AGU PUBLICATIONS

Earth's Future

Supporting Information for

How does landscape change after fire? Assessing the global patterns and influential factors

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Table S1 Grouping scheme for the CCI land cover classes to nine more general land cover categories used in this study.

General Land Cover Categories	Land Cover Classes (Global)	Land Cover Classes (Regional)
Agriculture	Rainfed cropland*	Rainfed cropland, herbaceous cover
		Rainfed cropland, tree or shrub cover
	Irrigated cropland	
	Mosaic cropland (>50%)/natural vegetation	
	Mosaic natural vegetation (>50%)/cropland	
Forest	Evergreen broadleaved forest	
	Deciduous broadleaved forest*	Deciduous broadleaved forest, closed (>40%)
		Deciduous broadleaved forest, open (15-40%)
	Evergreen needleleaved forest*	Evergreen needleleaved forest, closed (>40%)
		Evergreen needleleaved forest, open (15-40%)
	Deciduous needleleaved forest*	Deciduous needleleaved forest, closed (>40%)
		Deciduous needleleaved forest, open (15-40%)
	Mixed forest	
	Mosaic tree and shrub (>50%)/herbaceous cover	
	Fresh or brackish water flooded forests	
	Saline water flooded forest	
Shrubland	Shrubland*	Evergreen shrubland
		Deciduous shrubland
Grassland	Grassland	
	Herbaceous cover (>50%)/tree and shrub	
Sparse vegetation	Lichens and mosses	
	Sparse vegetation*	Sparse tree (<15%)
		Sparse shrub (<15%)
		Sparse herbaceous cover (<15%)
Wetland	Flooded shrub or herbaceous cover	
Urban	Urban	
Bare area	Bare*	Consolidated bare
		Unconsolidated bare
	Permanent snow and ice	
Water bodies	Water	

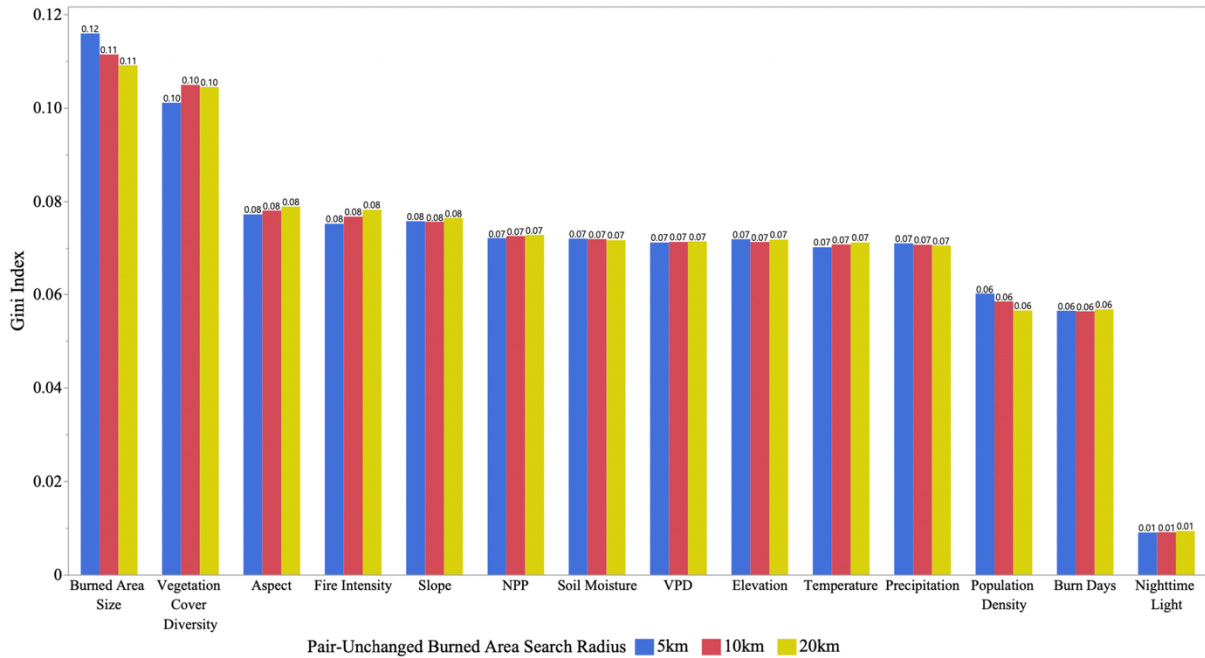*These global land cover classes have regional land cover classes.

Figure S1 Gini index of the 14 potential influential factors of post-fire land cover change occurrence based on the random forest classification analysis using paired-changed burned areas and paired-unchanged burned areas within 5, 10 and 20 km radius. The *p*-value of Kruskal-Wallis test on the Gini indices' differences among the three radii is 0.971. The *H* statistic equals 0.060.

Table S2 Chi-Square test results for the post-fire land cover change type composition across 2005, 2010 and 2015.

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	625.245[a]	90	0.000	0.000	0.000[b]	0.000
Likelihood Ratio	609.814	90	0.000	0.000	0.000[b]	0.000
Fisher's Exact Test	594.190			0.000	0.000[b]	0.000
N of Valid Cases	4052					

a 88 cells (63.8%) have expected count less than 5. The minimum expected count is 0.25.
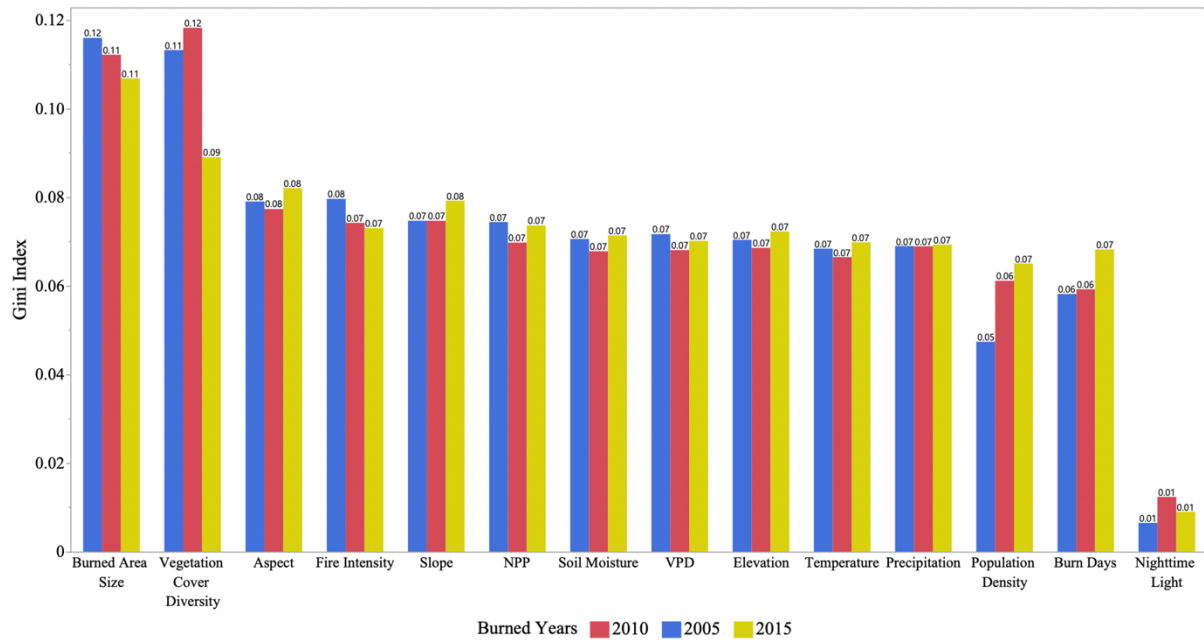b. Based on 10,000 sampled tables with starting seed 2,000,000.

Figure S2 Gini index of the 14 potential influential factors of post-fire land cover change occurrence based on the random forest classification analysis using the 2005, 2010 and 2015 datasets. The *p*-value of Kruskal-Wallis test on the Gini indices' differences among the three study years is 0.608. The *H* statistic equals 0.994.
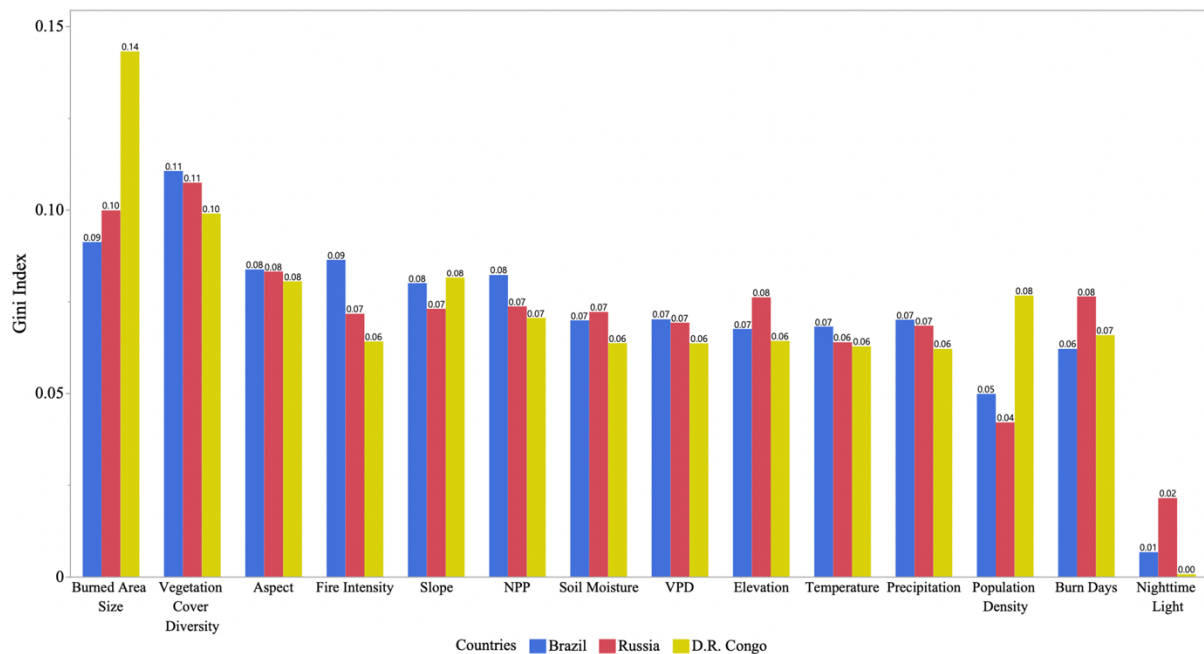

Figure S3 Gini index of the 14 potential influential factors of post-fire land cover change occurrence based on the random forest classification analysis using the pooled datasets of Brazil, Russia and D.R. Congo. The *p*-value of Kruskal-Wallis test on the Gini indices' differences among the three countries is 0.678. The *H* statistic equals 0.777.