

Supporting Information

Plant uptake of per- and polyfluoroalkyl substances at a contaminated fire training facility to evaluate the phytoremediation potential of various plant species

Laura Gobelius ^a, Jeffrey Lewis ^b, Lutz Ahrens ^{a,*}

^a Department of Aquatic Sciences and Assessment, Swedish University of Agricultural Sciences (SLU), Box 7050, SE-750 07 Uppsala, Sweden

^b Tyréns AB, Västra Norrlandsgatan 10B, 903 27 Umeå, Sweden

* Corresponding Author: Lutz Ahrens, email: lutz.ahrens@slu.se; phone: +46 (0)70-2972245

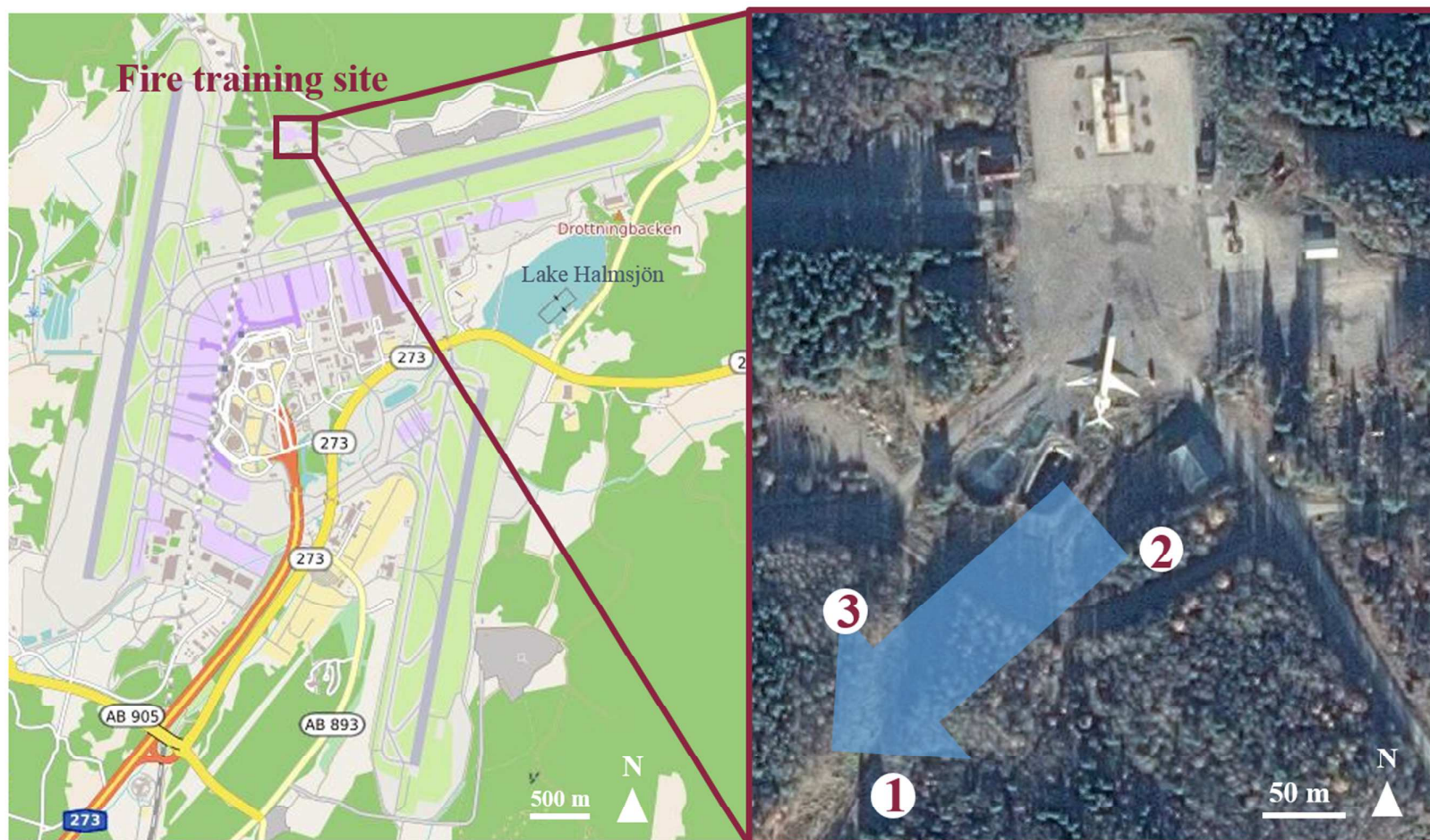


Figure S1 Map of Arlanda airport and aerial photo showing the fire training site (both images accessed on the 11th August 2017). The map was derived from openstreetmap.org (OpenStreetMap Foundation, ODbL): <https://www.openstreetmap.org/#map=13/59.6477/17.9117>. The aerial photo was taken from google maps (Google, DigitalGlobe): <https://www.google.se/maps/place/Arlanda/@59.6629413,17.9350544,27m/data=!3m1!1e3!4m5!3m4!1s0x465fbc6344d05993:0x2600fef3d64a6e12!8m2!3d59.6338076!4d17.8967802>

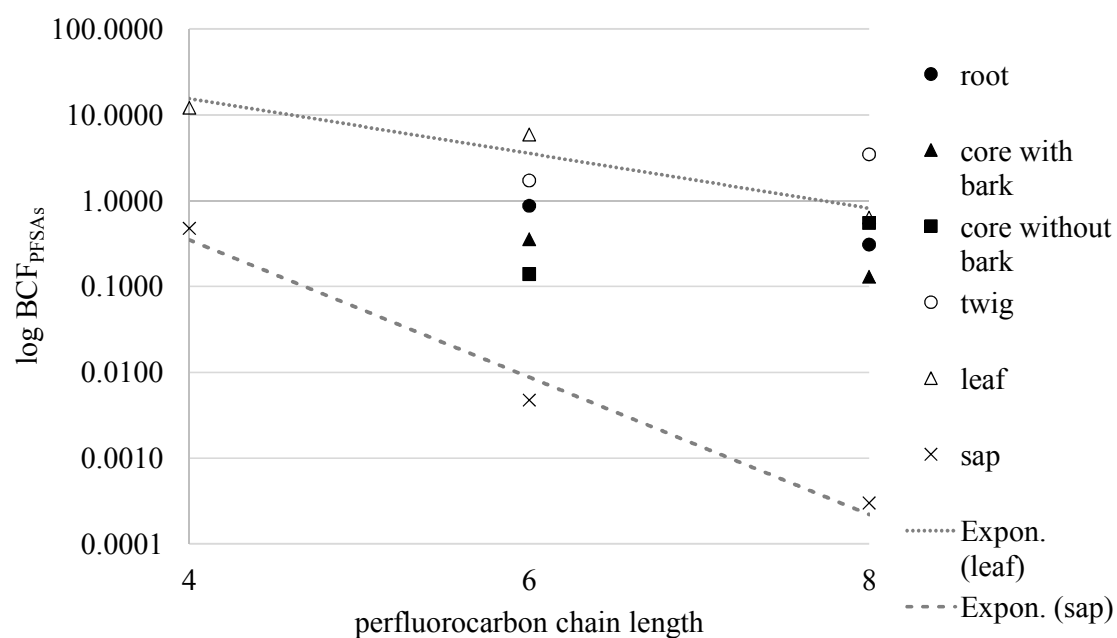


Figure S2 Median BCF_{ss} for birch concentrations related to soil concentrations in silver birch for PFSA's. The calculations were based on plant tissues concentrations [$ng\ kg^{-1}\ ww$], sap and groundwater concentrations [$ng\ L^{-1}$]. Trend lines have been added if applicable.

Table S1 Per- and polyfluoroalkyl substance (PFAS) analytes, CAS registry numbers, acronyms, supplier and purity^a

Analyte	CAS No	Acronym	Supplier (purity)
target analytes			
perfluorobutane sulfonic acid	375-73-5 or 59933-66-3	PFBS	Wellington Laboratories (>98%)
perfluorohexane sulfonic acid	355-46-4	PFHxS	Wellington Laboratories (>98%)
perfluorooctane sulfonic acid	1763-23-1	PFOS	Wellington Laboratories (>98%)
perfluorodecane sulfonic acid	335-77-3	PFDS	Wellington Laboratories (>98%)
perfluorobutanoic acid	375-22-4	PFBA	Wellington Laboratories (>98%)
perfluoropentanoic acid	2706-90-3	PFPeA	Wellington Laboratories (>98%)
perfluorohexanoic acid	307-24-4	PFHxA	Wellington Laboratories (>98%)
perfluoroheptanoic acid	375-85-9	PFHpA	Wellington Laboratories (>98%)
perfluorooctanoic acid	335-67-1	PFOA	Wellington Laboratories (>98%)
perfluorononanoic acid	375-95-1	PFNA	Wellington Laboratories (>98%)
perfluorodecanoic acid	335-76-2	PFDA	Wellington Laboratories (>98%)
perfluoroundecanoic acid	2058-94-8	PFUnDA	Wellington Laboratories (>98%)
perfluorododecanoic acid	307-55-1	PFDoDA	Wellington Laboratories (>98%)
perfluorotridecanoic acid	72629-94-8	PFTriDA	Wellington Laboratories (>98%)
perfluorotetradecanoic acid	376-06-7	PFTeDA	Wellington Laboratories (>98%)
perfluorohexadecanoic acid	67905-19-5	PFHxDA	Wellington Laboratories (>98%)
perfluorooctadecanoic acid	16517-11-6	PFOcDA	Wellington Laboratories (>98%)
perfluorooctane sulfonamide	754-91-6	FOSA	Wellington Laboratories (>98%)
<i>N</i> -methyl perfluorooctane sulfonamide	31506-32-8	MeFOSA	Wellington Laboratories (>98%)
<i>N</i> -ethyl perfluorooctane sulfonamide	4151-50-2	EtFOSA	Wellington Laboratories (>98%)
<i>N</i> -methyl perfluorooctane sulfonamidoethanol	24448-09-7	MeFOSE	Wellington Laboratories (>98%)
<i>N</i> -ethyl perfluorooctane sulfonamidoethanol	1691-99-2	EtFOSE	Wellington Laboratories (>98%)
perfluorooctanesulfonamidoacetic acid	2806-24-8	FOSAA	Wellington Laboratories (>98%)
<i>N</i> -methylperfluorooctanesulfonamidoacetic acid	2355-31-9	MeFOSAA	Wellington Laboratories (>98%)
<i>N</i> -ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	EtFOSAA	Wellington Laboratories (>98%)
6:2 fluorotelomersulfonate	425670-75-3	6:2 FTSA	Apollo Scientific Ltd (n.a)
mass-labeled internal standards (IS)			
perfluoro-(¹⁸ O ₂)-hexane sulfonic acid		¹⁸ O ₂ -PFHxS	Wellington Laboratories (>98%)
perfluoro-(¹³ C ₄)-octane sulfonic acid		¹³ C ₄ -PFOS	Wellington Laboratories (>98%)
perfluoro-(¹³ C ₄)-butanoic acid		¹³ C ₄ -PFBA	Wellington Laboratories (>98%)

perfluoro-(¹³ C ₂)-hexanoic acid	¹³ C ₂ -PFHxA	Wellington Laboratories (>98%)
perfluoro-(¹³ C ₈)-octanoic acid	¹³ C ₈ -PFOA	Wellington Laboratories (>98%)
perfluoro-(¹³ C ₅)-nonanoic acid	¹³ C ₅ -PFNA	Wellington Laboratories (>98%)
perfluoro-(¹³ C ₂)-decanoic acid	¹³ C ₂ -PFDA	Wellington Laboratories (>98%)
perfluoro-(¹³ C ₂)-undecanoic acid	¹³ C ₂ -PFUnDA	Wellington Laboratories (>98%)
perfluoro-(¹³ C ₂)-dodecanoic acid	¹³ C ₂ -PFDoDA	Wellington Laboratories (>98%)
perfluoro-1-(¹³ C ₈)octane sulfonamide	¹³ C ₈ -FOSA	Wellington Laboratories (>98%)
<i>N</i> -methyl-d ₃ -perfluorooctane sulfonamide	D ₃ -MeFOSA	Wellington Laboratories (>98%)
<i>N</i> -ethyl-d ₅ -perfluorooctane sulfonamide	D ₅ -EtFOSA	Wellington Laboratories (>98%)
<i>N</i> -methyl-d ₇ -perfluorooctane sulfonamido ethanol	D ₇ -MeFOSE	Wellington Laboratories (>98%)
<i>N</i> -ethyl-d ₉ -perfluorooctane sulfonamido ethanol	D ₉ -EtFOSE	Wellington Laboratories (>98%)
<i>N</i> -methyl-d ₃ -perfluorooctanesulfonamidoacetic acid	d ₃ -N-MeFOSAA	Wellington Laboratories (>98%)
<i>N</i> -ethyl-d ₅ -perfluorooctanesulfonamidoacetic acid	d ₅ -N-Et-FOSAA	Wellington Laboratories (>98%)

^astands for “not available”

Table S2 The 26 targeted PFASs, including their acronyms, molecular formulas, structural formulas, molecular weights (MW), water solubility (S_w), acid dissociation constant (pK_a) values and the octanol-water partition coefficient ($\log K_{ow}$).

	Substance	Acronym	Molecular Formular	MW [g mol ⁻¹]	S_w [mg L ⁻¹]	pK_a	Log K_{ow} [L kg ⁻¹]
PFCAs	perfluorobutanoate	PFBA	C ₃ F ₇ CO ₂ ⁻	214	563 ^a	0.05 ^b 0.4 ^c	2.91 ^d 2.82 ^a
	perfluoro- pentanoate	PFPeA	C ₄ F ₉ CO ₂ ⁻	264	113000 ^a	-0.10 ^b	3.69 ^d 3.43 ^a
	perfluorohexanoate	PFHxA	C ₅ F ₁₁ CO ₂ ⁻	314	15700 ^c 21700 ^a	-0.17 ^b -0.16 ^c	4.50 ^d 4.06 ^a
	perfluoro- heptanoate	PFHpA	C ₆ F ₁₃ CO ₂ ⁻	364	118.0 ^e 4180 ^a	-0.20 ^b	5.36 ^d 4.67 ^a
	perfluorooctanoate	PFOA	C ₇ F ₁₅ CO ₂ ⁻	414	4340 ^c 3400 ^c	-0.21 ^{b,c}	6.26 ^d 5.30 ^a
	perfluorononanoate	PFNA	C ₈ F ₁₇ CO ₂ ⁻	464	131 ^a	-0.21 ^b	7.23 ^d 5.92 ^a
	perfluorodecanoate	PFDA	C ₉ F ₁₉ CO ₂ ⁻	514	260 ^c 25 ^a	-0.22 ^b	8.26 ^d 6.50 ^a
	perfluoro- undecanoate	PFUnDA	C ₁₀ F ₂₁ CO ₂ ⁻	564	92.3 ^e 4.13 ^a	-0.22 ^b	2.32 ^e 7.15 ^a
	perfluorodo- decanoate	PFDoDA	C ₁₁ F ₂₃ CO ₂ ⁻	614	7.05 * 10 ^{-1a}	-0.22 ^b	7.77 ^a
	perfluorotri- decanoate	PFTriDA	C ₁₂ F ₂₅ CO ₂ ⁻	664	1.71 * 10 ^{-1a}	-0.22 ^b	8.25 ^a
	perfluorotetra- decanoate	PFTeDA	C ₁₃ F ₂₇ CO ₂ ⁻	714	2.71 * 10 ^{-2a}	-0.22 ^b	8.90 ^a
	perfluorohexa- decanoate	PFHxDA	C ₁₅ F ₃₁ CO ₂ ⁻	814	n.a.	-0.22 ^b	n.a.
	perfluoroocta- decanoate	PFOcDA	C ₁₇ F ₃₅ CO ₂ ⁻	914	n.a.	-0.22 ^a	n.a.
PFSA	perfluorobutane- sulfonate	PFBS	C ₄ F ₉ SO ₃ ⁻	300	510 ^c 46200 ^c	0.14 ^{b,c}	3.90 ^a
	perfluorohexane- sulfonate	PFHxS	C ₆ F ₁₃ SO ₃ ⁻	400	1400 ^c	0.14 ^{b,c}	0.97 ^e 5.17 ^a
	perfluorooctane- sulfonate	PFOS	C ₈ F ₁₇ SO ₃ ⁻	500	570 ^{c,e}	0.14 ^b -3.27 ^c	4.67 ^d 7.66 ^a
	perfluorodecane- sulfonate	PFDS	C ₁₀ F ₂₁ SO ₃ ⁻	600	n.a.	0.14 ^b	7.66 ^a
FOSAs	perfluorooctane- sulfonamide	FOSA	C ₈ F ₁₇ SO ₂ NH ₂	499	1850000 ^a	6.56 ^b	2.56 ^e
	methylperfluoro- octansulfonamide	MeFOSA	C ₈ F ₁₇ SO ₂ NHCH ₃	513	0.81 ^c 263000 ^a	7.69 ^b	6.07 ^a
	ethylperfluoro- octanesulfonamide	EtFOSA	C ₈ F ₁₇ SO ₂ NHCH ₂ CH ₃	527	306 ^a	7.91 ^b	6.71 ^a
DSEs	methylperfluoro- octanesulfo- amidoethanol	MeFOSE	C ₈ F ₁₇ SO ₂ N (CH ₂) ₂ CH ₃ OH	557	0.81 ^c	14.4 ^b	n.a.

	ethylperfluoro-octanesulfonamido-ethanol	EtFOSE	$C_8F_{17}SO_2N(CH_2)_3OH$	556	n.a.	14.4 ^b	n.a.
FOSAAs	perfluorooctane-sulfonamidoacetic acid	FOSAA	$C_8F_{17}SO_2NHCH_2CO_2$	557	n.a.	n.a.	n.a.
	methylperfluoro-octanesulfonamido-acetic acid	MeFOSA A	$C_8F_{17}SO_2NCH_3CH_2CO_2$	558	n.a.	-3.27 ^f	n.a.
	ethylperfluoro-octanesulfonamido-acetic acid	EtFOSAA	$C_8F_{17}SO_2N(CH_2)_2CH_3CO_2$	584	n.a.	n.a.	n.a.
FTSAs	6:2 fluorotelomer-sulfonate	6:2 FTSA	$C_8H_4F_{13}SO_3^-$		n.a.	n.a.	n.a.
^a Wang et al., 2011		^d Rayne and Forest, 2009		Not available (n.a.)			
^b Ahrens et al., 2012		^e Rahman et al., 2013					
^c Du et al., 2014		^f Brooke et al., 2004					

Table S3 Summary of the three sampling locations showing ID, coordinates, and number of samples for groundwater, surface water, soil and total number of plant samples (number of plant species in brackets, see Table 4 for details)

ID	Coordinates	Sample type	Number of samples	
	Latitude/Longitude		March 2016	June 2016
1	59°39'41.93308" N/ 17°56'6.28575" E	Groundwater, depth 1.10 m	1	-
		Surface water	-	-
		Soil	1	1
		Plant species (no of species)	4 (2)	7 (4)
2	59°39'43.00477" N/ 17°56'11.08658" E	Groundwater, depth 1.80 m	1	-
		Surface water	-	-
		Soil	1	1
		Plant species	8 (2)	11 (5)
3	59°39'43.19864" N/ 17°56'4.54373" E	Groundwater, depth 1.40 m	2	-
		Surface water	1	-
		Soil	1	1
		Plant species	5 (2)	9 (4)
		Σ plant samples	17	27

Table S4 Sampled species, sampled plant tissues, diameter at breast height (DBH) of the individual trees and number of samples in brackets from the three sampling locations in March and June 2016.

Species	Species name English	Site 1	Site 2	Site 3
March 2016				
<i>Betula pendula</i>	silver birch	root (1), cores (2), twigs (1), leaves (1) DBH: 22 & 27 cm	root (1), cores (2), twigs (1), leaves (1) DBH: 27 & 19 cm	root (1), core (1), leaves (1) DBH: 35 cm
<i>Picea abies</i>	Norway spruce	-	root (1), core (1), twig (1), needles (1) DBH: 26 cm	core (1), twig (1), needles (1) DBH: 30 cm
June 2016				
<i>Betula pendula</i>	silver birch	leaves (1)	leaves (1)	leaves (1)
<i>Prunus padus</i>	bird cherry	-	twigs (1), leaves(1),berries (1)	twigs (1), leaves(1),berries (1)
<i>Sorbus aucuparia</i>	mountain ash	twigs (1), leaves (1)	twigs (1), leaves (1)	twigs (1), leaves (1)
<i>Aegopodium podagraria</i>	ground elder	leaves (1)	stems (1), leaves (1)	stems (1), leaves (1)
<i>Phegopteris connectilis</i>	long beechfern	root (1), leaves (1)	-	-
<i>Fragaria vesca</i>	wild strawberry	-	leaves (1), berries (1)	-

Table S5 Method and solvent blanks with their concentrations per individual PFAS and the corresponding method detection limit (MDL).^a

<i>n</i>	Method Blanks				Solvent Blanks			
	WATER		PLANT & SOIL		homogenizer		coffee grinder	
	4		5 & 5		1		blank	
	blank	MDLs	blank	MDLs	blank	MDLs	blank	MDLs
	[ng/L]	[ng/L]	[ng/g dw]	[ng/g dw]	[ng/L]	[ng/L]	[ng/L]	[ng/L]
PFBA	0.088	2.10	0.127	0.208	ND	ND	ND	ND
PFPeA	0.0053	0.199	0.368	0.193	ND	ND	ND	ND
PFHxA	ND	0.269	0.091	0.139	ND	ND	ND	ND
PFHpA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFOA	ND	0.269	0.002	0.003	ND	ND	ND	ND
PFNA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFDA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFUnDA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFDoDA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFTriDA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFTeDA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFHxDA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFOcDA	ND	0.269	ND	0.017	ND	ND	ND	ND
PFBS	0.0073	0.264	0.040	0.060	0.0017	0.0093	ND	ND
PFHxS								
linear	0.0069	0.259	0.054	0.077	ND	ND	ND	ND
PFHxS								
branched	0.184	0.269	0.006	0.010	ND	ND	ND	ND
PFOS								
linear	0.123	3.23	0.047	0.040	ND	ND	ND	ND
PFOS								
branched	0.031	0.967	0.020	0.021	ND	ND	ND	ND
PFDS	ND	0.269	ND	0.017	ND	ND	ND	ND
6:2 FTSA	0.071	0.269	ND	0.017	ND	ND	ND	ND
FOSA								
linear	ND	0.269	ND	0.017	0.0090	0.049	ND	ND
FOSA								
branched	ND	0.269	ND	0.017	ND	ND	ND	ND
MeFOSA	ND	0.269	ND	0.017	ND	ND	ND	ND
EtFOSA	ND	0.269	ND	0.017	ND	ND	ND	ND
MeFOSE	ND	0.269	ND	0.017	ND	ND	ND	ND
EtFOSE	ND	0.269	ND	0.017	ND	ND	ND	ND
FOSAA	ND	0.269	ND	0.017	0.014	0.075	ND	ND
MeFOSA								
A	ND	0.269	ND	0.017	ND	ND	ND	ND
EtFOSAA	ND	0.269	ND	0.017	ND	ND	ND	ND

^aND stands for “not detected”

Table S6 The relative standard deviation (RSD) for the analysed duplicates for water, birch sap, soil and plant samples listed individually per PFAS.^a

<i>n</i>	water 5 mean RSD	birch sap 8 mean RSD	soil 6 mean RSD	plants 45 mean RSD
PFBA	7.78	12.2	4.20	28.0
PFPeA	3.91	9.56	4.83	10.0
PFHxA	5.90	11.4	3.71	9.41
PFHpA	5.81	13.7	4.79	34.7
PFOA	6.43	21.5	3.63	23.1
PFNA	42.5	ND	6.97	7.99
PFDA	13.3	ND	13.8	11.4
PFUnDA	ND	ND	8.66	ND
PFDoDA	ND	ND	ND	94.8
PFTriDA	ND	ND	ND	ND
PFTeDA	ND	ND	ND	ND
PFHxDA	ND	ND	ND	ND
PFOcDA	ND	ND	ND	ND
PFBS	4.98	16.3	30.0	24.0
PFHxS linear	6.44	16.8	4.99	13.1
PFHxS branched	8.31	47.5	ND	36.6
PFOS linear	4.32	13.7	13.2	18.0
PFOS branched	5.37	47.5	29.1	27.2
PFDS	ND	ND	ND	ND
6:2 FTSA	6.98	22.9	171	20.8
FOSA linear	4.81	22.5	4.30	12.9
FOSA branched	1.97	ND	6.92	ND
MeFOSA	ND	ND	15.0	ND
EtFOSA	ND	ND	ND	ND
MeFOSE	ND	ND	141	ND
EtFOSE	ND	ND	ND	ND
FOSAA	ND	ND	1.98	ND
MeFOSAA	ND	ND	ND	ND
EtFOSAA	ND	ND	ND	ND

^aND stands for “not detected”

Table S7 The recoveries for the individual substances and matrices.

<i>n</i>	groundwater 12		birch sap 21		soil 18		plants 97	
	mean	± SD	mean	± SD	mean	± SD	mean	± SD
¹³ C ₄ PFBA	32	28	127	143	145	57	28	32
¹³ C ₂ PFHxA	84	20	60	57	118	42	12	12
¹³ C ₄ PFOA	110	54	97	92	118	36	23	18
¹³ C ₅ PFNA	104	38	93	86	108	43	18	17
¹³ C ₂ PFDA	161	38	90	88	116	38	29	20
¹³ C ₂ PFUnDA	149	34	71	76	98	38	28	18
¹³ C ₂ PFDODA	126	32	49	55	111	26	27	16
¹⁸ O ₂ PFHxS	97	32	94	75	176	40	43	26
¹³ C ₄ PFOS	98	64	82	74	156	37	43	29
¹³ C ₈ -FOSA	145	35	53	57	120	44	36	22
d ₃ -N-MeFOSA	59	28	45	46	124	41	103	42
d ₅ -N-EtFOSA	37	27	34	40	104	39	27	17
d ₇ -N-MeFOSE	92	29	50	54	120	38	26	18
d ₉ -N-EtFOSE	87	30	37	41	98	37	25	15
d ₃ -N-MeFOSAA	171	43	92	96	168	56	39	30
d ₅ -N-EtFOSAA	167	43	85	86	158	56	49	34

Table S8 Concentrations [ng/L] of the analysed PFCAs in water samples for sites 1, 2 and 3. The standard deviation (SD) refers to duplicates. Results are rounded to two significant figures.^a

Sample ID	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160322_LG_site1_GW	59	153	207	69	87	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	575
SD	4.0	2.8	12	3.0	6.2	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160322_LG_site1B_GW	57	150	202	71	86	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	566
SD	5.2	7.1	17	3.6	4.8	0.30	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160322_LG_site2_GW	279	582	783	565	906	60	1.3	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	3177
SD	4.7	20	34	1.1	2.5	1.2	0.011	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160322_LG_site3_GW	563	1151	2198	1178	1768	28	0.94	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	6886
SD	92	57	146	175	260	3.7	0.040	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160322_LG_site3_SW	12	24	25	11	13	2.1	0.52	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	87
SD	0.61	1.1	1.1	0.49	0.60	0.28	0.18	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S9 Concentrations [ng/L] of the analysed PFSA in water samples from all three sites. The standard deviation (SD) is given for duplicate samples. Results are rounded to two significant figures.^a

Sample ID		PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSA
160322_LG_site1_GW		37	439	89	38	37	<0.27	640
	SD	1.7	32	10	0.61	1.8	<0.00	
160322_LG_site1B_GW		37	412	81	29	23	<0.27	581
	SD	1.3	22	6.0	0.48	1.3	<0.00	
160322_LG_site2_GW		1225	1461	582	10792	11170	<0.27	25230
	SD	20	25	12	338	247	<0.00	
160322_LG_site3_GW		3262	2398	1594	5789	9617	<0.27	22660
	SD	294	254	233	527	801	<0.00	
160322_LG_site3_SW		5.2	73	9.2	316	106	<0.27	510
	SD	0.32	5.3	0.56	19	6.1	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S10 Concentrations [ng/L] of the analysed FTSA, FOSAs, FOSEs and FOSAAs as well as the total amount of measured PFASs in water samples. The standard deviation (SD) is given for duplicate samples. Results are rounded to two significant figures.^a

Sample ID	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	Σ FTSAs/FOSAs/ FOSEs/FOSAAs	Σ PFASs
160322_LG_ site1_GW	10	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	10	1224
SD	0.44	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160322_LG_ site1B_GW	8.5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	8.5	1155
SD	0.63	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160322_LG_ site2_GW	2781	0.52	0.83	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	2782	31189
SD	61	0.033	0.0034	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160322_LG_ site3_GW	4152	4.3	3.9	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	4160	33705
SD	637	0.27	0.00058	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160322_LG_ site3_SW	50	3.2	1.6	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	55	652
SD	2.9	0.1	0.090	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S11 Concentrations [ng/g dw] of the analysed PFCAs in soil samples. The dry weight (dw) fraction is given in percentage, to allow for calculations of fresh soil concentrations. The standard deviation (SD) refers to duplicates. Results are rounded to two significant figures.^a

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDODA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160403_LG_ soil 1_site1	38	0.92	2.1	0.66	0.40	0.38	0.26	0.052	0.046	<0.017	<0.017	<0.017	<0.017	<0.017	4.8
SD		0.034	0.033	0.013	0.0063	0.0079	0.0080	0.0036	0.0040	<0.00	<0.00	<0.00	<0.00	<0.00	
160711_LG_ soil 1_site 1	18	1.1	2.4	0.72	0.29	0.29	0.14	0.030	0.025	<0.017	<0.017	<0.017	<0.017	<0.017	5.0
SD		0.066	0.10	0.00035	0.045	0.034	0.034	0.016	0.0032	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_ soil 2_site2	36	0.96	1.6	0.41	0.31	0.21	0.19	0.089	0.081	<0.017	<0.017	<0.017	<0.017	<0.017	3.9
SD		0.019	0.0054	0.0052	0.0038	0.0028	0.00016	0.0021	0.0017	<0.00	<0.00	<0.00	<0.00	<0.00	
160715_LG_ soil 2_site 2	13	1.6	3.4	1.3	0.87	0.57	0.26	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	8.1
SD		0.12	0.15	0.099	0.013	0.0032	0.0078	0.0027	0.0045	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_ soil 3_site3	41	1.5	3.3	1.5	1.2	0.87	0.62	0.11	0.087	<0.017	<0.017	<0.017	<0.017	<0.017	9.2
SD		0.066	0.10	0.00035	0.045	0.034	0.034	0.016	0.0032	<0.00	<0.00	<0.00	<0.00	<0.00	
160715_LG_ soil 3_site 3	21	2.5	8.3	2.0	1.0	0.44	0.36	0.070	0.089	<0.017	<0.017	<0.017	<0.017	<0.017	15
SD		0.049	1.3	0.23	0.054	0.010	0.020	0.0012	0.018	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S12 Concentrations [ng/g dw] of the analysed PFSA's in soil samples. The dry weight (dw) fraction is given in percentage. The standard deviation (SD) refers to duplicate samples. Results are rounded to two significant figures.^a

Sample ID	dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSA's
160403_LG_soil 1_site1	38	<0.060	1.2	0.022	13	2.3	0.025	17
SD		0.045	0.053	0.0076	1.0	0.14	0.0037	
160711_LG_soil 1_site 1	18	0.070	0.80	<0.010	8.2	1.2	<0.017	10
SD		0.0093	0.14	0.0054	4.3	1.7	0.0084	
160403_LG_soil 2_site2	36	0.14	1.1	0.057	11	1.8	0.038	14
SD		0.0076	0.026	0.0016	0.41	0.18	0.00088	
160715_LG_soil 2_site 2	13	0.40	2.3	<0.010	19	4.4	<0.017	26
SD		0.0013	0.011	<0.00	0.11	0.00085	<0.00	
160403_LG_soil 3_site3	41	0.25	3.4	0.26	97	26	0.11	127
SD		0.0093	0.14	0.0054	4.3	1.7	0.0084	
160715_LG_soil 3_site 3	21	0.23	2.7	<0.010	71	7.0	<0.017	81
SD		0.037	0.040	<0.00	7.5	0.60	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S13 Concentrations [ng/g dw] of the analysed FTSA, FOSA, FOSE and FOSAA as well as the sum of PFASs detected in each individual soil sample. The dry weight (dw) fraction is given in percentage. The standard deviation (SD) refers to duplicate samples. Results are rounded to two significant figures.^a

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	ΣFTSAs/ FOSAs/FOSEs/ FOSAAs	ΣPFASs
160403_LG_ soil 1_site1	38	0.13	0.35	0.088	0.050	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.62	22
SD		0.0055	0.0060	0.00050	0.0045	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160711_LG_ soil 1_site 1	18	<0.017	0.26	0.083	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.36	16
SD		0.12	0.0049	0.019	0.023	<0.00	0.53	<0.00	0.0022	<0.00	<0.00		
160403_LG_ soil 2_site2	36	0.77	0.22	0.11	0.072	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.2	20
SD		0.26	0.022	0.014	0.015	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160715_LG_ soil 2_site 2	13	0.30	0.53	0.43	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.3	35
SD		0.018	0.026	0.0012	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160403_LG_ soil 3_site3	41	16	1.4	1.1	0.15	<0.017	0.37	<0.017	0.11	<0.017	<0.017	19	156
SD		0.12	0.0049	0.019	0.023	<0.00	0.53	<0.00	0.00	<0.00	<0.00		
160715_LG_ soil 3_site 3	21	0.12	0.67	0.14	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.94	97
SD		0.037	0.047	0.0064	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S14 Concentrations of PFCAs [ng/g dw] in birch samples as well as PFCA concentrations in birch sap [ng/L] from Site 1. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b,c}

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160629_LG_R2_root_1A_birch_march	94	<0.21	<0.19	<0.14	<0.017	0.038	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.038
SD		<0.00	<0.00	<0.00	<0.00	0.017	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_C1_core_1A_birch_march	95	<0.21	<0.19	<0.14	0.090	0.061	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.15
SD		<0.00	<0.00	<0.00	0.13	0.087	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160722_LG_C2_core_1B_birch_march BARK	95	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160722_LG_C2_core_1B_birch_march noBARK	95	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160712_LG_T1_twig_1_birch_june	53	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	0.26	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.26
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	0.0059	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_L1_leaf_1_birch_march	30	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.12
SD		0.17	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160711_LG_L1_leaf_1_birch_june	30	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_1A_M	7.6	19	7.0	0.80	1.03	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	36
SD	2.2	1.8	0.69	0.14	0.12	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_1A_J	<2.1	32	12	<0.27	2.1	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	46
SD	<0.00	2.5	2.1	<0.00	0.85	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_1B_M	<2.1	6.3	4.6	0.80	1.1	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	13
SD	<0.00	0.85	0.43	0.17	0.33	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_1B_J	<2.1	24	8.6	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	33
SD	<0.00	4.4	1.5	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bND stands for “not detected”, ^cn.a. stands for “not available”

Table S15 Concentrations of PFSAAs [ng/g dw] in birch samples as well as PFSA concentrations in birch sap [ng/L] from Site 1. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID		dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSAAs
160629_LG_R2_root_1A_birch_march		94	<0.060	0.49	<0.010	1.8	0.37	<0.017	2.6
	SD		<0.00	0.080	<0.00	0.041	0.038	<0.00	
160403_LG_C1_core_1A_birch_march		95	<0.060	0.18	<0.010	0.80	0.18	<0.017	1.2
	SD		<0.00	0.046	<0.00	0.34	0.077	<0.00	
160722_LG_C2_core_1B_birch_march BARK		95	<0.060	<0.077	<0.010	0.20	0.057	<0.017	0.26
	SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160722_LG_C2_core_1B_birch_march noBARK		95	<0.060	<0.077	<0.010	0.28	0.038	<0.017	0.32
	SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160712_LG_T1_twig_1_birch_june		53	<0.060	0.21	<0.010	2.7	0.69	<0.017	3.6
	SD		<0.00	0.0063	<0.00	0.26	0.042	<0.00	
160403_LG_L1_leaf_1_birch_march		30	<0.060	0.084	<0.010	1.2	0.24	<0.017	1.5
	SD		<0.00	0.00058	<0.00	0.059	0.045	<0.00	
160711_LG_L1_leaf_1_birch_june		30	0.11	1.6	0.25	2.1	0.65	<0.017	4.6
	SD		0.015	0.23	0.083	0.28	0.098	<0.00	
160713_LG_BS_1A_M			6.3	4.2	0.39	<3.2	<0.97	<0.27	11
	SD		1.2	1.4	0.67	<0.00	0.60	<0.00	
160713_LG_BS_1A_J			3.7	<0.26	<0.27	<3.2	<0.97	<0.27	3.7
	SD		0.14	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_1B_M			6.0	1.6	<0.27	<3.2	<0.97	<0.27	7.6
	SD		2.5	0.55	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_1B_J			6.0	<0.26	1.4	<3.2	<0.97	<0.27	7.3
	SD		1.6	<0.00	0.16	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S16 Concentrations of FTSAs, FOSAs, FOSEs and FOSAAs [ng/g dw] in birch samples as well as FTSA, FOSA, FOSE and FOSAA concentrations in birch sap [ng/L] from Site 1. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	Σ FTSAs/FOSAs/ FOSEs/FOSAAs	Σ PFASs
160629_LG_R2_root_1A_birch_march	94	0.15	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.15	2.8
SD		0.022	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160403_LG_C1_core_1A_birch_march	95	0.17	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.17	1.5
SD		0.20	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160722_LG_C2_core_1B_birch_march BARK	95	0.13	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.13	0.39
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160722_LG_C2_core_1B_birch_march noBARK	95	0.18	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.18	0.49
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160712_LG_T1_twig_1_birch_june	53	6.2	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	6.2	10
SD		0.022	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160403_LG_L1_leaf_1_birch_march	30	0.25	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.25	1.9
SD		0.15	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160711_LG_L1_leaf_1_birch_june	30	106	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	106	110
SD		16	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160713_LG_BS_1A_M		6.6	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	6.6	54
SD		0.82	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160713_LG_BS_1A_J		21	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	21	71
SD		11	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160713_LG_BS_1B_M		3.8	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	3.8	24
SD		1.7	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160713_LG_BS_1B_J		7.5	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	7.5	48
SD		3.3	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S17 Concentrations of PFCAs [ng/g dw] in birch samples as well as PFCA concentrations in birch sap [ng/L] from Site 2. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b,c}

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160721_LG_R20_root_2B_birch_march	94	<0.21	<0.19	<0.14	<0.017	0.040	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.040
SD		<0.00	<0.00	<0.00	<0.00	0.00015	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160815_LG_C3_core_2A_birch_march BARK	95	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C3_core_2A_birch_march noBARK	95	<0.21	<0.19	<0.14	<0.017	0.039	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.039
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C4_core_2B_birch_march BARK	95	<0.21	<0.19	<0.14	<0.017	0.099	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.099
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C4_core_2B_birch_march noBARK	95	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160718_LG_T3_twig_2_birch_june	53	<0.21	<0.19	<0.14	<0.017	0.26	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.26
SD		<0.00	<0.00	<0.00	<0.00	0.022	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_L2_leaf_2_birch_march	30	0.33	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.33
SD		0.029	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160718_LG_L22_leaf_2_birch_june	30	<0.21	2.2	<0.14	0.69	0.44	3.9	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	7.2
SD		<0.00	0.12	<0.00	0.012	0.047	0.037	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_2A_M	73	68	52	3.8	2.3	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	198
SD		7.0	1.3	4.5	0.12	0.28	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_2A_J	299	357	143	23	5.8	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	828
SD		27	41	21	2.9	0.78	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bND stands for “not detected”, ^cn.a. stands for “not available”

Table S18 Concentrations of PFSAAs [ng/g dw] in birch samples as well as PFSA concentrations in birch sap [ng/L] from Site 2. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID		dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSAAs
160721_LG_R20_root_2B_birch_march		94	<0.060	0.37	<0.010	1.8	0.20	<0.017	2.4
	SD		<0.00	0.15	<0.00	0.72	0.28	<0.00	
160815_LG_C3_core_2A_birch_march BARK		95	<0.060	0.36	<0.010	13	1.5	<0.017	15
	SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C3_core_2A_birch_march noBARK		95	<0.060	0.41	<0.010	47	8.1	<0.017	56
	SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C4_core_2B_birch_march BARK		95	<0.060	0.25	<0.010	0.31	0.57	<0.017	1.1
	SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C4_core_2B_birch_march noBARK		95	<0.060	0.083	<0.010	0.77	1.0	<0.017	1.9
	SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160718_LG_T3_twig_2_birch_june		53	<0.060	1.5	<0.010	24	6.3	<0.017	32
	SD		<0.00	0.16	<0.00	0.79	0.15	<0.00	
160403_LG_L2_leaf_2_birch_march		30	<0.060	0.14	<0.010	11	0.95	<0.017	12
	SD		<0.00	0.046	<0.00	1.4	0.13	<0.00	
160718_LG_L22_leaf_2_birch_june		30	2.1	5.9	1.6	6.0	2.6	<0.017	18
	SD		0.57	0.23	0.078	1.2	0.52	<0.00	
160713_LG_BS_2A_M			51	19	<0.27	102	14	<0.27	186
	SD		7.1	1.7	<0.00	17	2.7	<0.00	
160713_LG_BS_2A_J			75	36	11	152	21	<0.27	295
	SD		15	4.9	1.6	32	4.9	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S19 Concentrations of FTSA, FOSA, FOSE and FOSAA [ng/g dw] in birch samples as well as FTSA, FOSA, FOSE and FOSAA concentrations in birch sap [ng/L] from Site 2. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	$\frac{\sum \text{FTSAs/ FOSAs/ FOSEs/ FOSAAs}}{\sum \text{PFASs}}$	
160721_LG_R20_root_2B_birch_march	94	2.7	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	2.7	5.2
SD		0.75	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160815_LG_C3_core_2A_birch_march BARK	95	5.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	5.5	20
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160815_LG_C3_core_2A_birch_march noBARK	95	5.2	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	5.2	61
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160815_LG_C4_core_2B_birch_march BARK	95	0.99	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.99	2.2
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160815_LG_C4_core_2B_birch_march noBARK	95	1.3	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.3	3.1
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160718_LG_T3_twig_2_birch_june	53	43	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	43	76
SD		4.1	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160403_LG_L2_leaf_2_birch_march	30	3.2	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	3.2	16
SD		0.39	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160718_LG_L22_leaf_2_birch_june	30	302	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	302	327
SD		4.7	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160713_LG_BS_2A_M		590	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	590	974
SD		44	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160713_LG_BS_2A_J		1594	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	1594	2717
SD		115	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S20 Concentrations of PFCAs [ng/g dw] in birch samples as well as PFCA concentrations in birch sap [ng/L] from Site 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDODA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160721_LG_R30_root_3A_birch_march	94	<0.21	<0.19	<0.14	1.8	<0.0033	0.032	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.9
SD		<0.00	<0.00	<0.00	0.16	<0.00	0.0071	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160815_LG_C6_core_3A_birch_march BARK	95	<0.21	<0.19	<0.14	<0.017	0.0098	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.010
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C6_core_3A_birch_march noBARK	95	<0.21	<0.19	<0.14	<0.017	0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.0033
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160711_LG_L3_leaf_3_birch_march	30	<0.21	18	4.6	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	23
SD		<0.00	1.08	0.48	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160719_LG_L30_leaf_3_birch_june	30	<0.21	4.1	<0.14	2.4	1.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	8.1
SD		<0.00	0.14	<0.00	0.26	0.11	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_3A_M	5.5	<0.20	3.06	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	8.6
SD		<0.00	0.094	<0.00	0.27	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160713_LG_BS_3A_J	<2.1	9.4	9.2	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	19
SD		<0.00	<0.00	0.43	0.48	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S21 Concentrations of PFSAAs [ng/g dw] in birch samples as well as PFSA concentrations in birch sap [ng/L] from Site 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID		dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSAAs
160721_LG_R30_root_3A_birch_march		94	<0.060	0.26	<0.010	3.2	0.48	<0.017	4.0
	SD		<0.00	0.071	<0.00	0.99	0.12	<0.00	
160815_LG_C6_core_3A_birch_march BARK		95	<0.060	0.12	<0.010	2	0.25	<0.017	2.4
	SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C6_core_3A_birch_march noBARK		95	<0.060	0.12	<0.010	15	1.9	<0.017	17
	SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160711_LG_L3_leaf_3_birch_march		30	<0.060	0.097	<0.010	1.2	0.11	<0.017	1.4
	SD		<0.00	0.0011	<0.00	0.11	0.022	<0.00	
160719_LG_L30_leaf_3_birch_june		30	2.1	16	1.8	1.5	0.83	<0.017	23
	SD		0.26	0.17	0.061	0.25	0.036	<0.00	
160713_LG_BS_3A_M			2.1	4.0	0.63	13	3.1	<0.27	23
	SD		0.070	0.18	0.19	1.2	0.34	<0.00	
160713_LG_BS_3A_J			2.5	3.4	7.6	15	2.7	<0.27	31
	SD		0.11	0.26	0.51	1.2	0.28	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S22 Concentrations of FTSA, FOSA, FOSE and FOSAA [ng/g dw] in birch samples as well as FTSA, FOSA, FOSE and FOSAA concentrations in birch sap [ng/L] from Site 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	ΣFTSAs/FOSAs/ FOSEs/FOSAAs	ΣPFASs
160721_LG_R30_root_ 3A_birch_march	94	0.78	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.8	6.6
SD		0.033	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160815_LG_C6_core_ 3A_birch_march BARK	95	4.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	4.5	7.0
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160815_LG_C6_core_ 3A_birch_march noBARK	95	3.4	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	3.4	21
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160711_LG_L3_leaf_ 3_birch_march	30	3.1	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	3.1	27
SD		0.044	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160719_LG_L30_leaf_ 3_birch_june	30	8.8	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	8.8	40
SD		0.42	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160713_LG_BS_3A_M		282	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	282	313
SD		9.7	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160713_LG_BS_3A_J		287	0.42	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	288	337
SD		27	0.096	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S23 Concentrations of PFCAs [ng/g dw] in spruce samples from Sites 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b,c}

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDaDA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160721_LG_R31_ root_2C_picea_march	94	<0.21	<0.19	<0.14	<0.017	1.4	0.40	0.064	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.9
SD		<0.00	<0.00	<0.00	<0.00	0.010	0.0039	0.013	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_C5_ core_2C_picea_march	95	<0.21	<0.19	<0.14	0.79	1.7	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	2.5
SD		<0.00	<0.00	<0.00	1.1	0.19	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_T1_ twig_2C_picea_march	67	<0.21	<0.19	<0.14	<0.017	1.04	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.0
SD		<0.00	<0.00	<0.00	<0.00	0.28	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_N1_ needle_2C_picea_march	42	81	7.9	19	1.7	7.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	117
SD		4.7	0.40	3.8	0.35	1.6	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160815_LG_C7_core_ 3B_picea_march BARK	95	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C7_core_ 3B_picea_march noBARK	95	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160720_LG_T0_ twig_3B_picea_march	67	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160403_LG_N2_ needle_3B_picea_march	42	8.0	5.7	0.71	0.19	1.3	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	16
SD		0.047	0.086	0.13	0.029	0.027	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bND stands for “not detected”, ^cn.a. stands for “not available”

Table S24 Concentrations of PFSAAs [ng/g dw] in spruce samples from Sites 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSAAs
160721_LG_R31_root_2C_picea_march	94	0.099	2.4	<0.010	26	7.5	<0.017	36
SD		0.010	0.024	<0.00	2.3	0.78	<0.00	
160403_LG_C5_core_2C_picea_march	95	<0.060	0.93	<0.010	9.9	5.3	<0.017	16
SD		<0.00	0.065	<0.00	3.7	2.3	<0.00	
160403_LG_T1Twig_2C_picea_march	67	<0.060	1.9	<0.010	1.1	0.47	<0.017	3.5
SD		<0.00	0.48	<0.00	0.13	0.073	<0.00	
160403_LG_N1_needle_2C_picea_march	42	1.3	51	<0.010	3.7	3.0	<0.017	59
SD		0.44	5.8	<0.00	1.2	0.93	<0.00	
160815_LG_C7_core_3B_picea_march BARK	95	<0.060	<0.077	<0.010	0.45	0.095	<0.017	0.54
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160815_LG_C7_core_3B_picea_march noBARK	95	<0.060	0.17	<0.010	1.1	0.44	<0.017	1.7
SD		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
160720_LG_T0Twig_3B_picea_march	67	<0.060	4.8	<0.010	<0.040	<0.021	<0.017	4.8
SD		<0.00	0.41	<0.00	<0.00	<0.00	<0.00	
160403_LG_N2_needle_3B_picea_march	42	0.12	2.0	<0.010	<0.040	<0.021	<0.017	2.2
SD		0.025	0.38	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S25 Concentrations of FTSA, FOSA, FOSE, FOSAA [ng/g dw] in spruce samples from Sites 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	ΣFTSAs/FOSAs/ FOSEs/FOSAAs	ΣPFASs
160721_LG_R31_ root_2C_picea_march	94	5.1	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	5.1	43
	SD	0.16	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160403_LG_C5_ core_2C_picea_march	95	1.7	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.7	20
	SD	0.27	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160403_LG_T1_ twig_2C_picea_march	67	1.6	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.6	6.1
	SD	0.36	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160403_LG_N1_ needle_2C_picea_march	42	45	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	45	222
	SD	8.8	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160815_LG_C7_core_ 3B_picea_march BARK	95	0.83	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.83	1.4
	SD	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160815_LG_C7_core_ 3B_picea_march noBARK	95	2.9	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	2.9	4.5
	SD	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
160720_LG_T0_ twig_3B_picea_march	67	1.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.5	6.3
	SD	0.082	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160403_LG_N2_ needle_3B_picea_march	42	15	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	15	33
	SD	2.4	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S26 Concentrations of PFCAs [ng/g dw] in bird cherry samples from Sites 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160719_LG_T4_ twig_2_prunus_june	53	<0.21	<0.19	<0.14	<0.017	0.039	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.039
SD		<0.00	<0.00	<0.00	<0.00	0.0087	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160718_LG_L20_ leaf_2_prunus_june	36	4.6	1.7	0.87	0.11	0.042	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	7.4
SD		0.016	0.12	0.0092	0.0077	0.0045	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160711_LG_B2_ berry_2_prunus_june	n.a.	<0.21	1.1	0.44	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.5
SD		<0.00	0.022	0.0047	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160720_LG_T31_ twig_3_prunus_june	53	<0.21	<0.19	0.61	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.61
SD		<0.00	<0.00	0.10	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160720_LG_L32_ leaf_3_prunus_june	36	<0.21	0.79	<0.14	0.13	0.070	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.99
SD		<0.00	0.23	<0.00	0.021	0.00047	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160715_LG_B3_ berry_3_prunus_june	n.a.	<0.21	1.2	0.37	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.6
SD		<0.00	0.0059	0.026	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S27 Concentrations of PFSAAs [ng/g dw] in bird cherry samples from Site 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID		dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSAAs
160719_LG_T4_twig_2_prunus_june		53	<0.060	0.20	<0.010	0.82	0.40	<0.017	1.4
	SD		0.046	0.0045	<0.00	0.11	0.0030	<0.00	
160718_LG_L20_leaf_2_prunus_june		36	0.98	0.82	0.30	0.43	0.87	<0.017	3.4
	SD		0.14	0.0077	0.036	0.032	0.13	<0.00	
160711_LG_B2_berry_2_prunus_june		n.a.	0.26	<0.077	<0.010	<0.040	<0.021	<0.017	0.26
	SD		0.036	<0.00	<0.00	<0.00	<0.00	<0.00	
160720_LG_T31_twig_3_prunus_june		53	0.06	0.73	0.055	2.9	0.65	<0.017	4.4
	SD		0.00	0.02	0.078	0.46	0.056	<0.00	
160720_LG_L32_leaf_3_prunus_june		36	0.56	4.26	0.83	5.0	2.3	<0.017	13
	SD		0.12	0.37	0.0040	0.47	0.29	<0.00	
160715_LG_B3_berry_3_prunus_june		n.a.	0.25	0.16	<0.010	<0.040	<0.021	<0.017	0.41
	SD		0.05	0.01	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S28 Concentrations of FTSA, FOSA, FOSE and FOSAA [ng/g dw] in bird cherry samples from Sites 2 and 3 as well as the total amount of PFASs per sample. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	ΣFTSAs/FOSAs/ FOSEs/FOSAAs	ΣPFASs
160719_LG_T4_ twig_2_prunus_june	53	0.85	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.85	2.3
SD		0.087	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160718_LG_L20_ leaf_2_prunus_june	36	1.4	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.4	12
SD		0.13	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160711_LG_B2_ berry_2_prunus_june	n.a	0.22	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.22	2.0
SD		0.082	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160720_LG_T31_ twig_3_prunus_june	53	19	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	19	24
SD		2.2	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160720_LG_L32_ leaf_3_prunus_june	36	44	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	44	58
SD		4.4	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160715_LG_B3_ berry_3_prunus_june	n.a	2.8	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	2.8	4.8
SD		0.032	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S29 Concentrations of PFCAs [ng/g dw] in mountain ash samples from Sites 1, 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDaDA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160712_LG_T2_ twig_1_rönn_june	50	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160712_LG_L4_ leaf_1_rönn_june	38	<0.21	7.2	<0.14	0.26	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	7.5
SD		<0.00	0.046	<0.00	0.040	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160719_LG_T5_ twig_2_rönn_june	50	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160718_LG_L21_ leaf_2_rönn_june	38	<0.21	3.4	<0.14	0.22	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	3.7
SD		<0.00	0.13	<0.00	0.061	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160720_LG_T30_ twig_3_rönn_june	50	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160720_LG_L33_ leaf_3_rönn_june	38	<0.21	2.5	<0.14	0.081	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	2.6
SD		<0.00	0.49	<0.00	0.028	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bND stands for “not detected”

Table S30 Concentrations of PFSAAs [ng/g dw] in mountain ash samples from Sites 1, 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID		dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSAAs
160712_LG_T2_twig_1_rönn_june		50	<0.060	<0.077	<0.010	<0.040	<0.021	<0.017	ND
	SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160712_LG_L4_leaf_1_rönn_june		38	<0.060	0.10	0.027	<0.040	<0.021	<0.017	0.13
	SD		<0.00	0.034	0.020	<0.00	<0.00	<0.00	
160719_LG_T5_twig_2_rönn_june		50	<0.060	<0.077	<0.010	0.057	<0.021	<0.017	0.057
	SD		<0.00	<0.00	<0.00	0.016	<0.00	<0.00	
160718_LG_L21_leaf_2_rönn_june		38	0.83	0.20	0.073	<0.040	<0.021	<0.017	1.1
	SD		0.19	0.00081	0.0015	<0.00	<0.00	<0.00	
160720_LG_T30_twig_3_rönn_june		50	<0.060	<0.077	<0.010	0.15	<0.021	<0.017	0.16
	SD		<0.00	<0.00	<0.00	0.0055	0.017	<0.00	
160720_LG_L33_leaf_3_rönn_june		38	0.090	0.40	0.055	<0.040	<0.021	<0.017	0.55
	SD		0.0050	0.025	0.029	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bND stands for “not detected”

Table S31 Concentrations of FTSA, FOSA, FOSE and FOSAA [ng/g dw] as well as the total amount of PFASs in mountain ash samples from Sites 1, 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^a

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	Σ FTSAs/ FOSAs/FOSEs/ FOSAAs	Σ PFASs
160712_LG_T2_ twig_1_rönn_june	50	0.30	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.30	0.30
SD		0.0026	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160712_LG_L4_ leaf_1_rönn_june	38	0.59	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.59	8.2
SD		0.062	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160719_LG_T5_ twig_2_rönn_june	50	0.40	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.40	0.46
SD		0.014	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160718_LG_L21_ leaf_2_rönn_june	38	0.71	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.71	5.5
SD		0.18	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160720_LG_T30_ twig_3_rönn_june	50	1.4	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.4	1.6
SD		0.15	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160720_LG_L33_ leaf_3_rönn_june	38	4.3	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	4.3	7.5
SD		0.14	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S32 Concentrations of PFCAs [ng/g dw] in ground elder samples from all three sites. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160712_LG_L6_ leaf_1_kirskål_ june	28	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160719_LG_T6_ twig_2_kirskål_ june	30	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160718_LG_L23_ leaf_2_kirskål_ june	28	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160720_LG_T32_ twig_3_kirskål_ june	30	<0.21	<0.19	0.43	0.082	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.51
SD		<0.00	<0.00	0.0021	0.025	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160720_LG_L31_ leaf_3_kirskål_ june	28	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bND stands for “not detected”

Table S33 Concentrations of PFSAAs [ng/g dw] in ground elder samples from Sites 1, 2 and 3. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^a

Sample ID	dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSAAs
160712_LG_L6_leaf_1_kirskål_june	28	0.65	<0.077	<0.010	<0.040	<0.021	<0.017	0.65
	SD	0.17	<0.00	<0.00	<0.00	<0.00	<0.00	
160719_LG_T6_twig_2_kirskål_june	30	<0.060	<0.077	<0.010	1.4	0.19	<0.017	1.6
	SD	<0.00	<0.00	<0.00	0.58	0.11	<0.00	
160718_LG_L23_leaf_2_kirskål_june	28	0.98	0.29	0.17	0.74	0.53	<0.017	2.7
	SD	0.14	0.10	0.046	0.12	0.11	<0.00	
160720_LG_T32_twig_3_kirskål_june	30	0.35	0.24	<0.010	<0.040	0.41	<0.017	1.0
	SD	0.0010	0.0041	<0.00	<0.00	0.015	<0.00	
160720_LG_L31_leaf_3_kirskål_june	28	0.48	0.35	<0.010	<0.040	<0.021	<0.017	0.82
	SD	0.062	0.091	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S34 Concentrations of FTSA, FOSA, FOSE and FOSAA [ng/g dw] in ground elder samples from all three sites as well as total PFASs concentrations per sample. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^a

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	ΣFTSAs/ FOSAs/FOSEs /FOSAAs	ΣPFASs
160712_LG_L6_ leaf_1_kirskål_june	28	14	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	14	15
SD		13	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160719_LG_T6_ twig_2_kirskål_june	30	5.6	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	5.6	7.2
SD		0.085	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160718_LG_L23_ leaf_2_kirskål_june	28	80	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	80	83
SD		41	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160720_LG_T32_ twig_3_kirskål_june	30	1.4	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	1.4	2.9
SD		0.0056	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160720_LG_L31_ leaf_3_kirskål_june	28	2.3	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	2.3	3.2
SD		1.2	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S35 Concentrations of PFCAs [ng/g dw] in long beechfern samples from Site 1. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^a

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDODA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160713_LG_R1_root_1_fern_june	38	<0.21	<0.19	<0.14	<0.017	0.067	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.067
SD		<0.00	<0.00	<0.00	<0.00	0.025	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160712_LG_L5_leaf_1_fern_june	20	4.9	28	<0.14	0.89	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	34
SD		0.55	7.0	<0.00	0.13	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S36 Concentrations of PFASs [ng/g dw] in long beechfern samples from Site 1. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^a

Sample ID	dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	6:2 FTSA	ΣPFASs
160713_LG_R1_root_1_fern_june	38	<0.060	0.34	<0.010	2.4	0.34	<0.017	<0.017	3.0
SD		<0.00	0.015	<0.00	0.49	0.030	<0.00	<0.00	
160712_LG_L5_leaf_1_fern_june	20	0.26	0.72	0.079	0.42	0.20	<0.017	<0.017	1.7
SD		0.094	0.086	0.040	0.068	0.037	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”

Table S37 Concentrations of FTSAs, FOSAs, FOSEs and FOSAAs [ng/g dw] in long beechfern samples from Site 1 as well as total PFASs concentrations. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	ΣFTSAs/FOSAs/FOSEs/FOSAAs	ΣPFASs
160713_LG_R1_root_1_fern_june	38	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND	3.1
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160712_LG_L5_leaf_1_fern_june	20	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	ND	35
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bND stands for “not detected”

Table S38 Concentrations of PFCAs [ng/g dw] in wild strawberry samples near the fire training site. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTriDA	PFTeDA	PFHxDA	PFOcDA	ΣPFCAs
160712_LG_strawberry_leaf_june	33	<0.21	4.2	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	4.2
SD		<0.00	1.3	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
160711_LG_strawberry_berry_june	n.a.	<0.21	<0.19	<0.14	<0.017	<0.0033	<0.017	<0.017	<0.017	5.0	<0.017	<0.017	<0.017	<0.017	5.0
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	4.7	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S39 Concentrations of PFSAAs [ng/g dw] in wild strawberry samples near the fire training site. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b,c}

Sample ID	dw %	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	PFDS	ΣPFSAAs
160712_LG_strawberry_leaf_june	33	<0.060	0.14	<0.010	<0.040	<0.021	<0.017	0.14
SD		<0.00	1.3	<0.00	<0.00	<0.00	<0.00	
160711_LG_strawberry_berry_june	n.a.	<0.060	<0.077	<0.010	<0.040	<0.021	<0.017	ND
SD		<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bND stands for “not detected”, ^cn.a. stands for “not available”

Table S40 Concentrations of FTSAs, FOSAs, FOSEs and FOSAAs [ng/g dw] in wild strawberry samples near the fire training site. The dry weight (dw) fraction of the plant samples is given in percentage. The standard deviation (SD) for duplicate samples is given if available. The results are rounded to two significant figures.^{a,b}

Sample ID	dw %	6:2 FTSA	FOSA linear	FOSA branched	MeFOSA	EtFOSA	MeFOSE	EtFOSE	FOSAA	MeFOSAA	EtFOSAA	ΣFTSAs/FOSAs/ FOSEs/FOSAAs	ΣPFASs
160712_LG_strawberry_leaf_june	33	3.7	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	3.7	8.0
SD		1.8	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		
160711_LG_strawberry_berry_june	n.a.	0.12	0.73	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	0.85	5.8
SD		0.045	0.093	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00		

^a<MDL; SD <0.00 refers to “SD <0.000001”, ^bn.a. stands for “not available”

Table S41 Bioconcentration factors of all birch samples with plant concentrations (solid [ng kg⁻¹ ww] OR liquid [ng L⁻¹]) in relation to groundwater concentrations [ng L⁻¹] at the particular site. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^a

site	dw factor	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
		3	4	5	6	7	8	9	4	6	6	8	8	8
BIRCH														
1 160629_LG_R2_root_1A_ birch_march	1.1	ND	ND	ND	ND	0.030	ND	ND	ND	0.39	ND	1.4	0.29	0.12
1 160403_LG_C1_core_1A_ birch_march	1.1	ND	ND	ND	0.072	0.049	ND	ND	ND	0.14	ND	0.63	0.14	0.14
1 160722_LG_C2_core_1B_ birch_march BARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16	0.045	0.10
1 160722_LG_C2_core_1B_ birch_march noBARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.22	0.030	0.14
1 160712_LG_T1_twig_1_birch_ june	1.9	ND	ND	ND	ND	ND	ND	0.115	ND	0.096	ND	1.2	0.31	2.7
1 160403_LG_L1_leaf_1_birch_ march	3.4	0.030	ND	ND	ND	ND	ND	ND	ND	0.021	ND	0.29	0.059	0.063
1 160711_LG_L1_leaf_1_birch_ une	3.4	ND	ND	ND	ND	ND	ND	ND	0.027	0.39	0.063	0.51	0.16	26
1 160713_LG_BS_1A_M		ND	0.016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1 160713_LG_BS_1A_J		ND	0.027	0.010	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.018
1 160713_LG_BS_1B_M		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1 160713_LG_BS_1B_J		ND	0.020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 160721_LG_R20_root_2B_ birch_march	1.1	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	0.055	ND	0.083
2 160815_LG_C3_core_2A_ birch_march BARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	0.38	0.046	0.17
2 160815_LG_C3_core_2A_ birch_march noBARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	0.013	ND	1.44	0.25	0.16
2 160815_LG_C4_core_2B_ birch_march BARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.017	0.030
2 160815_LG_C4_core_2B_ birch_march noBARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.023	0.031	0.038
2 160718_LG_T3_twig_2_birch_ june	1.9	ND	ND	ND	ND	ND	ND	ND	ND	0.025	ND	0.41	0.11	0.73
2 160403_LG_L2_leaf_2_birch_ march	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.10	ND	0.030

160718_LG_L22_leaf_2_birch														
2 _june	3.4	ND	0.021	ND	ND	ND	0.037	ND	0.020	0.056	0.015	0.057	0.025	2.9
2 160713_LG_BS_2A_M		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.019
2 160713_LG_BS_2A_J		ND	0.011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.051
160721_LG_R30_root_3A_														
3 birch_march	1.1	ND	ND	ND	0.051	ND	ND	ND	ND	ND	ND	0.090	0.013	0.022
160815_LG_C6_core_3A_														
3 birch_march BARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.058	ND	0.13
160815_LG_C6_core_3A_														
3 birch_march noBARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43	0.054	0.10
160711_LG_L3_leaf_3_birch_														
3 march	3.4	ND	0.16	0.041	ND	ND	ND	ND	ND	ND	ND	0.011	ND	0.027
160719_LG_L30_leaf_3_birch														
3 _june	3.4	ND	0.036	ND	0.021	0.014	ND	ND	0.019	0.15	0.015	0.013	ND	0.077
3 160713_LG_BS_3A_M		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 160713_LG_BS_3A_J		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Min		0.030	0.011	0.010	0.021	0.014	0.037	0.12	0.019	0.011	0.015	0.011	0.013	0.018
Max		-	0.16	0.041	0.072	0.049	-	-	0.027	0.39	0.063	1.4	0.31	26
Arithmetic Mean		-	0.041	0.025	0.048	0.031	-	-	0.022	0.12	0.031	0.39	0.11	1.5
Geometric Mean		-	0.027	0.020	0.043	0.027	-	-	0.022	0.055	0.024	0.17	0.066	0.12
Median		-	0.021	0.025	0.051	0.030	-	-	0.020	0.056	0.015	0.22	0.054	0.095
SD		-	0.052	0.021	0.025	0.018	-	-	2	0.14	0.027	0.46	0.10	5.5
n		1	7	2	3	3	1	1	3	11	3	19	15	23

^aND stands for “not detected”

Table S42 Bioconcentration factors of all spruce samples with plant concentrations [ng kg⁻¹ ww] in relation to groundwater concentrations [ng L⁻¹] at the particular site. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^a

site	dw factor	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
		3	4	5	6	7	8	9	4	6	6	8	8	8
SPRUCE														
2 160721_LG_R31_root_2C_ picea_march	1.1	ND	ND	ND	ND	0.044	0.012	ND	ND	0.072	ND	0.79	0.23	0.15
2 160403_LG_C5_core_2C_ picea_march	1.1	ND	ND	ND	0.024	0.051	ND	ND	ND	0.028	ND	0.30	0.16	0.052
2 160403_LG_T1_twig_2C_ picea_march	1.5	ND	ND	ND	ND	0.022	ND	ND	ND	0.040	ND	0.024	0.010	0.035
2 160403_LG_N1_needle_2C_ picea_march	2.4	1.1	0.11	0.26	0.023	0.10	ND	ND	0.017	0.70	ND	0.050	0.041	0.62
3 160815_LG_C7_core_3B_ picea_march BARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.013	ND	0.023
3 160815_LG_C7_core_3B_ picea_march noBARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.030	0.012	0.080
3 160720_LG_T0_twig_3B_ picea_march	1.5	ND	ND	ND	ND	ND	ND	ND	ND	0.095	ND	ND	ND	0.030
3 160403_LG_N2_needle_3B_ picea_march	2.4	0.10	0.072	ND	ND	0.016	ND	ND	ND	0.026	ND	ND	ND	0.19
Min		0.10	0.072	0.26	0.023	0.016	0.012	-	0.017	0.026	-	0.013	0.010	0.023
Max		1.1	0.11	-	0.024	0.10	-	-	-	0.70	-	0.79	0.23	0.62
Arithmetic Mean		0.60	0.090	-	0.023	0.047	-	-	-	0.16	-	0.20	0.090	0.15
Geometric Mean		0.33	0.088	-	0.023	0.038	-	-	-	0.072	-	0.069	0.045	0.081
Median		0.60	0.090	-	0.023	0.044	-	-	-	0.056	-	0.040	0.041	0.066
SD		0.71	0.025	-	0.0010	0.034	-	-	-	0.27	-	0.31	0.098	0.20
n		2	2	1	2	5	1	0	1	6	0	6	5	8

^aND stands for “not detected”

Table S43 Bioconcentration factors of all birch samples with plant concentrations (solid [ng kg⁻¹ ww] OR liquid [ng L⁻¹]) in relation to soil concentrations [ng kg⁻¹ ww] at the particular site. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^a

site	dw factor	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
		3	4	5	6	7	8	9		4	6	6	8	8
BIRCH														
1 160629_LG_R2_root_														
1 1A_birch_march	1.1	ND	ND	ND	ND	0.24	ND	ND	ND	1.0	ND	0.33	0.40	2.9
1 160403_LG_C1_core_														
1 1A_birch_march	1.1	ND	ND	ND	0.55	0.39	ND	ND	ND	0.36	ND	0.15	0.19	3.3
1 160722_LG_C2_core_														
1 1B_birch_march BARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.038	0.062	2.5
1 160722_LG_C2_core_														
1 1B_birch_march														
1 noBARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.052	0.041	3.4
1 160712_LG_T1_twig_														
1 1_birch_june	1.9	ND	ND	ND	ND	ND	ND	25	ND	0.78	ND	0.94	1.65	1420
1 160403_LG_L1_leaf_														
1 1_birch_march	3.4	0.10	ND	ND	ND	ND	ND	ND	ND	0.053	ND	0.069	0.081	1.5
1 160711_LG_L1_leaf_														
1 1_birch_june	3.4	ND	ND	ND	ND	ND	ND	ND	2.5	3.2	ND	0.41	0.87	13698
1 160713_LG_BS_1A_M		0.021	0.024	0.028	ND	ND	ND	ND	0.5	ND	0.045	ND	ND	0.13
1 160713_LG_BS_1A_J		ND	0.073	0.093	ND	0.039	ND	ND	0.29	ND	ND	ND	ND	9.4
1 160713_LG_BS_1B_M		ND	ND	0.018	ND	ND	ND	ND	0.49	ND	ND	ND	ND	0.076
1 160713_LG_BS_1B_J		ND	0.056	0.066	ND	ND	ND	ND	0.46	ND	ND	ND	ND	3.3
2 160721_LG_R20_root_														
2 2B_birch_march	1.1	ND	ND	ND	ND	0.49	ND	ND	ND	0.88	ND	0.41	0.29	9.2
2 160815_LG_C3_core_														
2 2A_birch_march BARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	0.88	ND	2.9	2.2	19
2 160815_LG_C3_core_														
2 2A_birch_march														
2 noBARK	1.1	ND	ND	ND	ND	0.48	ND	ND	ND	0.99	ND	11	12	18
2 160815_LG_C4_core_														
2 2B_birch_march BARK	1.1	ND	ND	ND	ND	1.2	ND	ND	ND	0.59	ND	0.070	0.84	3.3
2 160815_LG_C4_core_														
2 2B_birch_march	1.1	ND	ND	ND	ND	ND	ND	ND	ND	0.20	ND	0.18	1.5	4.3

noBARK															
2	160718_LG_T3_twig_ 2 2_birch_june	1.9	ND	ND	ND	ND	1.9	ND	ND	ND	2.7	ND	5.4	5.9	596
2	160403_LG_L2_leaf_ 2 2_birch_march	3.4	0.28	ND	ND	ND	ND	ND	ND	ND	0.10	ND	0.78	0.44	3.4
2	160718_LG_L22_leaf_ 2 2_birch_june	3.4	ND	1.5	ND	1.8	1.8	35	ND	12	5.9	ND	0.74	1.4	2330
2	160713_LG_BS_2A_M		0.21	0.11	0.35	0.034	0.029	ND	ND	1.0	0.049	ND	0.024	0.022	2.1
2	160713_LG_BS_2A_J 160721_LG_R30_root_		1.5	0.82	0.87	0.21	0.079	ND	ND	1.5	0.12	ND	0.064	0.037	41
3	3A_birch_march 160815_LG_C6_core_	1.1	ND	ND	ND	3.4	ND	0.12	ND	ND	0.17	ND	0.075	0.041	0.11
3	3A_birch_march BARK 160815_LG_C6_core_	1.1	ND	ND	ND	ND	0.026	ND	ND	ND	0.079	ND	0.049	0.022	0.64
3	3A_birch_march noBARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	0.081	ND	0.36	0.17	0.48
3	160711_LG_L3_leaf_ 3 3_birch_march	3.4	ND	3.9	2.2	ND	ND	ND	ND	ND	0.020	ND	ND	ND	0.14
3	160719_LG_L30_leaf_ 3 3_birch_june	3.4	ND	0.71	ND	3.5	5.1	ND	ND	13	8.8	ND	0.030	0.17	102
3	160713_LG_BS_3A_M		ND	ND	ND	ND	ND	ND	ND	0.021	ND	ND	ND	ND	0.043
3	160713_LG_BS_3A_J		ND	ND	0.022	ND	ND	ND	ND	0.053	ND	ND	ND	ND	11
	Min	0.0087	0.0055	0.0050	0.0052	0.0070	0.12	25	0.0206	0.0028	0.0059	0.00032	0.00029	0.043	
	Max	1.5	3.9	2.2	3.5	5.1	35	25	13	8.8	0.045	11	12	13698	
	Arithmetic Mean	0.35	0.72	0	2.3	1.2	18	-	2.9	1.1	0.026	0.99	1.1	653	
	Geometric Mean	0.18	0.28	0.12	0.66	0.32	2.0	-	0.70	0.39	0.045	0.24	0.31	5.8	
	Median	0.15	0.093	0	2.6	0.48	18	-	0.52	0.19	0.026	0.11	0.17	3.4	
	SD	0.56	1.2	0	1.4	1.5	25	-	4.9	2.1	0.028	2.4	2.6	2607	
	<i>n</i>	6	10	9	8	15	2	1	11	24	2	24	24	28	

^aND stands for “not detected”

Table S44 Bioconcentration factors of all spruce samples [ng kg⁻¹ ww] in relation to soil concentrations [ng kg⁻¹ ww] at the particular site. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^a

site	dw factor	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
		3	4	5	6	7	8	9	4	6	6	8	8	8
SPRUCE														
160721_LG_R31_root_														
2 2C_picea_march	1.1	ND	ND	ND	ND	18	5.5	1.9	1.8	5.7	ND	6.0	11	17
160403_LG_C5_core_														
2 2C_picea_march	1.1	ND	ND	ND	6.7	20	ND	ND	ND	2.2	ND	2.2	7.8	5.8
160403_LG_T1_twig_														
2 2C_picea_march	1.5	ND	ND	ND	ND	9.0	ND	ND	ND	3.2	ND	0.18	0.49	3.9
160403_LG_N1_needle_														
2 2C_picea_march	2.4	98	5.6	54	6.3	41	ND	ND	11	56	ND	0.37	2.0	68
160815_LG_C7_core_														
3 3B_picea_march BARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	0.12
160815_LG_C7_core_														
3 3B_picea_march noBARK	1.1	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	0.025	0.038	0.41
160720_LG_T0_twig_														
3 3B_picea_march	1.5	ND	ND	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	0.15
160403_LG_N2_needle_														
3 3B_picea_march	2.4	5.3	1.8	0.49	0.16	1.5	ND	ND	0.49	0.61	ND	ND	ND	0.97
Min		5.3	1.8	0.49	0.16	1.5	5.5	1.9	0.49	0.11	-	0.011	0.0083	0.12
Max		98	5.6	54	6.7	41	-	-	11	56	-	6.0	11	68
Arithmetic Mean		52	3.7	27	4.4	18	-	-	4.3	9.9	-	1.5	3.6	12
Geometric Mean		23	3.1	5.2	1.9	11	-	-	2.1	2.3	-	0.25	1.3	1.9
Median		52	3.7	27	6.3	18	-	-	1.8	2.3	-	0.28	1.2	2.4
SD		66	2.7	38	3.7	15	-	-	5.4	20	-	2.4	4.7	23
<i>n</i>		2	2	2	3	5	1	1	3	7	0	6	6	8

^aND stands for “not detected”

Table S45 Bioconcentration factors of all bird cherry samples [ng kg⁻¹ ww] in relation to soil concentrations [ng kg⁻¹ ww] at the particular site. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^{a,b}

site		dw factor	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
			3	4	5	6	7	8	9	4	6	6	8	8	8
	BIRD CHERRY														
2	160719_LG_T4_twig_2_2_prunus_june	1.9	ND	ND	ND	ND	0.28	ND	ND	0.33	0.35	ND	0.18	0.37	12
2	160718_LG_L20_leaf_2_2_prunus_june	2.8	8.1	1.4	1.9	0.34	0.20	ND	ND	6.7	0.99	ND	0.064	0.55	13
2	160711_LG_B2_berry_2_2_prunus_june	-	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	160720_LG_T31_twig_3_3_prunus_june	1.9	ND	ND	0.77	ND	ND	ND	ND	0.71	0.69	ND	0.11	0.24	391
3	160720_LG_L32_leaf_3_3_prunus_june	2.8	ND	0.16	ND	0.23	0.28	ND	ND	4.2	2.7	ND	0.12	0.57	609
3	160715_LG_B3_berry_3_3_prunus_june	-	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Min		8	0	1	0	0	0	0	0	0	0	0.064	0.24	12
	Max		-	1	2	0	0	-	-	7	3	-	0.18	0.57	609
	Arithmetic Mean		-	1	1	0	0	-	-	3	1	-	0.12	0.43	256
	Geometric Mean		-	0.48	1.2	0.28	0.25	-	-	1.6	0.90	-	0.11	0.41	78
	Median		-	1	1	0	0	-	-	2	1	-	0.11	0.46	202
	SD		-	1	1	0	0	-	-	3	1	-	0.048	0.16	295
	<i>n</i>		1	2	2	2	3	0	0	4	4	0	4	4	4

^aND stands for “not detected”, in this case also including BCFs < 0.01, ^bn.a. stands for “not available”

Table S46 Bioconcentration factors of all mountain ash samples [ng kg⁻¹ ww] in relation to soil concentrations [ng kg⁻¹ ww] at the particular site. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^a

site	MOUNTAIN ASH	dw factor	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
			3	4	5	6	7	8	9	4	6	6	8	8	8
1	160712_LG_T2_twig_ 1_rönn_june	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150
1	160712_LG_L4_leaf_ 1_rönn_june	2.6	ND	2737	ND	98	ND	ND	ND	ND	39	10	ND	ND	223
2	160719_LG_T5_twig_ 2_rönn_june	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.012	ND	5.2
2	160718_LG_L21_leaf_ 2_rönn_june	2.6	ND	3.0	ND	0.73	ND	ND	ND	6.1	0.26	ND	ND	ND	7.0
3	160720_LG_T30_twig_ 3_rönn_june	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	27
3	160720_LG_L33_leaf_ 3_rönn_june	2.6	ND	0.56	ND	0.15	ND	ND	ND	0.72	0.27	ND	ND	ND	64
	Min		-	0.56	-	0.15	-	-	-	0.72	0.26	10	0.0051	-	5
	Max		-	2737	-	98	-	-	-	6.1	39	-	0.012	-	223
	Arithmetic Mean		-	914	-	33	-	-	-	3.4	13	-	0.0085	-	79
	Geometric Mean		-	17	-	2.2	-	-	-	2.1	1.4	-	-	-	36
	Median		-	3.0	-	0.73	-	-	-	3.4	0.27	-	0.0085	-	46
	SD		-	1579	-	56	-	-	-	3.8	23	-	0.0048	-	89
	<i>n</i>		0	3	0	3	0	0	0	2	3	1	2	1	6

^aND stands for “not detected”, in this case also including BCFs < 0.01

Table S47 Bioconcentration factors of all ground elder samples [ng kg⁻¹ ww] in relation to soil concentrations [ng kg⁻¹ ww] at the particular site. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^a

site		dw factor	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
	GROUND ELDER		3	4	5	6	7	8	9	4	6	6	8	8	8
1	160712_LG_L6_leaf_1_kirskål_june	3.6	ND	ND	ND	ND	ND	ND	ND	182	ND	ND	ND	ND	3983
2	160719_LG_T6_twig_2_kirskål_june	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	0.10	44
2	160718_LG_L23_leaf_2_kirskål_june	3.6	ND	ND	ND	ND	ND	ND	ND	5.3	0.28	ND	0.087	0.26	586
3	160720_LG_T32_twig_3_kirskål_june	3.3	ND	ND	0.31	0.12	ND	ND	ND	2.2	0.13	ND	ND	0.086	16
3	160720_LG_L31_leaf_3_kirskål_june	3.6	ND	ND	ND	ND	ND	ND	ND	2.8	0.17	ND	ND	ND	26
	Min		-	-	0.31	0.12	-	-	-	2.2	0.00	-	0.087	0.086	16
	Max		-	-	-	-	-	-	-	182	0.28	-	0.17	0.26	3983
	Arithmetic Mean		-	-	-	-	-	-	-	48	0.19	-	0.13	0.15	931
	Geometric Mean		-	-	-	-	-	-	-	8.9	0.18	-	0.12	0.13	134
	Median		-	-	-	-	-	-	-	4.1	0.17	-	0.13	0.10	44
	SD		-	-	-	-	-	-	-	89	0.079	-	0.060	0.10	1723
	<i>n</i>		0	0	1	1	0	0	0	4	3	0	2	3	5

^aND stands for “not detected”, in this case also including BCFs < 0.01

Table S48 Bioconcentration factors of all beechfern samples [ng kg⁻¹ ww] in relation to soil concentrations [ng kg⁻¹ ww] at site 1. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^a

site		dw factor	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
			3	4	5	6	7	8	9	4	6	6	8	8	8
1	LONG BEECHFERN														
	160713_LG_R1_root_														
1	1_fern_june	2.6	ND	ND	ND	ND	26	ND	ND	ND	129	ND	906	131	ND
	160712_LG_L5_leaf_														
1	1_fern_june	5.1	4.7	5450	ND	175	ND	ND	ND	52	140	15	82	39	ND
	Min		4.7	5450	-	175	26	-	-	52	129	15	82	39	-
	Max		-	-	-	-	-	-	-	-	140	-	906	131	-
	Arithmetic Mean		-	-	-	-	-	-	-	-	135	-	494	85	-
	Geometric Mean		-	-	-	-	-	-	-	-	135	-	273	72	-
	Median		-	-	-	-	-	-	-	-	135	-	494	85	-
	SD		-	-	-	-	-	-	-	-	8	-	582	65	-
	<i>n</i>		1	1	0	1	1	0	0	1	2	1	2	2	0

^aND stands for “not detected”, in this case also including BCFs < 0.01

Table S49 Bioconcentration factors of all wild strawberry samples [ng kg⁻¹ ww] in relation to soil concentrations [ng kg⁻¹ ww] at site 2 which was the closest of the three main sampling sites. Only BCFs > 0.01 are displayed and taken into consideration. The values are rounded to two significant figures.^{a,b}

		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFBS	PFHxS linear	PFHxS branched	PFOS linear	PFOS branched	6:2 FTSA
WILD STRAWBERRY	dw factor	3	4	5	6	7	8	9	4	6	6	8	8	8
160712_LG_strawberry_ leaf_june	3.0	ND	3.2	ND	ND	ND	ND	ND	ND	0.16	ND	ND	ND	32
160711_LG_strawberry_ berry_june	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Min		-	3.2	-	-	-	-	-	-	0.16	-	-	-	32
Max		-	-	-	-	-	-	-	-	-	-	-	-	-
Arithmetic Mean		-	-	-	-	-	-	-	-	-	-	-	-	-
Geometric Mean		-	-	-	-	-	-	-	-	-	-	-	-	-
Median		-	-	-	-	-	-	-	-	-	-	-	-	-
SD		-	-	-	-	-	-	-	-	-	-	-	-	-
<i>n</i>		0	1	0	0	0	0	0	0	1	0	0	0	1

^aND stands for “not detected”, in this case also including BCFs < 0.01, ^bn.a. stands for “not available”

Table S50 Tree biomass estimations. The values are fractions of the total biomass. Table compiled with data from^{a,b}.

	Birch	Spruce
Root	0.125 ^a	0.26 ^b
Trunk	0.665 ^a	0.53 ^b
Twig	0.14 ^a	0.17 ^b
Leaf/Needle	0.07 ^a	0.04 ^b
Wood density [kg m ⁻³]	530 ^a	470 ^a
Height [m]	19 ^a	15 ^a
Total biomass [kg]	410	93

^aJohansson (2007 and 2014); ^bMinerbi and Cescatti (2015)

Table S51 Management scenario mixed shelterwood, comprising of birch and spruce in combination with regular sap harvest and mowing of the understorey (e.g. ground elder). Calculations are based on measured concentrations and data provided by Johansson (2007 and 2014)^a

Scenario 1: Shelterwood									
yield [m³ ha⁻¹]	species	share	density [kg m⁻³]	wood amount [kg]					
350 in	birch		0.66	530	122430				
45 years	spruce		0.33	470	54285				
BIRCH					Σ ₂₆ PFAS yield [µg ha⁻¹] in 45 yrs				
tissue	share	share without roots	yield [kg ha⁻¹ 45yrs⁻¹]	average concentration Σ ₂₆ PFAS [µg kg⁻¹ ww]		min	max	average	average yield [µg ha⁻¹ yr⁻¹]
root	0.13	0.00	15303		1.86	16441	38681	28490	0 ^b
trunk	0.67	0.76	93046		12.3	34480	5394797	1142898	25397
twig	0.14	0.16	19588		22.6	103555	783093	443324	9851
leaf	0.07	0.08	9794		47.2	5171874	42807480	20808573	462412
								sum	497662
SPRUCE									
root	0.26	0.00	14114		16.6	n.a.	n.a.	234133	0 ^b
trunk	0.53	0.72	38879		8.26	50550	745975	321228	7138
twig	0.17	0.23	12470		4.16	51094	52784	51939	1154
needle	0.04	0.05	2934		54.1	41382	275947	158665	3525
								sum	11818
								tree biomass [µg ha⁻¹ yr⁻¹]	509000
								tree biomass [mg ha⁻¹ yr⁻¹]	509
BIRCH SAP*					Σ ₂₆ PFAS yield [ng ha⁻¹ day⁻¹] in sap flow				
Sap flow [L cm⁻³]	no. of stems	average DBH [cm]	average cross section [cm²]	average concentration Σ ₂₆ PFAS [ng L⁻¹]		min	max	average	Σ ₂₆ PFAS yield [mg ha⁻¹ d⁻¹]
0.25	106	22.6	401		567	113248	44283915	6030564	6.03
								birch sap [mg ha⁻¹ yr⁻¹]	367
GROUND COVER		("meadow")							
species	no. of stems	average DBH [cm]	average cross section [cm²]	average area [m²] left for ground cover					
birch	106	22.6	401	9849					

spruce	1654	12.9	65	Σ_{26} PFAS yield [$\mu\text{g ha}^{-1} \text{yr}^{-1}$]				
	tissue	share	average concentration Σ_{26} PFAS [$\text{ng g}^{-1} \text{ww}$]	min	max	average	Σ_{26} PFAS yield [$\text{mg ha}^{-1} \text{yr}^{-1}$]	
	stem		0.5	1.51	43055	103322	74393	74.4
	leaf		0.5	9.45	44200	1116737	465548	466
	weight of plants [kg ww m^{-2}]		10			sum		540
						tree biomass		509
						sap		368
						ground cover		540
						Sum		1417

^an.a. means not available; ^bRoots are not removed in the remediation scenario

Table S52 Second management scenario, based on the coppicing method in combination with regular mowing of the understorey (ground elder). Calculations are based on measured concentrations and Jordbruksverket (n.d.)

Scenario 2: Coppicing									
Yield [kg ha ⁻¹ yr ⁻¹]	Cycle: 35 years cutting down every 3-5 yrs			Average concentration			Σ_{26} PFAS yield [$\mu\text{g ha}^{-1} \text{yr}^{-1}$]		
	tissue	share	weight [kg]	Σ_{26} PFAS [$\mu\text{g kg}^{-1} \text{ww}$]	min	max	average	Σ_{26} PFAS yield [mg ha ⁻¹ yr ⁻¹]	
5000	twigs	0.66	3300	22.6	17445	131923	74684		75
	leaves	0.33	1650	47.2	19362	160256	77900		78
							sum		153
							Ground cover ^a		540
							sum		653

^asee Table 49

Table S53 Third management scenario, called meadow, only growing annual plants (e.g. ground elder) with regular mowing.

Scenario 3: Ground cover									
individual plant weight [g]	ground elder		biomass weight		average concentration		Σ_{26} PFAS yield [$\mu\text{g ha}^{-1} \text{yr}^{-1}$]		
	plant density [plants ha ⁻¹]			tissue	share	Σ_{26} PFAS [$\text{ng g}^{-1} \text{ww}$]	min	max	Σ_{26} PFAS yield [mg ha ⁻¹ yr ⁻¹]
								average	
100	1000000	100000	stem	0.5	1.51	43237	107824	75531	76
			leaf	0.5	9.45	44388	1165392	472667	473
								sum	548

Table S54 Calculations for Scenario 1 with equations according to Algreen et al. (2014) assuming decreasing soil concentrations with gradual extraction by trees

Scenario 1: Shelterwood with equations from Algreen et al. (2014)										

$\Delta c_{\text{soil}45\text{years}}$	Birch PFOS	-4.8E-07	mg kg ⁻¹	Assumed soil depth	0.7	m
$\Delta c_{\text{soil}45\text{years}}$	Birch $\sum_{26}$ PFASs	-0.00018	mg kg ⁻¹	soil dry density	1.3	kg L ⁻¹
$\Delta c_{\text{soil}45\text{years}}$	Spruce PFOS	-3.5E-07	mg kg ⁻¹	soil mass M_{soil} yields	910	kg
$\Delta c_{\text{soil}45\text{years}}$	Spruce $\sum_{26}$ PFASs	-5.2E-05	mg kg ⁻¹			

3. equation change of contaminant concentration in soil

$$\frac{dc_{\text{soil}}}{dt} = -BCF * dM_{\text{wood}} (dt * M_{\text{soil}})^{-1} * c_{\text{soil}} = -k * c_{\text{soil}}$$

unit kg kg⁻¹ kg yr⁻¹ mg kg⁻¹

$dc_{\text{soil}} dt^{-1}$	Birch PFOS	-2.6E-07	k=	1.9E-05
$dc_{\text{soil}} dt^{-1}$	Birch $\sum_{26}$ PFASs	-9.5E-05	k=	0.0053
$dc_{\text{soil}} dt^{-1}$	Spruce PFOS	-8.5E-07	k=	6.2E-05
$dc_{\text{soil}} dt^{-1}$	Spruce $\sum_{26}$ PFASs	-0.00012	k=	0.0069

4. equation time to reach threshold value

$$t [\text{yrs}] = \ln(c_{\text{soil}}(0) * c_{\text{soil}}(t)^{-1}) * k^{-1}$$

		land use			
		sensitive	non-sensitive	$c_{\text{soil}}(0)$	mg kg ⁻¹ ww
t	Birch PFOS	158326	57590	PFOS	0.014
t	Birch $\sum_{26}$ PFASs	-2.4	-359	$\sum_{26}$ PFASs	0.018
t	Spruce PFOS	48449	17623		
t	Spruce $\sum_{26}$ PFASs	-1.9	-277		

References

- Ahrens, L.; Harner, T.; Shoeib, M.; Lane, D. A.; Murphy, J. G. Improved Characterization of Gas-Particle Partitioning for Per- and Polyfluoroalkyl Substances in the Atmosphere Using Annular Diffusion Denuder Samplers. *Environ. Sci. Technol.* **2012**, 46 (13), 7199–7206.
- Algreen, M.; Trapp, S.; Rein, A. Phytoscreening and Phytoextraction of Heavy Metals at Danish Polluted Sites Using Willow and Poplar Trees. *Environ. Sci. Pollut. Res.* **2014**, 21 (15), 8992–9001.
- Brooke, D., Footitt, A. and Nwaogu, T.A. Environmental risk evaluation report: perfluorooctanesulphonate (PFOS). Environment Agency. UK, **2004**.
- Du, Z.; Deng, S.; Bei, Y.; Huang, Q.; Wang, B.; Huang, J.; Yu, G. Adsorption Behavior and Mechanism of Perfluorinated Compounds on Various Adsorbents-A Review. *J. Hazard. Mater.* **2014**, 274, 443–454.
- Johansson, Tord. Growth and Yield in Shelter Stands of Silver Birch and Norway Spruce - Tillväxt Och Produktion Hos Skärbestand Med Björk Och Gran; Rapport 068; Swedish University of Agricultural Sciences, Department of Energy and Technology: Uppsala, **2014**.
- Johansson, T. Biomass Production and Allometric above- and below-Ground Relations for Young Birch Stands Planted at Four Spacings on Abandoned Farmland. *Forestry* **2007**, 80 (1), 41–52.
- Jordbruksverket. Handbok för Salixodlare. Jordbruksverket, Sweden.
- Minerbi, S.; Cescatti, A. Tree Volume and Biomass Equations for Picea Abies and Larix Decidua in South Tyrol. *For. Obs.* **2015**, 7, 5–34.
- Rahman, M. F.; Peldszus, S.; Anderson, W. B. Behaviour and Fate of Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs) in Drinking Water Treatment: A Review. *Water Res.* **2014**, 50, 318–340.
- Rayne, S.; Forest, K. Perfluoroalkyl Sulfonic and Carboxylic Acids: A Critical Review of Physicochemical Properties, Levels and Patterns in Waters and Wastewaters, and Treatment Methods. *J. Environ. Sci. Health Part –Toxic Hazardous Subst. Environ. Eng.* **2009**, 44 (12), 1145–1199.
- Wang, Z.; MacLeod, M.; Cousins, I. T.; Scheringer, M.; Hungerbuehler, K. Using COSMOtherm to Predict Physicochemical Properties of Poly- and Perfluorinated Alkyl Substances (PFASs). *Environ. Chem.* **2011**, 8 (4), 389–398.