Table S1: Compounds analysed in the 2020 moss survey

Substance	Abbreviation	LOQ	Unit	Statistics
2,3,7,8-Tetrachlorodibenzo dioxin	2,3,7,8-TetraCDD	0.168 - 0.246	pg/g	Sum PCDD/F
1,2,3,7,8-Pentachlorodibenzo dioxin	1,2,3,7,8-PentaCDD	0.221 - 0.324	pg/g	Sum PCDD/F
1,2,3,4,7,8-Hexachlorodibenzo dioxin	1,2,3,4,7,8-HexaCDD	0.336 - 0.492	pg/g	Sum PCDD/F
1,2,3,6,7,8-Hexachlorodibenzo dioxin	1,2,3,6,7,8-HexaCDD	0.460 - 0.673	pg/g	Sum PCDD/F
1,2,3,7,8,9-Hexachlorodibenzo dioxin	1,2,3,7,8,9-HexaCDD	0.433 - 0.635	pg/g	Sum PCDD/F
1,2,3,4,6,7,8-Heptachlorodibenzo dioxin	1,2,3,4,6,7,8-HeptaCDD	0.863 - 0.894	pg/g	Sum PCDD/F
Octachlorodibenzo dioxin	OctaCDD	5.130 - 7.510	pg/g	Sum PCDD/F
2,3,7,8-Tetrachlorodibenzo furan	2,3,7,8-TetraCDF	0.460 - 0.673	pg/g	Sum PCDD/F
1,2,3,7,8-Pentachlorodibenzo furan	1,2,3,7,8-PentaCDF	0.318 - 0.466	pg/g	Sum PCDD/F
2,3,4,7,8-Pentachlorodibenzo furan	2,3,4,7,8-PentaCDF	0.495 - 0.725	pg/g	Sum PCDD/F
1,2,3,4,7,8-Hexachlorodibenzo furan	1,2,3,4,7,8-HexaCDF	0.522 - 0.764	pg/g	Sum PCDD/F
1,2,3,6,7,8-Hexachlorodibenzo furan	1,2,3,6,7,8-HexaCDF	0.478 - 0.699	pg/g	Sum PCDD/F
1,2,3,7,8,9-Hexachlorodibenzo furan	1,2,3,7,8,9-HexaCDF	0.354 - 0.518	pg/g	Sum PCDD/F
2,3,4,6,7,8-Hexachlorodibenzo furan	2,3,4,6,7,8-HexaCDF	0.433 - 0.635	pg/g	Sum PCDD/F
1,2,3,4,6,7,8-Heptachlorodibenzo furan	1,2,3,4,6,7,8-HeptaCDF	0.495 - 0.725	pg/g	Sum PCDD/F
1,2,3,4,7,8,9-Heptachlorodibenzo furan	1,2,3,4,7,8,9-HeptaCDF	0.345 - 0.505	pg/g	Sum PCDD/F
Octachlorodibenzo furan	OctaCDF	1.060 - 2.000	pg/g	Sum PCDD/F
3,3',4,4'-Tetrachlorobiphenyl	PCB 77	15.9 - 23.3	pg/g	
3,4,4',5-Tetrachlorobiphenyl	PCB 81	2.39 - 3.50	pg/g	
2,3,3',4,4'-Pentachlorobiphenyl	PCB 105	34.5 - 50.5	pg/g	
2,3,4,4',5-Pentachlorobiphenyl	PCB 114	4.69 - 6.86	pg/g	
2,3',4,4',5-Pentachlorobiphenyl	PCB 118	124 – 181	pg/g	
2',3,4,4',5-Pentachlorobiphenyl	PCB 123	3.54 - 5.18	pg/g	
3,3',4,4',5-Pentachlorobiphenyl	PCB 126	2.21 - 3.80	pg/g	
2,3,3',4,4',5-Hexachlorobiphenyl	PCB 156	19.5 - 28.5	pg/g	
2,3,3',4,4',5'-Hexachlorobiphenyl	PCB 157	3.63 - 5.31	pg/g	
2,3',4,4',5,5'-Hexachlorobiphenyl	PCB 167	9.73 - 14.2	pg/g	
3,3',4,4',5,5'-Hexachlorobiphenyl	PCB 169	10.6 - 15.5	pg/g	
2,3,3',4,4',5,5'-Heptachlorobiphenyl	PCB 189	3.54 - 5.18	pg/g	
2,4,4'-Trichlorobiphenyl	PCB 28	0.884 - 1.3	ng/g	
2,2',5,5'-Tetrachlorobiphenyl	PCB 52	0.884 - 1.3	ng/g	
2,2',4,5,5'-Pentachlorobiphenyl	PCB 101	0.884 - 1.3	ng/g	
2,2',3,4,4',5'-Hexachlorobiphenyl	PCB 138	0.884 - 1.3	ng/g	
2,2',4,4',5,5'-Hexachlorobiphenyl	PCB 153	0.884 - 1.3	ng/g	
2,2',3,4,4',5,5'-Heptachlorobiphenyl	PCB 180	0.884 - 1.3	ng/g	
Naphthalene	Nap	50	pg/g FW	Sum 16 PAH
Acenaphthylene	Ace	0.40 - 4.75	pg/g FW	Sum 16 PAH
Acenaphthene	Acy	4,00 – 4.75	pg/g FW	Sum 16 PAH
Fluorene	Flu	4 - 7	pg/g FW	Sum 16 PAH
Phenanthrene	Phe	8 - 26	pg/g FW	Sum 16 PAH
Anthracene	Ant	0.36 - 2.01	pg/g FW	Sum 16 PAH
Fluoranthene	Fla	---	pg/g FW	Sum 16 PAH
Pyrene	Pyr	---	pg/g FW	Sum 16 PAH
Benzo(a)anthracene	BaA	0.916 - 0.924	pg/g FW	Sum 16 PAH
Chrysene	Chr	---	pg/g FW	Sum 16 PAH
Benzo(b/j)fluoranthene (coelution)	Bb+jF	---	pg/g FW	Sum 16 PAH
Benzo(k)fluoranthene	BkF	0.916	pg/g FW	Sum 16 PAH
Benzo(a)pyrene	BaP	---	pg/g FW	Sum 16 PAH
Dibenz(ah)anthracene	DahA	0.378 - 4.75	pg/g FW	Sum 16 PAH
Indeno(1,2,3cd)pyrene	IcdP	---	pg/g FW	Sum 16 PAH
Benzo(ghi)perylene	BghiP	---	pg/g FW	Sum 16 PAH
alpha-Hexabromocyclododecane	a-HBCD	---	ng/g	Sum HBCD
beta-Hexabromocyclododecane	b-HBCD	0.00648 - 0.0114	ng/g	Sum HBCD
gamma-Hexabromocyclododecane	g-HBCD	0.0151	ng/g	Sum HBCD
2,2',4-Tribromodiphenyl ether	TriBDE (BDE 17)	2.62 - 2.88	pg/g FW	
2,4,4'-Tribromodiphenyl ether	TriBDE (BDE 28)	2.62 - 5.82	pg/g FW	Sum 7 PBDE
2,2',4,4'-Tetrabromodiphenyl ether	TetraBDE (BDE 47)	8.22 - 8.22	pg/g FW	Sum 7 PBDE

Substance	Abbreviation	LOQ	Unit	Statistics
2,2',4,5'-Tetrabromodiphenyl ether	TetraBDE (BDE 49)	2.62 - 2.85	pg/g FW	
2,3',4,4'-Tetrabromodiphenyl ether	TetraBDE (BDE 66)	2.62 - 2.88	pg/g FW	
2,3',4',6-Tetrabromodiphenyl ether	TetraBDE (BDE 71)	2.62 - 2.88	pg/g FW	
3,3',4,4'-Tetrabromodiphenyl ether	TetraBDE (BDE 77)	2.62 - 2.88	pg/g FW	
2,2',3,4,4'-Pentabromodiphenyl ether	PentaBDE (BDE 85)	2.62 - 3.77	pg/g FW	
2,2',4,4',5-Pentabromodiphenyl ether	PentaBDE (BDE 99)	---	pg/g FW	Sum 7 PBDE
2,2',4,4',6-Pentabromodiphenyl ether	PentaBDE (BDE 100)	2.74 - 2.76	pg/g FW	Sum 7 PBDE
2,3',4,4',6-Pentabromodiphenyl ether	PentaBDE (BDE 119)	2.62 - 2.88	pg/g FW	
3,3',4,4',5-Pentabromodiphenyl ether	PentaBDE (BDE 126)	2.62 - 2.88	pg/g FW	
2,2',3,4,4',5'-Hexabromodiphenyl ether	HexaBDE (BDE 138)	5.24 - 5.76	pg/g FW	
2,2',4,4',5,5'-Hexabromodiphenyl ether	HexaBDE (BDE 153)	5.46 – 10.0	pg/g FW	Sum 7 PBDE
2,2',4,4',5,6'-Hexabromodiphenyl ether	HexaBDE (BDE 154)	5.24 - 5.76	pg/g FW	Sum 7 PBDE
2,3,3',4,4',5-Hexabromodiphenyl ether	HexaBDE (BDE 156)	5.24 - 5.76	pg/g FW	
2,2',3,4,4',5',6-Heptabromodiphenyl ether	HeptaBDE (BDE 183)	5.3 - 15.7	pg/g FW	Sum 7 PBDE
2,2',3,4,4',6,6'-Heptabromodiphenyl ether	HeptaBDE (BDE 184)	5.24 - 5.76	pg/g FW	
2,3,3',4,4',5',6-Heptabromodiphenyl ether	HeptaBDE (BDE 191)	5.24 - 5.76	pg/g FW	
2,2',3,3',4,4',5,6'-Octabromodiphenyl ether	OctaBDE (BDE 196)	26.2 - 28.8	pg/g FW	
2,2',3,3',4,4',6,6'-Octabromodiphenyl ether	OctaBDE (BDE 197)	26.2 - 28.8	pg/g FW	
2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	NonaBDE (BDE 206)	26.2 - 59.7	pg/g FW	
2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether	NonaBDE (BDE 207)	26.2 - 28.8	pg/g FW	
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether	DecaBDE (BDE 209)	183 - 350	pg/g FW	BDE-209
2,4,6-Tribomoanisol	TBA	40.8 - 43.2	pg/g FW	
2,4,6-Tribromophenylallylether	ATE	13.1 - 14.4	pg/g FW	
2-Bromoallyl-2,4,6-tribromophenylether	BATE	10.5 - 11.5	pg/g FW	
2,3-Dibromopropyl-2,4,6-tribromophenylether	DPTE	131 - 143	pg/g FW	DPTE
1,2-Bis(2,4,6-tribromophenoxy) ethane	BTBPE	26.2 - 141	pg/g FW	
2-Ethylhexyl-2,3,4,5-tetrabromobenzoate	EHTeBB	26.2 - 28.8	pg/g FW	
Bis(2-ethylhexyl) tetrabromophthalate	BEHTBP	79.5 - 86.3	pg/g FW	
Pentabromotoluene	PBT	27.4 - 28.2	pg/g FW	PBT
Hexabromobenzene	HBBz	5.2 - 5.7	pg/g FW	HBBz
Pentabromoethylbenzene	PBEB	1.1 - 1.4	pg/g FW	
Decabromodiphenylethane	DBDPE	1090 - 1180	pg/g FW	DBDPE
Dechlorane 602	Dec602	2.6 - 7.1	pg/g FW	
Dechlorane 603	Dec603	0.8 - 0.9	pg/g FW	
Dechlorane 604	Dec604	1.3 - 1.4	pg/g FW	
syn-Dechlorane Plus®	Syn-DP	---	pg/g FW	syn-DP + anti-DP
anti-Dechlorane Plus®	Anti-DP	---	pg/g FW	syn-DP + anti-DP
Cl10-Dechlorane Plus®	Cl10-AntiDP	0.5 - 1.7	pg/g FW	
Cl11-Dechlorane Plus®	Cl11-AntiDP	1.1 - 6.5	pg/g FW	
1,5-Dechloran Plus® Mono Addukt	DPMA	0.3 - 0.3	pg/g FW	
2,2′,5,5′-Tetrabromobiphenyl	PBB 52	0.00262 - 0.00288	ng/g	
2,2′,4,5,5′-Pentabromobiphenyl	PBB 101	0.00524 - 0.00576	ng/g	
2,2′,4,4′,5,5′-Hexabromobiphenyl	PBB 153	0.00786 - 0.00863	ng/g	
2,2′,3,4,4′,5,5′-Heptabromobiphenyl	PBB 180	0.0131 - 0.0144	ng/g	
2,2′,3,3′,4,4′,5,5′-Octabromobiphenyl	PBB 194	0.0262 - 0.0288	ng/g	
2,2′,3,3′,4,4′,5,5′,6-Nonabromobiphenyl	PBB 206	0.0524 - 0.0576	ng/g	
Decabromobiphenyl	PBB 209	0.131 - 0.144	ng/g	
Perfluorobutanoic acid	PFBA	0.30	ng/g	
Perfluoropentanoic acid	PFPA	0.30	ng/g	
Perfluorohexanoic acid	PFHxA	0.206 - 0.62	ng/g	
Perfluoroheptanoic acid	PFHpA	0.206 - 2.9	ng/g	
Perfluoroctanoic acid	PFOA	0.30 - 0.53	ng/g	
Perfluorononanoic acid	PFNA	0.30 - 0.50	ng/g	
Perfluorodecanoic acid	PFDA	0.206 - 0.50	ng/g	
Perfluoroundecanoic acid	PFUnA	0.206 - 0.50	ng/g	
Perfluorododecanoic acid	PFDoA	0.206 - 0.50	ng/g	
Perfluorotridecanoic acid	PFTrA	0.30 - 0.60	ng/g	
Perfluorotetradecanoic acid	PFTeA	0.411 - 1.3	ng/g	

Substance	Abbreviation	LOQ	Unit	Statistics
Perfluorbutane sulfonic acid	PFBS	0.205 - 0.228	ng/g	
Perfluorohexane suflonic acid	PFHxS	0.205 - 0.228	ng/g	
Perfluoroheptane sulfonic acid	PFHpS	0.205 - 0.228	ng/g	
Perfluoroctane sulfonic acid	PFOS	0.205 - 0.50	ng/g	
Perfluorodecane sulfonic acid	PFDS	0.205 - 0.228	ng/g	
Perfluoroctane sulfonamide	PFOSA	0.30 - 0.40	ng/g	
1H,1H,2H,2H-Perfluorhexane sulfonic acid	4:2 FTS	0.205 - 0.228	ng/g	
1H,1H,2H,2H-Perfluoroctane sulfonic acid	6:2 FTS	0.3 - 5.5	ng/g	
1H,1H,2H,2H-Perfluordecane sulfonic acid	8:2 FTS	0.41 - 0.457	ng/g	

LOQ: (range of) sample-specific limits of quantification; no values below LOQ (all measurements ≥ LOQ); Statistics: compounds included in the statistical analysis (individual substances and sum parameters)

Figure S1: Random Forest-modeled distribution of total concentrations of 16 PAH (excl. LOQ) in moss in Germany, 2020

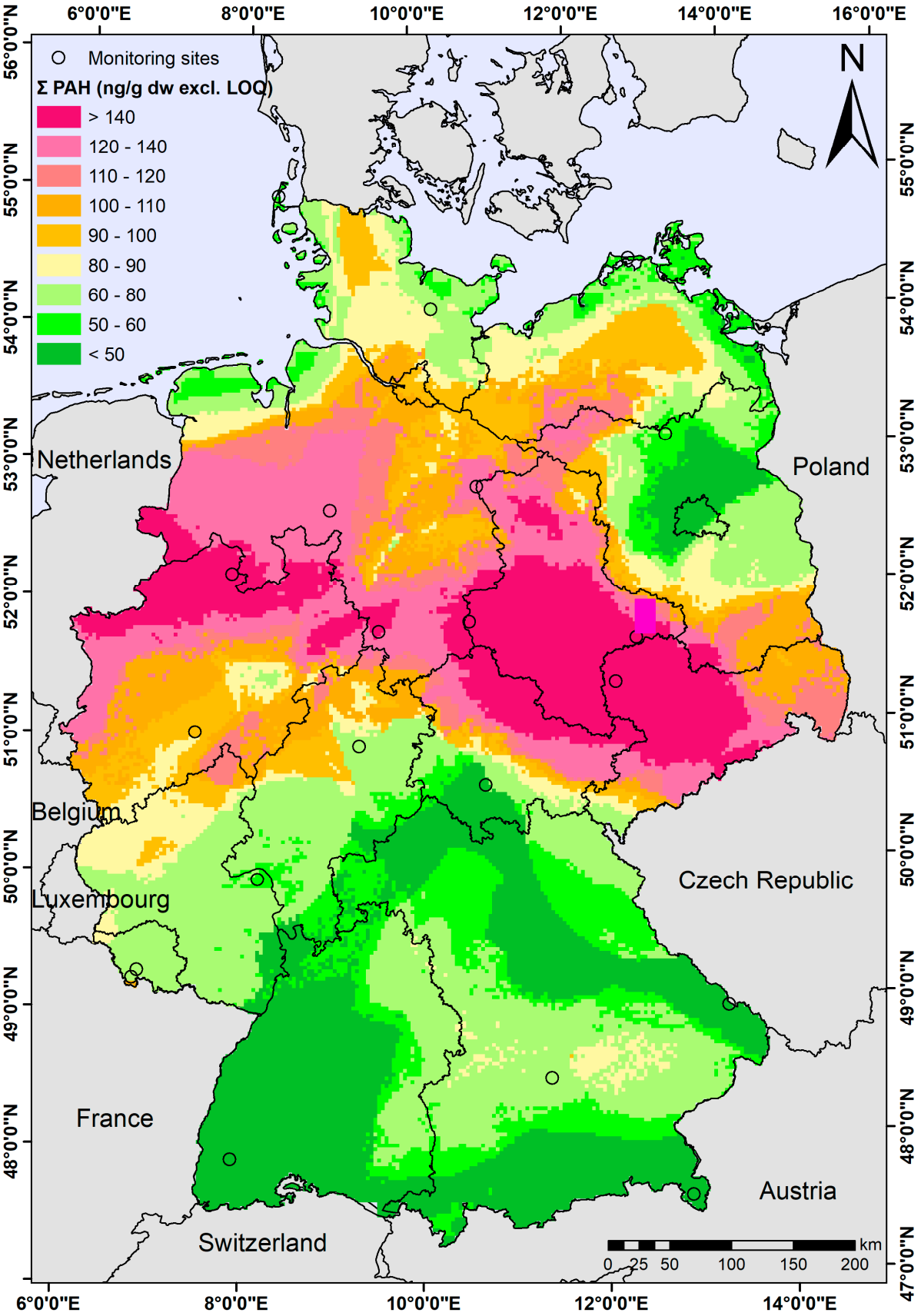


Figure S2: Random Forest-modeled distribution of total concentrations of PCDD/F (excl. LOQ) in moss in Germany, 2020

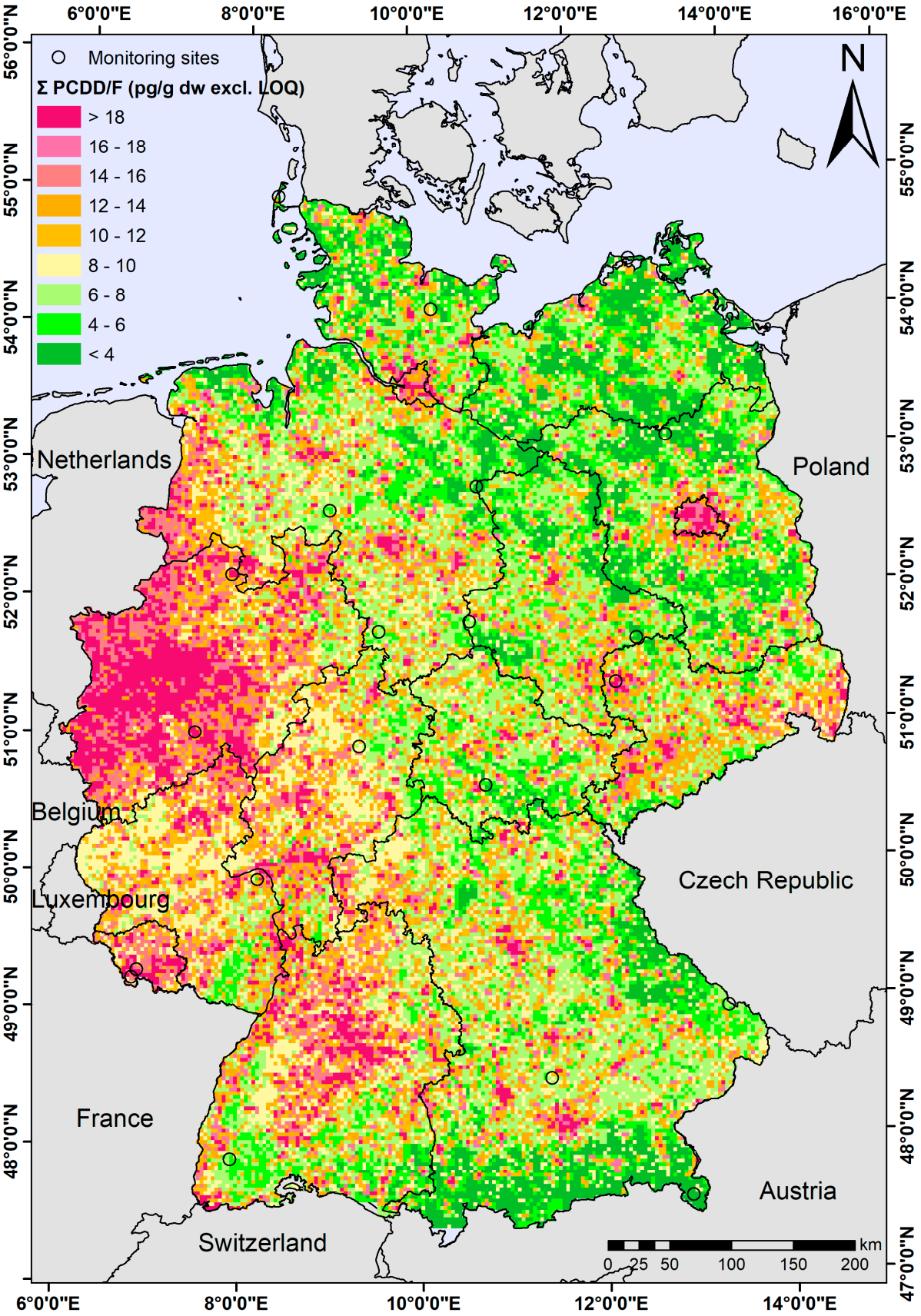


Figure S3: Random Forest-modeled distribution of total concentrations of PCDD/F TEQ values (excl. LOQ) in moss in Germany, 2020

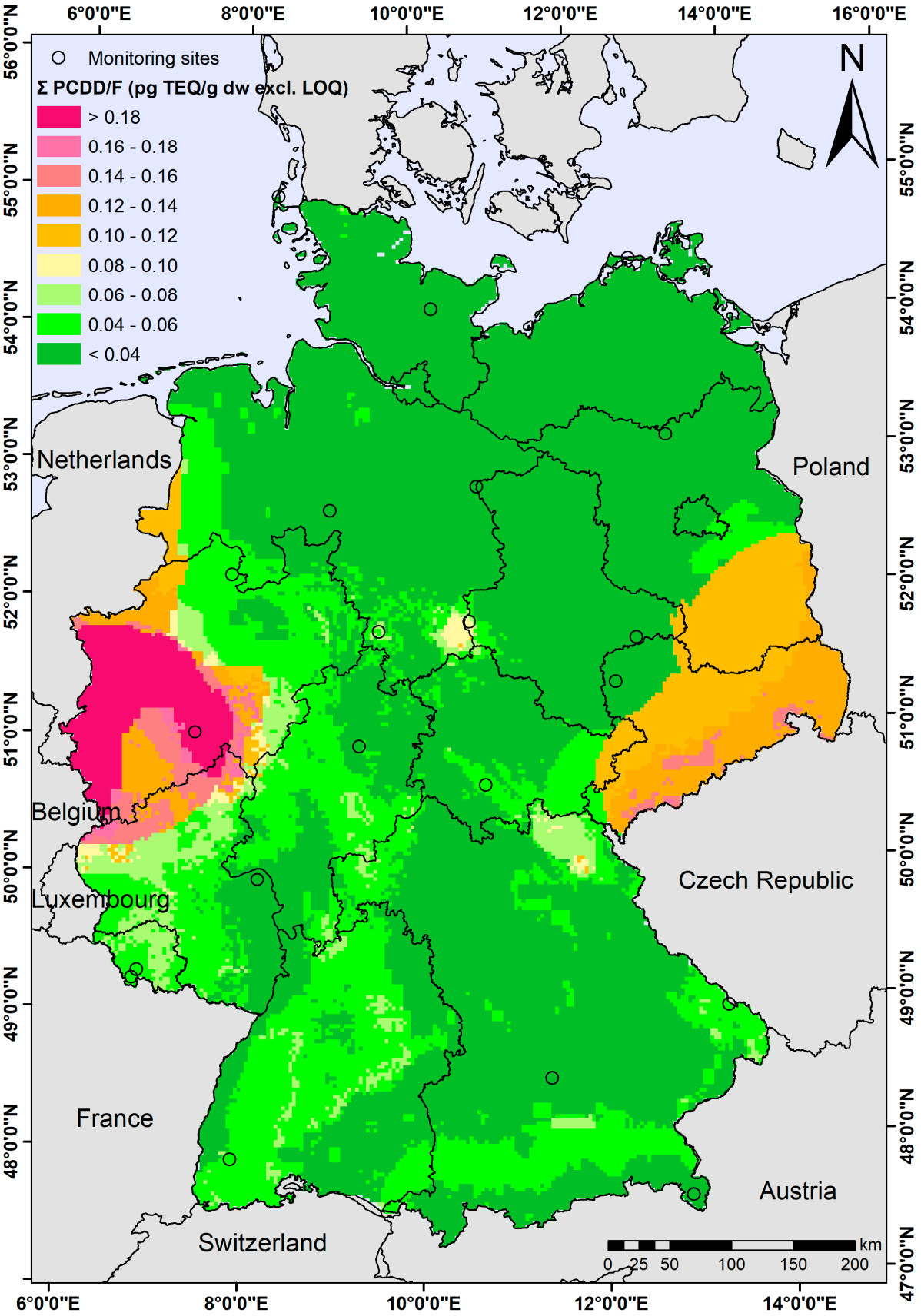


Figure S4: Random Forest-modeled distribution of total concentrations of HBCD (excl. LOQ) in moss in Germany, 2020

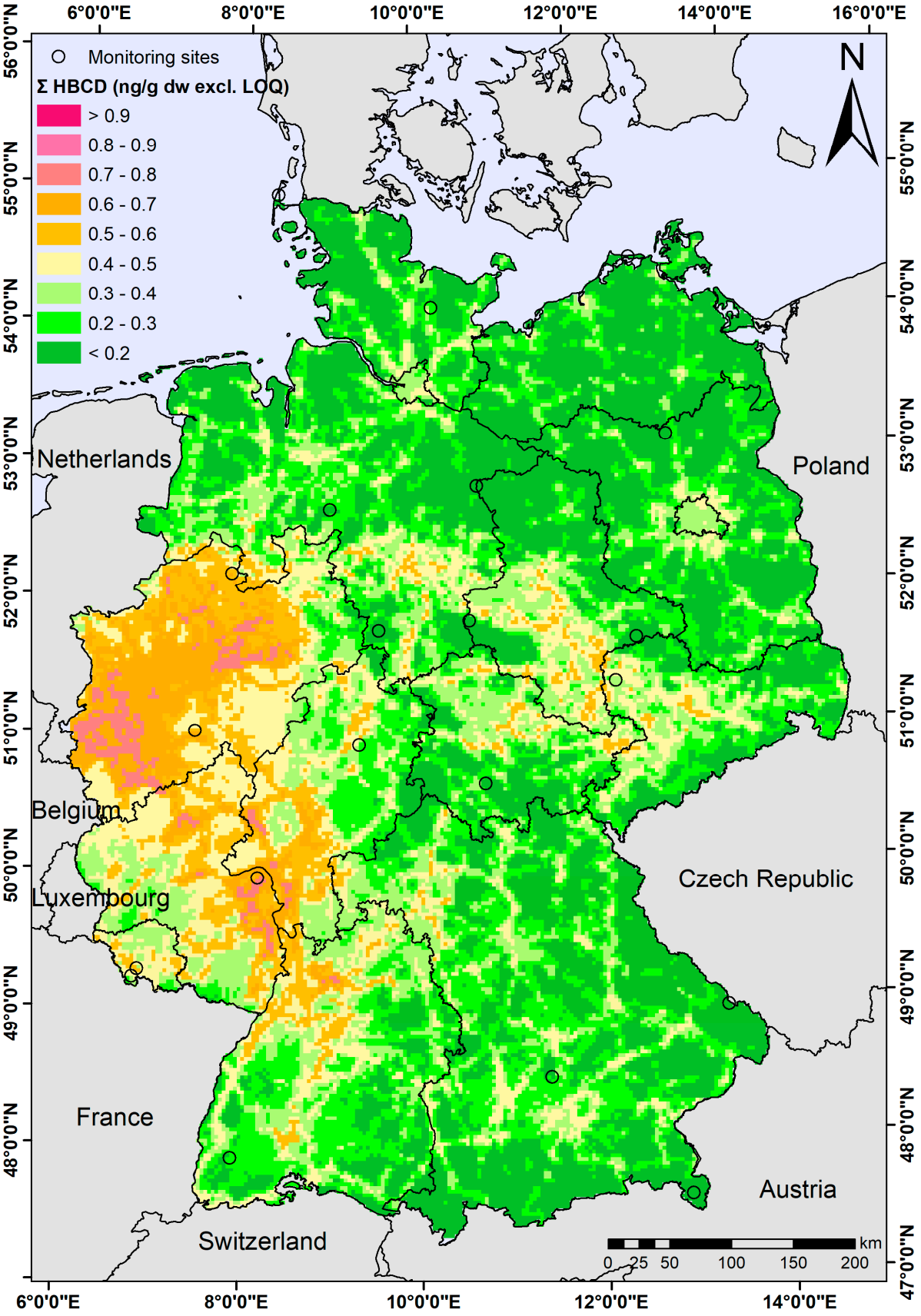


Figure S5: Random Forest-modeled distribution of total concentrations of 7 PBDE (excl. LOQ) in moss in Germany, 2020

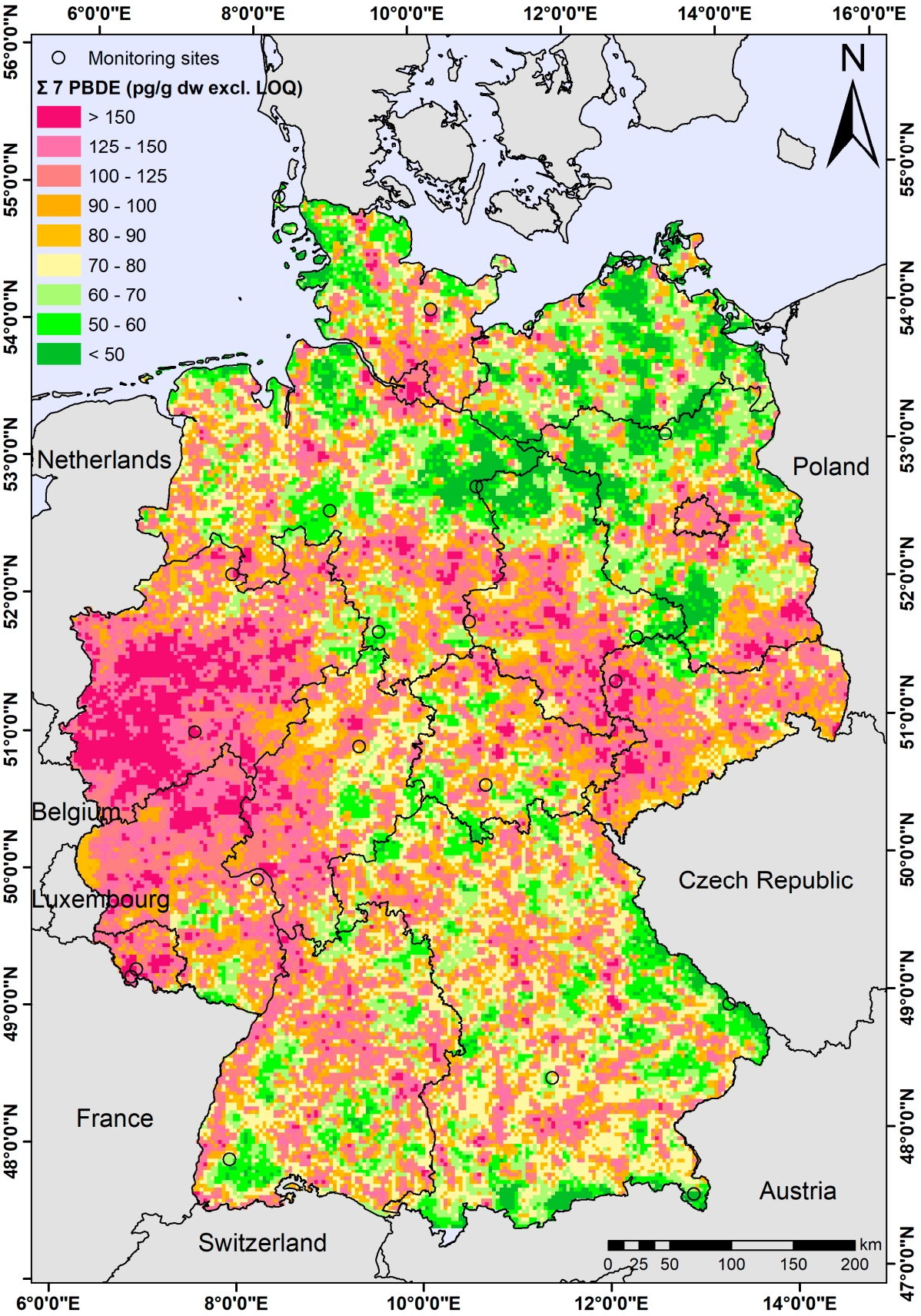


Figure S6: Random Forest-modeled distribution of BDE 209 concentrations (excl. LOQ) in moss in Germany, 2020

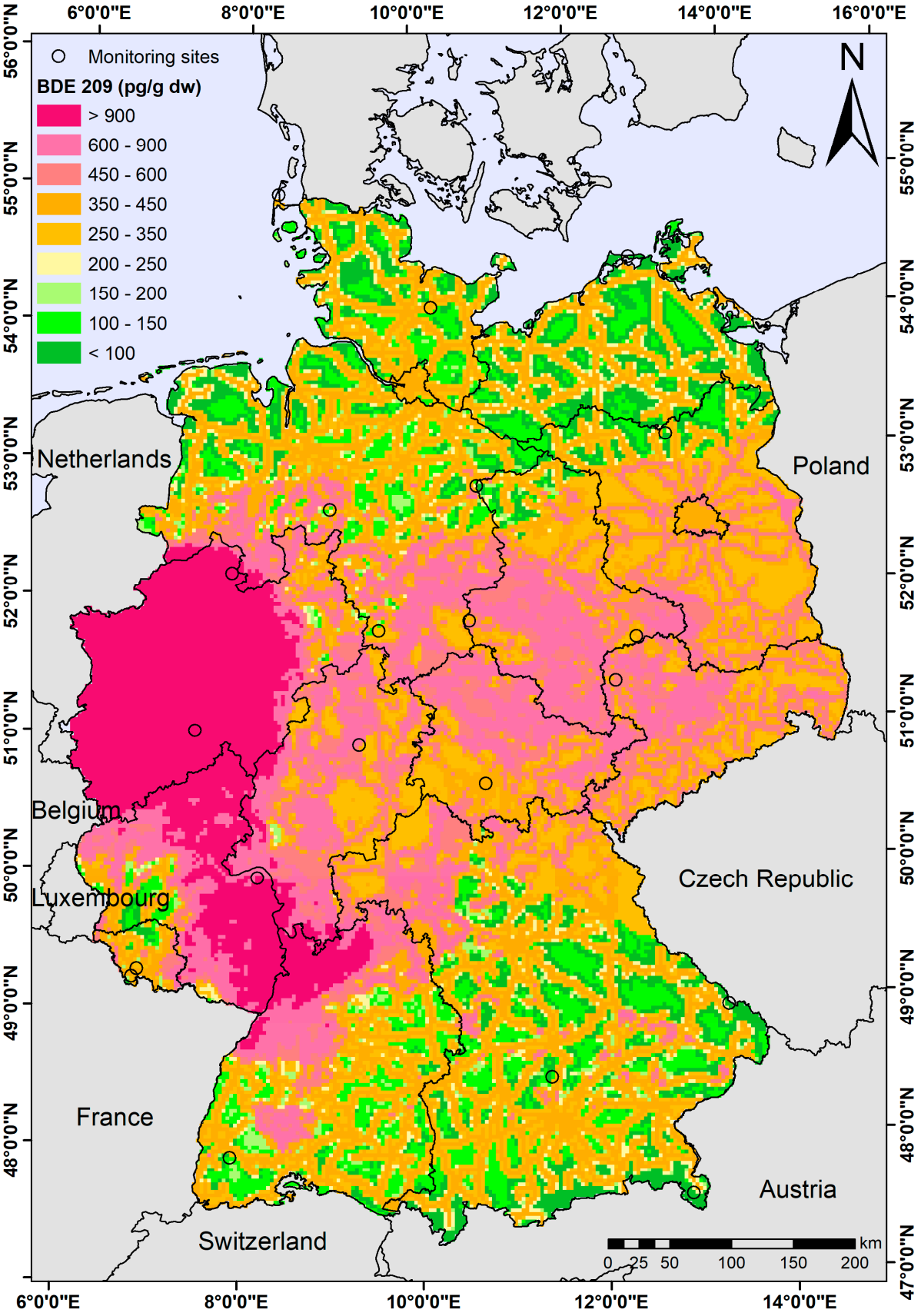


Figure S7: Random Forest-modeled distribution of total concentrations of Dechlorane Plus (syn-DP + anti-DP; excl. LOQ) in moss in Germany, 2020

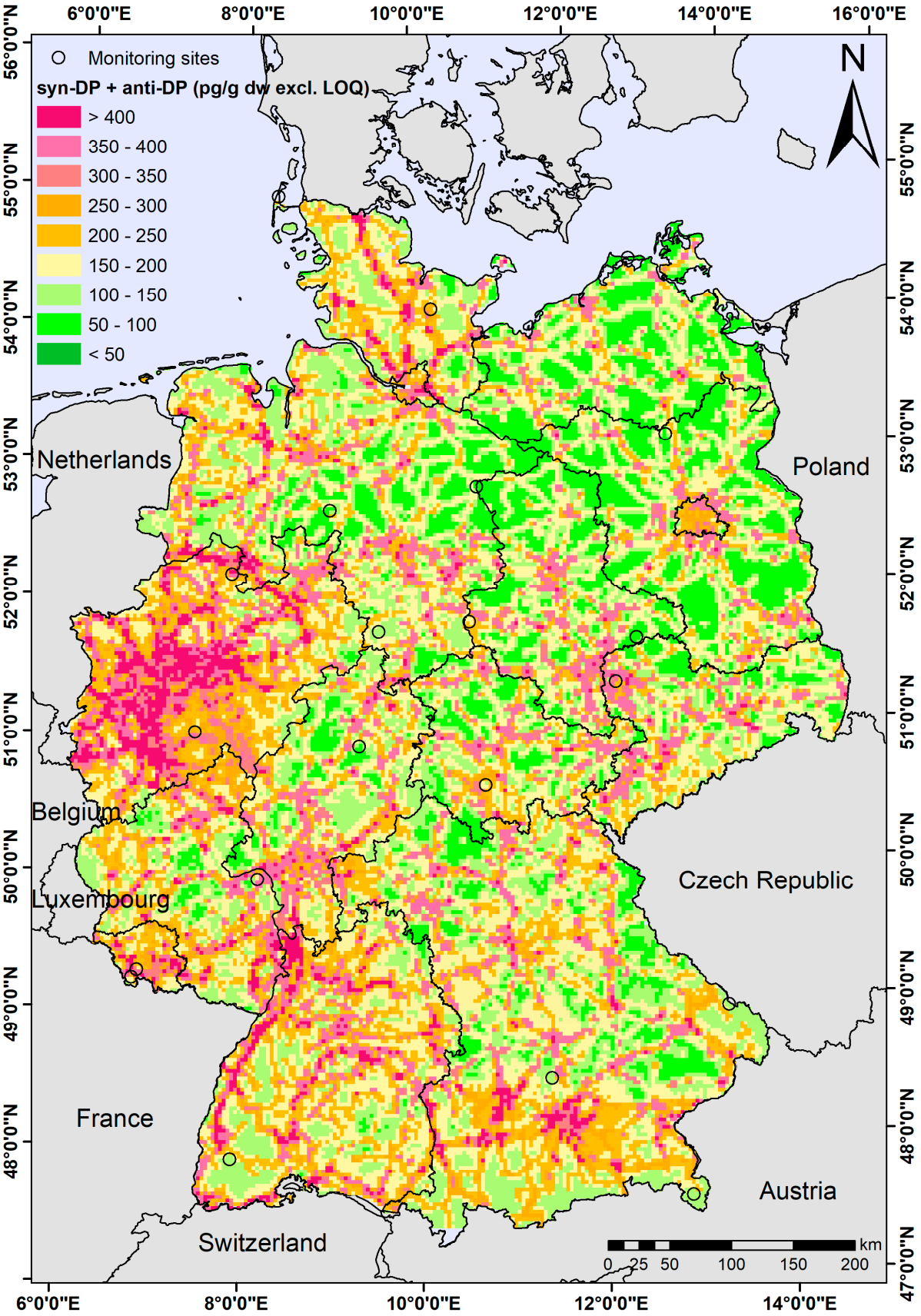


Figure S8: Random Forest-modeled distribution of DBDPE concentrations (excl. LOQ) in moss in Germany, 2020

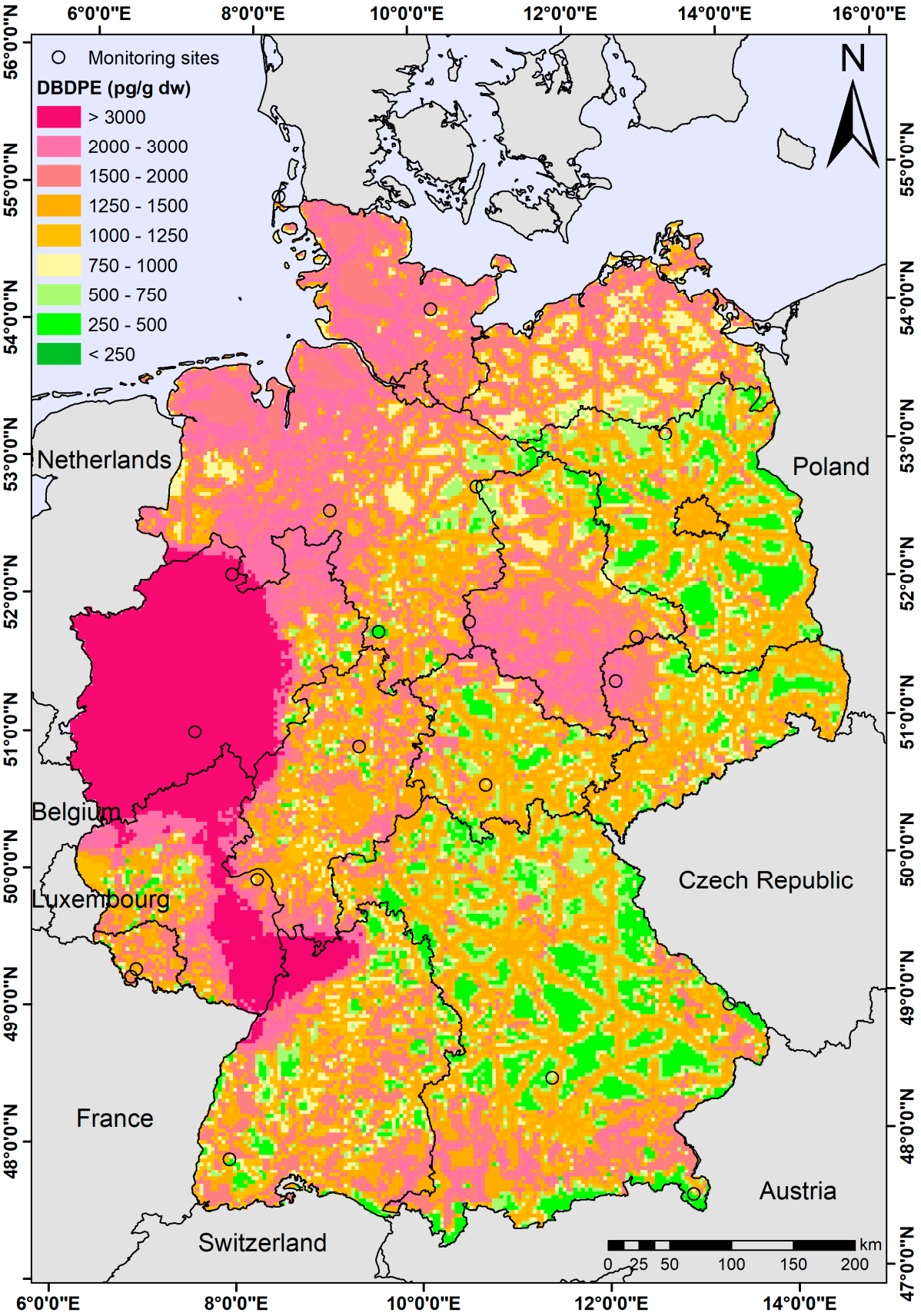


Figure S9: Random Forest-modeled distribution of DPTE concentrations (excl. LOQ) in moss in Germany, 2020

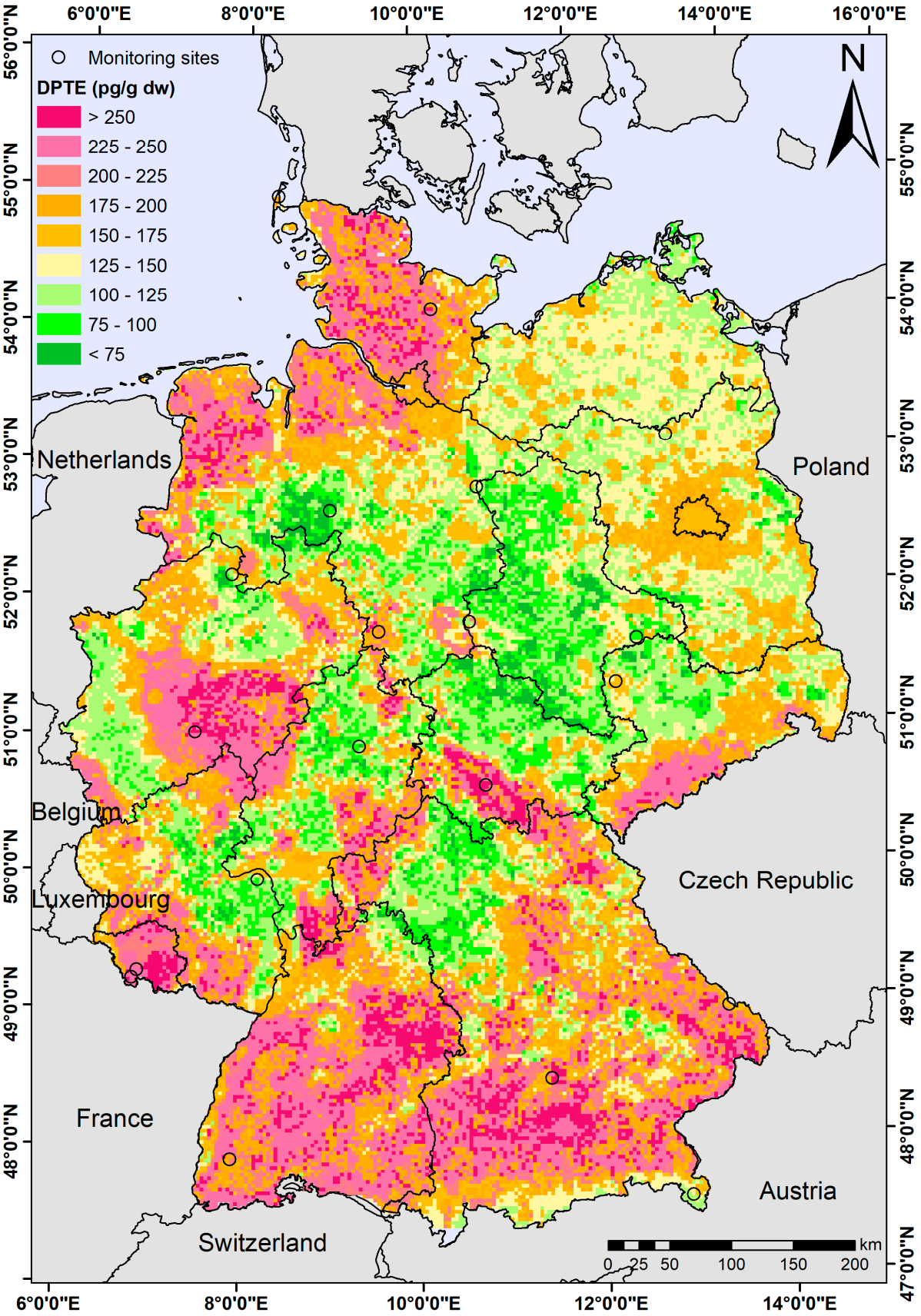


Figure S10: Random Forest-modeled distribution of PBT concentrations (excl. LOQ) in moss in Germany, 2020

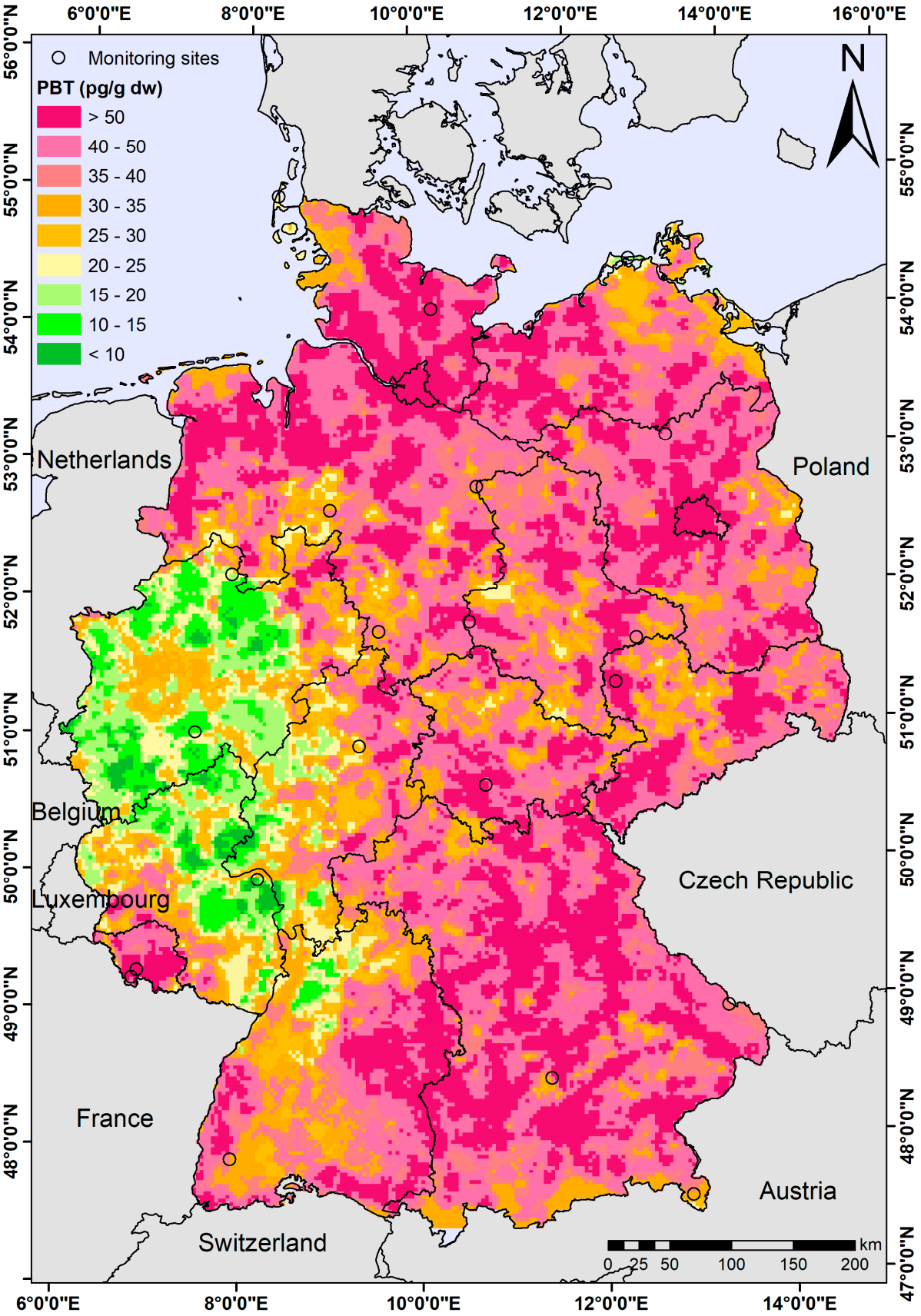


Figure S11: Random Forest-modeled distribution of HBBz concentrations (excl. LOQ) in moss in Germany, 2020

