

# Supplementary Materials

## Section 3.1. (Results). Thresholding for fire activity stratification

The sampling units with a lower BA percentage than the biome-specific threshold were stratified as low fire activity, while those with a higher BA percentage composed the high fire activity stratum.

**Table S1.** Threshold values determined to each biome for the high/low fire activity stratification. The value was defined in the 80<sup>th</sup> percentile.

Biome	Threshold (% BA)
Tropical Forest	5.5752
Tropical Savanna	17.3876
Temperate Savanna	1.4950
Deserts & Xeric Shrublands	2.7102
Temperate Forest	0.8430
Mediterranean	3.0206

## Section 3.2. (Results). Total area for each category of S2RP by biomes

**Table S2.** Total burned, unburned and unobserved area, and corresponding percentage (%) for each biome.

Biome	Categories ( $km^2$ (%))		
	<i>Burned</i>	<i>Unburned</i>	<i>Unobserved</i>
Tropical Forest	4,637.4 (1.9%)	204,599.5 (84.5%)	32,940.6 (13.6%)
Tropical Savanna	13,512.9 (8.3%)	142,493.3 (87.7%)	6,522.6 (4.0%)
Temperate Savanna	248 (0.6%)	39,961.7 (97.5%)	764.6 (1.9%)
Deserts & Xeric Shrublands	419.3 (1.0%)	39,481.7 (98.6%)	146.9 (0.4%)
Temperate Forest	542.7 (1.3%)	39,675.8 (94.5%)	1,743.2 (4.1%)
Mediterranean	400.4 (1.0%)	38,962.9 (93.8%)	2,160.7 (5.2%)
Total	19,760.7 (3.5%)	505,174.9 (88.7%)	44,278.6 (7.8%)

### Section 3.3. (Results). S2RP-PlanetScope comparison sites

**Table S3.** The characteristics of the selected S2RP - PlanetScope comparison sites: n° and country of the site; the coordinates of the site centroid and its total area; the biome, burned and unobserved percentage, and the period of the overlapping sample unit and its tile; and the PlanetScope period, number of PlanetScope scenes employed and the composites downloaded.

Site & Country	Coordinates	Area (km <sup>2</sup> )	Biome	S2RP Burned (%)	S2RP Unobserved (%)	S2RP tile & Dates	PlanetScope Time Period	N PlanetScope Scenes	N PlanetScope Composites
1 Brazil	9.3952 S 50.1781 W	587.9	Tropical Forest	46.59%	0.06%	22LEQ 15/06/2019→23/09/2019	15/06/2019→22/09/2019-03/10/2019	63	7
2 Bolivia	14.2353 S 63.7950 W	456.5	Tropical Forest	21.36%	2.81%	20LMK 16/05/2019→28/09/2019	16/05/2019-17/05/2019→28/09/2019-30/09/2019	57	7
3 Paraguay	26.1125 S 56.5581 W	536.3	Tropical Forest	17.97%	0.03%	21JWM 23/06/2019→21/09/2019	23/06/2019→21/09/2019-22/09/2019-23/09/2019	45	5
4 Brazil	13.1352 S 51.2781 W	580.6	Tropical Savanna	82.74%	0.11%	22LDL 15/07/2019→23/09/2019	16/07/2019→24/09/2019-25/09/2019	46	5
5 Venezuela	8.2048 N 66.6781 W	589.8	Tropical Savanna	38.78%	4.02%	19PGK 05/01/2019→15/04/2019	05/01/2019-06/01/2019→15/04/2019	58	6
6 Venezuela	7.7648 N 68.8620 W	503.8	Tropical Savanna	20.63%	0.22%	19NEJ 18/01/2019→03/04/2019	18/01/2019-19/01/2019→03/04/2019	61	5
7 Argentina	39.5352 S 64.6981 W	461.9	Temperate Savanna	14.19%	0.21%	20HLB 09/02/2019→20/04/2019	09/02/2019→20/04/2019-21/04/2019	44	5
8 Mexico	32.1848 N 115.0781 W	506.1	Deserts & Xeric Shrublands	11.10%	0.00%	11SPR 04/08/2019→28/10/2019	04/08/2019-08/08/2019→28/10/2019-29/10/2019	46	5
9 Chile	38.4352 S 72.1781 W	478.8	Temperate Forest	19.45%	0.01%	19HBT 19/01/2019→30/03/2019	18/01/2019→30/03/2019-02/04/2019	46	5
10 Chile	36.8952 S 71.9581 W	469.1	Mediterranean	17.98%	0.00%	19HBV 19/01/2019→14/04/2019	19/01/2019-23/01/2019→15/04/2019-27/04/2019	42	4
<b>Total</b>		<b>5170.9</b>		<b>30.56%</b>	<b>0.77%</b>			<b>508</b>	<b>54</b>