

ANALYSIS OF THE COSTS AND BENEFITS OF ALTERNATIVE SOLUTIONS FOR RESTORING BIODIVERSITY

Defra Competition Code: WC0758/CR0444

Appendix 3. Carbon stock values from Cantarello et al. submitted and their alignment with CEH LCM2000 habitat classifications.

LCM broad habitats	Habitat classifications used in Cantarello <i>et al.</i>	Vegetation carbon stock MgC ha-1 (mean)	Soil carbon stock MgC ha-1 (mean)	Total carbon MgC ha-1 (mean)	Notes
1. Broadleaved woodland	Broadleaved forest; Mixed forest	94.5	142.5	237	Use average of overall value for Broadleaved forest and Mixed forest.
2. Coniferous woodland	Coniferous forest	59.1	107	166.1	
4. Arable and horticulture	Non-irrigated arable land	2.36	63.9	66.26	
5. Improved grassland	Natural grasslands; Pastures	3.1	121	124.1	Bracken not included as a habitat classification by Cantarello <i>et al.</i> , but according to paper by Milne and Brown (1997), one of the grassland sources, it can be attributed the same carbon value as rough grassland.
6. Neutral grassland					
7. Calcareous grassland					
8. Acid grassland					
9. Bracken					
10. Dwarf shrub heath	Moors and heathland	7.11	102.94	110.05	

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11. Fen, marsh and swamp	Inland and salt marshes - inland studies only	15	145.5	160.5	For soil carbon, use average of values from 'inland and salt marshes' studies focussing on inland marshes only (Bradley and others 2005, and Bernal and Mitsch 2008). As there were no studies providing vegetation carbon values just using inland marshes, exclude the studies focussing only on salt marshes and take an average of just the two studies that provided a combined inland and salt marsh value (Taylor and Lloyd, 1992 and Whittaker, 1977).
12. Bog	Peat bogs	7.15	576	583.15	
13. Standing water/canals	0	0	0	0	No real equivalent; assume 0.
15. Montane habitats	Moors and heathland			110.05	The only montane habitat type in any of the case study sites was in Ennerdale, for moss-heath, so moors and heathland was the most appropriate alignment.
16. Inland rock	0	0	0	0	No real equivalent; assume 0.
17. Built-up areas, gardens	0	0	0	0	No real equivalent (green urban areas, sport and leisure facilities is different); assume 0.
21. Littoral sediment: 21.1. Littoral sediment 21.2. Saltmarsh	0 Inland and salt marshes - saltmarsh studies only	0	0	0	No real equivalent; assume 0. Use average of values from 'inland and salt marshes' studies focussing on salt marshes only (<i>soil</i> : Álvarez-Rogel and others 2007; Bernal and Mitsch 2008; <i>vegetation</i> : Milne and Brown, 1997; Van Ryckegem et al., 2006; Bouchard and Lefeuvre, 2000).

Cantarello, E., Newton, A. C. & Hill, R. A. (In press) *Potential effects of future land-use change on regional carbon stocks in the UK. Environmental Science & Policy*