriton vulgaris</i>	17	2	+'			not tested	
Totally tested				1341	210				2	

Supplementary document 4. *Bsal*-negative sites (populations) of caudate species from Germany from 2019 and early 2020. Legend as in document 1.

Site (alphabetical order)	District	Coordinates (latitude, longitude)	Species	N samples	95% Bayesian CI	Remarks
Northern Eifel						
North Rhine-Westphalia, Binsfeldhammer	StädteRegion Aachen	50.756521, 6.243033	Smooth newt, <i>Lissotriton vulgaris</i>	2	0–51%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	2		
North Rhine-Westphalia, Broichbachtal	StädteRegion Aachen	50.864910, 6.122293	Smooth newt, <i>Lissotriton vulgaris</i>	5	0–19%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	12		
North Rhine-Westphalia, Döppeskaul	StädteRegion Aachen	50.509209, 6.295323	Alpine newt, <i>Ichthyosaura alpestris</i>	18	0–11%	
			Palmate newt, <i>Lissotriton helveticus</i>	13 (of which 1†)		
North Rhine-Westphalia, Fischbach	StädteRegion Aachen	50.735368, 6.294149	Fire salamander, <i>Salamandra salamandra</i>	26	0–12%	<i>Bsal</i> -infected European fire salamanders in 2015 and 2016
			Alpine newt, <i>Ichthyosaura alpestris</i>	2		
North Rhine-Westphalia, Geddautal	StädteRegion Aachen	50.764826, 6.210666	Alpine newt, <i>Ichthyosaura alpestris</i>	4	0–51%	
North Rhine-Westphalia, Herzogenrath Schwimmhalle	StädteRegion Aachen	50.866332, 6.103468	Smooth newt, <i>Lissotriton vulgaris</i>	5	0–44%	
North Rhine-Westphalia, Holderbach	StädteRegion Aachen	50.548397, 6.292036	Fire salamander, <i>Salamandra salamandra</i>	3	0–61%	
North Rhine-Westphalia, Holderbach-Fischteiche	StädteRegion Aachen	50.528889, 6.298801	Smooth newt, <i>Lissotriton vulgaris</i>	1	0–44%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	2		
			Palmate newt, <i>Lissotriton helveticus</i>	2		
North Rhine-Westphalia, Konzen	StädteRegion Aachen	50.595878, 6.266865	Alpine newt, <i>Ichthyosaura alpestris</i>	13	0–8%	
			Palmate newt, <i>Lissotriton helveticus</i>	27		
North Rhine-Westphalia, Lamersiefen	StädteRegion Aachen	50.756932, 6.321338	Fire salamander, <i>Salamandra salamandra</i>	16	0–20%	
North Rhine-Westphalia, Lensbach	StädteRegion Aachen	50.672648, 6.230209	Fire salamander, <i>Salamandra salamandra</i>	23	0–13%	
			Palmate newt, <i>Lissotriton helveticus</i>	2		
North Rhine-Westphalia, Palsen Mützenich	StädteRegion Aachen	50.568479, 6.201584	Alpine newt, <i>Ichthyosaura alpestris</i>	1	0–31%	
			Palmate newt, <i>Lissotriton helveticus</i>	9		
North Rhine Westphalia, Peterbach	StädteRegion Aachen	50.657733, 6.323633	Fire salamander, <i>Salamandra salamandra</i>	1	0–6%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	31		
			Palmate newt, <i>Lissotriton helveticus</i>	23		
North Rhine-Westphalia, Schlangenbergl	StädteRegion Aachen	50.738106, 6.252416	Smooth newt, <i>Lissotriton vulgaris</i>	1	0–11%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	7		
			Palmate newt, <i>Lissotriton helveticus</i>	22		
North Rhine-Westphalia, Solchbach	StädteRegion Aachen	50.70178, 6.270098	Fire salamander, <i>Salamandra salamandra</i>	39	0–9%	<i>Bsal</i> -infected European salamanders in 2015, 2017, 2018
			Alpine newt, <i>Ichthyosaura alpestris</i>	1		
North Rhine-Westphalia, Schomet	StädteRegion Aachen	50.722813, 6.219435	Smooth newt, <i>Lissotriton vulgaris</i>	10	0–16%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	11		

Supplementary document 4 continued

Site (alphabetical order)	District	Coordinates (latitude, longitude)	Species	N samples	95% Bayesian CI	Remarks
North Rhine-Westphalia, Vygten	StädteRegion Aachen	50.771877, 6.289942	Smooth newt, <i>Lissotriton vulgaris</i>	18	0–15%	
			Palmate newt, <i>Lissotriton helveticus</i>	4		
North Rhine-Westphalia, Vichtbach	StädteRegion Aachen	50.676448, 6.198452	Fire salamander, <i>Salamandra salamandra</i>	34	0–10%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	1		
North Rhine-Westphalia, Wurmatal Mühle Bardenberg	StädteRegion Aachen	50.836770, 6.101372	Palmate newt, <i>Lissotriton helveticus</i>	7	0–36%	
North Rhine-Westphalia, Asselbach	Düren	50.71486, 6.34355	Fire salamander, <i>Salamandra salamandra</i>	2	0–70%	
North Rhine-Westphalia, Ginnicker Bruch	Düren	50.694938, 6.579291	Northern crested newt, <i>Triturus cristatus</i>	0	0–5%	
			Smooth newt, <i>Lissotriton vulgaris</i>			
			Alpine newt, <i>Ichthyosaura alpestris</i>			
North Rhine-Westphalia, Hasselbach	Düren	50.681882, 6.428362	Fire salamander, <i>Salamandra salamandra</i>	9 (of which 1†)	0–30%	
North Rhine-Westphalia, Merkener Teiche	Düren	50.841698, 6.441830	Smooth newt, <i>Lissotriton vulgaris</i>	22	0–15%	
North Rhine-Westphalia, Merode Generalsweg	Düren	50.790850, 6.383657	Smooth newt, <i>Lissotriton vulgaris</i>	1	0–16%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	11		
			Palmate newt, <i>Lissotriton helveticus</i>	99		
North Rhine-Westphalia, Pierer Wald	Düren	50.868203, 6.425354	Smooth newt, <i>Lissotriton vulgaris</i>	28	0–10%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	7		
North Rhine-Westphalia, Quellteiche Linnich	Düren	50.969190, 6.277490	Smooth newt, <i>Lissotriton vulgaris</i>	24	0–15%	
North Rhine-Westphalia, Rosbach	Düren	50.692512, 6.435706	Fire salamander, <i>Salamandra salamandra</i>	29	0–11%	
North Rhine-Westphalia, Rote Wehe	Düren	50.726667, 6.323306	Alpine newt, <i>Ichthyosaura alpestris</i>	113	0–1%	
			Palmate newt, <i>Lissotriton helveticus</i>	207		
North Rhine-Westphalia, Sandkaulsiefen	Düren	50.789973, 6.375219	Fire salamander, <i>Salamandra salamandra</i>	6	0–43%	
North Rhine-Westphalia, Stetternich, temporärer Kleinweiher	Düren	50.916295, 6.413348	Smooth newt, <i>Lissotriton vulgaris</i>	7	0–18%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	6		
			Palmate newt, <i>Lissotriton helveticus</i>	6		
North Rhine-Westphalia, Ursprungsbach	Düren	50.764144, 6.371654	Fire salamander, <i>Salamandra salamandra</i>	8	0–31%	
North Rhine-Westphalia, Weiße Wehe	Düren	50.717116, 6.345695	Alpine newt, <i>Ichthyosaura alpestris</i>	52	0–6%	<i>Bsal</i> -infected European fire salamanders in 2015
			Palmate newt, <i>Lissotriton helveticus</i>	8		
North Rhine-Westphalia, Zweifallshammer	Düren	50.684688, 6.412117	Fire salamander, <i>Salamandra salamandra</i>	1		<i>Bsal</i> -infected European fire salamanders in 2018
North Rhine-Westphalia, Billerbach	Nationalpark Eifel	50.619605, 6.494605	Fire salamander, <i>Salamandra salamandra</i>	16	0–20%	
North Rhine-Westphalia, Braubach	Nationalpark Eifel	50.569117, 6.489517	Fire salamander, <i>Salamandra salamandra</i>	16	0–20%	

Supplementary document 4 continued

Site (alphabetical order)	District	Coordinates (latitude, longitude)	Species	N samples	95% Bayesian CI	Remarks
North Rhine-Westphalia, Haftenbach	Nationalpark Eifel	50.613929, 6.431371	Fire salamander, <i>Salamandra salamandra</i>	6	0–26%	<i>Bsal</i> -infected European fires al- manders in 2017
			Alpine newt, <i>Ichthyosaura alpestris</i>	1		
			Palmate newt, <i>Lissotriton helveticus</i>	5		
North Rhine-Westphalia, Honigberg	Nationalpark Eifel	50.6152, 6.409683	Alpine newt, <i>Ichthyosaura alpestris</i>	8	0–13%	
			Palmate newt, <i>Lissotriton helveticus</i>	18		
North Rhine-Westphalia, Patersweiher	Nationalpark Eifel	50.544562, 6.428677	Smooth newt, <i>Lissotriton vulgaris</i>	1	0–51%	
			Palmate newt, <i>Lissotriton helveticus</i>	3		
North Rhine-Westphalia, Riffelsberg	Nationalpark Eifel	not available	Smooth newt, <i>Lissotriton vulgaris</i>	2	0–20%	
			Palmate newt, <i>Lissotriton helveticus</i>	12		
North Rhine-Westphalia, Vogelsang	Nationalpark Eifel	50.581426, 6.445964	Smooth newt, <i>Lissotriton vulgaris</i>	1	0–44%	
North Rhine-Westphalia, Walbigbach	Nationalpark Eifel	50.624289, 6.502341	Fire salamander, <i>Salamandra salamandra</i>	12	0–26%	
Southern Eifel						
Rhineland-Palatinate, Alfbach	Bitburg-Prüm	50.266170, 6.341554	Alpine newt, <i>Ichthyosaura alpestris</i>	6	0–15%	<i>Bsal</i> -infected palmate newts in 2018
			Palmate newt, <i>Lissotriton helveticus</i>	16		
Rhineland-Palatinate, Bitburg	Bitburg-Prüm	49.976417, 6.474156	Alpine newt, <i>Ichthyosaura alpestris</i>	35	0–7%	
			Palmate newt, <i>Lissotriton helveticus</i>	16		
Rhineland-Palatinate, Bollendorf	Bitburg-Prüm	49.849103, 6.326625	Alpine newt, <i>Ichthyosaura alpestris</i>	35	0–7%	
			Palmate newt, <i>Lissotriton helveticus</i>	16		
Rhineland-Palatinate, Fuhrbach	Bitburg-Prüm	50.039648, 6.417938	Alpine newt, <i>Ichthyosaura alpestris</i>	3	0–8%	
			Palmate newt, <i>Lissotriton helveticus</i>	39		
Rhineland-Palatinate, Hauchenbach	Bitburg-Prüm	49.919317, 6.405269	Fire salamander, <i>Salamandra salamandra</i>	10	0–31%	
Rhineland-Palatinate, Idenheim	Bitburg-Prüm	49.890914, 6.590448	Alpine newt, <i>Ichthyosaura alpestris</i>	6	0–11%	
			Palmate newt, <i>Lissotriton helveticus</i>	24		
Rhineland-Palatinate, Irrel	Bitburg-Prüm	49.856404, 6.448138	Fire salamander, <i>Salamandra salamandra</i>	9	0–30%	
Rhineland-Palatinate, Lichtenborn	Bitburg-Prüm	50.113526, 6.280058	Fire salamander, <i>Salamandra salamandra</i>	83	0–4%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	2		
			Palmate newt, <i>Lissotriton helveticus</i>	7		
Rhineland-Palatinate, Läuskopfbach	Bitburg-Prüm	50.057222, 6.434027	Alpine newt, <i>Ichthyosaura alpestris</i>	11	0–16%	
			Palmate newt, <i>Lissotriton helveticus</i>	9		
Rhineland-Palatinate, Lützkampen	Bitburg-Prüm	50.152251, 6.170181	Alpine newt, <i>Ichthyosaura alpestris</i>	2	0–70%	
Rhineland-Palatinate, Nimshuscheid	Bitburg-Prüm	50.081105, 6.474474	Alpine newt, <i>Ichthyosaura alpestris</i>	2	0–31%	
			Palmate newt, <i>Lissotriton helveticus</i>	8		

Supplementary document 4 continued

Site (alphabetical order)	District	Coordinates (latitude, longitude)	Species	N samples	95% Bayesian CI	Remarks
Rhineland-Palatinate, Plütscheid	Bitburg-Prüm	50.073109, 6.431563	Alpine newt, <i>Ichthyosaura alpestris</i>	8	0–31%	<i>Bsal</i> -infected alpine newts in 2017
			Palmate newt, <i>Lissotriton helveticus</i>	2		
Rhineland-Palatinate, Schwarzer Mann	Bitburg-Prüm	50.266283, 6.359239	Alpine newt, <i>Ichthyosaura alpestris</i>	8	0–9%	<i>Bsal</i> -infected alpine newt in 2018
			Palmate newt, <i>Lissotriton helveticus</i>	29		
Rhineland-Palatinate, Weilerbach	Bitburg-Prüm	49.845261, 6.389539	Alpine newt, <i>Ichthyosaura alpestris</i>	6	0–14%	
			Palmate newt, <i>Lissotriton helveticus</i>	17		
Ruhr area and ist vicinities						
North Rhine-Westphalia, Berger Mühle	Bochum	51.511293, 7.235178	Fire salamander, <i>Salamandra salamandra</i>	43	0–8%	
North Rhine-Westphalia, Dahlhausen	Bochum	51.435, 7.1385	Fire salamander, <i>Salamandra salamandra</i>	3	0–36%	<i>Bsal</i> -infected European fire salamanders in 2018
			Smooth newt, <i>Lissotriton vulgaris</i>	2		
			Alpine newt, <i>Ichthyosaura alpestris</i>	2		
North Rhine-Westphalia, Hiltrop	Bochum	51.52021, 7.26652	Smooth newt, <i>Lissotriton vulgaris</i>	1		<i>Bsal</i> -infected European fire salamanders in 2018
North Rhine-Westphalia, Königsbüscher Wald	Bochum	51.448228, 7.279486	Fire salamander, <i>Salamandra salamandra</i>	4	0–51%	
North Rhine-Westphalia, Querenburg	Bochum	51.441398, 7.264886	Fire salamander, <i>Salamandra salamandra</i>	1		<i>Bsal</i> -infected European fire salamanders in 2018
North Rhine-Westphalia, Stiepel	Bochum	51.418056, 7.250944	Fire salamander, <i>Salamandra salamandra</i>	6	0–26%	
			Smooth newt, <i>Lissotriton vulgaris</i>	4		
			Alpine newt, <i>Ichthyosaura alpestris</i>	1		
North Rhine-Westphalia, Grevelsberger Stadtwald	Ennepe-Ruhr-Kreis	51.323936, 7.366966	Fire salamander, <i>Salamandra salamandra</i>	1 (of which 1 †)		
North Rhine-Westphalia, Rumbachtal	Mülheim an der Ruhr	51.418650, 6.930562	Fire salamander, <i>Salamandra salamandra</i>	1	0–51%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	3		
North Rhine-Westphalia, Gysenberg	Herne	51.532070, 7.250724	Fire salamander, <i>Salamandra salamandra</i>	1		
North Rhine-Westphalia, Langeloh	Herne	51.532323, 7.289932	Fire salamander, <i>Salamandra salamandra</i>	18	0–18%	7 swabbed in summer
North Rhine-Westphalia, Hiesfelder Wald	Oberhausen	51.562273, 6.846767	Fire salamander, <i>Salamandra salamandra</i>	58	0–4%	
			Northern crested newt, <i>Triturus cristatus</i>	24		
			Alpine newt, <i>Ichthyosaura alpestris</i>	2		
			Palmate newt, <i>Lissotriton helveticus</i>	1		
North Rhine-Westphalia, Sterkrader Wald	Oberhausen	51.541882, 6.833255	Fire salamander, <i>Salamandra salamandra</i>	84	0–4%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	2		
North Rhine-Westphalia, Ratingen, Baulofsbruch	Mettmann	51.312164, 6.861132	Fire salamander, <i>Salamandra salamandra</i>	24	0–13%	swabbed in autumn
			Smooth newt, <i>Lissotriton vulgaris</i>	1		
Others						
Baden-Wuerttemberg, Reicherthausen	Rhein-Neckar-Kreis	49.314267, 9.299841	Fire salamander, <i>Salamandra salamandra</i>	4 (of which 4 †)	0–51%	

Supplementary document 4 continued

Site (alphabetical order)	District	Coordinates (latitude, longitude)	Species	N samples	95% Bayesian CI	Remarks
Lower Saxony, Bonaforth	Göttingen	51.398075, 9.626154	Fire salamander, <i>Salamandra salamandra</i>	2 (of which 2 †)	0–70%	
Lower Saxony, Wolfshagen	Goslar	51.923595, 10.303128	Fire salamander, <i>Salamandra salamandra</i>	1 (1 †)		
North Rhine-Westphalia, Bielefeld	Bielefeld	not available	Fire salamander, <i>Salamandra salamandra</i>	14	0–20%	
North Rhine-Westphalia, Kottenforst (various sub-sites)	Bonn	50.65-50.69, 7.06-70.12	Fire salamander, <i>Salamandra salamandra</i>	1 (of which 1 †)		
North Rhine-Westphalia, Bad Driburg	Höxter	51.749378, 9.364750	Fire salamander, <i>Salamandra salamandra</i>	1 (of which 1 †)		
North Rhine-Westphalia, Biostation Höxter	Höxter	not available	Northern crested newt, <i>Triturus cristatus</i>	1	0–61%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	1		
			Palmate newt, <i>Lissotriton helveticus</i>	1		
North Rhine-Westphalia, Tevereener Heide	Heinsberg	50.947346, 6.027223	Northern crested newt, <i>Triturus cristatus</i>	3	0–16%	
			Smooth newt, <i>Lissotriton vulgaris</i>	6		
			Alpine newt, <i>Ichthyosaura alpestris</i>	12		
North Rhine-Westphalia, Kiesgrube	Kleve	51.759072, 6.440043	Northern crested newt, <i>Triturus cristatus</i>	2	0–19%	
			Smooth newt, <i>Lissotriton vulgaris</i>	13		
North Rhine-Westphalia, Schloss Hüth	Kleve	51.813430, 6.373628	Northern crested newt, <i>Triturus cristatus</i>	4	0–43%	
			Smooth newt, <i>Lissotriton vulgaris</i>	2		
North Rhine-Westphalia, Niepkuhlen	Krefeld	51.384235, 6.562701	Northern crested newt, <i>Triturus cristatus</i>	1	0–9%	
			Smooth newt, <i>Lissotriton vulgaris</i>	38		
North Rhine-Westphalia, Orbroich		51.390638, 6.513952	Northern crested newt, <i>Triturus cristatus</i>	1	0–43%	
			Smooth newt, <i>Lissotriton vulgaris</i>	5		
North Rhine-Westphalia, Mönchengladbach	Mönchengladbach	51.217208, 6.471023	Smooth newt, <i>Lissotriton vulgaris</i>	4	0–51%	
North Rhine-Westphalia, Mönchengladbach Entenweiher	Mönchengladbach	51.177977, 6.418822	Alpine newt, <i>Ichthyosaura alpestris</i>	10 (of which 10 †)	0–31%	
Rhineland-Palatinate, Butzweiler	Trier-Saarburg	49.816517, 6.614972	Alpine newt, <i>Ichthyosaura alpestris</i>	1 (of which 1 †)		
Rhineland-Palatinate, Ralingen	Trier-Saarburg	49.804369, 6.514113	Fire salamander, <i>Salamandra salamandra</i>	1		
Rhineland-Palatinate, Kiesgrube bei Landscheid	Bernkastel-Wittlich	50.004117, 6.775064	Northern crested newt, <i>Triturus cristatus</i>	3	0–31%	
			Alpine newt, <i>Ichthyosaura alpestris</i>	7		
Saarland, Gersheim	Saarpfalz-Kreis	49.158114, 7.180896	Fire salamander, <i>Salamandra salamandra</i>	1 (of which 1 †)		
			Totally tested	1985		

Supplementary document 5. Details of anurans tested for *Bsal*. Legend as in document 1.

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	“N samples Bsal-positive”	Infection loads	Prevalence per year	95% Bayesian CI	Remarks
Northern Eifel										
North Rhine-Westphalia, Belgenbach	StädteRegion Aachen	50.578169, 6.278448	Common frog, <i>Rana temporaria</i>	2019	2	0	0	0%	0–70%	Bsal-infected caudates in 2015
North Rhine-Westphalia, Binsfeldhammer	StädteRegion Aachen	50.756521, 6.243033	Yellow-bellied toad, <i>Bombina variegata</i>	2018	20	0	0	0%	0–16%	
			Yellow-bellied toad, <i>Bombina variegata</i>	2019	16	0	0	0%	0–20%	
North Rhine-Westphalia, Brockenberg	StädteRegion Aachen	50.746724, 6.232078	Yellow-bellied toad, <i>Bombina variegata</i>	2018	30	0	0	0%	0–11%	Bsal-infected caudates in 2017-2019
			Yellow-bellied toad, <i>Bombina variegata</i>	2019	35	0	0	0%	0–10%	
North Rhine-Westphalia, Fischbach	StädteRegion Aachen	50.735368, 6.294149	Common toad, <i>Bufo bufo</i>	2018	1	0	0	0%	0–51%	Bsal-infected caudates in 2015-2016
			Common frog, <i>Rana temporaria</i>		3	0	0			
			Common toad, <i>Bufo bufo</i>	2019	3	0	0	0%	0–61%	
North Rhine-Westphalia, Holderbach	StädteRegion Aachen	50.548397, 6.292036	Common frog, <i>Rana temporaria</i>	2018	1	0	0	0%		
			Common toad, <i>Bufo bufo</i>	2019	2	0	0	0%	0–44%	
			Common frog, <i>Rana temporaria</i>		3	0	0			
North Rhine-Westphalia, Lensbach	StädteRegion Aachen	50.672648, 6.230209	Common toad, <i>Bufo bufo</i>	2019	1	0	0	0%	0–61%	
			Common frog, <i>Rana temporaria</i>		2	0	0			
North Rhine-Westphalia, Merkener Teiche	StädteRegion Aachen	50.841698, 6.441830	Water frog, <i>Pelophylax spec.</i>	2019	1	0	0	0%		
North Rhine-Westphalia, Omerbach	StädteRegion Aachen	50.754140, 6.307838	Common toad, <i>Bufo bufo</i>	2018	2	0	0	0%	0–51%	Bsal-infected caudates in 2019
			Common frog, <i>Rana temporaria</i>		2	0	0			
			Common toad, <i>Bufo bufo</i>	2019	1	0	0	0%	0–44%	
North Rhine-Westphalia, Solchbach	StädteRegion Aachen	50.70178, 6.270098	Common frog, <i>Rana temporaria</i>		4	0	0			
			Common toad, <i>Bufo bufo</i>	2018	5	0	0	0%	0–31%	Bsal-infected caudates in 2015-2018
			Common toad, <i>Bufo bufo</i>	2019	7	0	0	0%	0–30%	
North Rhine-Westphalia, Vichtbach	StädteRegion Aachen	50.676448, 6.198452	Common frog, <i>Rana temporaria</i>	2019	4	0	0	0%	0–51%	
North Rhine-Westphalia, Asselbach	Düren	50.71486, 6.34355	Common toad, <i>Bufo bufo</i>	2019	1	0	0	0%		
North Rhine-Westphalia, Hasselbach	Düren	50.681882, 6.428362	Common frog, <i>Rana temporaria</i>	2019	1	0	0	0%		
North Rhine-Westphalia, Sandkaulsiefen	Düren	50.789973, 6.375219	Common toad, <i>Bufo bufo</i>	2018	4	0	0	0%	0–44%	

Supplementary document 5 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	“N samples Bsal-positive”	Infection loads	Prevalence per year	95% Bayesian CI	Remarks
North Rhine-Westphalia, Sandkaulsiefen	Düren	50.789973, 6.375219	Common frog, <i>Rana temporaria</i>		1	0	0			
North Rhine-Westphalia, Teufelspütz	Düren	50.747069, 6.366387	Common toad, <i>Bufo bufo</i>	2018	1	0	0	0%	0–61%	Bsal-infected caudates in 2018-2019
North Rhine-Westphalia, Thönbach	Düren	50.747069, 6.366387	Common frog, <i>Rana temporaria</i>		2	0	0			
			Common toad, <i>Bufo bufo</i>	2018	2	0	0	0%	0–61%	Bsal-infected caudates in 2019
			Common frog, <i>Rana temporaria</i>		1	0	0			
North Rhine-Westphalia, Weberbach	Düren	50.735089, 6.359651	Common toad, <i>Bufo bufo</i>	2018	14	0	0	0%	0–19%	Bsal-infected caudates in 2015-2019
			Common frog, <i>Rana temporaria</i>		1	0	0	0%		
			Common toad, <i>Bufo bufo</i>	2019	7	0	0	0%	0–36%	
North Rhine-Westphalia, Härtgessief	Nationalpark Eifel	50.550369, 6.358216	Common frog, <i>Rana temporaria</i>	2019	1	0	0	0%		
North Rhine-Westphalia, Haftenbach	Nationalpark Eifel	50.613929, 6.431371	Common toad, <i>Bufo bufo</i>	2018	1	0	0	0%		Bsal-infected caudates in 2017
			Common toad, <i>Bufo bufo</i>	2019	4	0	0	0%	0–44%	
			Common frog, <i>Rana temporaria</i>		1	0	0			
North Rhine-Westphalia, Honigberg	Nationalpark Eifel	50.6152, 6.409683	Common toad, <i>Bufo bufo</i>	2019	2	0	0	0%	0–70%	
Southern Eifel										
Rhineland-Palatinate, Alfbach	Bitburg-Prüm	50.266170, 6.341554	Common frog, <i>Rana temporaria</i>	2019	1	0	0	0%		
Rhineland-Palatinate, Arzfeld	Bitburg-Prüm	50.086198, 6.228402	Common toad, <i>Bufo bufo</i>	2019	2	0	0	0%	0–70%	
Rhineland-Palatinate, Bitburg	Bitburg-Prüm	49.976417, 6.474156	Common frog, <i>Rana temporaria</i>	2018	3	0	0	0%	0–61%	
Rhineland-Palatinate, Fleissbach	Bitburg-Prüm	49.880861, 6.338427	Common frog, <i>Rana temporaria</i>	2018	2	0	0	0%	0–70%	
Rhineland-Palatinate, Hauchenbach	Bitburg-Prüm	49.919317, 6.405269	Common toad, <i>Bufo bufo</i>	2018	1	0	0	0%	0–70%	
			Common frog, <i>Rana temporaria</i>		1	0	0			
			Common toad, <i>Bufo bufo</i>	2019	2	0	0	0%	0–44%	
			Common frog, <i>Rana temporaria</i>		3	0	0			
Rhineland-Palatinate, Irrel	Bitburg-Prüm	49.856404, 6.448138	Common toad, <i>Bufo bufo</i>	2018	1	0	0	0%	0–19%	
			Common frog, <i>Rana temporaria</i>		16	0	0			
			Common frog, <i>Rana temporaria</i>	2019	33	0	0	0%	0–11%	
Rhineland-Palatinate, Läuskopfbach	Bitburg-Prüm	50.057222, 6.434027	Common toad, <i>Bufo bufo</i>	2018	1	0	0	0%		
Rhineland-Palatinate, Lichtenborn	Bitburg-Prüm	50.113526, 6.280058	Midwife toad, <i>Alytes obstetricans</i>	2018	1	0	0	0%	0–31%	
			Common toad, <i>Bufo bufo</i>		7	0	0			
			Common frog, <i>Rana temporaria</i>		2	0	0			
			Common toad, <i>Bufo bufo</i>	2019	4	0	0	0%	0–43%	
			Common frog, <i>Rana temporaria</i>		2	0	0			

Supplementary document 5 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	“N samples Bsal-positive”	Infection loads	Prevalence per year	95% Bayesian CI	Remarks
Rhineland-Palatinate, Schwarzer Mann	Bitburg-Prüm	50.266283, 6.359239	Common frog, <i>Rana temporaria</i>	2019	1	0	0	0%		Bsal-infected caudates in 2018
Rhineland-Palatinate, Sellerich	Bitburg-Prüm	50.237990, 6.366980	Common frog, <i>Rana temporaria</i>	2019	1	0	0	0%		Bsal-infected caudates in 2019
Rhineland-Palatinate, Watzbach	Bitburg-Prüm	50.215607, 6.328830	Common frog, <i>Rana temporaria</i>	2019	1	0	0	0%		Bsal-infected caudates in 2019
Rhineland-Palatinate, Dreisbach	Vulkaneifel	50.269520, 6.523619	Common frog, <i>Rana temporaria</i>	2018	7	0	0	0%	0–36%	Bsal-infected caudates in 2018
Rhineland-Palatinate, Gerolstein Staatsforst	Vulkaneifel	50.222095, 6.718408	Common frog, <i>Rana temporaria</i>	2018	1	0	0	0%		
Rhineland-Palatinate, Gerolstein Stadtwald	Vulkaneifel	50.209914, 6.658375	Common toad, <i>Bufo bufo</i>	2019	1	0	0	0%	0–70%	Bsal-infected caudates in 2019
			Common frog, <i>Rana temporaria</i>		1	0	0			
Rhineland-Palatinate, Jungfernweiher	Vulkaneifel	50.221864, 6.977731	Common toad, <i>Bufo bufo</i>	2018	1	0	0	0%		
Rhineland-Palatinate, Pelmer Wald	Vulkaneifel	50.216805, 6.698373	Common frog, <i>Rana temporaria</i>	2018	1	0	0	0%		
Rhineland-Palatinate, Peterskaul	Vulkaneifel	50.187174, 7.026245	Common frog, <i>Rana temporaria</i>	2018	1	0	0	0%		
Rhineland-Palatinate, Prümquelle	Vulkaneifel	50.3147510, 6.4617130	Common frog, <i>Rana temporaria</i>	2018	1	0	0	0%		
Ruhr area and vicinities										
North Rhine-Westphalia, Bredene	Essen	51.403281, 6.995988	Common toad, <i>Bufo bufo</i>	2019	1	0	0	0%	0–61%	Bsal-infected caudates in 2019
			Common frog, <i>Rana temporaria</i>		2	0	0			
North Rhine-Westphalia, Byfang	Essen	51.392093, 7.11252	Common frog, <i>Rana temporaria</i>	2018	2	0	0	0%	0–70%	
North Rhine-Westphalia, Fulerum Südwestfriedhof	Essen	51.431025, 6.968945	Common toad, <i>Bufo bufo</i>	2019	26	0	0	0%	0–12%	Bsal-infected caudates in 2018-2019
			Common frog, <i>Rana temporaria</i>		2	0	0			
North Rhine-Westphalia, Stadtwald	Essen	51.423354, 7.020767	Common toad, <i>Bufo bufo</i>	2019	4	0	0	0%	0–44%	Bsal-infected caudates in 2017-2019
			Common frog, <i>Rana temporaria</i>		1	0	0			
North Rhine-Westphalia, Hattingen Deile	Ennepe-Ruhr-Kreis	51.401582, 7.126877	Common frog, <i>Rana temporaria</i>	2018	2	0	0	0%	0–70%	
North Rhine-Westphalia, Witten	Ennepe-Ruhr-Kreis	51.429405, 7.387315	Common frog, <i>Rana temporaria</i>	2019	2	0	0	0%	0–70%	Bsal-infected caudates in 2019
North Rhine-Westphalia, Rottbachtal	Mülheim an der Ruhr		Common toad, <i>Bufo bufo</i>	2019	1	0	0	33%	8–82%	Bsal-infected caudates in 2018-2019
			Common frog, <i>Rana temporaria</i>		2	1	++++'			
North Rhine-Westphalia, Rumbachtal	Mülheim an der Ruhr	51.41865, 6.930562	Common toad, <i>Bufo bufo</i>	2019	1	0	0	0%	0–70%	
			Common frog, <i>Rana temporaria</i>		1	0	0			

Supplementary document 5 continued

Site	District	Coordinates (latitude, longitude)	Species	Year	N samples	“N samples Bsal-positive”	Infection loads	Prevalence per year	95% Bayesian CI	Remarks
North Rhine-Westphalia, Ratingen, Baulofsbruch	Mettmann	51.312164, 6.861132	Common frog, <i>Rana temporaria</i>	2019	2	0	0	0%	0–70%	
North Rhine-Westphalia, Langeloh	Herne	51.532323, 7.289932	Common toad, <i>Bufo bufo</i>	2019	1	0	0	0%		
North Rhine-Westphalia, Oberhausen Sterkrader Wald	Oberhausen	51.540524, 6.827279	Common toad, <i>Bufo bufo</i>	2019	1	0	0	0%		
North Rhine-Westphalia, Barmen	Wuppertal	51.247764, 7.168684	Common frog, <i>Rana temporaria</i>	2018	1	0	0	0%		
Others										
North Rhine-Westphalia, Bergisch-Gladbach	Bergisch-Gladbach	51.010725, 7.254744	Common toad, <i>Bufo bufo</i>	2019	3 (3 †)	0	0	0%	0–61%	
North Rhine-Westphalia, Erkelenz	Heinsberg	51.049363, 6.298195	Yellow-bellied toad, <i>Bombina variegata</i>	2018	10	0	0	0%	0–31%	from an outdoor enclosure with infected European fire salamanders
North Rhine-Westphalia, Tevereener Heide	Heinsberg	50.947346, 6.027223	Water frog, <i>Pelophylax spec.</i>	2019	1	0	0	0%		
North Rhine-Westphalia, Orbroich	Krefeld	51.390638, 6.513952	Common frog, <i>Rana temporaria</i>	2019	1	0	0	0%		
					To- tally tested	365				

Supplementary document 6. Methods used to build *Bsal* species distribution models

Data

Grid-based correlative species distribution models, SDMs (FRANKLIN 2010, HUI et al. 2018), were created to study the global suitability to *Bsal*. SDMs are based on ecological information at species presences and calculate an ‘idealized’ niche (in environmental space) which is then projected into geographic space. To catch as much as possible of *Bsal*’s niche, we used both invasive and native records (cf. RÖDDER & LÖTTERS 2009). We employed most of the records known to date, in total 103 (30 of which native), accounting for the *Bsal* distribution in Belgium, China, Germany, Japan, the Netherlands, Spain, Taiwan, Thailand and Vietnam. Records were adopted from FELDMEIER et al. (2016) BEUKEMA et al. (2018), DALBECK et al. (2018), LÖTTERS et al. (2018), MARTEL et al. (2020), and, in addition, new records published in this paper were used:



The full list of records included the following coordinates (longitude, latitude in decimal degree): 99.05, 19.87; 105.05, 20.92; 105.04, 20.94; 106.73, 21.18; 106.66, 21.18; 105.72, 21.2; 105.65, 21.46; 104.35, 21.96; 104.26, 22; 105.81, 22.29; 105.73, 22.37; 104.42, 22.54; 114.2, 22.6; 105.87, 22.62; 104.87, 23.03; 104.85, 23.04; 121.28, 24.15; 121.29, 24.16; 121.31, 24.19; 127.77, 26.14; 127.8, 26.18; 128.03, 26.54; 128.24, 26.75; 119.61, 27.72; 129.3, 28.27; 129.5, 28.34; 135.43,

33.79; 139.39, 37.02; 144.41, 43.02; 144.28, 43.08; 6.41785, 50.039536; 6.420525, 50.045956; 6.439868, 50.079225; 4.89, 50.22; 6.36817, 50.241592; 6.344899, 50.252272; 6.338861, 50.259879; 6.522695, 50.268734; 6.1, 50.45; 6.279463, 50.570422; 6.400809, 50.574792; 5.59, 50.58; 6.431283, 50.614152; 6.09, 50.63; 6.185149, 50.65692; 6.358669, 50.664551; 6.423461, 50.682277; 6.27, 50.7; 6.270363, 50.702002; 6.345602, 50.717221; 6.32233, 50.726267; 6.361194, 50.736297; 6.301953, 50.739019; 6.36933, 50.744405; 6.232294, 50.745694; 5.95, 50.77; 5.97, 50.85; 5.75, 50.88; 6.08, 50.9; 5.74, 50.91; 6.02, 50.94; 5.99, 50.98; 6.298502, 51.049452; 5.92, 51.07; 4.51, 51.09; 7.05, 51.41; 6.97, 51.43; 7.26, 51.44; 7.27, 51.44; 7.14, 51.44; 5.92, 51.82; 2.499264, 41.554996; 7.266148, 51.442199; 7.139507, 51.435073; 7.270582, 51.442880; 7.256134, 51.440284; 7.019866, 51.423689; 6.968945, 51.431025; 6.423373, 50.682388; 6.232078, 50.746724; 6.204713, 50.770778; 6.307838, 50.754140; 6.366387, 50.747069; 6.366387, 50.747069; 6.359651, 50.735089; 6.413199, 50.737227; 6.366980, 50.237990; 6.328830, 50.215607; 6.658375, 50.209914; 7.257333, 51.437; 7.048501, 51.436599; 6.995988, 51.403281; 6.968945, 51.431025; 6.972078, 51.382679; 7.033296, 51.423306; 7.033296, 51.423306; 6.973143, 51.404382; 6.833334, 51.375838; 6.856205, 51.401709; 7.126877, 51.401582; 7.171701, 51.326008; 7.387315, 51.429405; 7.142683, 51.337388.

As ecological predictors we used current high resolution climate data for the period 1979-2013 at grid resolution 30 arc sec from the CHELSA version 1.2 database (KARGER et al. 2017), data available at: <http://chelsa-climate.org/>). Although most *Bsal* records originate from the period 2010-2019, we decided to use CHELSA data, as we consider them the best available global predictors. CHELSA operates on monthly means and is based on a quasi-mechanistic statistical downscaling of the ERA interim global circulation model (GCM) with a GPCC bias correction (KARGER et al. 2017). The CHELSA website provides 19 so called ‘bioclim’ variables (cf. BOOTH et al. 2014): Bio1 = Annual Mean Temperature, Bio2 = Mean Diurnal Range, Bio3 = Isothermality, Bio4 = Temperature Seasonality, Bio5 = Max Temperature of Warmest Month, Bio6 = Min Temperature of Coldest Month, Bio7 = Temperature Annual Range, Bio8 = Mean Temperature of Wettest Quarter, Bio9 = Mean Temperature of Driest Quarter, Bio10 = Mean Temperature of Warmest Quarter, Bio11 = Mean Temperature of Coldest Quarter, Bio12 = Annual Precipitation, Bio13 = Precipitation of Wettest Month, Bio14 = Precipitation of Driest Month, Bio15 = Precipitation Seasonality, Bio16 = Precipitation of Wettest Quarter, Bio17 = Precipitation of Driest Quarter, Bio18 = Precipitation of Warmest Quarter, Bio19 = Precipitation of Coldest Quarter.

These variables provide information independent of latitudinal variation and therefore are more useful in modelling than monthly values. As variable choice is one crucial aspect when generating SDMs, we computed SDMs with various bioclim variable combinations out of the 19 ones available: **(i)** Seven were selected via pair-wise Pearson correlation analyses to avoid effects

of multicollinearity, which is important when projecting SDMs into new space (DORMANN et al. 2013). Of highly correlated variables ($|r| > 0.7$), we excluded the less informative one, based on a priori assumptions on biological importance (cf. MARTEL et al. 2013) to our target organisms: Bio1, Bio2, Bio10, Bio13, Bio14, Bio18, Bio19. In accordance with previous published *Bsal* SDMs, we also ran predictor sets incorporating **(ii)** Bio8, Bio10, Bio11, Bio15, Bio16, Bio17 (cf. FELDMEIER et al. 2016), **(iii)** Bio3, Bio4, Bio5, Bio6, Bio15, Bio16, Bio17 (cf. BEUKEMA et al. 2018) and **(iv)** Bio2, Bio5, Bio7, Bio15, Bio18, Bio19 (cf. BASANTA et al. 2018).

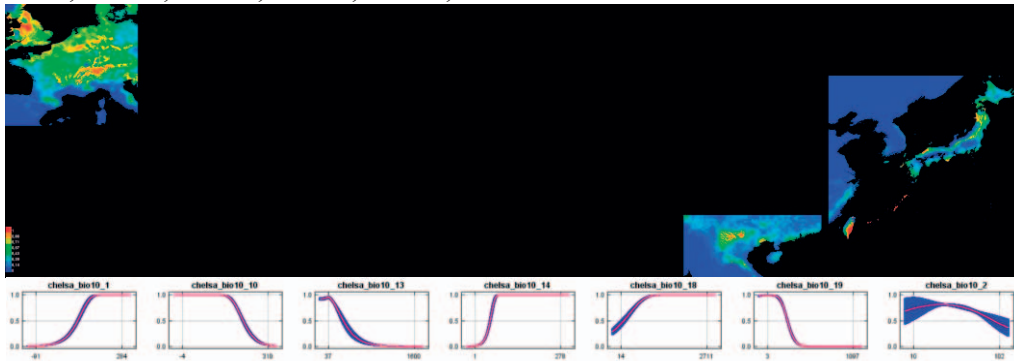
Modelling

Maxent 3.4.1 (https://biodiversityinformatics.amnh.org/open_source/maxent/) was used for SDM building (PHILLIPS et al. 2006, 2017). This presence-only/background method operates with a machine-learning algorithm following the principle of maximum entropy. It makes predictions on the potential geographic range of a taxon by taking environmental (here: climatic) data from georeferenced species records and random background data (PHILLIPS et al. 2006, YACKULIC et al. 2013). In this way, it contrasts the environmental conditions at species' presences against those at the background to fit a function to estimate the relative suitability to the species (MEROW et al. 2013). Maxent is a widely used SDM tool and often performs better than other SDM methods (ELITH et al. 2006, PHILLIPS & DUDÍK 2008). It offers various settings for SDM building allowing fine-tuning (cf. PHILLIPS et al. 2006, PHILLIPS & DUDÍK 2008). This requires some caution, however, as with them, the output can be dramatically altered when uncritically used (ELITH et al. 2010, 2011, MEROW et al. 2013, YACKULIC et al. 2013). Therefore, it is important to explore settings and to adapt them to the available data (PHILLIPS & DUDÍK 2008, WARTON & AARTS 2013, PHILLIPS et al. 2017).

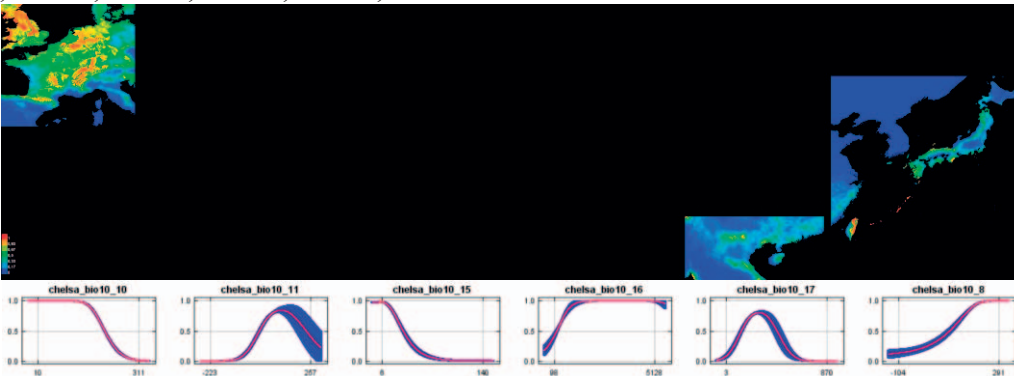
In our final model runs, we employed linear + quadratic + product (LQP) features under the subsample approach (100 replicates), with 25% of the records randomly set aside as test data. In response curve calculations, extrapolation was used and fading by clamping. Ample windows around *Bsal* presences in Asia and Europe were chosen as background (see below), while we projected models into Germany only. The number of background points was set to 100,000. All other Maxent settings were default, including the Cloglog output format (ranging 0-1) (PHILLIPS & DUDÍK 2008, SHCHEGLOVITOVA & ANDERSON 2013, PHILLIPS et al. 2017).

Below we show average model performance as Cloglog heat maps (standard deviation was ≤ 0.17 , not shown) and response curves (red, with the standard deviation each indicated in blue) for model runs (i) to (iv).

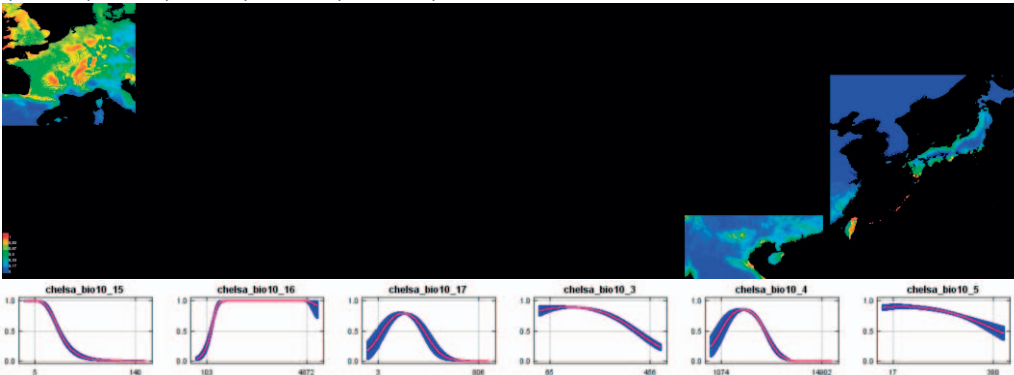
(i) Bio1, Bio2, Bio10, Bio13, Bio14, Bio18, Bio19



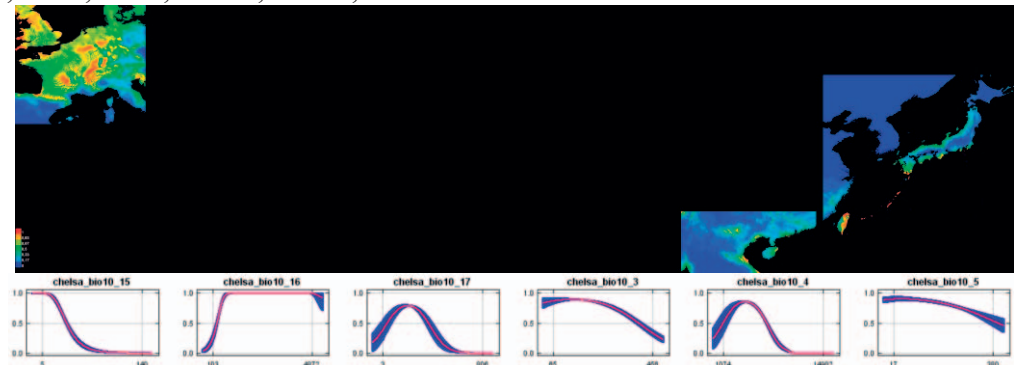
(ii) Bio8, Bio10, Bio11, Bio15, Bio16, Bio17



(iii) Bio3, Bio4, Bio5, Bio6, Bio15, Bio16, Bio17



(iv) Bio2, Bio5, Bio7, Bio15, Bio18, Bio19



Data processing and output maps

Maxent calculates the area under the receiver operating characteristic curve (AUC) as a measure of predictive accuracy (PHILLIPS et al. 2006). Following the classification of SWETS (1988), AUC values range between 0.5 for models with no predictive ability and 1.0 for models giving perfect predictions; values ≥ 0.91 describe ‘high’, ≥ 0.71 ‘moderate’, ≥ 0.5 ‘low’ model accuracy. Although criticized (e.g. YACKULIC et al. 2013), the AUC is informative as it mirrors the model’s ability to distinguish between species records and background points, i.e. showing how general or restricted a distribution is along the range of the variables in the studied region (MEROW et al. 2013). The mean AUC values in our approaches were (i) 0.903, (ii) 0.862, (iii) 0.876 and (iv) 0.904, thus suggesting high accuracy in model performance.

For processing the resulting SDM maps (see Fig. 5), DIVA-GIS 7.5.0 (HIJMANS et al. 2001) was chosen. We did not set any threshold delimitating potential presence versus absence (cf. PHILLIPS et al. 2017).

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