Supplementary Material: A global fuel characteristic model and dataset for wildfire prediction

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Supplementary Table 1. ECLand vegetation types and parameter values used to derive categorised fuel load. Values estimated where references are not given. †Relates LAI to wood mass (see equation 4, Harper et al., 2018).

Vegetation Type	Live Percentage (%)	Dead Foliage Percentage (%)	Leaf Mass per Unit Area	Allometric Coefficient †	Reference
Crops	85	100	0.1370	0.005	-
Short grass	85	100	0.0495	0.005	Fan *et al.* (2007), Peichl *et al*. (2011), Perez *et al*. (2000)
Evergreen needleleaf trees	65	45	0.2263	0.65	Pan *et al.* (2011)
Deciduous needleleaf trees	55	60	0.1006	0.80	Pan *et al.* (2011)
Deciduous broadleaf trees	60	90	0.0823	0.78	Michaelian *et al*. (2010), Pan *et al*. (2011), Peichl *et al*. (2011)
Evergreen broadleaf trees	85	10	0.1039	0.845	Pan *et al.* (2011)

Mixed Crops	60	100	0.1370	0.005	Fan *et al.* (2007), Guo *et al*. (2005), Li *et al*. (2020)
Desert	50	50	0.1370	0.005	-
Tundra	75	50	0.0495	0.005	-
Irrigated crops	85	100	0.1370	0.005	-
Semidesert	65	50	0.1370	0.005	-
Bogs and marshes	65	50	0.1370	0.005	-
Evergreen shrubs	70	50	0.1515	0.13	Anderson *et al*. (2015), Baeza *et al*. (2006)
Deciduous shrubs	65	90	0.0709	0.13	Li *et al*. (2020), Taylor *et al*. (2021)
Broadleaf Savannah	80	90	0.1370	0.13	-
Interrupted forest	60	90	0.1039	0.78	-

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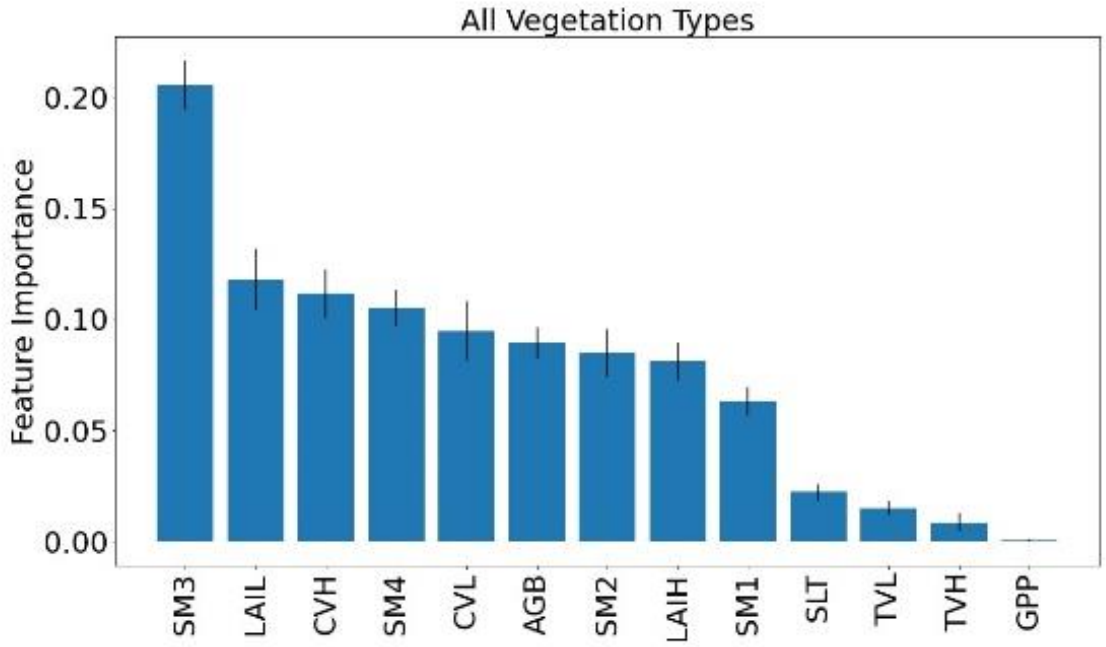
Supplementary Table 2. Vegetation-specific coefficients used to derive live fuel moisture content used in equation 4.

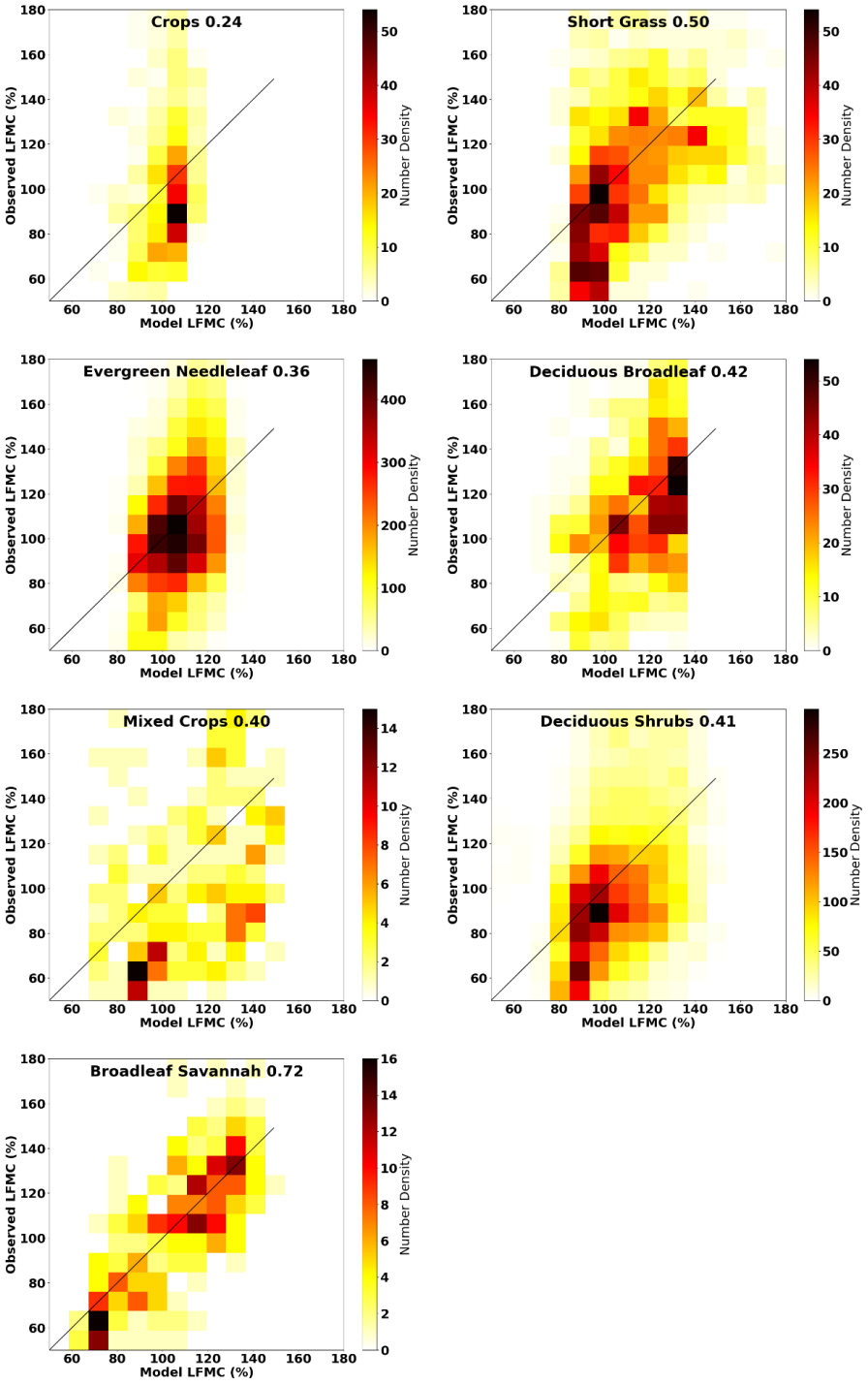
Vegetation Type	$LFMC_{max}$	A	α	β	γ
Crops	110.8	1500.9	27.2	0.00	0.0
Short Grass	197.4	119.7	0.2	0.23	0.5
Evergreen needleleaf trees	132.6	65.3	1.9	0.00	1.2
Deciduous broadleaf trees	131.5	78.7	0.0	0.00	3.8
Mixed Crops	165.8	148.2	4.3	0.00	0.6
Deciduous shrubs	158.8	131.0	3.5	0.00	1.7
Broadleaf Savannah	242.3	237.9	1.8	0.03	0.0

Supplementary Table 3. Allocation of vegetation-specific fuel into the 4 classes defined by the National Fire Danger Rating System (Deeming et al., 1978).

Vegetation Type	1-h Fuel (% of dead foliage)	10-h Fuel (% of dead foliage)	100-h Fuel (% of dead wood)	1000-h Fuel (% of dead wood)
Crops	50	50	100	0
Short grass	100	0	100	0
Evergreen needleleaf trees	53	47	30	70
Deciduous needleleaf trees	53	47	30	70
Deciduous broadleaf trees	53	47	30	70
Evergreen broadleaf trees	53	47	30	70
Mixed Crops	50	50	100	0
Desert	65	35	100	0
Tundra	65	35	100	0
Irrigated crops	50	50	100	0
Semidesert	65	35	100	0
Bogs and marshes	65	35	100	0
Evergreen shrubs	65	35	100	0
Deciduous shrubs	50	50	100	0
Broadleaf Savannah	50	50	50	50
Interrupted forest	50	50	50	50



Supplementary Figure 1. Feature importance output from random forest training of model variables against live fuel moisture content observations.



Supplementary Figure 2. A density heat map showing the correlation of all modelled and sampled live fuel moisture content for 7 vegetation types between 2010 and 2019. The R-value is given for each type.