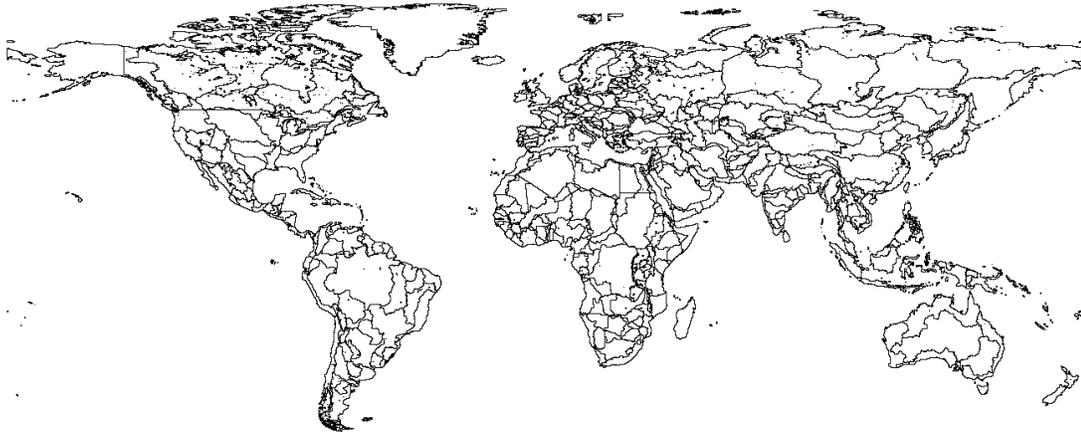
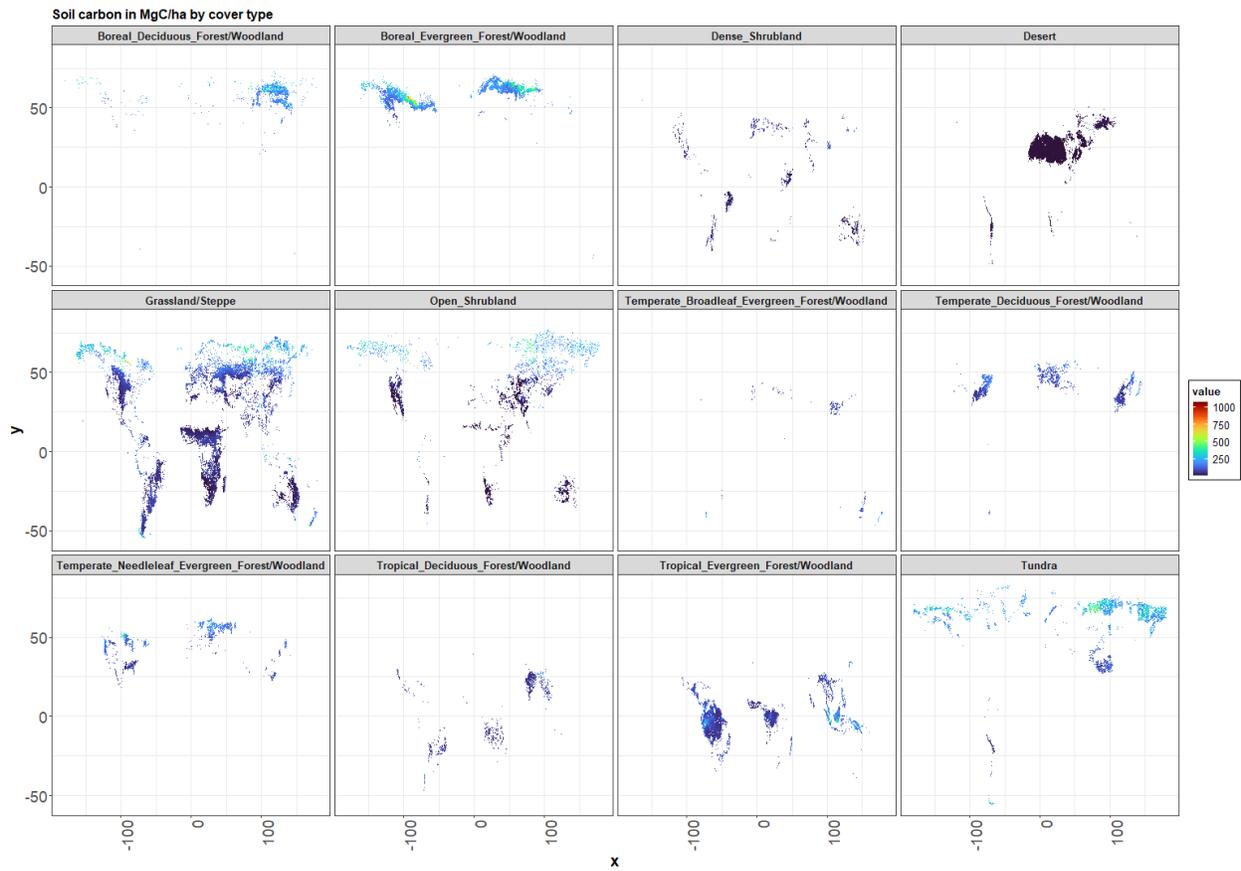
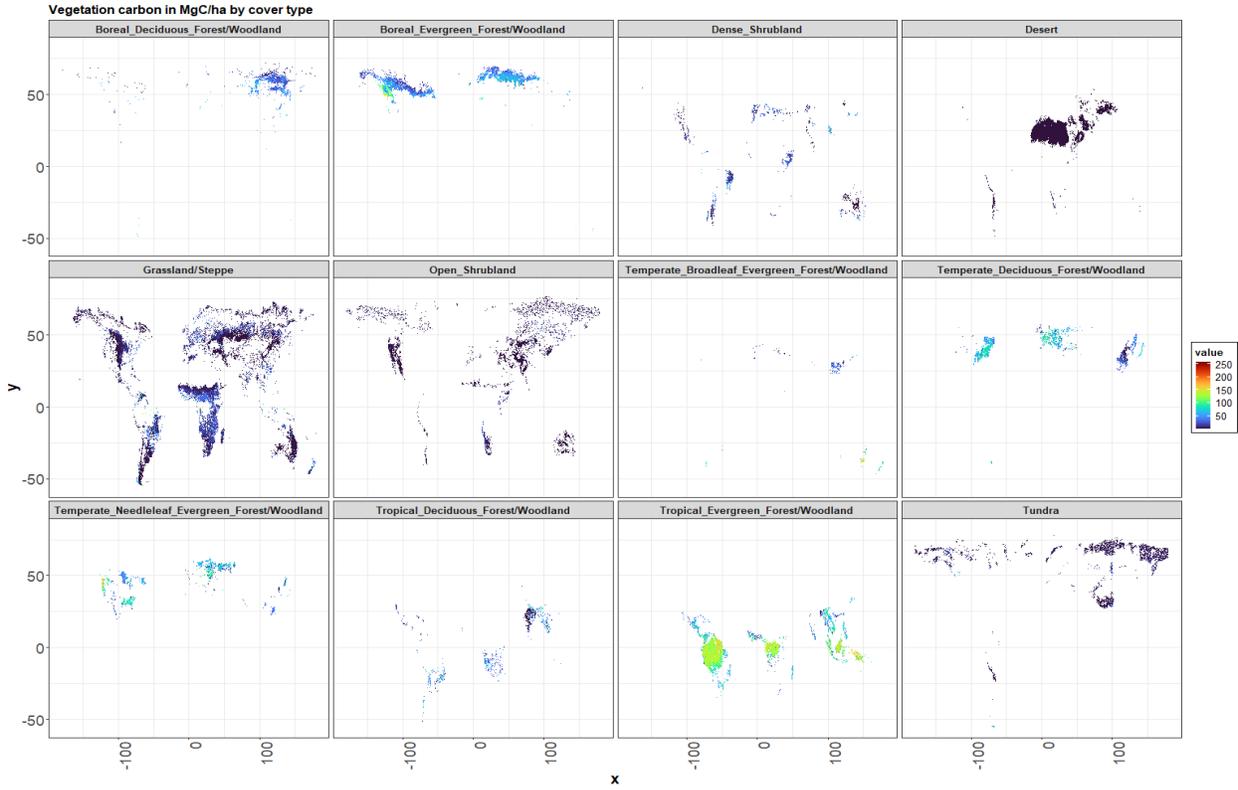
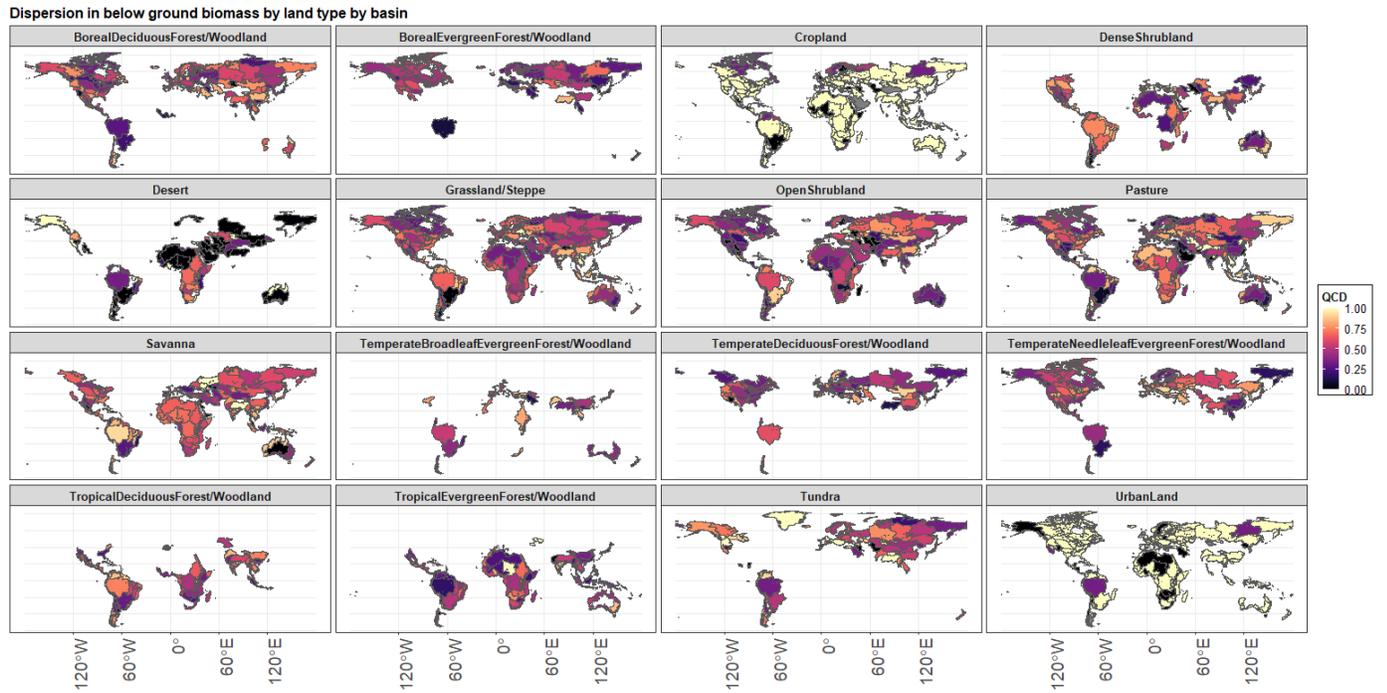
Supplementary information for "Spatially explicit re-harmonized terrestrial carbon densities for calibrating Integrated Multisectoral Models"

Contents:

SI Figure 1: *Map of 699 land regions (207 country boundaries intersected with 235 basins)*

SI Figure 2*: Topsoil (0-30 cms) carbon densities in MgC/ha by land cover type for the Q3 state. Carbon values are shown here for unmanaged land types.*

SI Figure 3*: vegetation (above ground biomass) carbon densities in MgC/ha by land cover type for the Q3 state. Carbon values are shown here for unmanaged land types.*

SI Figure 4*: QCD values calculated for below ground biomass by basin, land type (facet).*

SI Table 1: Global moirai carbon densities by state (topsoil carbon in MgC/ha)

Land type	weighted_average	median_value	min_value	max_value	q1_value	q3_value
BorealDeciduousForest/Woodland	189.5	176.8	47.3	671.2	139.6	239.1
BorealEvergreenForest/Woodland	218.2	199.2	53.0	743.3	153.0	283.6
Cropland	70.4	85.5	38.1	302.4	69.4	110.6
DenseShrubland	51.1	47.8	20.2	209.6	37.1	63.1
Desert	13.1	12.2	10.2	130.9	11.6	14.2
Grassland/Steppe	124.3	129.4	38.5	449.5	101.2	173.3
OpenShrubland	98.1	103.1	25.4	394.9	80.9	138.4
Pasture	53.0	59.2	20.8	267.7	44.4	81.8
Savanna	58.9	54.9	24.4	231.6	44.3	70.5
TemperateBroadleafEvergreenForest/Woodland	101.2	93.1	43.1	314.8	79.1	115.9
TemperateDeciduousForest/Woodland	120.1	111.3	50.8	361.1	91.1	137.4
TemperateNeedleleafEvergreenForest/Woodland	137.0	126.0	52.2	524.7	104.5	164.0
TropicalDeciduousForest/Woodland	72.3	64.6	33.1	241.0	54.5	81.6
TropicalEvergreenForest/Woodland	101.1	90.5	32.5	474.8	68.4	126.8
Tundra	174.4	223.4	49.6	515.1	179.0	283.2
UrbanLand	61.4	87.8	43.5	307.5	71.6	113.7

SI Table 2: Global moirai carbon densities by state (aboveground biomass carbon in MgC/ha)

Land type	weighted_average	median_value	min_value	max_value	q1_value	q3_value
BorealDeciduousForest/Woodland	40.8	38.8	0.34	136.5	20.1	62.0
BorealEvergreenForest/Woodland	54.2	52.6	0.06	171.4	30.2	79.3
Cropland	1.3	0.9	0.04	8.2	0.3	2.2
DenseShrubland	30.9	24.7	0.65	188.8	10.0	53.4
Desert	1.2	1.1	0.19	35.8	1.0	1.3
Grassland/Steppe	16.9	10.6	0.32	139.4	6.8	28.3
OpenShrubland	9.5	7.1	0.19	120.6	4.2	14.0
Pasture	12.1	9.5	0.32	121.2	4.9	22.0
Savanna	28.4	17.4	0.91	162.9	10.6	42.9
TemperateBroadleafEvergreenForest/Woodland	66.9	63.4	0.48	224.2	39.0	90.2
TemperateDeciduousForest/Woodland	61.4	60.8	1.14	159.9	35.4	84.8
TemperateNeedleleafEvergreenForest/Woodland	66.2	67.1	0.48	168.6	33.6	96.8
TropicalDeciduousForest/Woodland	44.7	36.2	0.87	183.2	18.0	65.0
TropicalEvergreenForest/Woodland	119.7	122.6	0.25	257.4	86.8	152.4
Tundra	8.7	4.2	0.09	14.5	4.2	14.5
UrbanLand	1.2	0.8	0.02	6.6	0.2	1.9