

Supplementary document 1. Raw data from presence-absence mapping of larval fire salamanders. For variable definitions see Table 1; NA = not applicable.

LandscapeUnit	Creek	Presence	Date	Day	Elevation(m)	Pools	Width(m)	Fish	Tilt(°)	Tilt_perpendicular(°)	Substrate	Prey	Hiding	Decid100	Mixed100(%)	Conif100(%)	Agri100(%)	Grass100(%)	Settl100(%)	Decid500(%)	Mixed500(%)	Conif500(%)	Agri500(%)	Grass500(%)	Settl500(%)
Gutland	Diebach	1	15 June 2016	21	270	42	0.4	0	15	5	3	1	3	30.1	0	50.4	0	19.5	0	36.1	0	39.5	0	24.4	0
Gutland	Eschbach_2	1	25 June 2016	31	344	21	0.8	0	8	14	2	2	3	0	0	100	0	0	0	0	0	63.8	27.5	8.7	0
Gutland	Ferschweiler_1	1	18 May 2018	8	321	45	0.5	0	15	6	3	2	3	75.6	24.4	0	0	0	0	44.8	11.9	0	1.6	40.2	1.6
Gutland	Ferschweiler_2	1	18 May 2018	8	324	21	1.5	0	5	11	3	1	2	100	0	0	0	0	0	87.7	0	0	3.2	9.1	0
Gutland	Finkenbach	0	27 May 2016	2	399	16	0.7	0	10	4	1	1	3	0	0	0	0	100	0	0	8.2	0	17.1	74.7	0
Gutland	Fleissbach	1	16 May 2018	6	357	31	0.5	1	30	7	3	1	3	0	0	100	0	0	0	3.9	0	96.1	0	0	0
Gutland	Gutenbach	1	14 May 2018	4	288	30	1.9	0	8	19	1	3	3	98.8	0	0	1.2	0	0	46.8	0	6.0	47.2	0	0
Gutland	Hauchenbach	1	9 June 2018	30	256	19	1.5	0	2	7	3	3	3	12.9	85.9	0	0	1.2	0	31.6	44.8	0	5.0	18.6	0
Gutland	Ingendorf	1	11 June 2018	32	352	47	0.5	0	3	1	1	3	3	100	0	0	0	0	0	75.0	0	0	25.0	0	0
Gutland	Irrel_1	1	18 May 2018	8	233	38	0.5	0	5	15	2	3	2	100	0	0	0	0	0	70.3	0	0	23.1	6.6	0
Gutland	Irrel_2	1	18 May 2018	8	217	34	1.0	0	2	6	1	2	1	69	0	0	0	31	0	64.5	0	0.3	11.5	21.5	2.2
Gutland	Mattelsbach	1	5 June 2016	11	277	12	0.5	0	5	3	1	3	2	100	0	0	0	0	0	53.8	22.9	0	15.3	8.0	0
Gutland	Pfaffenderbach	1	15 June 2016	21	249	38	2.0	0	10	1	1	1	3	54.7	0	0	0	45.3	0	31.4	0	0	20.5	47.5	0.6
Gutland	Schanzbach	1	1 June 2016	7	300	24	0.8	0	4	2	3	2	2	100	0	0	0	0	0	70.1	0	2.7	27.2	0	0
Gutland	Schleibbach	0	5 June 2016	11	309	16	0.5	0	6	3	2	1	1	100	0	0	0	0	0	65.4	3.6	14.8	15.7	0.5	0
Gutland	Silberbach	0	5 June 2016	11	291	28	2.0	0	8	2	1	1	3	80.2	0	0	19.4	0.4	0	51.4	0	0	27.9	20.6	0
Gutland	Stockheimerbach	0	1 June 2016	7	245	0	0.5	0	1	7	1	1	2	51.8	0	0	48.2	0	0	54.1	0	0	24.9	21.0	0
Hunsrueck	Alkenbach	1	23 May 2017	9	327	62	0.8	0	5	15	3	3	2	100	0	0	0	0	0	63.7	7.4	0	0	28.8	0
Hunsrueck	Altbach	0	12 June 2017	29	484	17	3.5	1	1	19	3	1	2	0	0	100	0	0	0	4.9	14.0	33.6	2.1	28.3	17.1
Hunsrueck	AltlayerNebenbach	1	11 June 2016	17	358	80	0.4	0	8	3	1	1	2	100	0	0	0	0	0	75.3	0	0	24.7	0	0
Hunsrueck	Antenbachsgraben	1	12 June 2016	18	302	28	0.5	0	5	2	3	1	2	0	26.0	0	0	74.0	0	26.4	13.4	0	0	60.2	0
Hunsrueck	Bernsbach	1	29 May 2017	15	309	15	1.0	0	5	5	NA	3	2	100	0	0	0	0	0	100	0	0	0	0	0
Hunsrueck	Dammfloesschen	0	12 June 2017	29	541	38	0.5	0	7	6	3	1	2	0	0	95.5	0	0	4.5	0	0	69.1	0	2.1	28.8
Hunsrueck	DrohnerNebenbach	0	11 July 2016	47	563	0	0.3	0	6	1	1	1	2	0	0	100	0	0	0	0	24.8	75.2	0	0	0
Hunsrueck	Eisbach	1	10 June 2017	27	585	35	1.0	0	5	7	3	1	2	100	0	0	0	0	0	78.9	0	21.1	0	0	0
Hunsrueck	Eschbach	0	18 June 2016	24	403	38	1.5	0	3	3	3	1	2	0	53.2	0	46.8	0	0	0	18.2	0	77.9	0	3.9
Hunsrueck	Forstelbach	0	20 June 2017	37	559	32	1.3	0	2	12	3	1	2	37.5	0	62.5	0	0	0	72.1	6.2	20.8	0	1	0
Hunsrueck	Gehresbach	1	27 June 2017	44	311	20	1.0	0	5	9	NA	1	2	100	0	0	0	0	0	100	0	0	0	0	0
Hunsrueck	Hottenbach	1	7 June 2017	24	577	66	1.0	0	3	2	NA	1	3	0	82.4	17.6	0	0	0	0	38.9	31.1	0	0	0
Hunsrueck	Kalmbach	1	6 June 2017	23	439	30	1.0	0	8	1	NA	2	3	39.2	0	60.8	0	0	0	71.1	0	12.5	0	16.4	0

LandscapeUnit	Creek	Presence	Date	Day	Elevation(m)	Pools	Width(m)	Fish	Tilt(°)	Tilt_perpendicular(°)	Substrate	Prey	Hiding	Decid100	Mixed100(%)	Conif100(%)	Agri100(%)	Grass100(%)	Settl100(%)	Decid500(%)	Mixed500(%)	Conif500(%)	Agri500(%)	Grass500(%)	Settl500(%)
Hunsrueck	Kieselbornbach	1	23 June 2016	29	449	69	1.5	1	6	2	3	1	2	74.2	0	25.8	0	0	0	32.2	0	67.8	0	0	0
Hunsrueck	Kiweringsbach	1	23 May 2017	9	441	83	1.0	0	2	3	3	1	1	96.8	0	3.2	0	0	0	52.8	0	45.6	0	1.5	0
Hunsrueck	Koenigsbach	0	10 June 2017	27	577	30	1.5	1	2	1	1	1	3	38.8	0	61.2	0	0	0	59.1	1.0	39.9	0	0	0
Hunsrueck	Korlingen	1	15 May 2017	1	254	77	0.8	0	7.5	9	1	3	2	99.1	0	0	0	0	0.9	44.2	0	0	15.9	14.9	25.0
Hunsrueck	Krebsbach	1	31 May 2017	17	548	60	1.5	0	3	7	2	1	3	0.3	0	99.7	0	0	0	39.6	0	60.4	0	0	0
Hunsrueck	Lautenbach	1	9 July 2016	45	543	62	0.5	0	13	7	3	1	1	93.9	0	6.1	0	0	0	81.5	0	18.5	0	0	0
Hunsrueck	Liedchenbach	1	13 July 2017	60	360	52	1.0	0	1	9	1	2	2	100	0	0	0	0	0	59.4	0	0	5.0	35.7	0
Hunsrueck	Liefbach	1	29 May 2017	15	516	61	0.5	0	1	2	NA	1	2	100	0	0	0	0	0	20.5	0	79.5	0	0	0
Hunsrueck	LorscheiderNebenbach	1	31 May 2016	6	468	20	0.5	0	7	2	3	1	2	53.2	0	38.5	8.3	0	0	17.7	2.1	41.2	38.9	0	0
Hunsrueck	Markenbach	1	29 June 2016	35	388	45	0.4	0	18	6	1	2	2	0	0	100	0	0	0	0	22.1	33.7	0	44.1	0.0
Hunsrueck	Misselbach	1	26 May 2016	1	509	27	1.0	1	2	3	1	1	2	0	49.9	50.1	0	0	0	0	18.9	81.1	0	0	0
Hunsrueck	Moertschelbach	1	21 May 2017	7	315	53	1.5	0	10	9	NA	3	3	38.5	0	0	0	61.5	0	25.8	0	0	36.6	37.6	0
Hunsrueck	Morschbach	1	11 June 2016	17	407	41	1.0	0	2	6	3	2	2	100	0	0	0	0	0	42.9	0.4	0	56.7	0	0
Hunsrueck	Rauruwer	0	5 June 2016	11	480	30	0.5	0	1	1	3	1	1	0	0	0	0	0	0	20.1	0	79.9	0	0	0
Hunsrueck	Riedfloss	0	31 May 2017	17	588	30	1.5	1	2	2	1	1	1	0	0	41.1	0	58.9	0	22.9	0	45.9	0	31.2	0
Hunsrueck	Sattelbach	1	24 June 2016	30	566	62	2.0	1	8	3	1	1	3	42.1	0	57.9	0	0	0	53.9	0	46.1	0	0	0
Hunsrueck	Schastebach	1	29 May 2017	15	425	55	1.0	0	4	1	3	2	2	100	0	0	0	0	0	40.9	4.5	50.3	0	4.3	0
Hunsrueck	Steierbach	0	18 July 2017	65	315	23	2.0	0	5	11	NA	1	2	88.4	0	11.6	0	0	0	45.9	0	53.4	0.7	0	0
Hunsrueck	Struntbach	0	11 July 2016	47	443	35	0.4	0	1	2	1	3	2	0	0	50.8	0	49.2	0	15.0	0	39.3	17.0	28.7	0
Hunsrueck	Thommerbach	0	26 May 2016	1	412	16	1.5	0	4	6	3	1	2	98.4	0	0	0	1.6	0	30.1	0	0	7.6	51.8	10.6
Moseltal	Morschbach	1	11 June 2016	17	407	41	1.0	0	2	6	3	2	2	100	0	0	0	0	0	42.9	0.4	0	56.7	0	0
Moseltal	AhringsbachNebenbach	1	18 June 2016	24	345	65	0.5	0	10	9	3	1	2	88.4	0	0	11.6	0	0	55.0	0	0	45.0	0	0
Moseltal	CompenerBaechelchen	1	6 June 2017	23	230	45	1.0	0	3	7	NA	1	3	100	0	0	0	0	0	97.2	0	0	0	0	2.8
Moseltal	Lierenbach	1	16 June 2016	22	275	58	1.0	0	5	10	3	2	3	8.5	0	91.5	0	0	0	55.6	0	44.4	0	0	0
Moseltal	Schafhausbach	1	8 June 2017	25	395	18	0.2	0	3	3	NA	1	2	5.4	0	79.1	15.5	0	0	33.1	0	18.3	48.6	0	0
Moseltal	Speinbach	1	5 June 2017	22	280	28	0.5	0	5	9	NA	2	3	68.7	0	31.3	0	0	0	37.5	0.4	56.0	6.1	0	0
Moseltal	Viebach	1	8 June 2017	25	278	41	0.7	0	3	11	NA	1	3	86.4	0	0	13.6	0	0	38.3	0	28.6	33.1	0	0
Moseltal	Waldrach	1	17 May 2017	3	233	72	0.8	0	15	2	3	3	3	87.4	0	12.6	0	0	0	45.4	0	34.0	0	0	20.6
Osteifel	Aelsbach	1	19 June 2018	40	471	2	1.0	0	3	6	3	1	1	66.2	0	0	0	33.8	0	32.7	0	22.2	0	45.0	0
Osteifel	Ahbach	1	29 June 2018	49	501	13	0.9	0	4	18	3	2	3	65.9	0	34.1	0	0	0	70.4	0	28.9	0	0.6	0
Osteifel	Alfenbach	1	20 June 2018	41	344	7	0.8	0	4	20	3	2	2	41.1	0	58.9	0	0	0	40.4	0	35.5	0	24.1	0
Osteifel	Auschsbach	1	14 June 2016	20	237	3	0.5	0	5	21	3	2	1	100	0	0	0	0	0	80.5	0	4.0	0	0	15.4

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Osteifel	Baubach	0	6 June 2018	27	499	1	0.5	0	3	1	1	1	1	0	0	100	0	0	0	38.5	0	58.7	0	2.8	0
Osteifel	BodenbacherBach	0	19 June 2018	40	540	0	0.5	0	3	3	3	1	3	0	86.0	14.0	0	0	0	0	33.4	59.2	0.3	7.2	0
Osteifel	Drasselbach	1	20 June 2018	41	323	2	0.2	0	1	8	3	1	1	0	0	100	0	0	0	40.5	0	42.9	0	0	10.4
Osteifel	Exbach	0	24 June 2018	44	443	1	0.5	0	3	3	3	2	1	2.4	46.0	0	0	51.6	0	38.0	35.3	0	0	26.7	0
Osteifel	Gilgenbach	1	27 June 2018	47	380	6	0.5	0	4	22	3	2	2	0	21.9	78.1	0	0	0	0	39.6	60.4	0	0	0
Osteifel	Girrelsbach	1	27 June 2018	47	377	9	0.5	0	3	16	3	2	3	35.9	0	64.1	0	0	0	62.7	0	37.3	0	0	0
Osteifel	Gruenbach	1	29 June 2018	49	468	7	0.5	0	5	2	3	2	1	25.7	0	74.3	0	0	0	39.3	0	40.0	0	20.7	0
Osteifel	Hasbach_1	1	6 June 2018	27	575	0	0.6	0	4	9	3	2	1	100	0	0	0	0	0	5.0	0	81.5	0	13.6	0
Osteifel	Hasbach_2	1	6 June 2018	27	516	6	0.5	0	6	10	1	3	1	100	0	0	0	0	0	100	0	0	0	0	0
Osteifel	Kaulbach	0	30 June 2018	50	429	2	1.5	0	4	1	3	1	2	0	0	0	0	100	0	0	0	2.6	23.2	72.5	1.6
Osteifel	Krekelbach	1	20 June 2018	41	409	8	0.3	0	7	17	3	2	1	100	0	0	0	0	0	65.8	0	0	0	34.2	0
Osteifel	Laufenbach	0	24 June 2018	44	440	1	0.3	0	24	22	1	1	1	99.4	0	0	0	0.6	0	64.9	0	10.1	6.1	19.0	0
Osteifel	Mirbach	1	14 June 2016	20	225	2	0.4	0	3	1	3	1	1	25.2	0	74.8	0	0	0	55.7	0	36.8	0	0.1	7.4
Osteifel	Nohnerbach	0	29 June 2018	49	500	6	0.5	0	5	11	1	1	1	20.5	0	79.5	0	0	0	29.8	0	57.5	0	12.7	0
Osteifel	Rudersbach	1	30 June 2018	50	509	3	0.7	0	2	7	1	3	1	38.6	0	61.4	0	0	0	25.1	4.9	58.6	0	11.5	0
Osteifel	Wiesbach	0	30 June 2018	50	462	3	0.5	0	1	2	1	1	2	100	0	0	0	0	0	6.2	24.6	69.2	0	0	0
Westeifel	Arzfeld	1	6 June 2018	27	493	47	0.6	0	8	6	3	2	1	95.0	0	0	0	5.0	0	70.6	9.4	0	9.4	20.1	0
Westeifel	Berkotherbach	1	25 June 2016	31	439	49	1.2	0	15	18	1	2	2	0	100	0	0	0	0	24.0	31.5	14.0	10.5	20.0	0
Westeifel	Bisselbach	1	7 July 2018	57	511	5	1.7	0	3	7	1	3	1	22.2	77.8	0	0	0	0	31.3	0	56.1	0	12.6	0
Westeifel	Bosborn	1	8 July 2016	44	502	43	0.6	0	15	5	1	1	3	100	0	0	0	0	0	38.3	0	33.2	20.3	8.2	0
Westeifel	Braubach	1	28 June 2016	34	405	15	0.8	0	8	30	1	1	3	0	50.4	49.6	0	0	0	0	37.2	26.2	4.4	0	15.0
Westeifel	Bueschbach	1	17 June 2018	38	462	22	0.5	0	6	8	2	2	2	86.0	0	0	0	10.3	0	31.0	0	0	0	68.6	0.5
Westeifel	Eiergraben	1	18 June 2016	24	446	28	0.3	0	20	17	1	1	3	98.2	0	0	0	1.8	0	45.7	0	16.2	0	38.0	0
Westeifel	Eigelscheid	1	12 June 2017	29	469	46	0.3	0	4	1	1	1	2	0	0	100	0	0	0	0	0	98.3	0	1.7	0
Westeifel	Eschweiler	1	9 July 2016	45	451	23	2.0	0	5	25	1	1	3	93.6	0	0	6.4	93.6	0	46.3	13.4	0	36.0	4.3	0
Westeifel	Ettelbach	0	10 July 2016	46	490	21	0.6	1	3	13.5	1	1	1	0	0	73.0	0	27.0	0	0.3	6.4	52.0	13.2	28.1	0
Westeifel	Ettelbach_2	0	23 May 2018	13	517	7	0.5	0	2	11	1	1	2	0.0	0	100.0	0	0	0	24.9	0	60.4	3.6	11.0	0
Westeifel	Fussbach	1	14 June 2016	20	360	16	1.0	0	7	19	1	1	3	86.5	0	0	0	13.5	0	48.8	0	0	8.5	42.8	0
Westeifel	Gaybach	1	19 June 2016	25	333	19	0.6	0	3	12	1	1	3	100	0	0	0	0	0	92.9	0	7.1	0	0	0
Westeifel	Gecklenbach_Seitenarm	1	19 June 2016	25	467	23	1.0	0	6	14	1	1	2	15.9	0	0	0	84.1	0	14.0	0.0	0	45.9	40.0	0
Westeifel	Gemuenderbach	1	18 May 2018	8	416	48	0.8	0	15	15	2	1	3	0	98.3	1.7	0	0	0	13.0	42.0	13.1	31.9	0	0
Westeifel	Grasmaerchen	1	17 May 2018	7	225	77	0.5	0	15	6	3	2	2	29.0	0	0	0	71.0	0	31.3	0	0	12.8	55.9	0

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Westeifel	Grieselbergerbach	1	25 June 2016	31	478	59	0.4	0	7	10	1	1	2	99.3	0	0.7	0	0	0	39.0	0	17.7	0	43.3	0
Westeifel	Grimbach	0	28 June 2016	34	447	8	0.7	0	3	31	1	1	1	93.2	0	0	0	6.8	0	26.5	0	0	7.9	65.6	0
Westeifel	Heilhausen	1	2 July 2016	38	454	40	0.3	0	15	1	1	1	2	72.8	0	0	0	27.2	0	32.6	0	0	7.9	59.5	0
Westeifel	Heimbach	1	28 May 2018	18	350	45	1.2	0	10	19	1	2	3	100	0	0	0	0	0	84.0	0	1.2	14.8	0	0
Westeifel	Heimersdell	1	18 June 2016	24	390	31	1.0	0	5	21	1	2	2	97.7	0	2.3	0	0	0	49.4	8.3	40.3	0	2.1	0
Westeifel	Heisdorferbach	1	24 June 2016	30	526	36	0.3	0	10	6	2	3	3	100	0	0	0	0	0	82.0	0	15.5	1.3	1.2	0
Westeifel	Hennebach	0	22 June 2016	28	502	33	0.9	0	7	1	1	2	2	0	0	100	0	0	0	0	0	96.6	0	3.4	0
Westeifel	Hennebach_Seitenarm	0	2 July 2016	38	506	65	0.3	0	10	7	1	1	3	0	0	100	0	0	0	0	0	93.2	1.0	5.8	0
Westeifel	Herreler_Graben	1	14 June 2016	20	364	26	0.4	0	10	7	1	1	3	98.3	0	0	1.7	0	0	70.7	0	0	27.0	2.3	0
Westeifel	Hofswaldbach	1	8 July 2016	44	457	35	0.5	0	5	12	1	2	2	0	0	100	0	0	0	4.2	0	52.3	0	43.5	0
Westeifel	Irsen	0	9 July 2016	45	548	32	0.8	0	2	6	1	1	2	0	0	100	0	0	0	8.6	1.1	61.0	10.4	18.9	0
Westeifel	Klingendell	1	14 May 2018	4	385	67	0.8	0	20	26	1	2	2	100	0	0	0	0	0	72.8	0	0	0.2	26.9	0
Westeifel	Koerperich	1	19 June 2016	25	312	21	0.7	0	2	11	1	2	3	0	0	0	1.6	98.4	0.0	0	0	0	55.9	36.0	8.0
Westeifel	Kotzelsbach	1	28 June 2016	34	411	32	0.7	0	15	17	1	1	3	0	0	100	0	0	0	1.3	4.2	38.7	15.3	40.6	0
Westeifel	Lambach	1	25 June 2016	31	456	10	0.5	0	3	6	1	1	3	100	0	0	0	0	0	44.1	0	0	0	55.9	0
Westeifel	Luenebach	1	22 June 2016	28	541	31	0.2	0	10	8	2	3	2	0	0	100	0	0	0	0	0	82.9	17.1	0	0
Westeifel	Mattelbusch	0	16 July 2016	49	498	31	0.4	0	35	13	1	2	2	0	0	46.9	0	53.1	0	0	0	45.5	0	54.5	0
Westeifel	Mausbach	1	2 July 2016	38	459	39	0.4	0	10	7	1	1	3	0	0	96.1	0	3.9	0	0	0	34.2	0	65.8	0
Westeifel	Michelbach	0	18 June 2016	24	323	14	2.0	0	4	3	1	1	1	0	0	0	0	100	0	3.5	0	0	14.2	68.3	14.0
Westeifel	Moehnbach	0	28 May 2018	18	509	10	0.3	0	4	1	1	1	2	0	0	95.0	0	5.0	0	0	0	58.6	0	41.4	0
Westeifel	Pittenbach	1	15 July 2016	48	422	44	0.8	0	6	15	1	1	2	100	0	0	0	0	0	43.7	0	0	22.0	34.3	0
Westeifel	Reiff	1	30 May 2018	20	452	66	0.5	0	15	19	1	2	3	99.5	0	0	0.5	0	0	69.9	0	0	0	30.1	0
Westeifel	Reinzelbach_1	0	11 May 2018	1	588	7	0.3	0	2	16	1	1	3	3.6	0	96.4	0	0	0	29.4	0	70.6	0	0	0
Westeifel	Reinzelbach_2	0	11 May 2018	1	592	15	0.5	0	6	2	1	1	2	0	0	100	0	0	0	0.7	0	99.3	0	0	0
Westeifel	Reipeldingen	1	29 June 2016	35	450	39	1.3	0	4	18	1	2	3	0	0	100	0	0	0	9.4	0	54.0	27.1	9.5	0
Westeifel	Roscheid	1	12 June 2017	29	420	22	0.4	1	3	10	1	1	1	84.7	0	0	0	15.3	0	48.4	0	20.4	11.9	19.3	0
Westeifel	Scharrenborn	1	12 June 2017	29	485	40	0.2	0	7	7	2	1	1	0	0	100	0	0	0	0	20.2	76.8	0	3.0	0
Westeifel	Schirmbach	1	8 July 2016	44	509	54	0.6	0	7	1	2	1	3	0	0	94.3	0	5.7	0	0	0	60.7	0	39.3	0
Westeifel	Seisbach	1	30 May 2018	20	462	79	1.3	0	10	1	1	2	2	42.6	0	57.3	0	0.1	0	30.2	0	38.7	10.2	20.9	0
Westeifel	Sengerich	1	9 July 2016	45	531	42	0.3	0	15	4	2	1	2	89.1	0	0	10.9	0	0	29.4	0	0	68.0	2.7	0
Westeifel	Spielmannsholz	1	31 May 2018	21	500	26	1.0	0	5	22	3	3	3	100	0	0	0	0	0	52.7	0	24.5	9.6	13.3	0
Westeifel	Steuernbach	1	28 May 2018	18	386	41	1.0	0	15	20	3	3	2	100	0	0	0	0	0	75.1	0	0	0	24.9	0

LandscapeUnit	Creek	Presence	Date	Day	Elevation(m)	Pools	Width(m)	Fish	Tilt(°)	Tilt_perpendicular(°)	Substrate	Prey	Hiding	Decid100	Mixed100(%)	Conif100(%)	Agri100(%)	Grass100(%)	Settl100(%)	Decid500(%)	Mixed500(%)	Conif500(%)	Agri500(%)	Grass500(%)	Settl500(%)
Westeifel	Taubenbach	0	23 May 2018	13	530	3	0.5	0	4	16	1	1	2	86.5	0	0	0	13.5	0	24.5	0.2	0	0	75.4	0
Westeifel	Teggelbach	1	19 June 2016	25	248	23	0.4	0	3	17	1	1	1	18.1	0.0	81.9	0	0	0	24.0	8.5	41.2	22.1	4.2	0
Westeifel	Thierbach_1	0	26 June 2016	32	501	23	0.8	0	7	18	1	1	3	0	0	100	0	0	0	15.7	0	46.0	0	38.4	0
Westeifel	Thierbach_2	0	26 June 2016	32	521	26	1.1	0	10	12	2	1	2	0	0	100	0	0	0	0.8	0	36.0	6.3	57.0	0
Westeifel	Wallertbach	1	9 July 2016	45	498	36	0.5	0	4	9	1	2	2	0	0	100	0	0	0	0	0	98.9	0	1.1	0
Westeifel	Watzbach	1	31 May 2018	21	523	55	1	0	5	20	3	1	2	100	0	0	0	0	0	45.4	0	5.0	0	49.6	0
Westeifel	Watzbachzufluss	1	31 May 2018	21	499	76	0.3	0	10	10	1	1	2	0	0	72.7	0	27.3	0	20.8	0	43.5	0	35.8	0
Westeifel	Weiherbach	0	24 June 2016	30	534	30	0.3	0	4	9	2	2	3	100	0	0	0	0	0	52.7	0	2.1	0	45.2	0
Westeifel	Winterspelterbach	1	8 July 2016	44	491	37	1.0	0	10	5	1	2	1	0	0	100	0	0	0	0	0.6	65.6	0	33.8	0

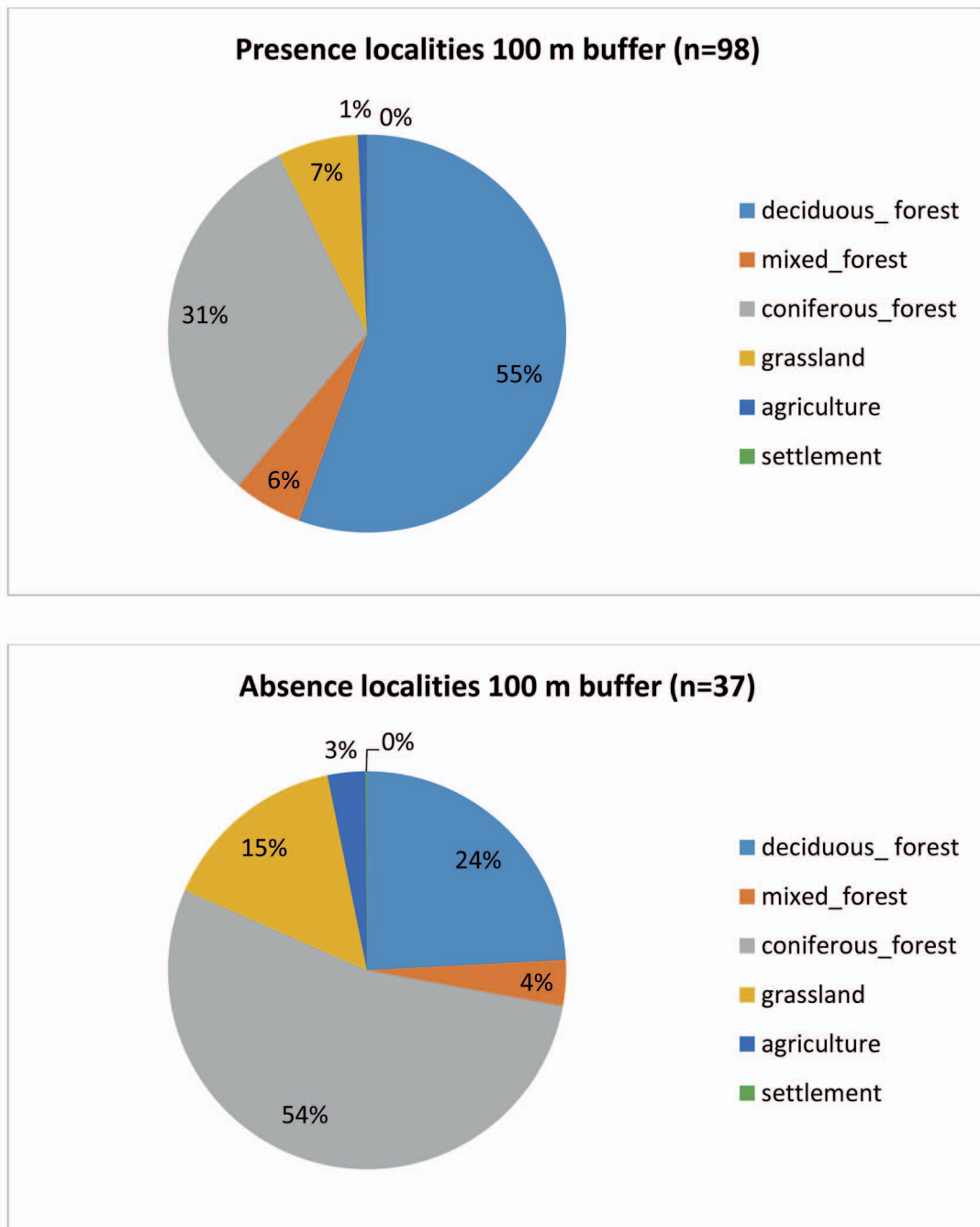
Supplementary document 2. Raw data from removal sampling of larval fire salamanders. Larvae1 = captured larvae from the first occasion of removal sampling, Larvae2 = captured larvae from the second occasion of removal sampling, Larvae3 = captured larvae from the third occasion of removal sampling.

LandscapeUnit	Creek	Larvae1	Larvae2	Larvae3	Total_captured	Date	Day	Elevation (m)	Pools	Width (m)	Fish	Tilt (°)	Tilt_perpendicular (°)	Substrate	Prey	Hiding	Decid100	Mixed100 (%)	Conif100 (%)	Agri100 (%)	Grass100 (%)	Settl100 (%)	Decid500 (%)	Mixed500 (%)	Conif500 (%)	Agri500 (%)	Grass500 (%)	Settl500 (%)
Gutland	Gutenbach	2	0	0	2	14 May 2018	4	288	30	1.9	0	8	19	1	3	3	98.8	0	0	1.2	0	0	46.8	0	6.0	47.2	0	0
Gutland	Fleissbach	3	2	0	5	16 May 2018	6	357	31	0.5	1	30	7	3	1	3	0	0	100	0	0	0	3.9	0	96.1	0	0	0
Gutland	Ferschweiler_1	40	40	28	108	22 May 2018	12	321	45	0.5	0	15	6	3	2	3	75.6	24.4	0	0	0	0	44.8	11.9	0	1.6	40.2	1.6
Gutland	Ferschweiler_2	133	153	22	308	22 May 2018	12	324	21	1.5	0	5	11	3	1	2	100	0	0	0	0	0	87.7	0	0	3.2	9.1	0
Gutland	Irrel_1	7	23	31	61	22 May 2018	12	233	38	0.5	0	5	15	2	3	2	100	0	0	0	0	0	70.3	0	0	23.1	6.6	0
Gutland	Irrel_2	7	10	14	31	22 May 2018	12	217	34	1.0	0	2	6	1	2	1	69	0	0	0	31	0	64.5	0	0.3	11.5	21.5	2.2
Gutland	Hauchenbach	5	5	0	10	9 June 2018	30	256	19	1.5	0	2	7	3	3	3	12.9	85.9	0	0	1.2	0	31.6	44.8	0	5.0	18.6	0
Gutland	Ingendorf	1	0	2	3	11 June 2018	32	352	47	0.5	0	3	1	1	3	3	100	0	0	0	0	0	75.0	0	0	25.0	0	0
Hunsrueck	Misselbach	2	1	0	3	26 May 2016	1	509	27	1.0	1	2	3	1	1	2	0	49.9	50.1	0	0	0	0	18.9	81.1	0	0	0
Hunsrueck	Thommerbach	0	0	0	0	26 May 2016	1	412	16	1.5	0	4	6	3	1	2	98.4	0	0	0	1.6	0	30.1	0	0	7.6	51.8	10.6
Hunsrueck	LorscheiderNebenbach	0	0	2	2	31 May 2016	6	468	20	0.5	0	7	2	3	1	2	53.2	0	38.5	8.3	0	0	17.7	2.1	41.2	38.9	0	0
Hunsrueck	Rauruwer	0	0	0	0	5 June 2016	11	480	30	0.5	0	1	1	3	1	1	0	0	100	0	0	0	20.1	0	79.9	0	0	0
Hunsrueck	AltlayerNebenbach	6	5	4	15	11 June 2016	17	358	80	0.4	0	8	3	1	1	2	100	0	0	0	0	0	75.3	0	0	24.7	0	0
Hunsrueck	Antenbachsgraben	0	2	1	3	12 June 2016	18	302	28	0.5	0	5	2	3	1	2	0	26.0	0	0	74.0	0	26.4	13.4	0	0	60.2	0
Hunsrueck	Eschbach	0	0	0	0	18 June 2016	24	403	38	1.5	0	3	3	3	1	2	0	53.2	0	46.8	0	0	0	18.2	0	77.9	0	3.9
Hunsrueck	Kieselbornbach	5	10	9	24	23 June 2016	29	449	69	1.5	1	6	2	3	1	2	74.2	0	25.8	0	0	0	32.2	0	67.8	0	0	0
Hunsrueck	Sattelbach	0	0	1	1	24 June 2016	30	566	62	2.0	1	8	3	1	1	3	42.1	0	57.9	0	0	0	53.9	0	46.1	0	0	0
Hunsrueck	Markenbach	1	0	1	2	29 June 2016	35	388	45	0.4	0	18	6	1	2	2	0	0	100	0	0	0	0	22.1	33.7	0	44.1	0.0
Hunsrueck	Lautenbach	19	18	14	51	9 July 2016	45	543	62	0.5	0	13	7	3	1	1	93.9	0	6.1	0	0	0	81.5	0	18.5	0	0	0
Hunsrueck	DrohnerNebenbach	0	0	0	0	11 July 2016	47	563	0	0.3	0	6	1	1	1	2	0	0	100	0	0	0	0	24.8	75.2	0	0	0
Hunsrueck	Struntbach	0	0	0	0	11 July 2016	47	443	35	0.4	0	1	2	1	3	2	0	0	50.8	0	49.2	0	15.0	0	39.3	17.0	28.7	0
Hunsrueck	Altbach	0	0	0	0	12 July 2016	48	484	17	3.5	1	1	19	3	1	2	0	0	100	0	0	0	4.9	14.0	33.6	2.1	28.3	17.1
Hunsrueck	Dammfloesschen	0	0	0	0	12 July 2016	48	541	38	0.5	0	7	6	3	1	2	0	0	95.5	0	0	4.5	0	0	69.1	0	2.1	28.8
Hunsrueck	Liedchenbach	0	2	1	3	13 July 2016	49	360	52	1.0	0	1	9	1	2	2	100	0	0	0	0	0	59.4	0	0	5.0	35.7	0
Hunsrueck	Korlingen	4	4	0	8	15 May 2017	1	254	77	0.8	0	7.5	9	1	3	2	99.1	0	0	0	0	0.9	44.2	0	0	15.9	14.9	25.0
Hunsrueck	Moertschelbach	3	9	9	21	21 May 2017	7	315	53	1.5	0	10	9	NA	3	3	38.5	0	0	0	61.5	0	25.8	0	0	36.6	37.6	0
Hunsrueck	Kiweringbach	21	25	15	61	23 May 2017	9	441	83	1.0	0	2	3	3	1	1	96.8	0	3.2	0	0	0	52.8	0	45.6	0	1.5	0
Hunsrueck	Alkenbach	34	26	14	74	23 May 2017	9	327	62	0.8	0	5	15	3	3	2	100	0	0	0	0	0	63.7	7.4	0	0	28.8	0
Hunsrueck	Liefbach	33	24	25	82	29 May 2017	15	516	61	0.5	0	1	2	NA	1	2	100	0	0	0	0	0	20.5	0	79.5	0	0	0

LandscapeUnit	Creek	Larvae1	Larvae2	Larvae3	Total_captured	Date	Day	Elevation (m)	Pools	Width (m)	Fish	Tilt (°)	Tilt_perpendicular (°)	Substrate	Prey	Hiding	Decid100	Mixed100 (%)	Conif100 (%)	Agri100 (%)	Grass100 (%)	Settl100 (%)	Decid500 (%)	Mixed500 (%)	Conif500 (%)	Agri500 (%)	Grass500 (%)	Settl500 (%)
Hunsrueck	Schastebach	19	25	12	56	29 May 2017	15	425	55	1.0	0	4	1	3	2	2	100	0	0	0	0	0	40.9	4.5	50.3	0	4.3	0
Hunsrueck	Bernsbach	15	16	19	50	29 May 2017	15	309	15	1.0	0	5	5	NA	3	2	100	0	0	0	0	0	100	0	0	0	0	0
Hunsrueck	Krebsbach	7	24	10	41	31 May 2017	17	548	60	1.5	0	3	7	2	1	3	0.3	0	99.7	0	0	0	39.6	0	60.4	0	0	0
Hunsrueck	Riedfloss	0	0	0	0	31 May 2017	17	588	30	1.5	1	2	2	1	1	1	0	0	41.1	0	58.9	0	22.9	0	45.9	0	31.2	0
Hunsrueck	Kalmbach	12	15	8	35	6 June 2017	23	439	30	1.0	0	8	1	NA	2	3	39.2	0	60.8	0	0	0	71.1	0	12.5	0	16.4	0
Hunsrueck	Hottenbach	17	24	22	63	7 June 2017	24	577	66	1.0	0	3	2	NA	1	3	0	82.4	17.6	0	0	0	0	38.9	31.1	0	0	0
Hunsrueck	Eisbach	14	10	10	34	10 June 2017	27	585	35	1.0	0	5	7	3	1	2	100	0	0	0	0	0	78.9	0	21.1	0	0	0
Hunsrueck	Koenigsbach	0	0	0	0	10 June 2017	27	577	30	1.5	1	2	1	1	1	3	38.8	0	61.2	0	0	0	59.1	1.0	39.9	0	0	0
Hunsrueck	Forstelbach	0	0	0	0	20 June 2017	37	559	32	1.3	0	2	12	3	1	2	37.5	0	62.5	0	0	0	72.1	6.2	20.8	0	1	0
Hunsrueck	Gehresbach	3	0	0	3	27 June 2017	44	311	20	1.0	0	5	9	NA	1	2	100	0	0	0	0	0	100	0	0	0	0	0
Hunsrueck	Steierbach	0	0	0	0	18 July 2017	65	315	23	2.0	0	5	11	NA	1	2	88.4	0	11.6	0	0	0	45.9	0	53.4	0.7	0	0
Moseltal	Morschbach	13	7	5	25	11 June 2016	17	407	41	1.0	0	2	6	3	2	2	100	0	0	0	0	0	42.9	0.4	0	56.7	0	0
Moseltal	Lierenbach	10	7	8	25	16 June 2016	22	275	58	1.0	0	5	10	3	2	3	8.5	0	91.5	0	0	0	55.6	0	44.4	0	0	0
Moseltal	AhringsbachNebenbach	1	0	0	1	18 June 2016	24	345	65	0.5	0	10	9	3	1	2	88.4	0	0	11.6	0	0	55.0	0	0	45.0	0	0
Moseltal	Waldrach	36	13	28	77	17 May 2017	3	233	72	0.8	0	15	2	3	3	3	87.4	0	12.6	0	0	0	45.4	0	34.0	0	0	20.6
Moseltal	Speinbach	0	0	1	1	5 June 2017	22	280	28	0.5	0	5	9	NA	2	3	68.7	0	31.3	0	0	0	37.5	0.4	56.0	6.1	0	0
Moseltal	CompenerBaechelchen	8	4	5	17	6 June 2017	23	230	45	1.0	0	3	7	NA	1	3	100	0	0	0	0	0	97.2	0	0	0	0	2.8
Moseltal	Schafhausbach	6	3	1	10	8 June 2017	25	395	18	0.2	0	3	3	NA	1	2	5.4	0	79.1	15.5	0	0	33.1	0	18.3	48.6	0	0
Moseltal	Viehbach	1	1	2	4	8 June 2017	25	278	41	0.7	0	3	11	NA	1	3	86.4	0	0	13.6	0	0	38.3	0	28.6	33.1	0	0
Osteifel	Hasbach_1	2	2	0	4	6 June 2018	27	575	0	0.6	0	4	9	3	2	1	100	0	0	0	0	0	5.0	0	81.5	0	13.6	0
Osteifel	Hasbach_2	1	0	0	1	6 June 2018	27	516	6	0.5	0	6	10	1	3	1	100	0	0	0	0	0	100	0	0	0	0	0
Osteifel	Baubach	0	0	0	0	6 June 2018	27	499	1	0.5	0	3	1	1	1	1	0	0	100	0	0	0	38.5	0	58.7	0	2.8	0
Osteifel	Auschsbach	17	10	1	28	14 June 2018	35	237	3	0.5	0	5	21	3	2	1	100	0	0	0	0	0	80.5	0	4.0	0	0	15.4
Osteifel	Mirbach	1	0	0	1	14 June 2018	35	225	2	0.4	0	3	1	3	1	1	25.2	0	74.8	0	0	0	55.7	0	36.8	0	0.1	7.4
Osteifel	Aelsbach	3	0	0	3	19 June 2018	39	471	2	1.0	0	3	6	3	1	1	66.2	0	0	0	33.8	0	32.7	0	22.2	0	45.0	0
Osteifel	BodenbacherBach	0	0	0	0	19 June 2018	39	540	0	0.5	0	3	3	3	1	3	0	86.0	14.0	0	0	0	0	33.4	59.2	0.3	7.2	0
Osteifel	Alfenbach	21	8	2	31	20 June 2018	40	344	7	0.8	0	4	20	3	2	2	41.1	0	58.9	0	0	0	40.4	0	35.5	0	24.1	0
Osteifel	Drasselbach	2	0	0	2	20 June 2018	40	323	2	0.2	0	1	8	3	1	1	0	0	100	0	0	0	40.5	0	42.9	0	0	10.4
Osteifel	Krekelbach	63	11	3	77	20 June 2018	40	409	8	0.3	0	7	17	3	2	1	100	0	0	0	0	0	65.8	0	0	0	34.2	0
Osteifel	Exbach	0	0	0	0	24 June 2018	44	443	1	0.5	0	3	3	3	2	1	2.4	46.0	0	0	51.6	0	38.0	35.3	0	0	26.7	0
Osteifel	Laufenbach	0	0	0	0	24 June 2018	44	440	1	0.3	0	24	22	1	1	1	99.4	0	0	0	0.6	0	64.9	0	10.1	6.1	19.0	0
Osteifel	Gilgenbach	17	8	1	26	27 June 2018	47	380	6	0.5	0	4	22	3	2	2	0	21.9	78.1	0	0	0	0	39.6	60.4	0	0	0

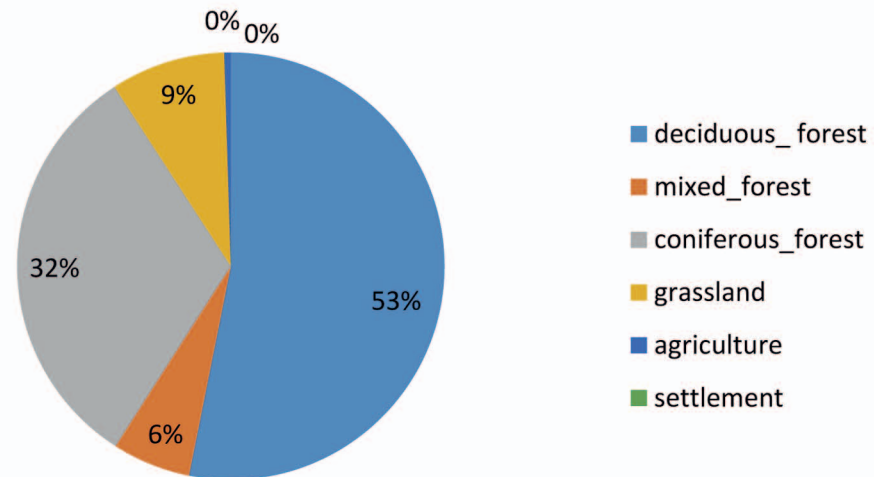
LandscapeUnit	Creek	Larvae1	Larvae2	Larvae3	Total_captured	Date	Day	Elevation (m)	Pools	Width (m)	Fish	Tilt (°)	Tilt_perpendicular (°)	Substrate	Prey	Hiding	Decid100	Mixed100 (%)	Conif100 (%)	Agri100 (%)	Grass100 (%)	Settl100 (%)	Decid500 (%)	Mixed500 (%)	Conif500 (%)	Agri500 (%)	Grass500 (%)	Settl500 (%)
Osteifel	Girrelsbach	29	14	9	52	27 June 2018	47	377	9	0.5	0	3	16	3	2	3	35.9	0	64.1	0	0	0	62.7	0	37.3	0	0	0
Osteifel	Ahbach	6	1	0	7	29 June 2018	49	501	13	0.9	0	4	18	3	2	3	65.9	0	34.1	0	0	0	70.4	0	28.9	0	0.6	0
Osteifel	Gruenbach	8	4	3	15	29 June 2018	49	468	7	0.5	0	5	2	3	2	1	25.7	0	74.3	0	0	0	39.3	0	40.0	0	20.7	0
Osteifel	Nohnerbach	0	0	0	0	29 June 2018	49	500	6	0.5	0	5	11	1	1	1	20.5	0	79.5	0	0	0	29.8	0	57.5	0	12.7	0
Osteifel	Kaulbach	0	0	0	0	30 June 2018	50	429	2	1.5	0	4	1	3	1	2	0	0	0	0	100	0	0	0	2.6	23.2	72.5	1.6
Osteifel	Rudersbach	3	0	0	3	30 June 2018	50	509	3	0.7	0	2	7	1	3	1	38.6	0	61.4	0	0	0	25.1	4.9	58.6	0	11.5	0
Osteifel	Wiesbach	0	0	0	0	30 June 2018	50	462	3	0.5	0	1	2	1	1	2	100	0	0	0	0	0	6.2	24.6	69.2	0	0	0
Westeifel	Reinzelbach_1	0	0	0	0	11 May 2018	1	588	7	0.3	0	2	16	1	1	3	3.6	0	96.4	0	0	0	29.4	0	70.6	0	0	0
Westeifel	Reinzelbach_2	0	0	0	0	11 May 2018	1	592	15	0.5	0	6	2	1	1	2	0	0	100	0	0	0	0.7	0	99.3	0	0	0
Westeifel	Klingendell	42	23	17	82	14 May 2018	4	385	67	0.8	0	20	26	1	2	2	100	0	0	0	0	0	72.8	0	0	0.2	26.9	0
Westeifel	Grasmaerchen	41	36	27	104	17 May 2018	7	225	77	0.5	0	15	6	3	2	2	29.0	0	0	0	71.0	0	31.3	0	0	12.8	55.9	0
Westeifel	Gemuenderbach	14	10	9	33	22 May 2018	12	416	48	0.8	0	15	15	2	1	3	0	98.3	1.7	0	0	0	13.0	42.0	13.1	31.9	0	0
Westeifel	Ettelbach_2	0	0	0	0	23 May 2018	13	517	7	0.5	0	2	11	1	1	2	0.0	0	100.0	0	0	0	24.9	0	60.4	3.6	11.0	0
Westeifel	Taubenbach	0	0	0	0	23 May 2018	13	530	3	0.5	0	4	16	1	1	2	86.5	0	0	0	13.5	0	24.5	0.2	0	0	75.4	0
Westeifel	Steuernbach	0	3	3	6	28 May 2018	18	386	41	1.0	0	15	20	3	3	2	100	0	0	0	0	0	75.1	0	0	0	24.9	0
Westeifel	Heimbach	4	2	2	8	28 May 2018	18	350	45	1.2	0	10	19	1	2	3	100	0	0	0	0	0	84.0	0	1.2	14.8	0	0
Westeifel	Moehnbach	0	0	0	0	28 May 2018	18	509	10	0.3	0	4	1	1	1	2	0	0	95.0	0	5.0	0	0	0	58.6	0	41.4	0
Westeifel	Reiff	26	21	14	61	30 May 2018	20	452	66	0.5	0	15	19	1	2	3	99.5	0	0	0.5	0	0	69.9	0	0	0	30.1	0
Westeifel	Seisbach	45	36	33	114	30 May 2018	20	462	79	1.3	0	10	1	1	2	2	42.6	0	57.3	0	0.1	0	30.2	0	38.7	10.2	20.9	0
Westeifel	Spielmannsholz	18	13	14	45	31 May 2018	21	500	26	1.0	0	5	22	3	3	3	100	0	0	0	0	0	52.7	0	24.5	9.6	13.3	0
Westeifel	Watzbachzufluss	29	40	22	91	31 May 2018	21	499	76	0.3	0	10	10	1	1	2	0	0	72.7	0	27.3	0	20.8	0	43.5	0	35.8	0
Westeifel	Watzbach	69	52	73	194	31 May 2018	21	523	55	1	0	5	20	3	1	2	100	0	0	0	0	0	45.4	0	5.0	0	49.6	0
Westeifel	Arzfeld	10	5	5	20	6 June 2018	27	493	47	0.6	0	8	6	3	2	1	95.0	0	0	0	5.0	0	70.6	9.4	0	9.4	20.1	0
Westeifel	Bisselbach	8	4	1	13	7 July 2018	57	511	5	1.7	0	3	7	1	3	1	22.2	77.8	0	0	0	0	31.3	0	56.1	0	12.6	0

Supplementary document 3. Proportions of different land use in a 100 m buffer around all studied creeks, divided into presence and absence sites.

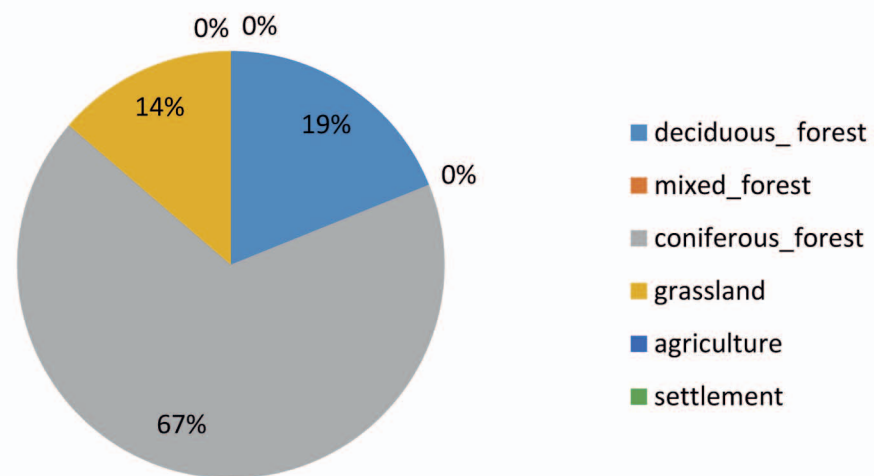


Supplementary document 4. Proportions of different land use in a 100 m buffer around all studied creeks from the 'Westeifel', divided into presence and absence sites.

Presence localities 'Westeifel' 100 m buffer (n=42)

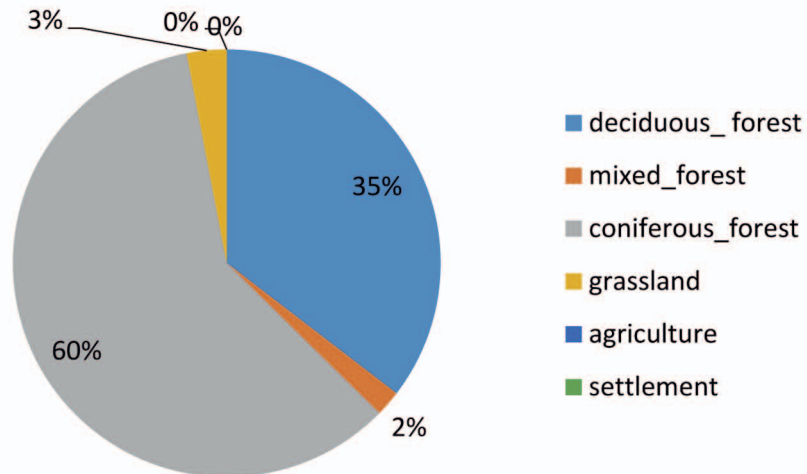


Absence localities 'Westeifel' 100 m buffer (n=15)

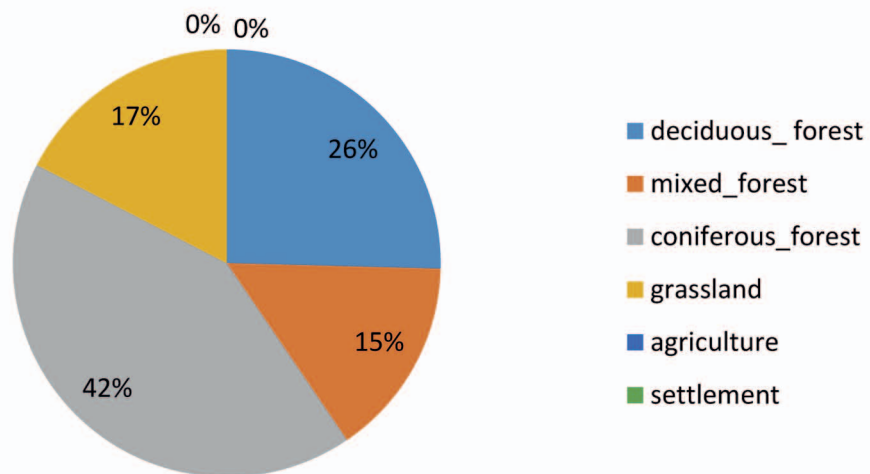


Supplementary document 5. Proportions of different land use in a 100 m buffer around all studied creeks from the 'Osteifel', divided into presence and absence sites.

Presence localities 'Osteifel' 100 m buffer (n=13)

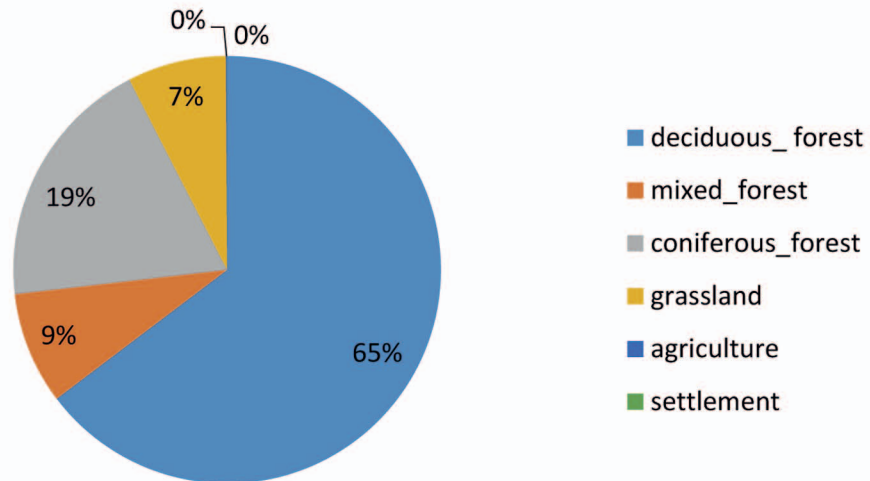


Absence localities 'Osteifel' 100 m buffer (n=7)

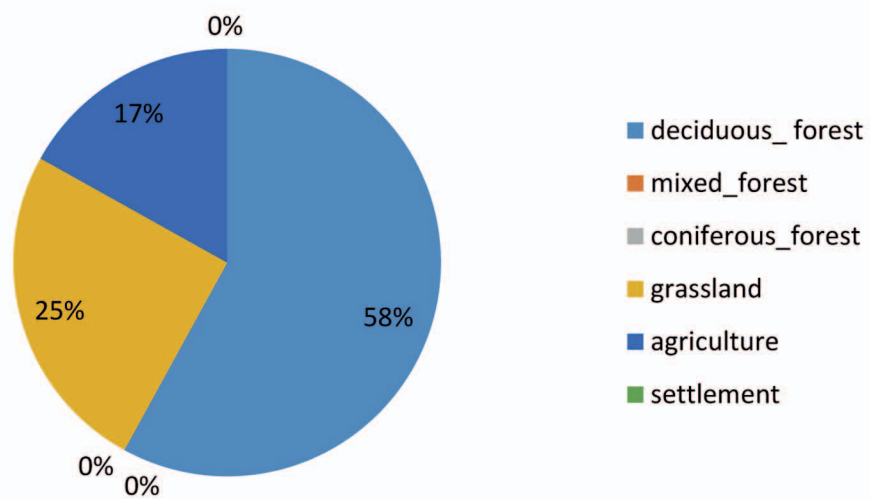


Supplementary document 6. Proportions of different land use in a 100 m buffer around all studied creeks from the 'Gutland', divided into presence and absence sites.

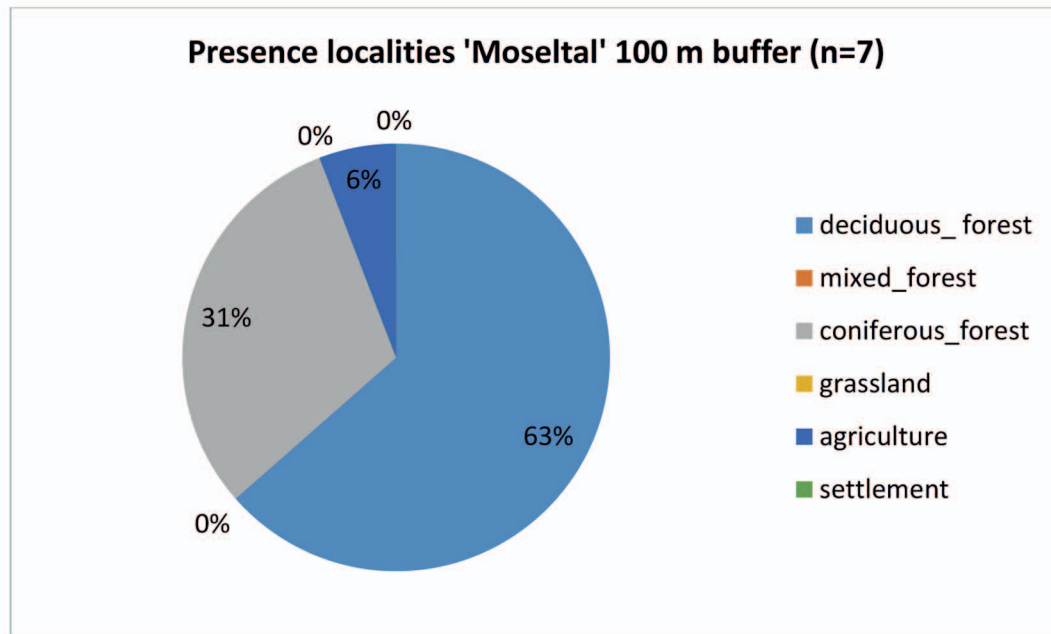
Presence localities 'Gutland' 100 m buffer (n=13)



Absence localities 'Gutland' 100 m buffer (n=4)



Supplementary document 7. Proportions of different land use in a 100 m buffer around all studied creeks from the 'Moseltal'.



Supplementary document 8. Proportions of different land use in a 100 m buffer around all studied creeks from the 'Hunsrück', divided into presence and absence sites.

