Table S1. Chemical speciation of SQTs (%) from a sub-Arctic Wetland

	CAS	RT	RI
α-copaene	3856-25-5	34.9	1376
Longicyclene*	1137-12-8	35.2	1371
SQT6		35.6	
Isolongifolene*	1135-66-6	35.7	1390
α-gurjunene*	489-40-7	35.7	1406
β-farnesene*	18794-84-8	35.8	1448
Cadinene	5951-61-1	35.8	
β-caryophyllene*	87-44-5	36.0	1419
Isosativene	24959-83-9	36.1	1453
β-gurjunene	17334-55-3	36.2	1430
γ-selinene	515-17-3	36.3	1492
α-humulene*	6753-98-6	36.7	1451
α-farnesene	502-61-4	36.8	1496
SQT2		36.9	
α-muurolene	10208-80-7	37.2	1494
SQT8(sum of 3)		37.2	
β-cadinene	523-47-7	37.5	1522
Calamene	483-77-2	37.6	1510
SQT10		37.9	

*included into our calibration standard

Table S2. Limits of detection (LODs) for soil emission and ambient air samples and precision and expanded uncertainty (U) of the analytical method

Compound	CAS number	LOD ($ug\ m^{-2}\ h^{-1}$)	LOD (pptv)	Precision (RSD%)	U (%)
isoprene	78-79-5	0.055	5.1	3.0	16
<u>monoterpenes</u>					
α-Pinene	7785-70-8	0.006	1.1	2.6	17
camphene	79-92-5	0.002	1.0	1.6	18
β-pinene	19902-08-0	0.002	0.2	4.2	18
3Δ-carene	498-15-7	0.003	0.8	2	17
p-cymene	99-87-6	0.003	0.6	2	19
limonene	5989-54-8	0.010	1.0	1.5	17
1,8-cineol	470-82-6	0.005	0.9	2.6	18
terpinolene	586-62-9	0.011	1.2	2.5	17
linalool	78-70-6	0.015	1.6	2.4	18
bornylacetate	5655-61-8	0.008	0.6	2.4	20
<u>sesquiterpenes</u>					
longicyclene	1137-12-8	0.006	0.3	2.4	19
isolongifolene	1135-66-6	0.006	0.3	2.5	20
β-caryophyllene	87-44-5	0.018	0.8	2.2	17
β-farnesene	18794-84-8	0.033	0.9	5	25
α-humulene	6753-98-6	0.006	0.3	2.1	18