Supplementary materials

Atmospheric trends of CO and CH_4 from extreme wildfires in Portugal using Sentinel-5P TROPOMI level-2 data

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Table S1. Total CO column precision and CH_4 mixing ratio precision data from S5-P TROPOMI in the two geographic locations where the highest CO and XCH_4 emissions were achieved (Figure 3 and 4 related).

	CO total column precision	**CH_4 mixing ratio precision**
*Monchique, 2018**	*	#
3 08	NaN	NaN
4 08	NaN	NaN
5 08	NaN	NaN
6 08	0.0014	1.2724
7 08	0.0008	-
8 08	NaN	-
9 08	NaN	NaN
Vila de Rei/Mação, 2019#		
20 07	0.0012	NaN
21 07	0.0011	1.6669
23 07	0.0011	NaN

-Monchique fire - CO point (*) Lat 37° 16' 58.116" N, Long 8° 27' 17.136" W; CH_4 point (#) Lat 37° 43' 58.008" N, Long 8° 4' 41.232" W

-Vila de Rei/Mação fire - CO point (*) Lat 39° 41' 20.760" N, Long 8° 2' 4.452" W; CH_4 point (#) Lat 39° 33' 36.252" N, Long 8° 32' 25.404" W

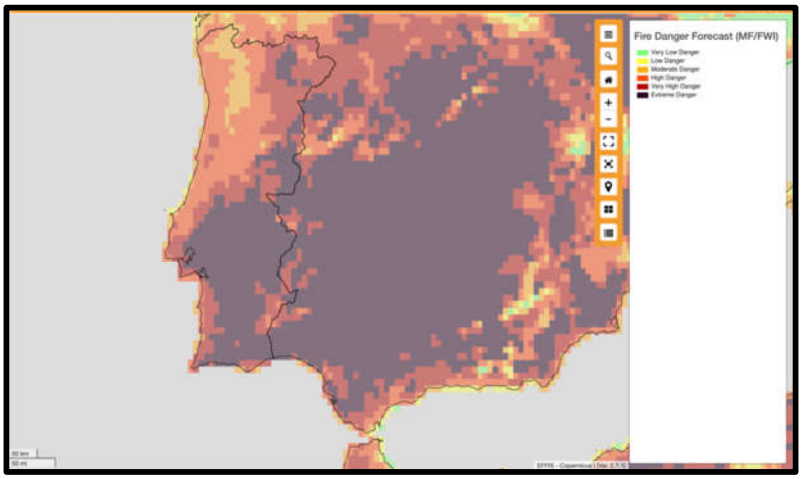

Figure S1. Wildfire Danger Forecast for August 7, 2018. (data collect from https://effis.jrc.ec.europa.eu/apps/effis_current_situation/public/index.html, accessed on 15 March 2021)

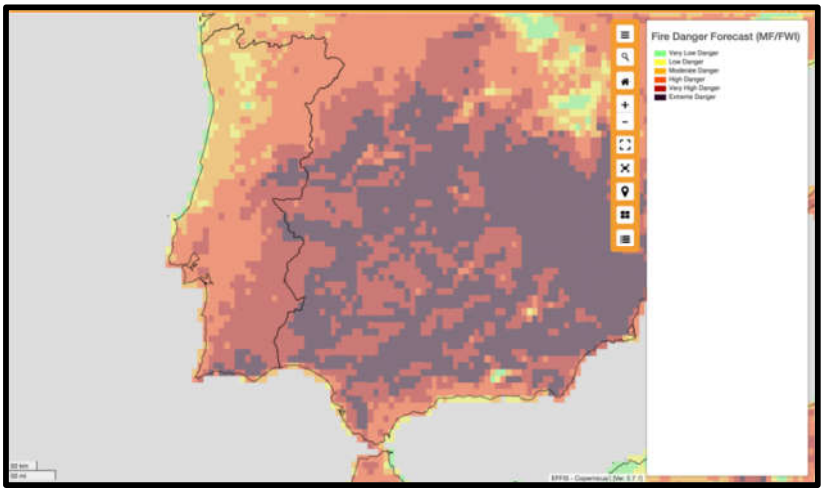

Figure S2. Wildfire Danger Forecast for July 21, 2019. (data collect from https://effis.jrc.ec.europa.eu/static/effis_current_situation/public/index.html, accessed on 15 March 2021)

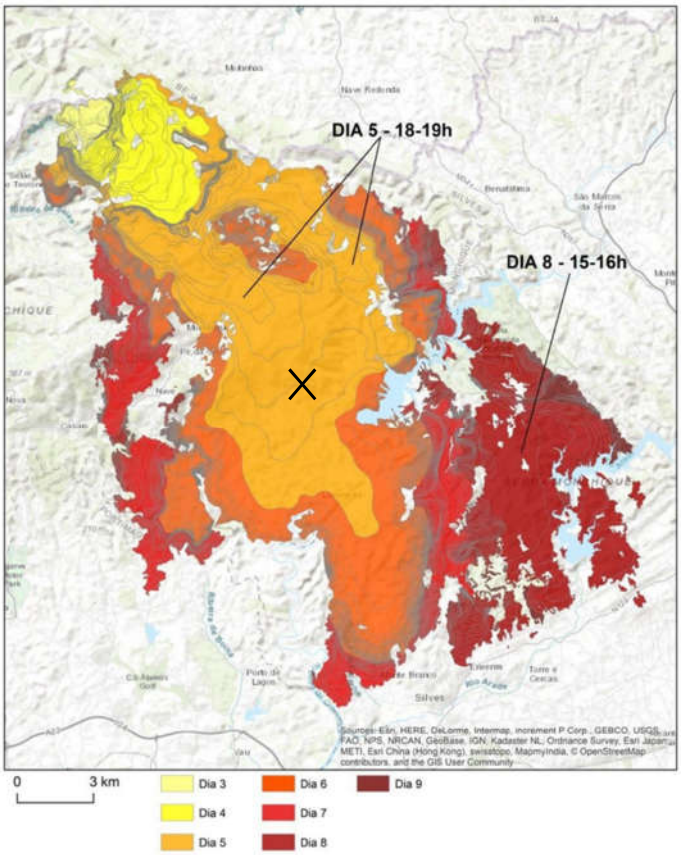

Figure S3. Burned area: propagation during Monchique wildfire event [26] (centered at lat 37° 17' 55.644" N, long 8° 30' 35.064" W - represented by the x in the map).

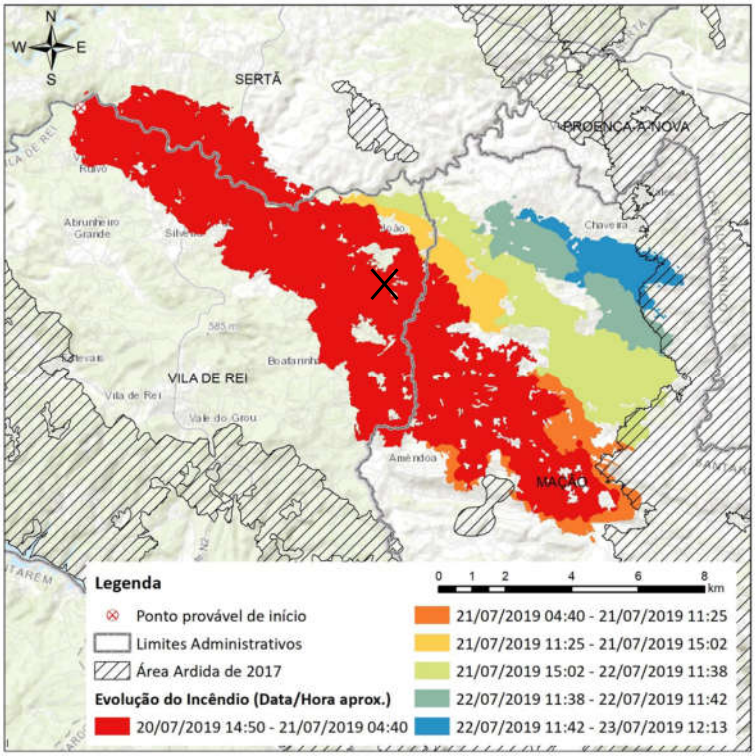

Figure S4. Burned area: propagation during Vila de Rei/Mação wildfire event [27] (centered at lat 39° 45' 5.688" N, long 8° 3' 26.172" W -represented by the x in the map).

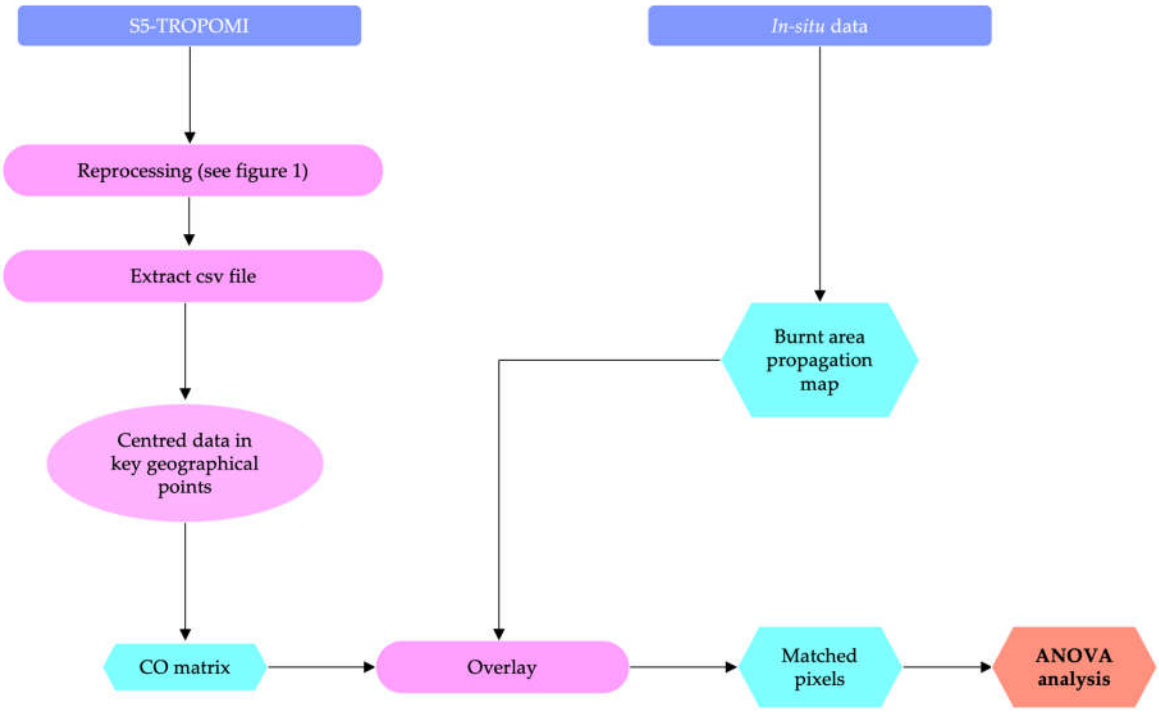

Figure S5. Spatio-temporal analysis flow chart process.

Figure S6. Highest and lowest CO and XCH_4 emissions geographic locations map for Monchique fire.

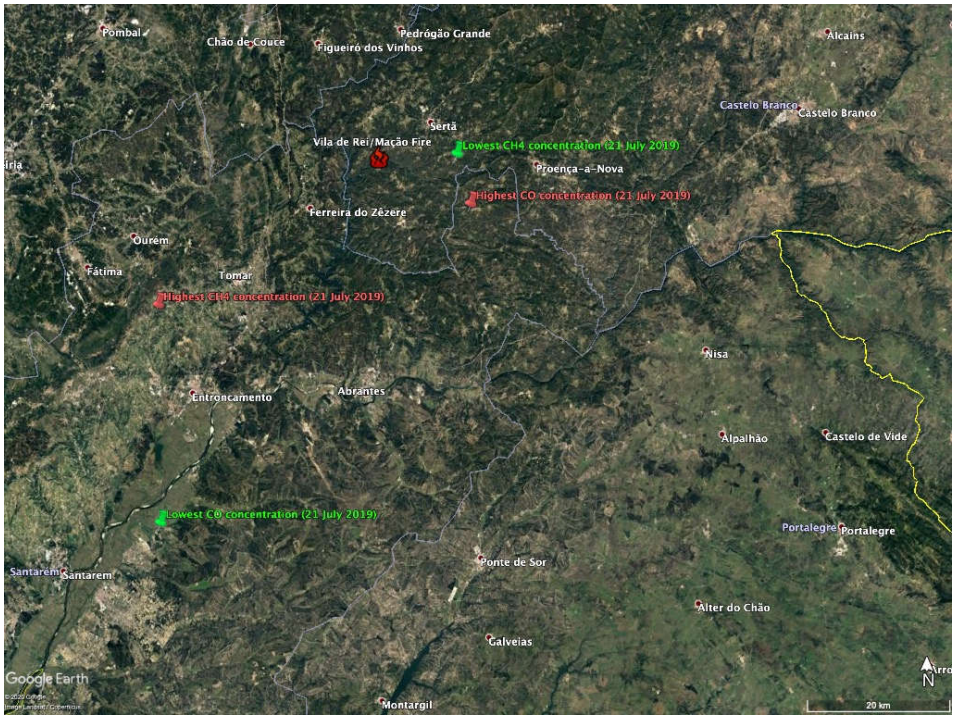

Figure S7. Highest and lowest CO and XCH_4 emissions geographic locations map for Vila de Rei/Mação fire.