

We would like to thank the reviewer’s suggestion that is relevant to compare fireline intensity (as measured by the CFL estimate) with the forest fire loss (FFL) dataset, particularly for the year of 2021, as the first fire season after the wildfire hazard assessment. However, we need to remind some considerations regarding the fire regime in the study area and the framework of the fire spread simulations, which make them not totally comparable with the FFL dataset:

- Fuel model map used in the simulations includes burned areas from 2020, thus one approach would be to compare it with forest fire loss map of 2021 (FFL21);
- However, in 2021 the largest fires have 118 and 124 ha, and are both winter fires (from January and March, respectively); According to the FFL21 none of these fires were highlighted with forest loss;
- Wildfire hazard was assessed using the 95<sup>th</sup> percentile of fire spread days to represent the extreme weather conditions that usually can produce large fires, specifically  $\geq 100$  ha;
- The fire regime in the study area is characterized for having some winter fires (represented in the “cooler/wetter (CWe)” weather type) that spread with weather conditions different from those occurring in the main fire season and in extreme days;
- According to the official Portuguese Statistics, there are some discrepancies between these and those from the FFL dataset; Annual burned area values are not supposed to be lower than the area identified as Forest Loss due to fires. As we can see in the histogram below (Figure 1), there are three years where this occurs: 2008, 2014 and 2018 (in the last case the difference is ca. 1600 ha). This makes us suspect that at least in these years there might be a problem with the FFL dataset;
- From the previous point, we do not have sufficient and comparable fire data from 2021 fire season in the study area.

Besides these considerations, and assuming that fire simulations were run at 100m spatial resolution (lower than the 30m from the FFL dataset) under extreme weather conditions and ignoring the lack of correspondence between the observed burned area extent with the corresponding annual records from the FFL dataset, we compared the CFL estimates with the annual area of FFL from 2001 to 2021.

We compared the FFL divided into two periods (before and after 2010) with the estimated CFL divided in two classes (below and above 2.5m, based on the relationship with FLI). We removed from analysis the years 2008, 2014 and 2018 due to the reasons mentioned above.

The hypothesis is that areas where in the past were classified with FFL are expected to have higher intensities now, especially if they are not from recent fires; For this reason, we selected the year of 2010 to define two burned area periods that historically burned approximately the same.

Results are shown in the next table:

	CFL (m)	
FFL	<2.5	$\geq 2.5$
before 2010	20.6%	<b>79.4%</b>
after 2010	<b>41.1%</b>	58.9%

From the table above, we conclude that areas that before 2010 were mapped with forest fire loss (“sum of high and medium certainty of forest loss due to fire pixels”) are mostly expected to experience very intense fires (~79%). Areas that burned after 2010 and that were mapped with forest fire loss, approximately 60% has the potential to spread high intensity fires, as shown by CFL values  $\geq 2.5$  m.

The next table shows the distribution among years before and after 2010, and we can see that before 2010 the burned areas from years of 2006 and 2010 are those that now are more susceptible to have very intense fires. 73% of the areas that burned after 2010 (mainly from 2016 and 2017) are susceptible to less intense fires (CFL<2.5m) due to the lower accumulation of fuels, as expected. Overall, we may conclude that with this validation we believe that our wildfire hazard assessment based on the estimated intensity of fires is reasonably reliable using the Portuguese forest service reference data and the suggested dataset of the Forest Fire Loss

FFL	CFL		TOTAL
	<2.5	$\geq 2.5$	
<b>before 2010</b>			
2001	7.1%	4.7%	5.2%
2002	14.2%	8.4%	9.6%
2003	0.5%	0.4%	0.4%
2004	5.6%	4.6%	4.8%
2005	9.3%	5.5%	6.3%
2006	25.5%	22.4%	23.0%
2007	3.5%	2.5%	2.7%
2009	17.3%	12.2%	13.3%
2010	17.0%	39.2%	34.6%
<b>after 2010</b>			
2011	2.1%	6.9%	5.0%
2012	9.4%	12.3%	11.1%
2013	7.1%	8.4%	7.8%
2015	4.4%	10.9%	8.2%
2016	20.6%	34.0%	28.5%
2017	52.5%	18.0%	32.2%
2019	1.3%	3.0%	2.3%
2020	0.4%	0.6%	0.5%
2021	2.1%	5.9%	4.3%

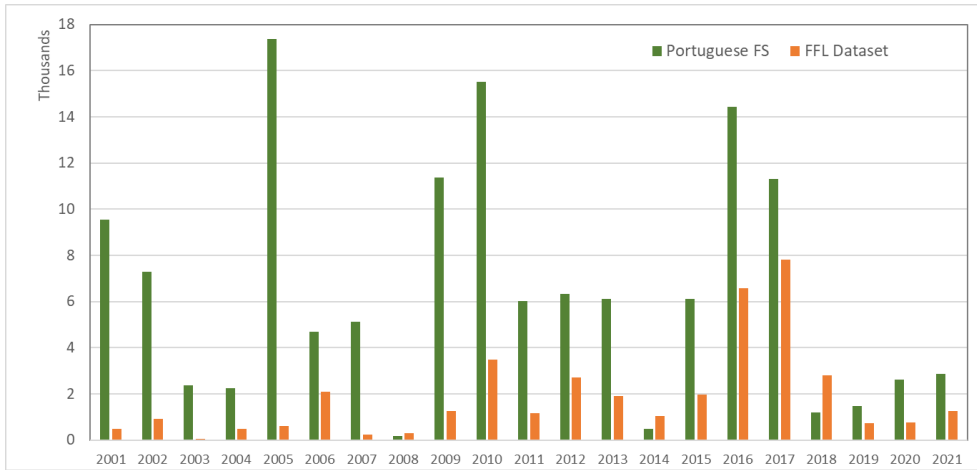


Figure 1