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Table 1a. (BACK TO TOP)
Broadleaf Forest Classes (GLC2000 Classes 1-3)

FAO Ecofloristic Zone	Continental Region	Frontier Class	Carbon Fraction	Root:Shoot Ratio	IPCC Aboveground Biomass	Carbon Value
Tropical Rainforest	Africa		0.47	0.37	310	200
	N and S America		0.47	0.37	300	193
	Continental Asia		0.47	0.37	280	180
	Insular Asia		0.47	0.37	350	225
	Australia ²		ave	ave	ave	199.5
Tropical Moist Deciduous Forest	Africa		0.47	0.24	260	152
	N and S America		0.47	0.24	220	128
	Continental Asia		0.47	0.24	180	105
	Insular Asia		0.47	0.24	290	169
Tropical Mtn. Systems	Africa		0.47	0.27	115	69
	N and S America		0.47	0.27	145	87
	Continental Asia		0.47	0.27	135	81
	Insular Asia		0.47	0.27	205	122
Tropical Dry Forest (also applies in tropical desert and tropical shrubland ¹)	Africa		0.47	0.28	120	72
	N and S America		0.47	0.28	210	126
	Continental Asia		0.47	0.28	130	78
	Insular Asia		0.47	0.28	160	96
	Australia ²		ave	ave	ave	93
	Africa ²	Either	ave	ave	ave	134
	N and S America		0.47	0.24	220	128

Subject Areas

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Subtropical Humid Forest	Continental Asia		0.47	0.24	180	105
	Insular Asia		0.47	0.24	290	169
	Australia and New Zealand ²		ave	ave	ave	134
Subtropical Mtn Systems	Africa		0.47	0.27	50	30
	N and S America		0.47	0.27	145	87
	Continental Asia		0.47	0.27	135	81
	Europe ²		0.47	0.27	135	81
	Insular Asia		0.47	0.27	205	122
Subtropical Dry Forest (also applies in subtropical steppe and subtropical desert ¹)	Africa		0.47	0.28	140	84
	N and S America		0.47	0.28	210	126
	Continental Asia		0.47	0.28	130	78
	Europe ²		0.47	0.28	130	78
	Insular Asia		0.47	0.28	160	96
	Australia ²		ave wo Europe	ave wo Europe	ave wo Europe	96
Temperate Oceanic Forest	Europe		0.47	0.23	120	69
	N America		0.47	0.24	660	385
	Australia and New Zealand ²		0.47	0.24	360	210
	S America		0.47	0.24	180	105
Temperate Continental Forest (also applies in temperate steppe and temperate desert ¹)	Asia and Europe	Non-frontier	0.47	0.46	20	14
		Frontier	0.47	0.23	120	69
	N and S America	Non-frontier	0.47	0.46	60	41
		Frontier	0.47	0.23	130	75
Temperate Mtn Systems	Asia and Europe	Non-frontier	0.47	0.23	100	58
		Frontier	0.47	0.23	130	75
	N and S America	Non-frontier	0.47	0.46	50	34
		Frontier	0.47	0.23	130	75
	Australia and New Zealand ²	Non-frontier	ave	ave	ave	46
	Frontier	ave	ave	ave	75	
Boreal Coniferous Forest (also applies in boreal tundra woodland and polar ¹)	Global	Either	0.47	0.39	50	33
Boreal Mtn Systems	Global	Non-frontier	0.47	0.39	13.5	9
		Frontier	0.47	0.39	45	29

Table 1b. (BACK TO TOP)

Needleleaf Forest Classes (GLC2000 Classes 4&5)

FAO Ecofloristic Zone	Continental Region	Frontier Class	Carbon Fraction	Root:Shoot Ratio	IPCC Aboveground Biomass	Carbon Value
Tropical Rainforest	Africa	Either	0.47	0.37	310	200
	N and S America		0.47	0.37	300	193
	Continental Asia		0.47	0.37	280	180
	Insular Asia		0.47	0.37	350	225
	Australia ²		ave	ave	ave	199.5
Tropical Moist Deciduous Forest	Africa		0.47	0.24	260	152
	N and S America		0.47	0.24	220	128
	Continental Asia		0.47	0.24	180	105
	Insular Asia		0.47	0.24	290	169
Tropical Mtn. Systems	Africa		0.47	0.27	115	69
	N and S America		0.47	0.27	145	87
	Continental Asia		0.47	0.27	135	81
	Insular Asia		0.47	0.27	205	122
Tropical Dry Forest (also applies in tropical desert and tropical shrubland ¹)	Africa		0.47	0.28	120	72
	N and S America		0.47	0.28	210	126
	Continental Asia		0.47	0.28	130	78
	Insular Asia		0.47	0.28	160	96
	Australia ²		ave	ave	ave	93
Subtropical Humid Forest	Africa ²		ave	ave	ave	134
	N and S America		0.47	0.24	220	128
	Continental Asia	0.47	0.24	180	105	
	Insular Asia	0.47	0.24	290	169	
	Australia and New Zealand ²	ave	ave	ave	134	
Subtropical Mtn Systems	Africa	0.47	0.27	50	30	
	N and S America	0.47	0.27	145	87	
	Continental Asia	0.47	0.27	135	81	
	Europe ²	0.47	0.27	135	81	
	Insular Asia	0.47	0.27	205	122	
Subtropical Dry Forest (also applies in subtropical steppe and subtropical desert ¹)	Africa	0.47	0.28	140	84	
	N and S America	0.47	0.28	210	126	
	Continental Asia	0.47	0.28	130	78	
	Europe ²	0.47	0.28	130	78	
	Insular Asia	0.47	0.28	160	96	

			ave wo Europe	ave wo Europe	ave wo Europe	96
Temperate Oceanic Forest	Australia ²					
	Europe		0.47	0.29	120	73
	N America		0.47	0.20	660	372
	Australia and New Zealand ²		0.47	0.20	360	203
Temperate Continental Forest (also applies in temperate steppe and temperate desert ¹)	Asia and Europe	Non- frontier	0.47	0.29	20	14????
		Frontier	0.47	0.29	120	73
	N and S America	Non- frontier	0.47	0.29	60	36
		Frontier	0.47	0.29	130	75
Temperate Mtn Systems	Asia and Europe	Non- frontier	0.47	0.29	100	61
		Frontier	0.47	0.29	130	79
	N and S America	Non- frontier	0.47	0.40	50	33
		Frontier	0.47	0.29	130	79
	Australia and New Zealand ²	Non- frontier	ave	ave	ave	47
Frontier	ave	ave	ave	79		
Boreal Coniferous Forest (also applies in boreal tundra woodland and polar ¹)	Global	Either	0.47	0.39	50	33
Boreal Mtn Systems	Global	Non- frontier	0.47	0.39	13.5	9
		Frontier	0.47	0.39	45	29

Table 1c. (BACK TO TOP)

Mixed Forest Classes (GLC2000 Classes 6-8)

FAO Ecofloristic Zone	Continental Region	Frontier Class	Broadleaved Carbon Value	Needleleaved Carbon Value	Carbon Value
Tropical Rainforest	Africa		200	200	200
	N and S America		193	193	193
	Continental Asia		180	180	180
	Insular Asia		225	225	225
	Australia ²		199.5	199.5	199.5
Tropical Moist Deciduous Forest	Africa		152	152	152
	N and S America		128	128	128
	Continental Asia		105	105	105
	Insular Asia		169	169	169
Tropical Mtn. Systems	Africa		69	69	69
	N and S America		87	87	87
	Continental Asia		81	81	81
	Insular Asia		122	122	122
	Africa		72	72	72

Tropical Dry Forest (also applies in tropical desert and tropical shrubland ¹⁾)	N and S America	Either	126	126	126
	Continental Asia		78	78	78
	Insular Asia		96	96	96
	Australia ²		93	93	93
Subtropical Humid Forest	Africa ²		134	134	134
	N and S America		128	128	128
	Continental Asia		105	105	105
	Insular Asia		169	169	169
	Australia and New Zealand ²		134	134	134
Subtropical Mtn Systems	Africa		30	30	30
	N and S America		87	87	87
	Continental Asia		81	81	81
	Europe ²		81	81	81
	Insular Asia		122	122	122
Subtropical Dry Forest (also applies in subtropical steppe and subtropical desert ¹⁾)	Africa		84	84	84
	N and S America		126	126	126
	Continental Asia		78	78	78
	Europe ²		78	78	78
	Insular Asia		96	96	96
	Australia ²	96	96	96	
Temperate Oceanic Forest	Europe	69	73	71	
	N America	385	372	378.5	
	Australia and New Zealand ²	210	203	206.5	
	S America	105	102	103.5	
Temperate Continental Forest (also applies in temperate steppe and temperate desert ¹⁾)	Asia and Europe	Non-frontier	14	13	13.5
		Frontier	69	73	71
	N and S America	Non-frontier	41	36	38.5
		Frontier	75	79	77
Temperate Mtn Systems	Asia and Europe	Non-frontier	58	61	59.5
		Frontier	75	79	77
	N and S America	Non-frontier	34	33	33.5
		Frontier	75	79	77
	Australia and New Zealand ²	Non-frontier	46	47	46.5
		Frontier	75	79	77
Boreal Coniferous Forest (also applies in boreal tundra woodland and polar ¹⁾)	Global	Either	33	33	33
Boreal Mtn Systems	Global	Non-frontier	9	9	9
		Frontier	29	29	29

Table 1d. (BACK TO TOP)

Burnt Forest and Natural Forest Mosaic- (GLC2000 Classes 9&10)

FAO Ecofloristic Zone	Continental Region	Frontier Class	Mixed Forest Carbon Value	Carbon Value
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Tropical Rainforest	Africa	200	100
	N and S America	193	96.5
	Continental Asia	180	90
	Insular Asia	225	112.5
	Australia ²	199.5	99.75
Tropical Moist Deciduous Forest	Africa	152	76
	N and S America	128	64
	Continental Asia	105	52.5
	Insular Asia	169	84.5
Tropical Mtn. Systems	Africa	69	34.5
	N and S America	87	43.5
	Continental Asia	81	40.5
	Insular Asia	122	61
Tropical Dry Forest (also applies in tropical desert and tropical shrubland ¹)	Africa	72	36
	N and S America	126	63
	Continental Asia	78	39
	Insular Asia	96	48
	Australia ²	93	46.5
Subtropical Humid Forest	Africa ²	134	67
	N and S America	128	64
	Continental Asia	105	52.5
	Insular Asia	169	84.5
	Australia and New Zealand ²	134	67
Subtropical Mtn Systems	Africa	30	15
	N and S America	87	43.5
	Continental Asia	81	
	Europe ²	81	40.5
	Insular Asia	122	61
Subtropical Dry Forest (also applies in subtropical steppe and subtropical desert ¹)	Africa	84	42
	N and S America	126	63
	Continental Asia	78	39
	Europe ²	78	39
	Insular Asia	96	48
	Australia ²	96	48
Temperate Oceanic Forest	Europe	71	35.5
	N America	378.5	189.25
	Australia and New Zealand ²	206.5	103.25
	S America	103.5	51.75

Either

Temperate Continental Forest (also applies in temperate steppe and temperate desert ¹)	Asia and Europe	Non-frontier	13.5	6.75
		Frontier	71	35.5
	N and S America	Non-frontier	38.5	19.25
		Frontier	77	38.5
Temperate Mtn Systems	Asia and Europe	Non-frontier	59.5	29.75
		Frontier	77	38.5
	N and S America	Non-frontier	33.5	16.75
		Frontier	77	38.5
	Australia and New Zealand ²	Non-frontier	46.5	23.25
	Frontier	77	38.5	
Boreal Coniferous Forest (also applies in boreal tundra woodland and polar ¹)	Global	Either	33	16.5
Boreal Mtn Systems	Global	Non-frontier	9	4.5
		Frontier	29	14.5

Table 1e. (BACK TO TOP)

Forest /Cropland Mosaic (GLC2000 Class 17)

FAO Ecofloristic Zone	Continental Region	Frontier Class	Mixed Forest Carbon Value	Carbon Value
Tropical Rainforest	Africa		200	100
	N and S America		193	96.5
	Continental Asia		180	90
	Insular Asia		225	112.5
	Australia ²		199.5	99.75
Tropical Moist Deciduous Forest	Africa		152	76
	N and S America		128	64
	Continental Asia		105	52.5
	Insular Asia		169	84.5
Tropical Mtn. Systems	Africa		69	34.5
	N and S America		87	43.5
	Continental Asia		81	40.5
	Insular Asia		122	61
Tropical Dry Forest (also applies in tropical desert and tropical shrubland ¹)	Africa		72	36
	N and S America		126	63
	Continental Asia		78	39
	Insular Asia		96	48
	Australia ²		93	46.5
Subtropical Humid Forest	Africa ²		134	67
	N and S America		128	64
	Continental Asia		105	52.5
	Insular Asia		169	84.5

	Australia and New Zealand ²	Non-frontier	134	67
Subtropical Mtn Systems	Africa		30	15
	N and S America		87	43.5
	Continental Asia		81	
	Europe ²		81	40.5
	Insular Asia		122	61
Subtropical Dry Forest (also applies in subtropical steppe and subtropical desert ¹)	Africa		84	42
	N and S America		126	63
	Continental Asia		78	39
	Europe ²		78	39
	Insular Asia		96	48
	Australia ²		96	48
Temperate Oceanic Forest	Europe		71	35.5
	N America	378.5	189.25	
	Australia and New Zealand ²	206.5	103.25	
	S America	103.5	51.75	
Temperate Continental Forest (also applies in temperate steppe and temperate desert ¹)	Asia and Europe	13.5	6.75	
	N and S America	38.5	19.25	
Temperate Mtn Systems	Asia and Europe	59.5	29.75	
	N and S America	33.5	16.75	
	Australia and New Zealand ²	46.5	23.25	
Boreal Coniferous Forest (also applies in boreal tundra woodland and polar ¹)	Global	33	16.5	
Boreal Mtn Systems	Global	9	4.5	

Table 1f. (BACK TO TOP)

Shrub Cover (GLC2000 Class 11,12, & 15)

FAO Ecofloristic Zone	Continental Region	Frontier Class	Carbon Fraction	Root:shoot R	Carbon Value
Tropical	Africa	Either	0.47	0.4	46.00
	N. and S. America		0.47	0.4	53.00
	Continental Asia		0.47	0.4	39.00
	Insular Asia		0.47	0.4	46.00
	Australia ²		0.47	0.4	46.00
Subtropical	Africa		0.47	0.32	43.00
	N. and S. America		0.47	0.32	50.00
	Continental Asia		0.47	0.32	37.00
	Europe ²		0.47	0.32	37.00
	Insular Asia		0.47	0.32	43.00

	Australia and New Zealand ²		ave	ave	43.25
Temperate ²	Global		0.47		7.4
Boreal and Polar	Global	Non-frontier	0.47		3.0
		Frontier	0.47		11

Table 1g. (BACK TO TOP)

Grassland (GLC2000 Class 13)

FAO Ecofloristic Zone	Continental Region	Frontier Class	Carbon Value
Tropical rainforest tropical moist deciduous forest, and subtropical humid	Global	Either	8.00
Tropical mtn. systems, subtropical mtn systems, and temperate oceanic forests ³			6.00
Tropical dry forest, tropical shrubland, and tropical desert			4.00
Subtropical dry forest, subtropical steppe, and subtropical desert			4.00
Boreal forest, boreal tundra woodland, boreal mtn systems, and polar			4.00
Temperate continental, forest, and temperate mountain systems ³			4.50
Temperate steppe, and temperate desert ³			3.00

Table 1h. (BACK TO TOP)

Sparse Grassland and Grassland Mosaic (GLC2000 Classes 14 & 18)

FAO Ecofloristic Zone	Continental Region	Frontier Class	Carbon Value
Tropical rainforest tropical moist deciduous forest, and subtropical humid	Global	Either	4.00
Tropical mtn. systems, subtropical mtn systems, and temperate oceanic forests ³			3.00
Tropical dry forest, tropical shrubland, and tropical desert			2.00
Subtropical dry forest, subtropical steppe, and subtropical desert			2.00
Boreal forest, boreal tundra woodland, boreal mtn systems, and polar			2.00
Temperate continental, forest, and temperate mountain systems ³			2.25
Temperate steppe, and temperate desert ³			1.50

Table 1i. (BACK TO TOP)**Other Classes**

GLC2000 Class	FAO Ecofloristic Zone, and Continental Region, and Frontier Class	Carbon Value
16: Cultivated and managed land	All	5.00
19: Bare Areas		1.00
20-23: Water, Snow and ice, and artificial surfaces		0.00

Footnotes (BACK TO TOP)

- Occasionally, land cover (GLC2000) forest pixels fell within ecofloristic zones (referred to as ecoregions hereafter) where GLC2000 did not logically match the ecoregion description i.e. GLC2000 forest class pixel within a tropical desert ecoregion. In such instances, we made best guesses as to the best carbon value to apply.
 - When a GLC2000 forest class pixel fell within a tropical desert or tropical shrubland ecoregion, we used the carbon value for tropical dry forest.
 - When a GLC2000 forest class pixel fell within a subtropical desert or subtropical steppe ecoregion, we used the carbon value for subtropical dry forest.
 - When a GLC2000 forest class pixel fell within a temperate steppe or temperate desert ecoregion, we used the carbon value for temperate continental forest.
 - When a GLC2000 forest class pixel fell within a boreal tundra woodland or polar ecoregion, we used the carbon value for boreal coniferous forest.
- Although their frequency was low, we encountered several instances where the Intergovernmental Panel on Climate Change (IPCC) tables lacked adequate information or did not match up with the input vegetation layers. In such instances, we applied a carbon value from the next best fit.
 - Australia and New Zealand were not fully described by the IPCC so we applied the global average carbon values except in the case of temperate oceanic forest in New Zealand, which we also applied to Australia.
 - For GLC2000 forest class pixels that fell within subtropical ecoregions in Europe, we used carbon values from GLC2000 forest class pixels falling within subtropical ecoregions in continental Asia.
 - For GLC2000 forest class pixels that fell within subtropical humid forest ecoregions in Africa, we used the global average carbon value for GLC2000 forest class pixels falling within subtropical humid forest ecoregions.
 - For GLC2000 shrubland class pixels that fell within any temperate ecoregion, we used the value from Mediterranean shrubland in Roy, et al. (2001) because no value for temperate shrublands was given by IPCC.
- The IPCC tables only defined carbon density values for grasslands in terms of temperature (i.e. tropical, temperate, etc.) and precipitation (wet or dry). Therefore we had to aggregate ecoregions to match the descriptions from the IPCC tables. In some ambiguous cases (e.g. precipitation regimes of mountain systems), we took the average of more than one possible case.
 - For GLC2000 grassland class pixels that fell within a tropical mountain system or subtropical mountain system ecoregions we averaged the IPCC values for tropical moist & wet and tropical dry.
 - For GLC2000 grassland class pixels that fell within a temperate oceanic forest ecoregion, we averaged the IPCC values for cold temperate wet and warm temperate -wet grasslands.
 - For GLC2000 grassland class pixels that fell within a temperate continental forest or temperate mountain system ecoregion, we averaged the IPCC values for cold temperate wet, warm temperate -wet, cold temperate dry, and warm temperate dry grasslands.
 - For GLC2000 grassland class pixels that fell within a temperate steppe or temperate desert ecoregions, we averaged the IPCC values for cold temperate dry and warm temperate -dry grasslands.

