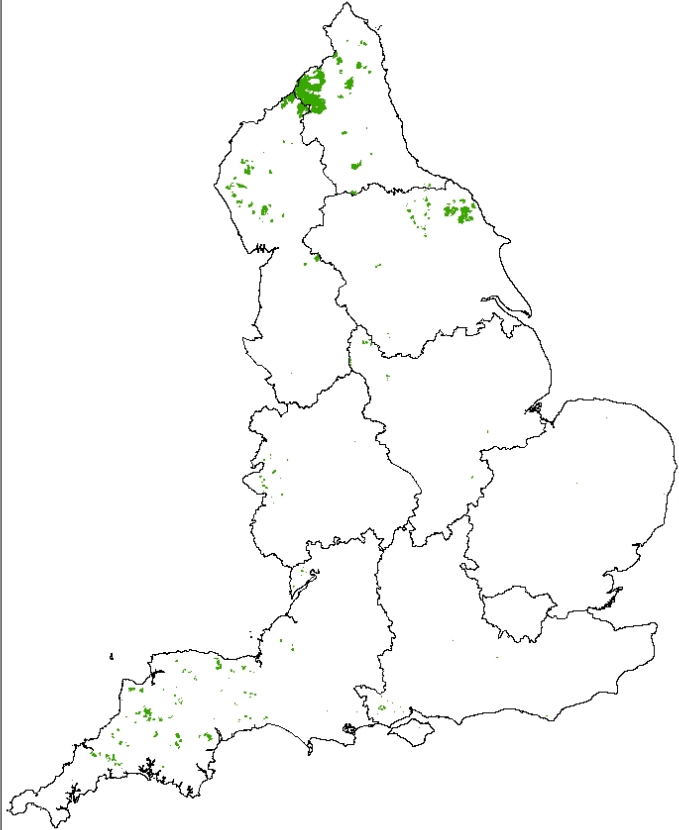


# Change in suitability of Sitka spruce on FC England Estate: a tree species risk assessment

Analysis: Louise Sing, Michal Petr &  
Duncan Ray

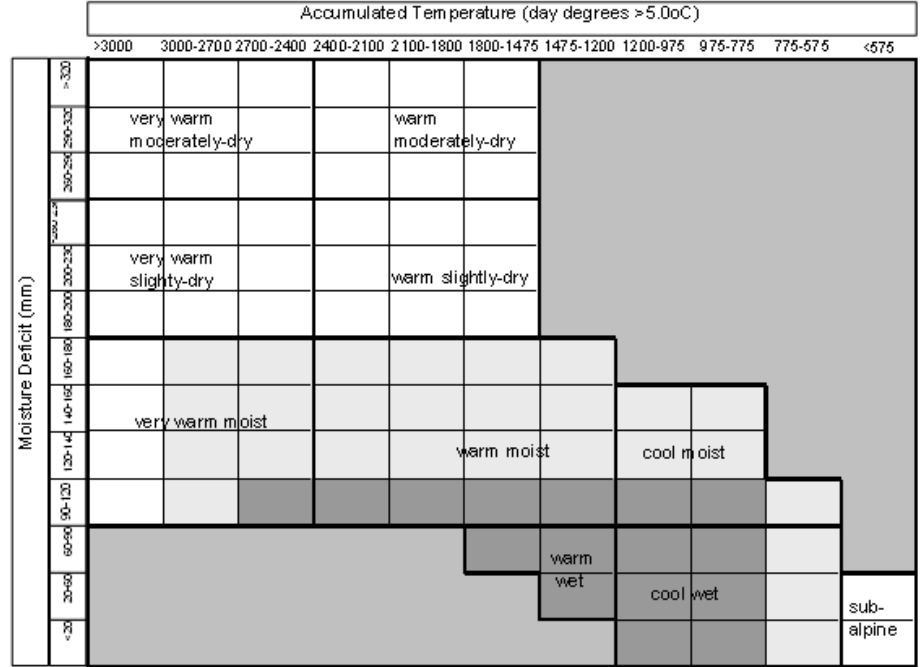
Data: Mark Broadmeadow and Kay  
Greenwell (FCE)

Distribution of Sitka spruce on FC England land by region

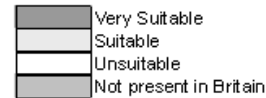


December 2010

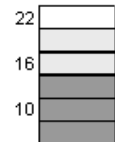
Sitka spruce - *Picea sitchensis*



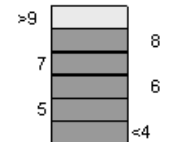
KEY



Windiness

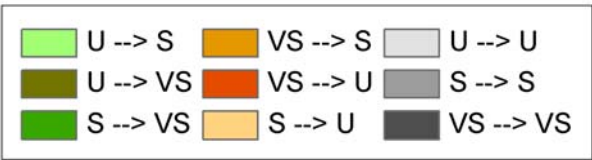
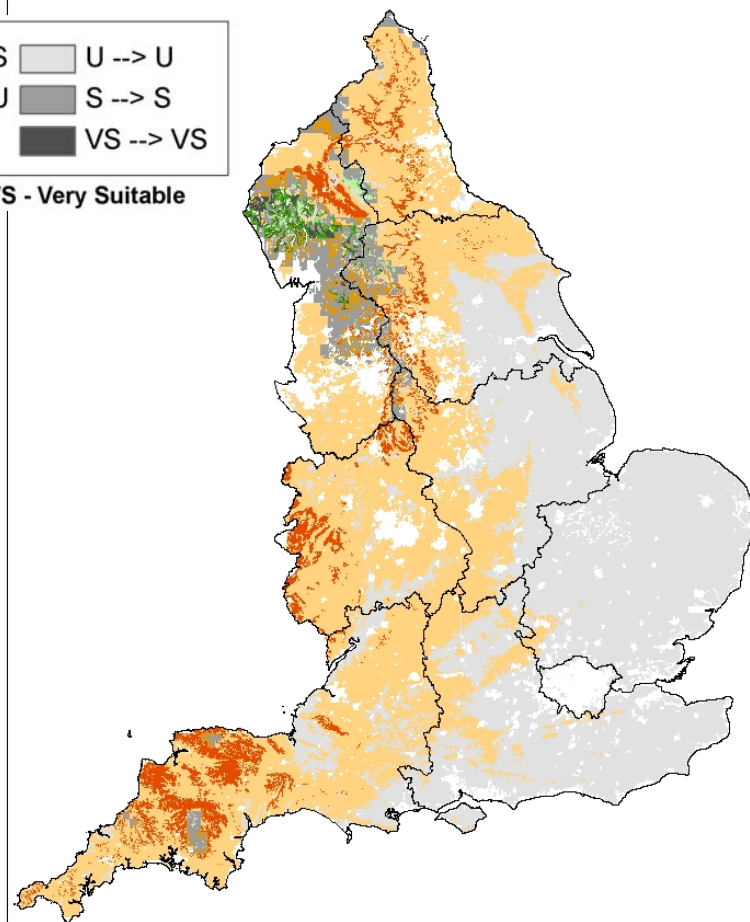
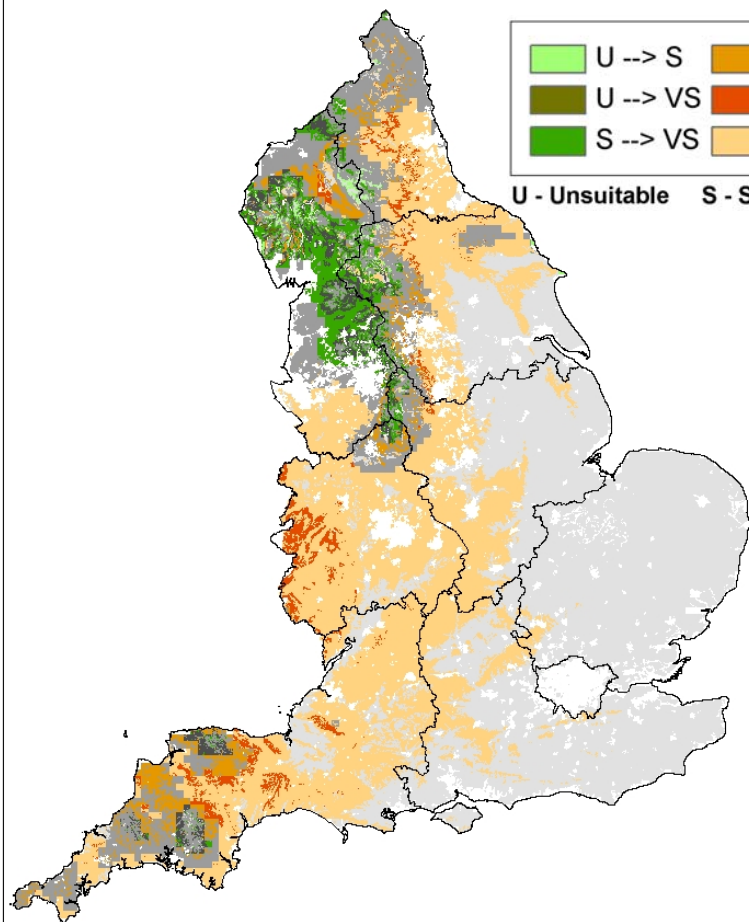


Continentality



Potential change in ESC suitability score for Sitka spruce based on UKCIP02 2050s high emissions scenario

Potential change in ESC suitability score for Sitka spruce based on UKCIP02 2080s high emissions scenario



**U - Unsuitable S - Suitable VS - Very Suitable**

December 2010

December 2010

Region	Becoming more suitable			Becoming less suitable			No change in suitability			total area (ha)
	unsuitable to suitable (ha)	unsuitable to very suitable (ha)	suitable to very suitable (ha)	very suitable to suitable (ha)	very suitable to unsuitable (ha)	suitable to unsuitable (ha)	no change: unsuitable (ha)	no change: suitable (ha)	no change: very suitable (ha)	
North East England	1	0	4508	396	89	2774	282	23752	23	31824
North West England	165	47	2628	1043	0	27	58	4832	2426	11226
South West England	0	0	174	1841	895	978	3	1697	442	6030
Yorkshire And The Humber	0	0	0	111	107	3989	5	1430	0	5642
West Midlands	0	0	0	0	114	420	6	0	0	540
East Midlands	0	0	177	1	0	28	34	173	0	413
South East England	0	0	0	0	0	23	113	0	0	135
East England	0	0	0	0	0	0	9	0	0	9
London	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>165</b>	<b>47</b>	<b>7487</b>	<b>3392</b>	<b>1206</b>	<b>8238</b>	<b>509</b>	<b>31884</b>	<b>2891</b>	<b>55819</b>

Based on 2050 High emissions scenario – UKCIP02 models

Region	Becoming more suitable			Becoming less suitable			No change in suitability			total area (ha)
	unsuitable to suitable (ha)	unsuitable to very suitable (ha)	suitable to very suitable (ha)	very suitable to suitable (ha)	very suitable to unsuitable (ha)	suitable to unsuitable (ha)	no change: unsuitable (ha)	no change: suitable (ha)	no change: very suitable (ha)	
North East England	0	0	0	23	485	22177	282	8857	0	31824
North West England	107	39	1062	2737	59	145	123	6281	672	11226
South West England	0	0	0	57	3121	2621	3	228	0	6030
Yorkshire And The Humber	0	0	0	0	218	5424	5	0	0	5647
West Midlands	0	0	0	0	114	420	6	0	0	540
East Midlands	0	0	0	0	1	249	34	128	0	413
South East England	0	0	0	0	0	23	113	0	0	135
East England	0	0	0	0	0	0	8	0	0	8
London	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>107</b>	<b>39</b>	<b>1062</b>	<b>2818</b>	<b>3999</b>	<b>31058</b>	<b>574</b>	<b>15494</b>	<b>672</b>	<b>55823</b>

Based on 2080 High emissions scenario – UKCIP02 models

- Provides some information about the scale of the change in suitability
- Analysis should include a marginally suitable category – would provide a measure of woodland habitat suitability not in production
- Should use UKCP09 projections – use 11-member RCM
- Run analysis for GB for a range of key species
- More detailed analysis could provide data on projected change in productivity of FC (GB) stands