

Simulating impacts on UK air quality from net-zero forest planting scenarios

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Supplementary material

S1. EMEP4UK (2018) model runs for 4 planting scenarios showing isoprene emissions (top row), the difference in emissions between planting scenario and base case (middle row) and the percentage difference in emissions between planting scenarios and base case (bottom row)

S3. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly isoprene emissions for UK

S3. EMEP4UK (2018) model runs for 4 planting scenarios showing total monoterpene emissions (top row), the difference in emissions between planting scenario and base case (middle row) and the percentage difference in emissions between planting scenarios and base case (bottom row)

S4. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly total monoterpene emissions for UK

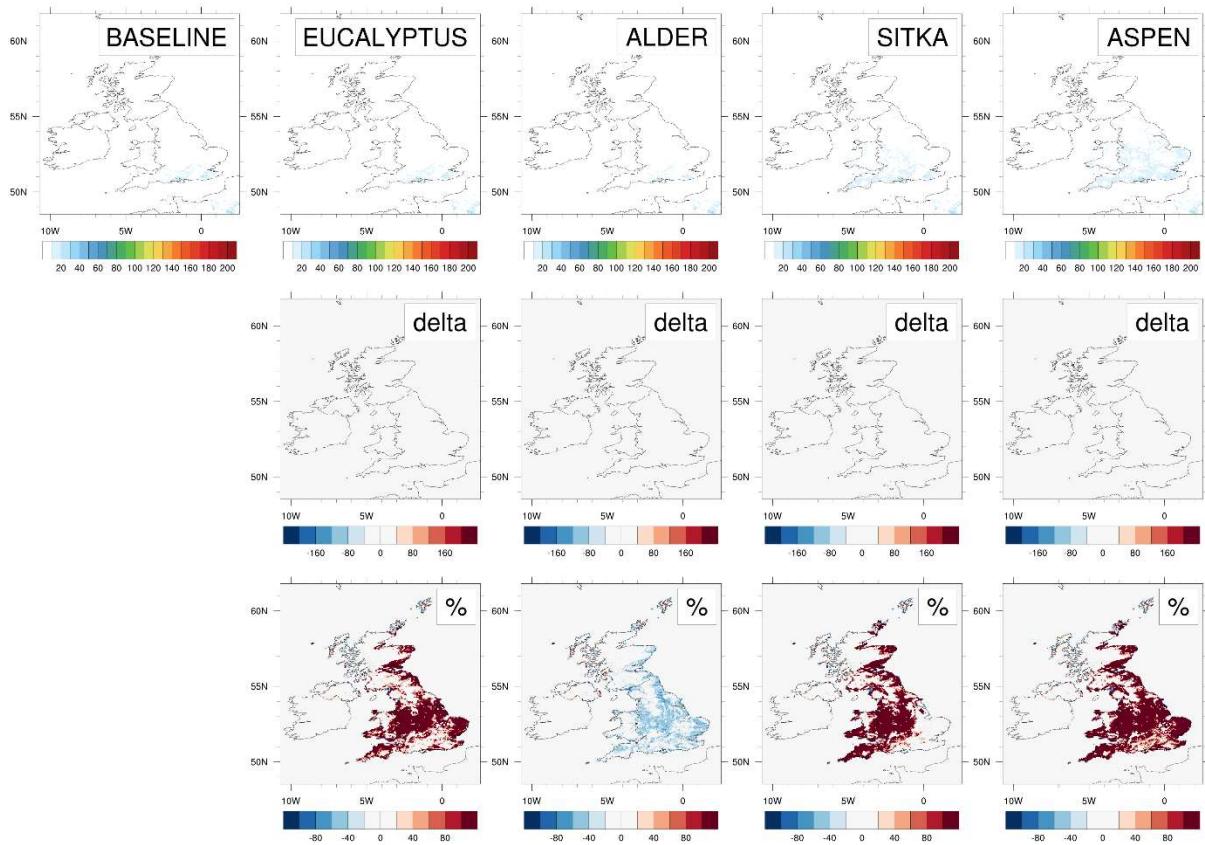
S5. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly ozone concentrations for UK

S6. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly PM_{2.5} concentrations for UK

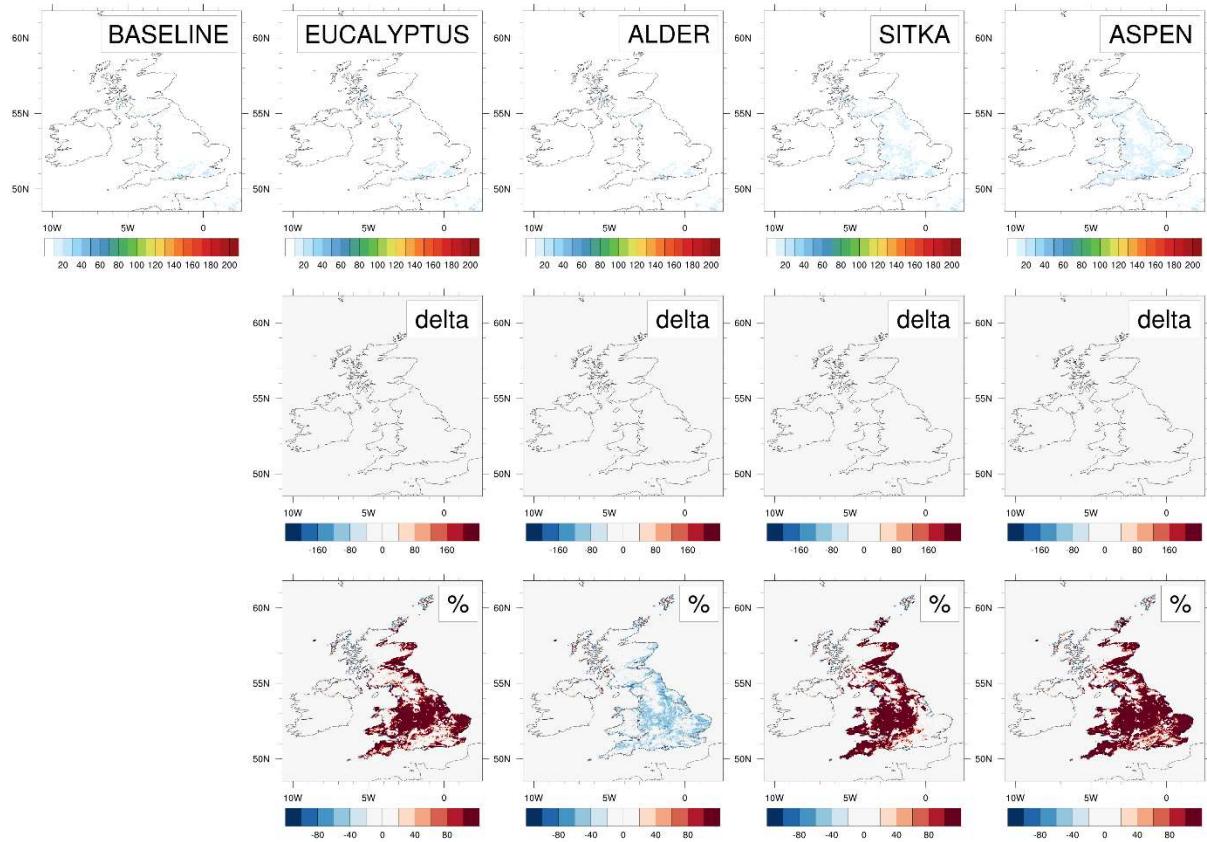
S7. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly SOA concentrations for UK

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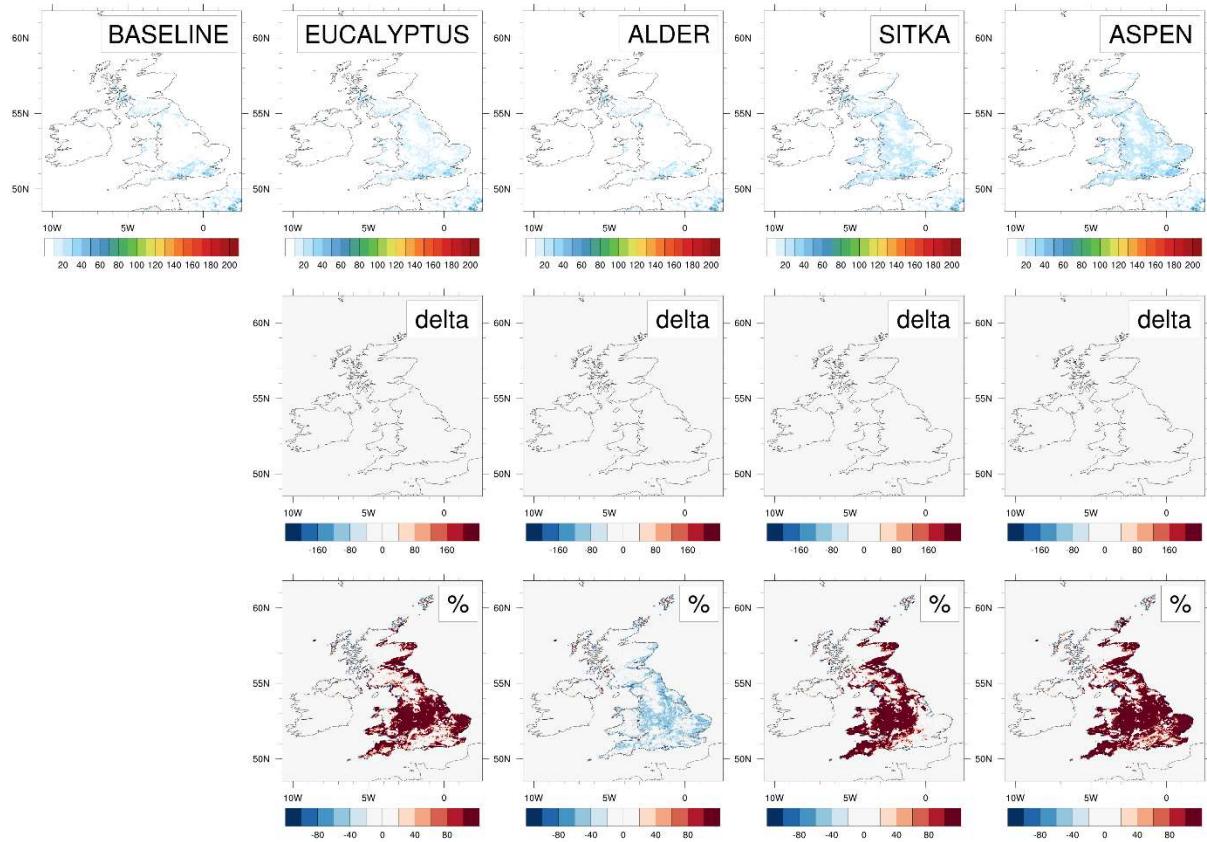
Jan 2018



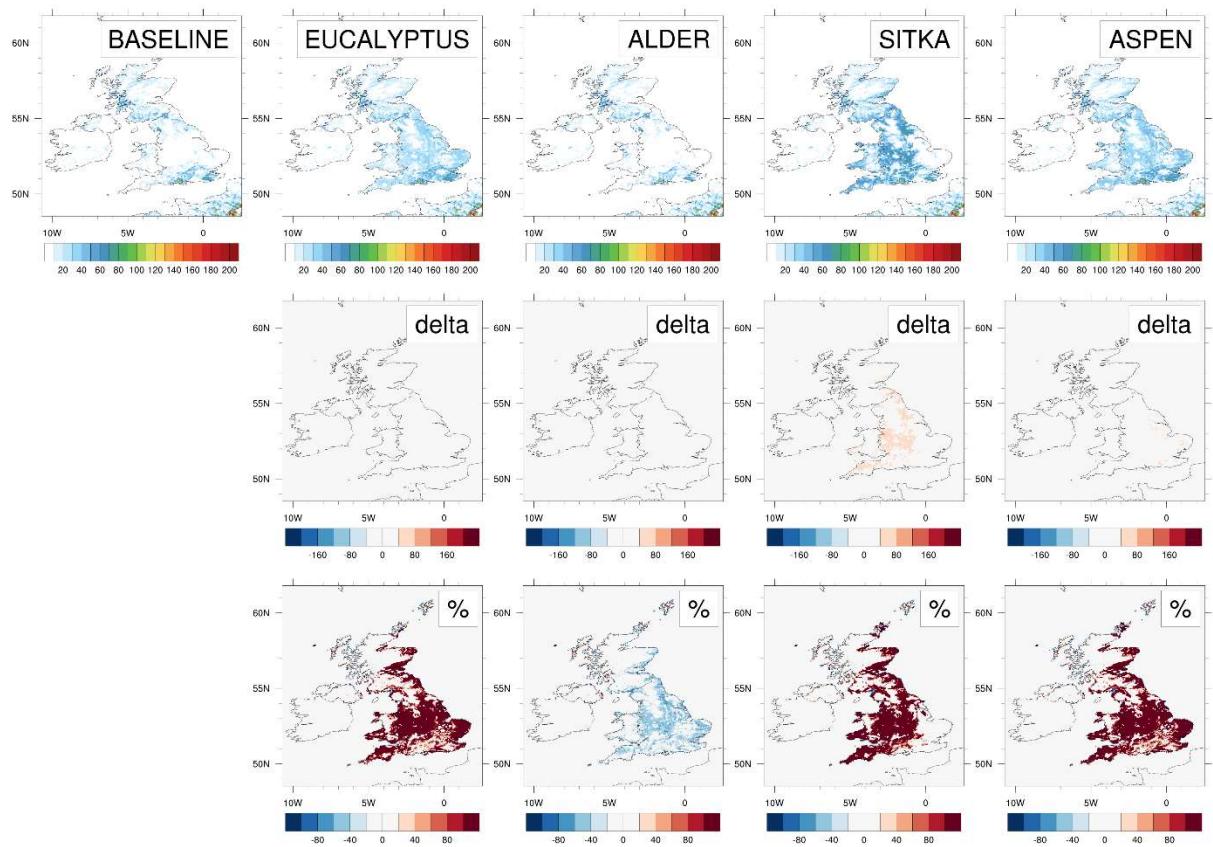
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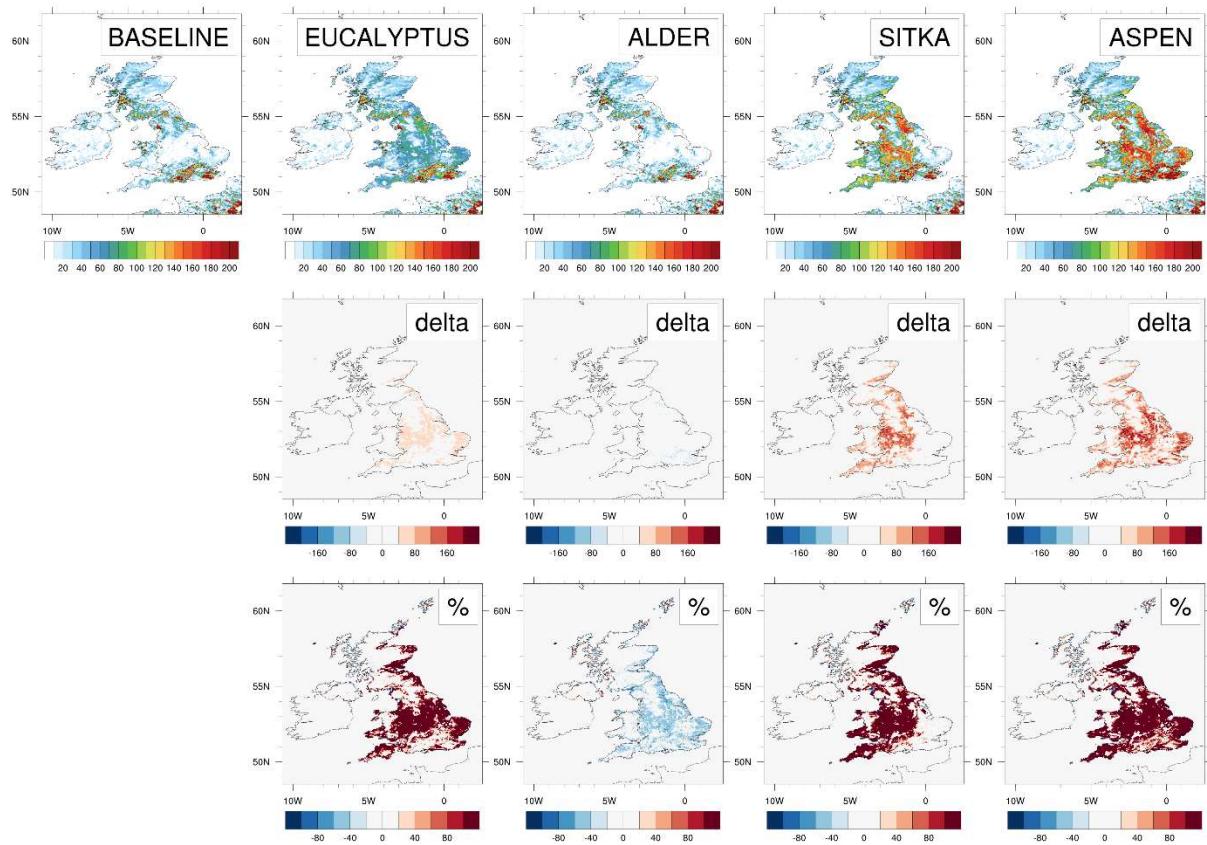
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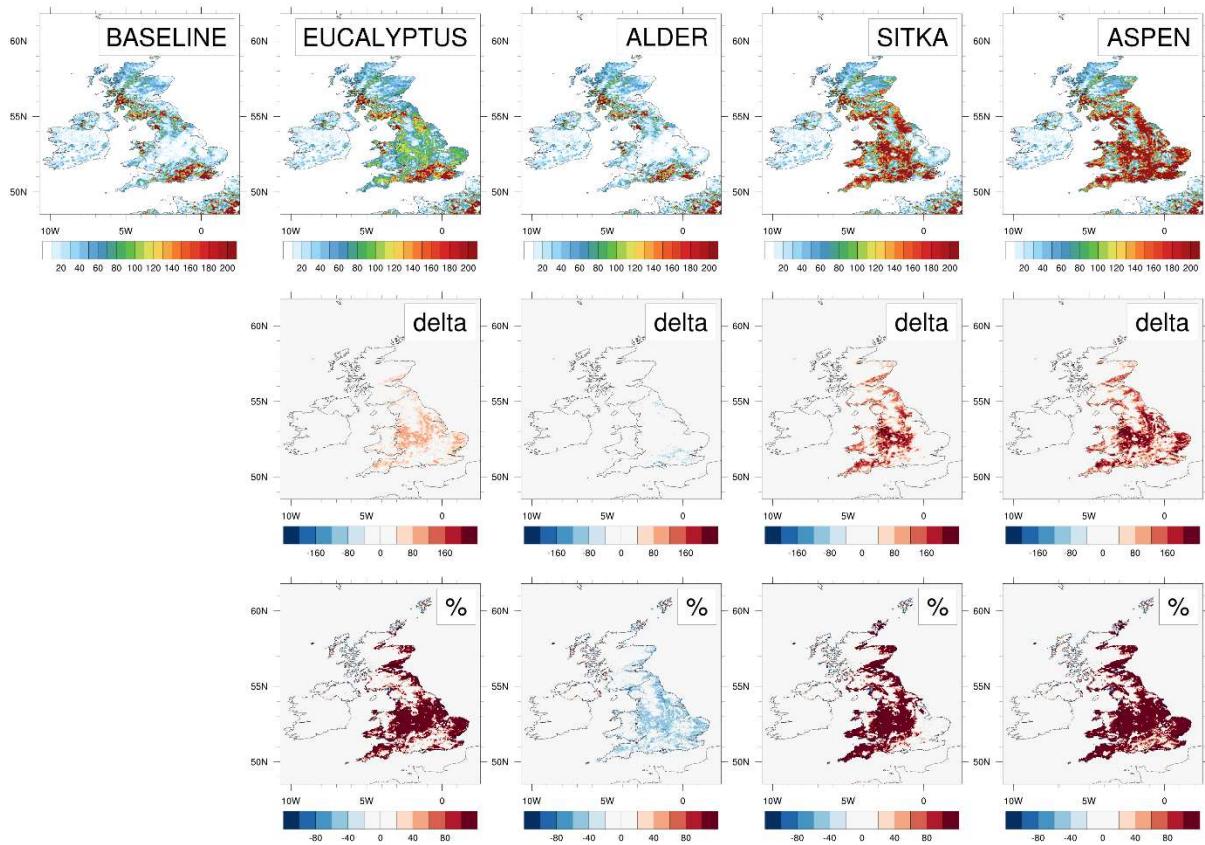
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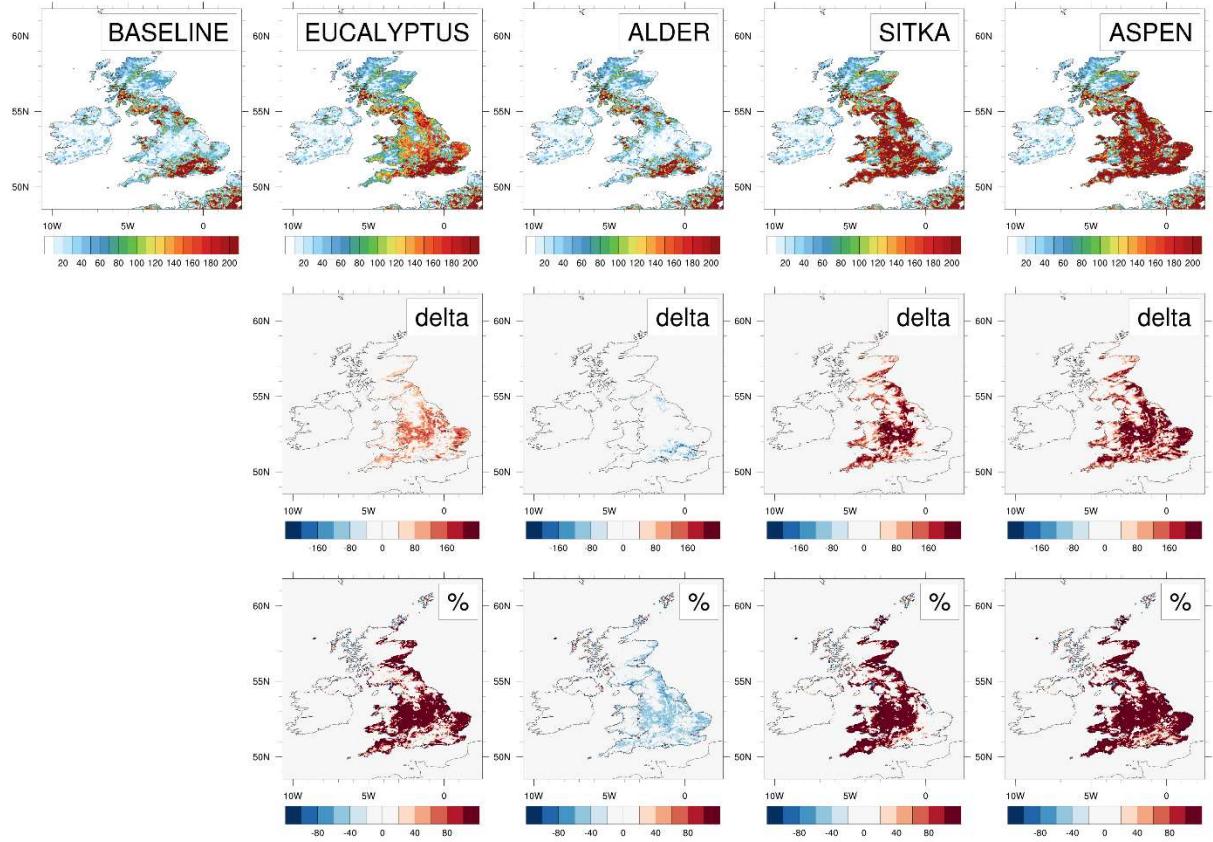
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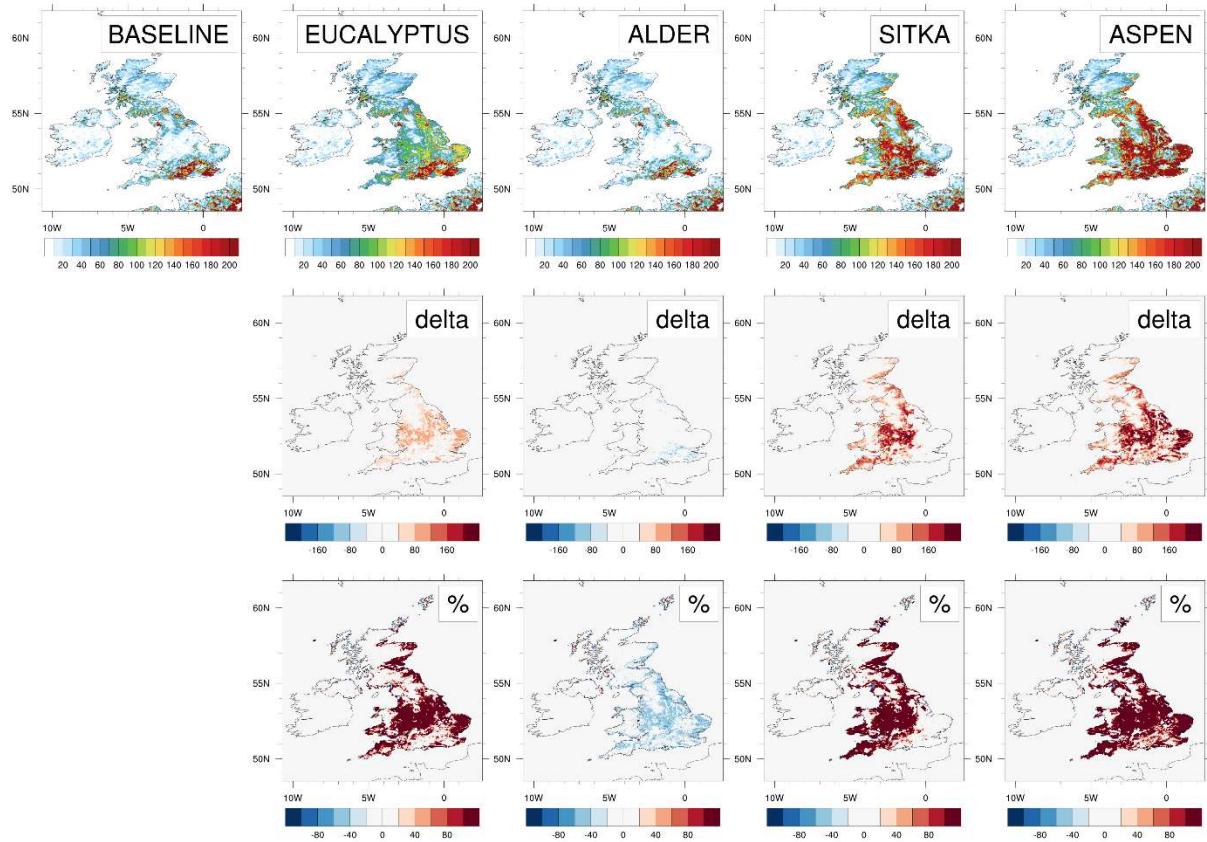
Jun 2018



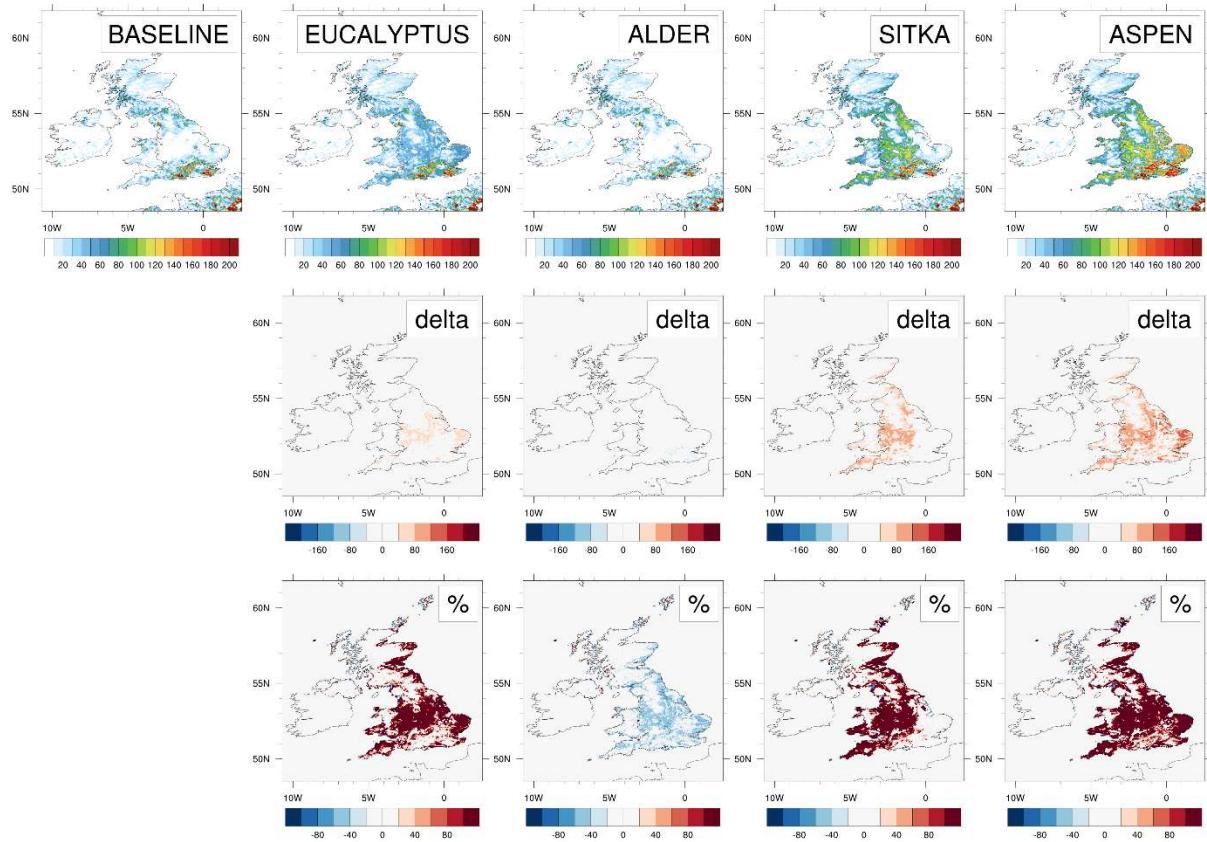
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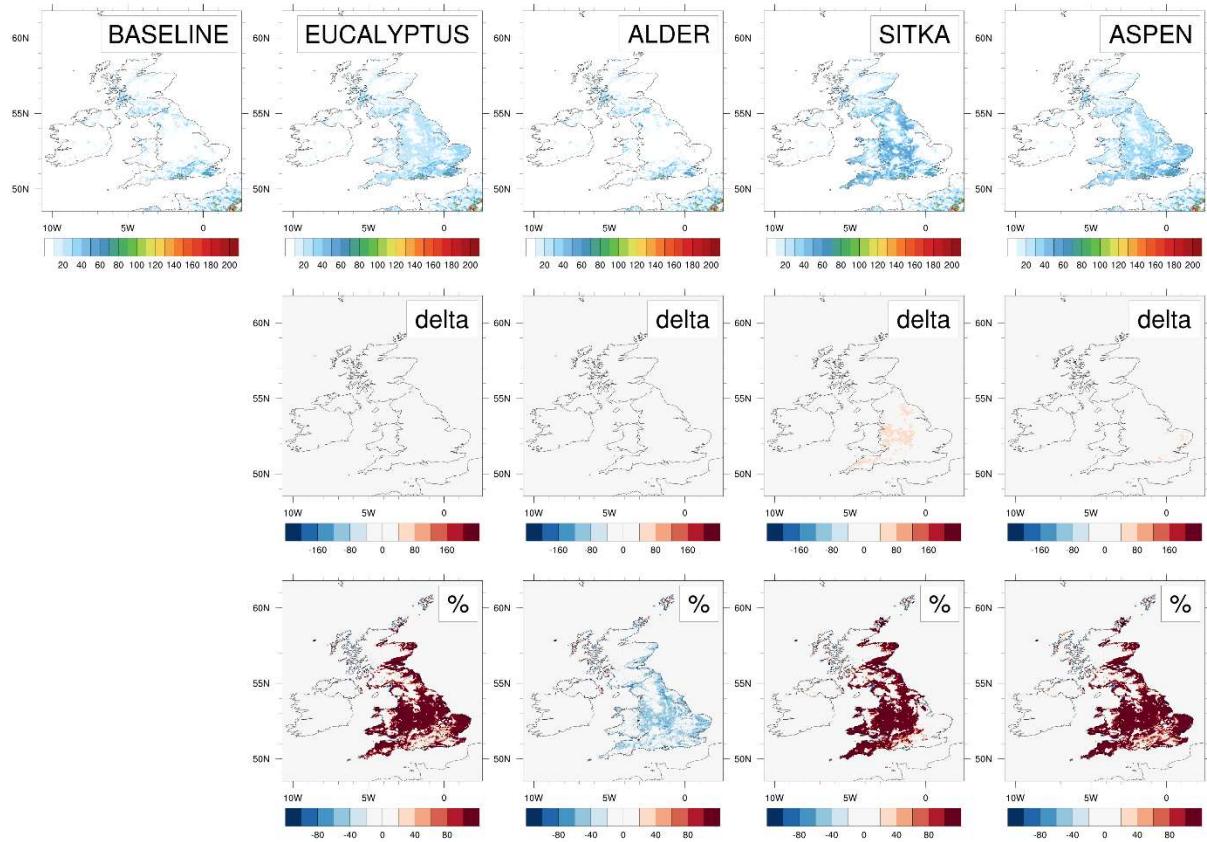
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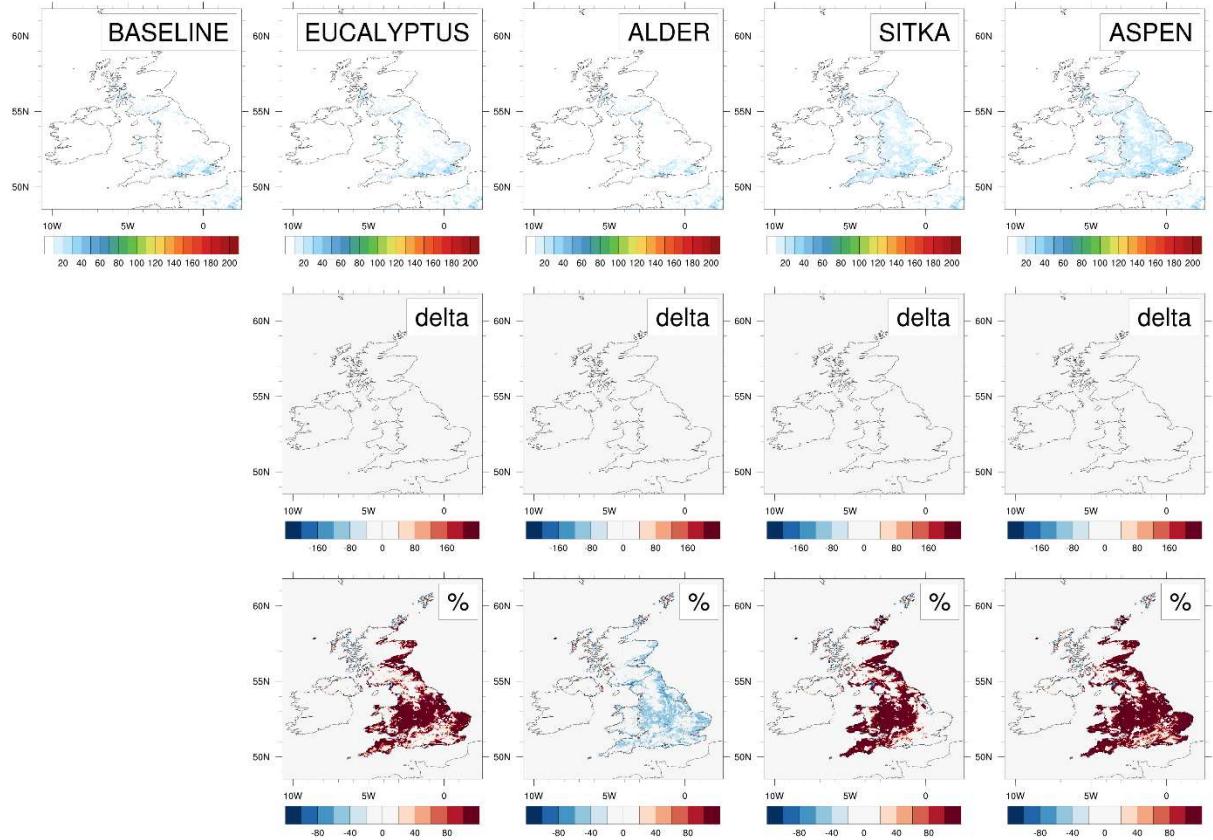
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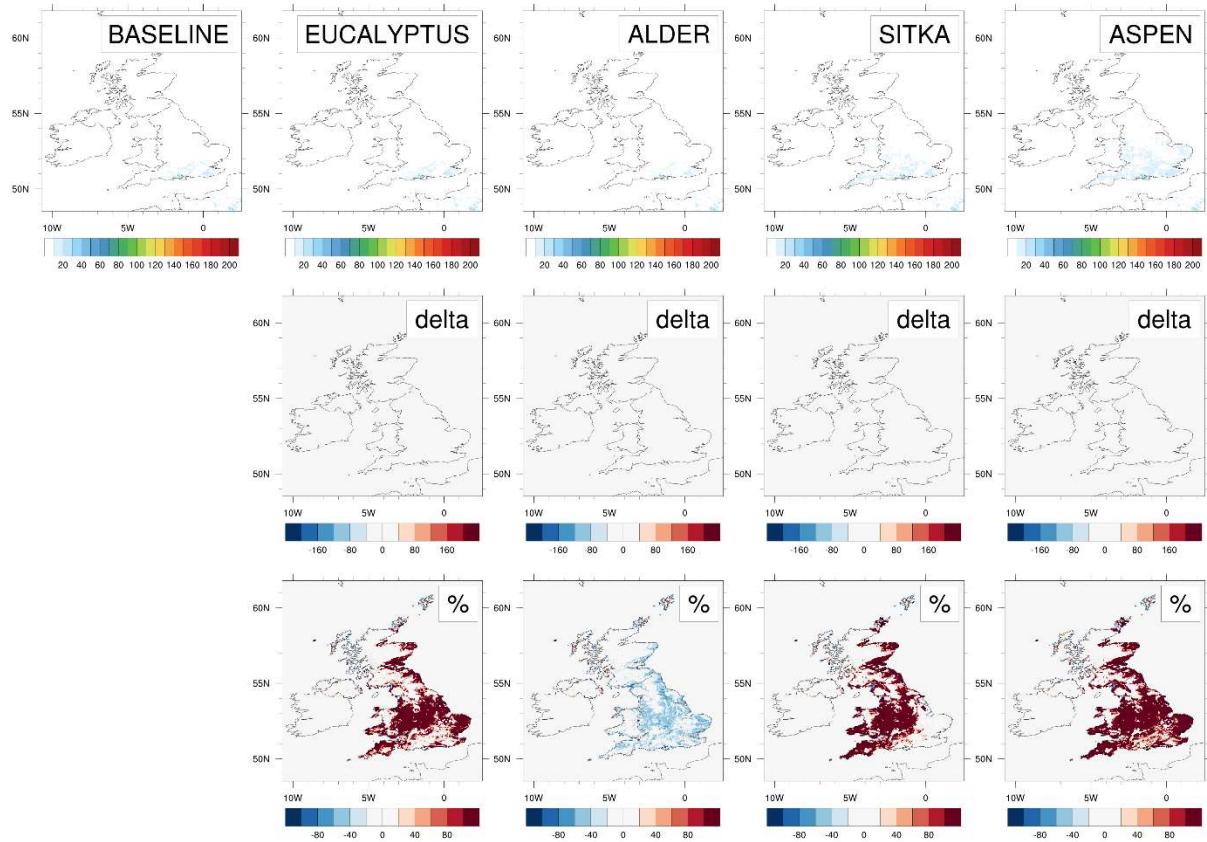
Oct 2018



Nov 2018



Dec 2018

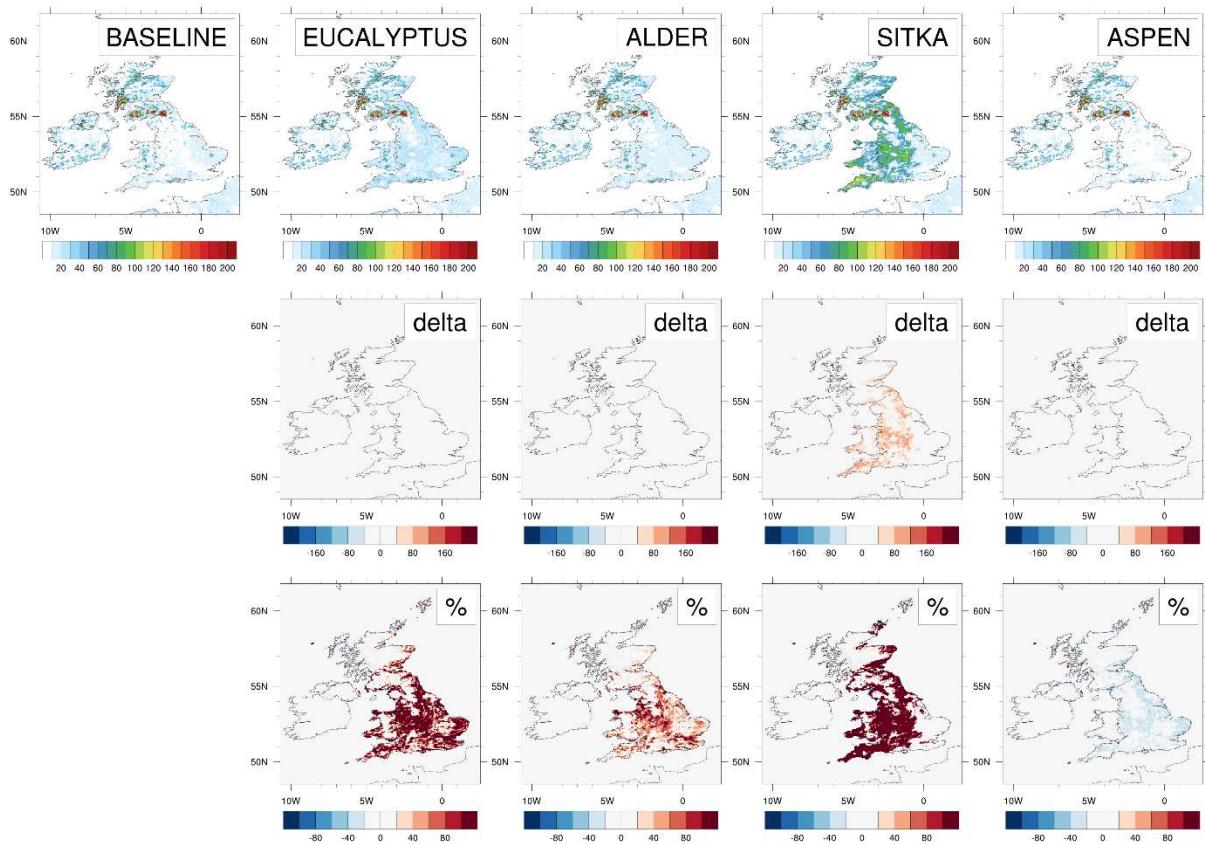


S2. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly isoprene emissions for UK

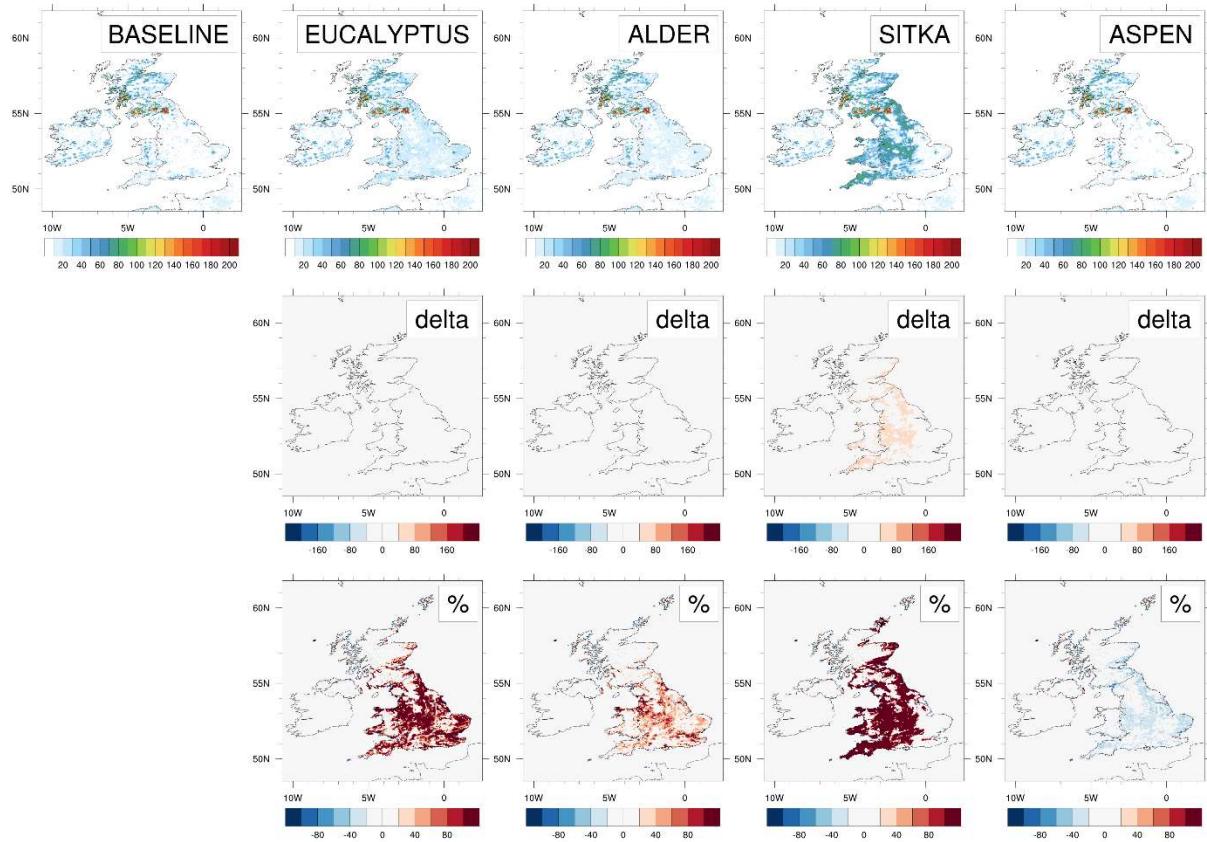
	Isoprene (kt)	Baseline	Alder	Aspen	Eucalyptus	Spruce
Jan		0.55	0.46		1.35	0.84
Feb		0.73	0.63		1.67	1.07
Mar		1.33	1.15		3.1	1.98
Apr		2.66	2.33		5.43	4.73
May		8.67	7.55		19.95	12.89
Jun		12.76	11.14		28.98	18.73
Jul		17.08	14.55		41.26	25.96
Aug		10.53	8.93		26.14	16.28
Sep		5.74	4.89		13.88	8.74
Oct		2.18	1.89		4.59	3.95
Nov		1.13	0.97		2.7	1.7
Dec		0.53	0.44		1.29	0.8

S3. EMEP4UK (2018) model runs for 4 planting scenarios showing total monoterpenes emissions (top row), the difference in emissions between planting scenario and base case (middle row) and the percentage difference in emissions between planting scenarios and base case (bottom row)

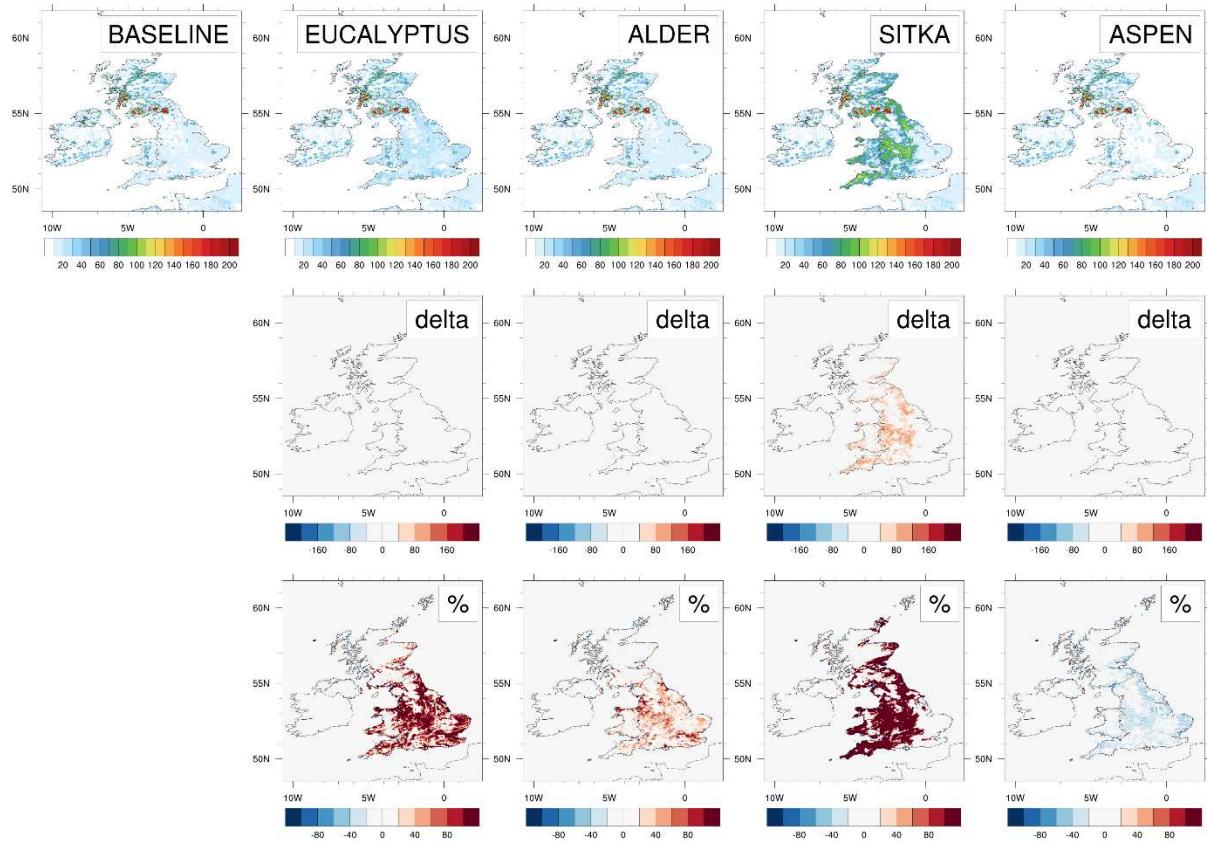
Jan 2018



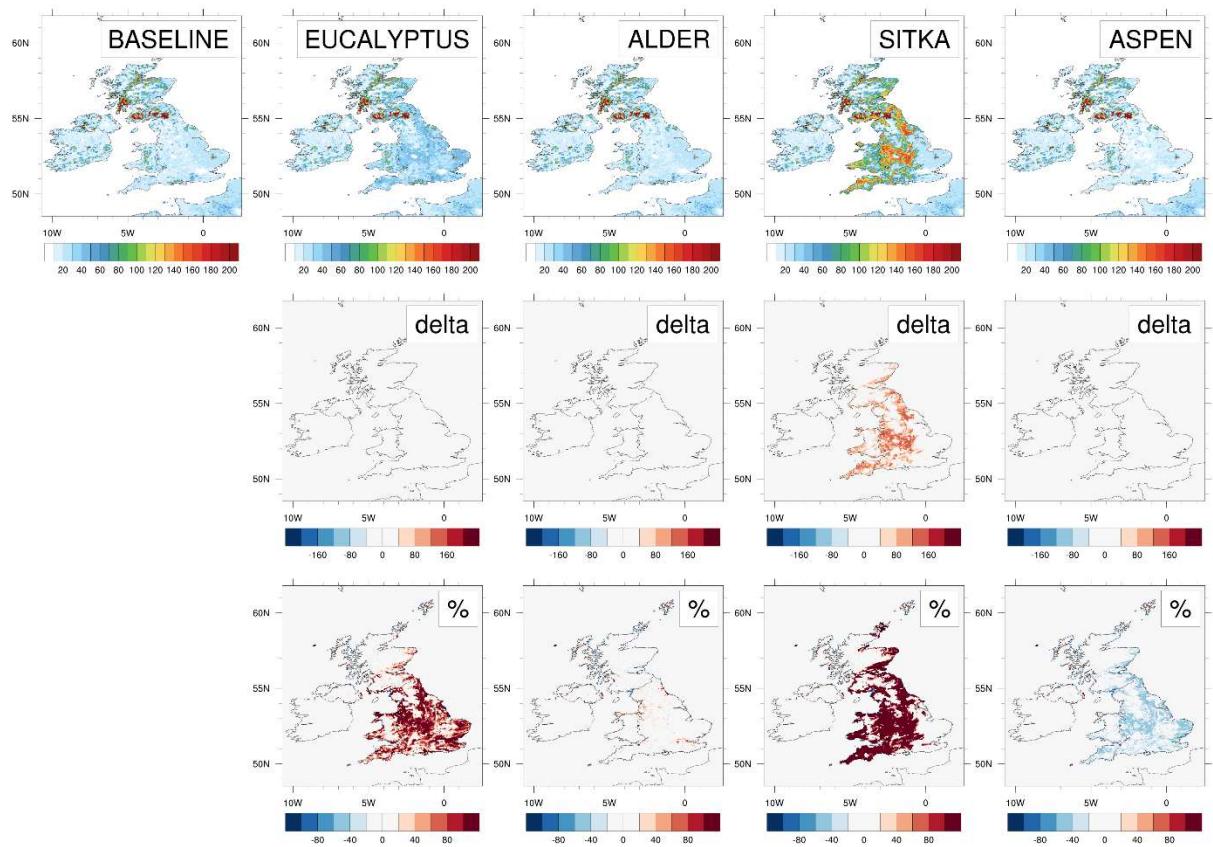
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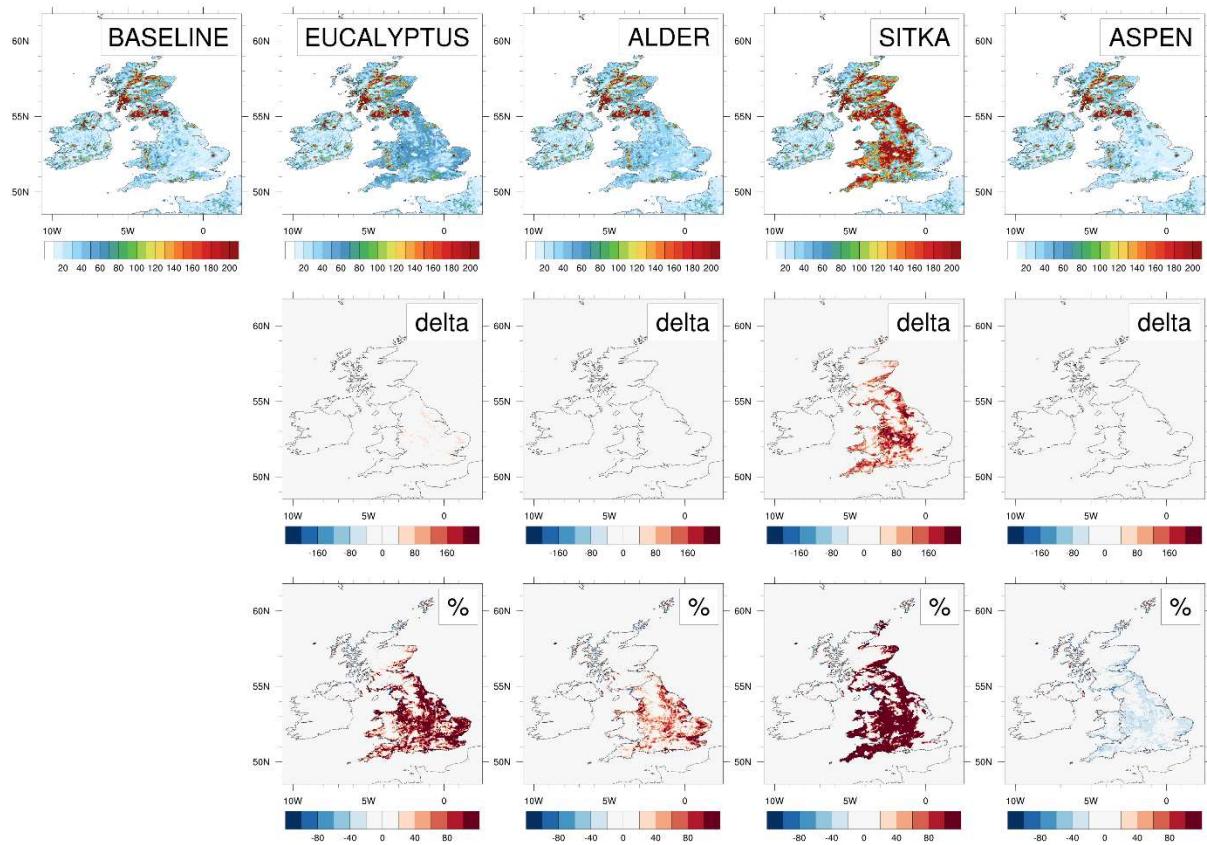
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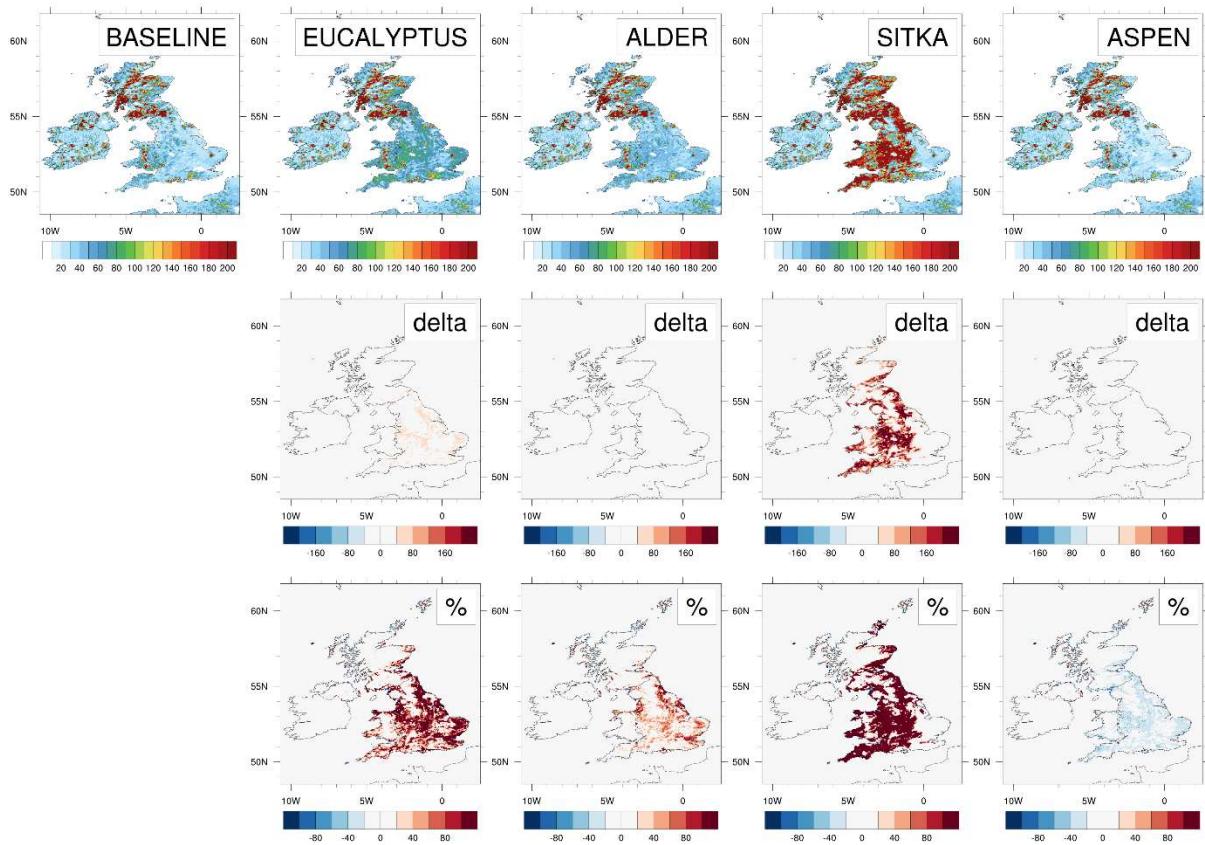
Apr 2018



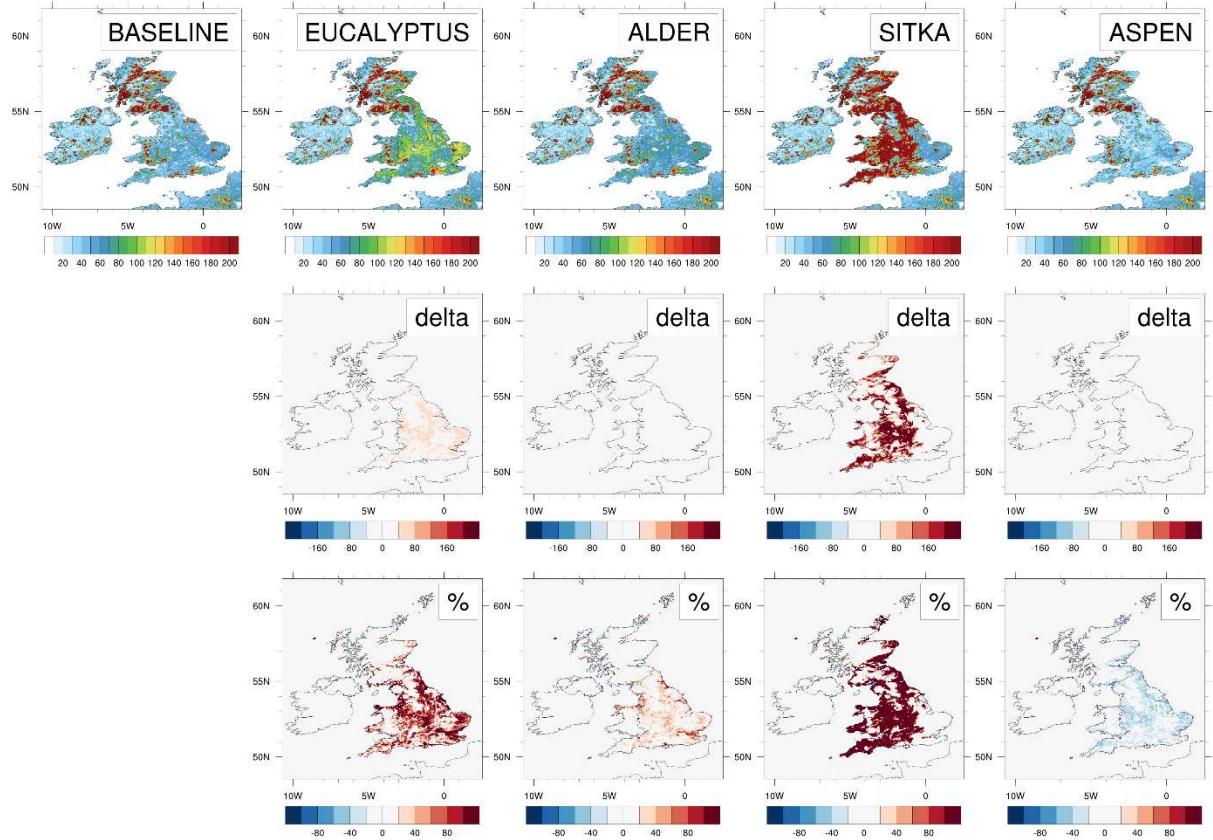
May 2018



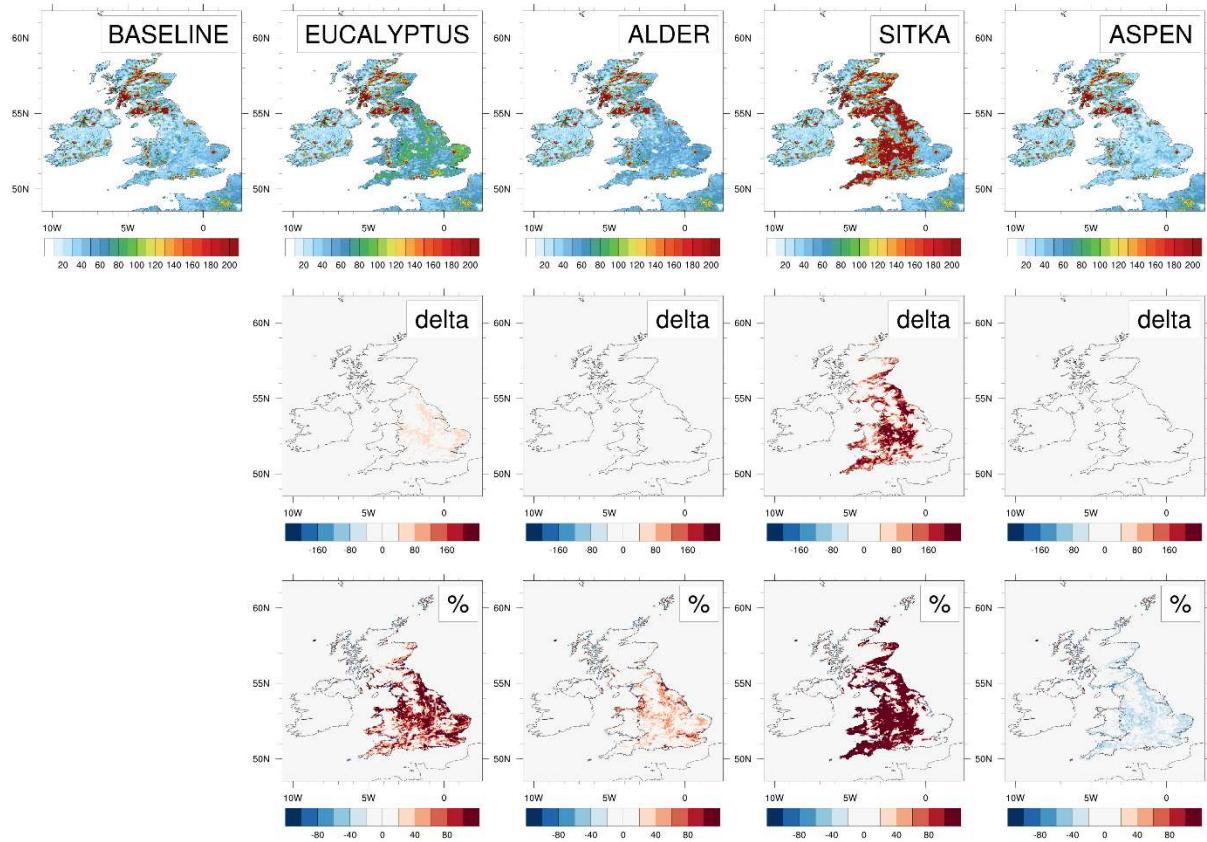
Jun 2018



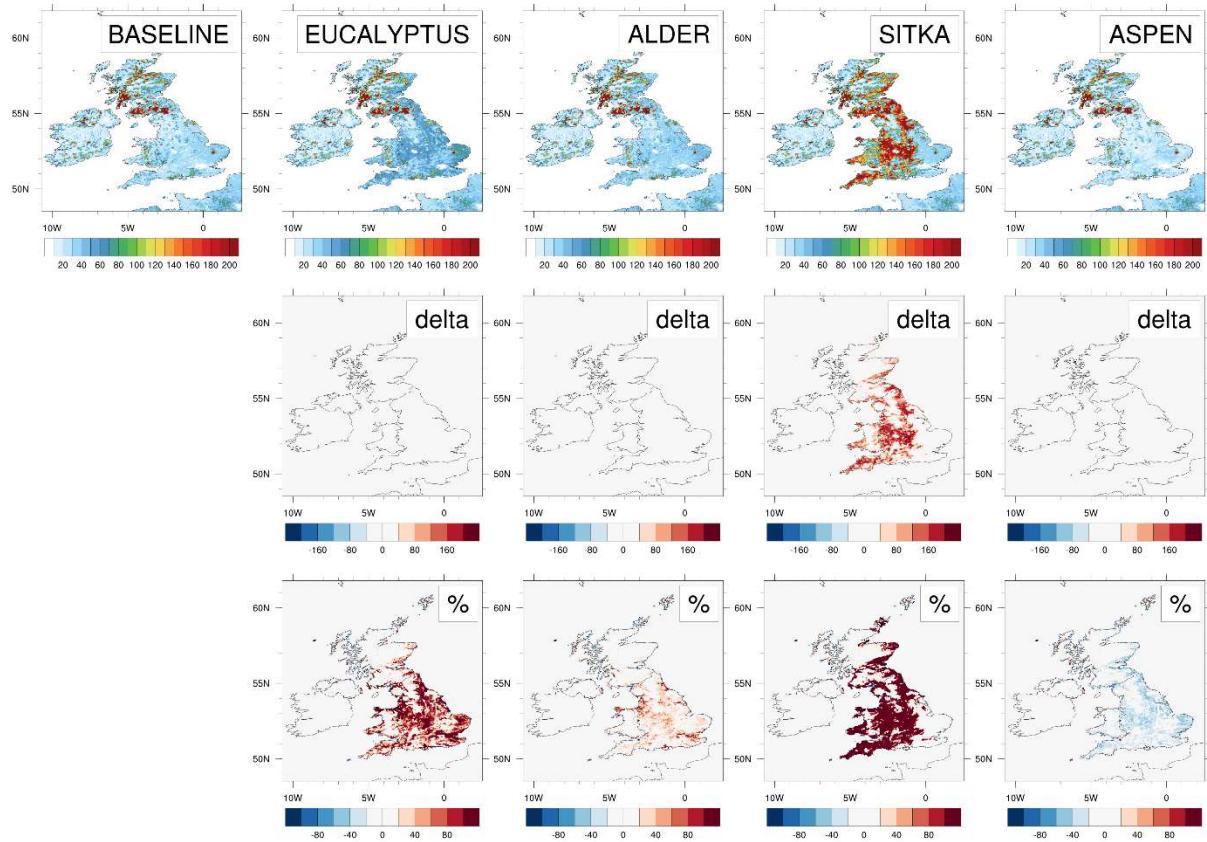
Jul 2018



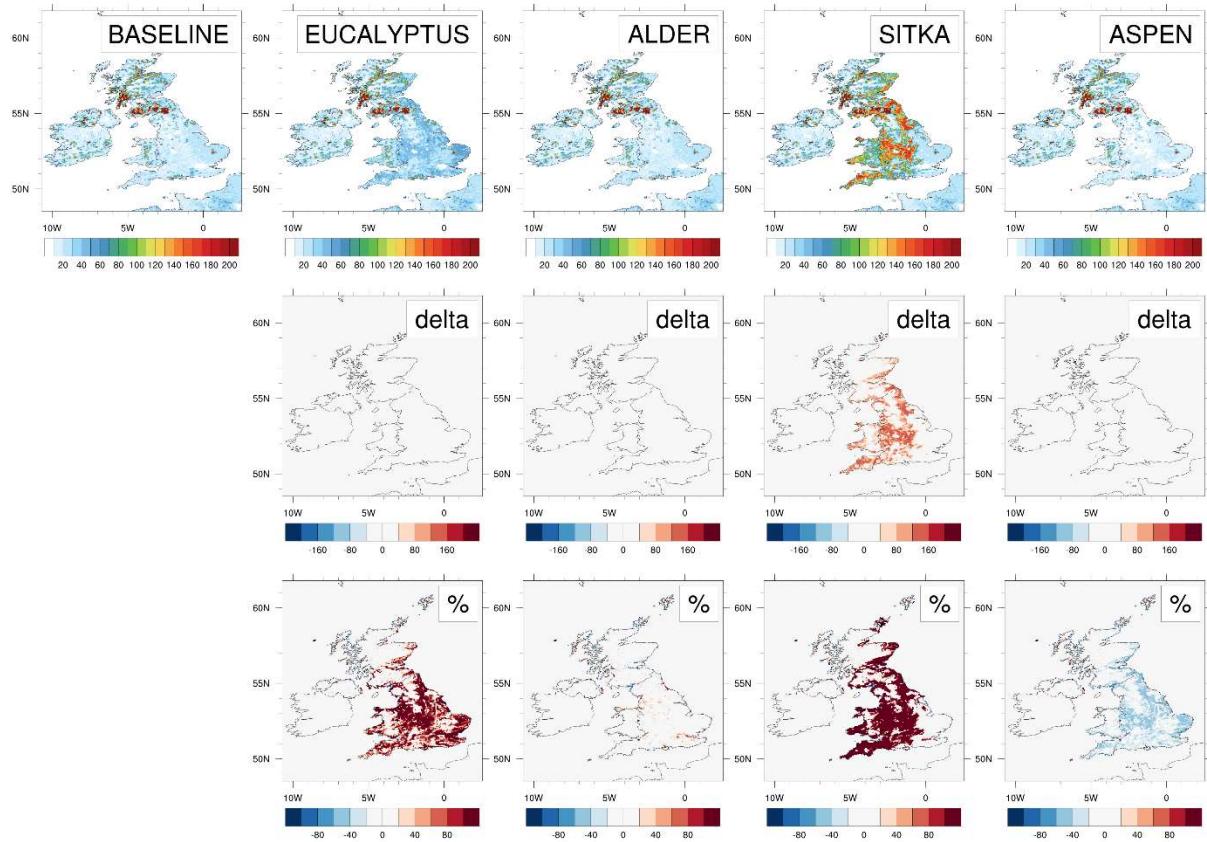
Aug 2018



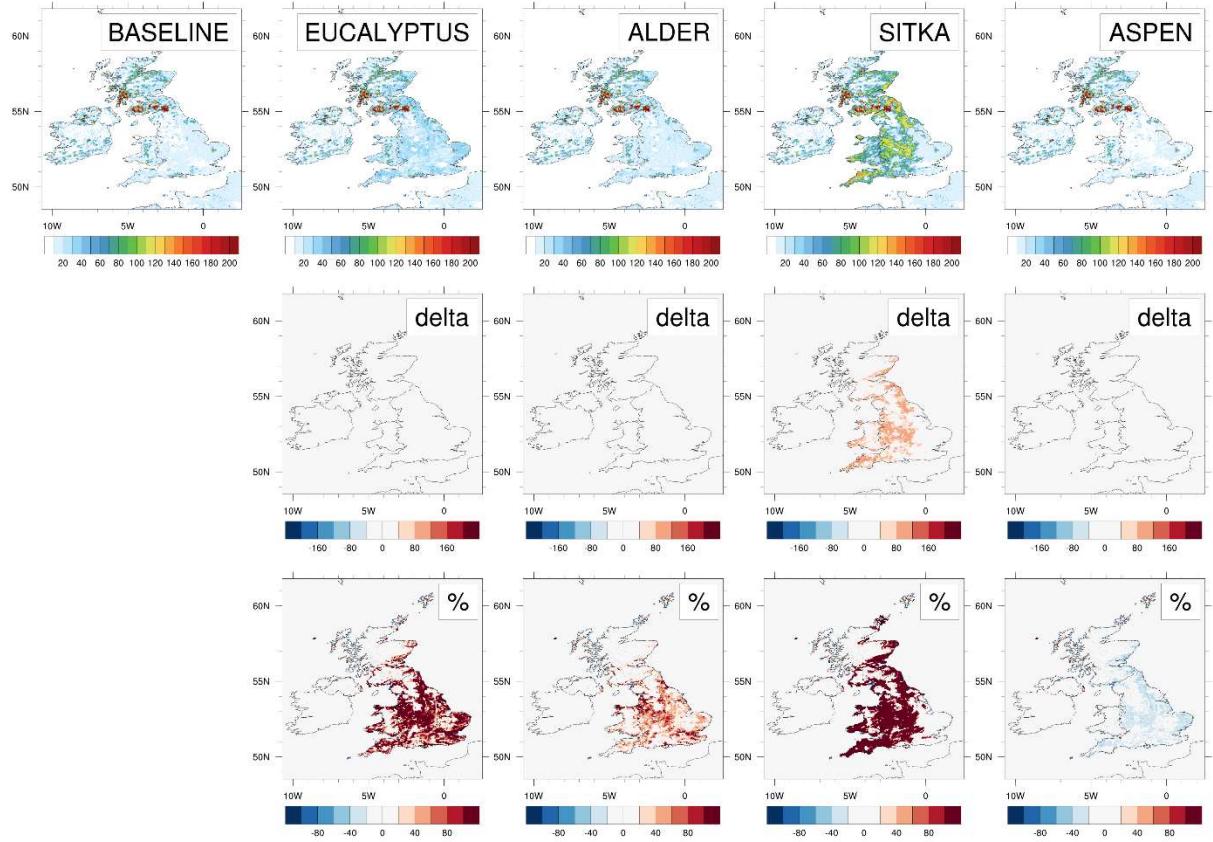
Sep 2018



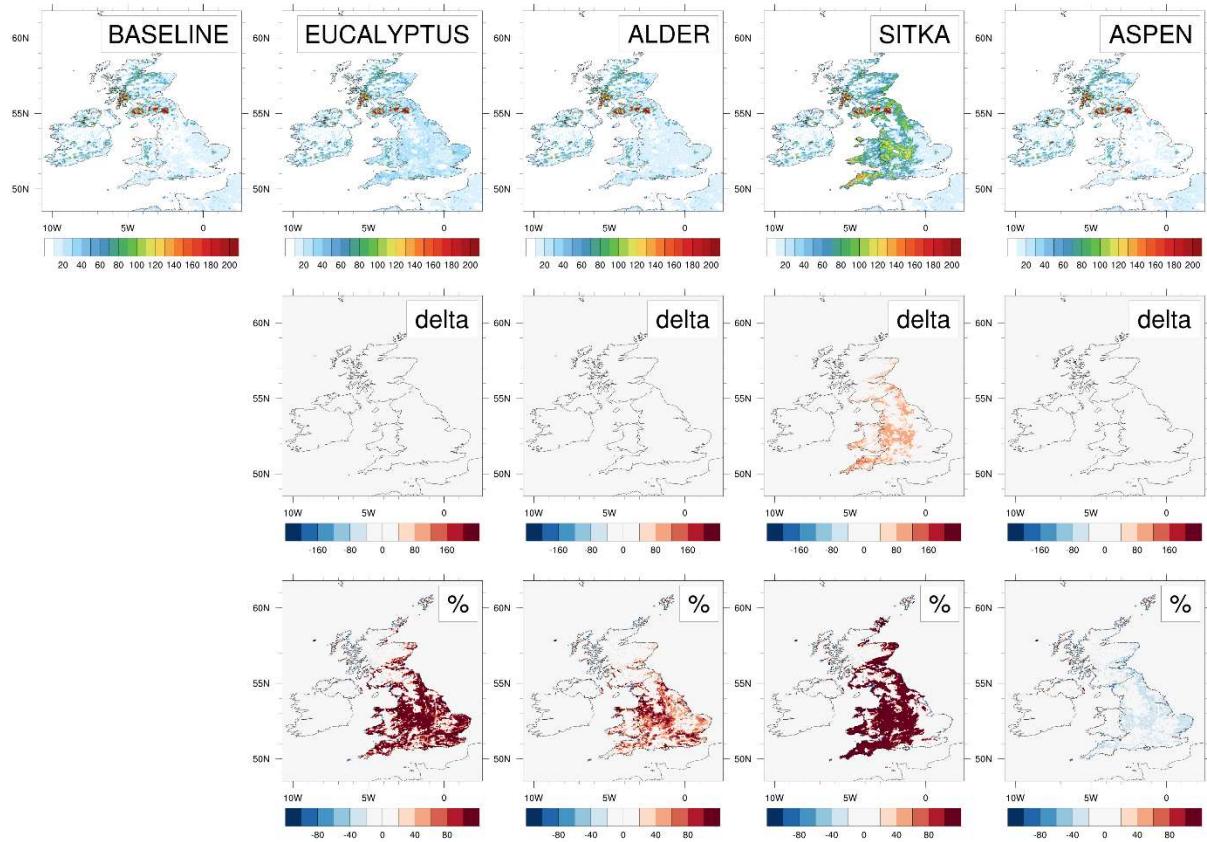
Oct 2018



Nov 2018



Dec 2018



S4. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly total monoterpene emissions for UK

	Total monoterpene (kt)					
	Baseline	Alder	Aspen	Eucalyptus	Spruce	
Jan	4.97	5.44		4.66	6.36	10.43
Feb	4.34	4.66		4.04	5.36	8.58
Mar	5.54	5.91		5.11	6.8	10.86
Apr	8.18	8.17		7.36	10	15.91
May	12.69	13.52		11.81	15.49	24.18
Jun	16.26	17.18		15.05	19.55	30.35
Jul	20.31	21.26		18.41	24.4	38.15
Aug	15.95	16.87		14.52	19.46	30.67
Sep	11.73	12.33		10.65	14.21	22.44
Oct	8.76	8.72		7.94	10.91	17.44
Nov	6.49	7.02		6.05	8.12	13.07
Dec	5.55	6.1		5.21	7.13	11.77

S5. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly ozone concentrations for UK

	UK mean ozone concentrations (ppb)				
	Baseline	Alder	Aspen	Eucalyptus	Spruce
Jan	26.72	27.10	27.13	27.16	26.84
Feb	30.24	30.73	30.77	30.79	30.41
Mar	35.17	35.44	35.50	35.46	35.11
Apr	38.16	38.93	39.05	38.86	38.48
May	39.35	39.28	39.37	40.62	40.23
Jun	34.15	34.35	34.72	35.94	35.60
Jul	31.74	32.15	32.70	33.81	33.45
Aug	28.58	28.67	28.80	29.90	29.46
Sep	29.72	29.84	29.85	30.90	30.36
Oct	26.62	27.30	27.32	27.48	27.06
Nov	22.47	23.06	23.10	23.05	22.73
Dec	22.39	22.93	22.97	22.93	22.61

S6. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly PM_{2.5} concentrations for UK

UK mean baseline PM_{2.5} concentrations ($\mu\text{g m}^{-3}$)

	Baseline	Alder	Aspen	Eucalyptus	Spruce
Jan	6.98	6.71	6.70	6.65	6.71
Feb	6.39	6.18	6.16	6.12	6.16
Mar	8.26	7.94	7.92	7.84	7.92
Apr	9.85	9.28	9.22	9.09	9.33
May	9.02	7.90	7.59	8.18	8.53
Jun	6.17	5.56	5.34	5.79	6.05
Jul	4.35	3.95	3.79	4.14	4.45
Aug	3.14	2.90	2.81	2.99	3.13
Sep	3.93	3.55	3.45	3.69	3.83
Oct	6.69	6.37	6.29	6.35	6.45
Nov	11.65	11.36	11.34	11.25	11.30
Dec	8.11	7.87	7.84	7.79	7.85

S7. EMEP4UK (2018) model runs for baseline and 4 planting scenarios showing monthly SOA concentrations for UK

UK mean SOA concentrations ($\mu\text{g m}^{-3}$)

month	Baseline	Alder	Aspen	Eucalyptus	Spruce
Jan	0.001	0.001	0.001	0.001	0.001
Feb	0.001	0.001	0.001	0.001	0.002
Mar	0.004	0.004	0.004	0.005	0.007
Apr	0.055	0.053	0.051	0.057	0.072
May	0.321	0.288	0.267	0.318	0.366
Jun	0.174	0.157	0.141	0.184	0.242
Jul	0.137	0.128	0.112	0.155	0.214
Aug	0.006	0.006	0.005	0.008	0.015
Sep	0.009	0.009	0.007	0.011	0.017
Oct	0.019	0.019	0.018	0.021	0.028
Nov	0.012	0.012	0.012	0.013	0.015
Dec	0.001	0.001	0.001	0.001	0.002