Supplement of Fire risk: an integrated modelling approach

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S1

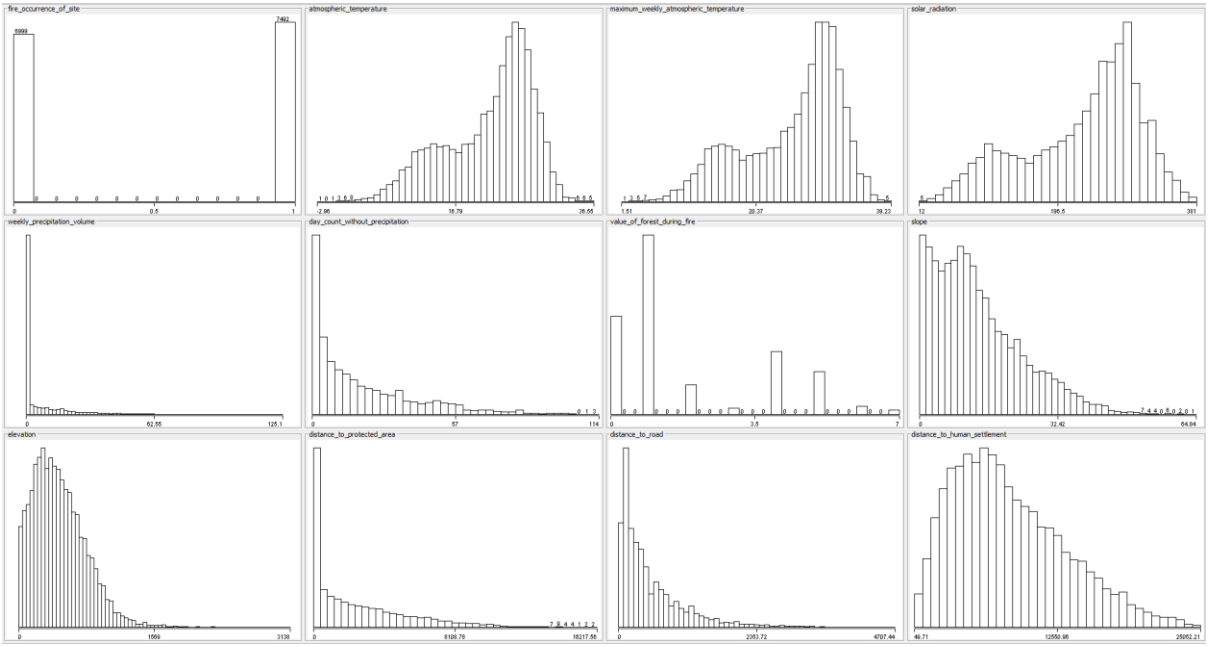

Figure S1. Distribution of the variables used on the fire occurrence modelling.

Table S1. Fuel type classifications developed for Mediterranean ecosystems (Lasaponara et al., 2006).

	Fuel type	Description
1	Ground fuels (cover >50%)	Grass
2	Surface fuels (shrub cover >60%; tree cover <50%)	Grassland, shrubland (smaller than 0.3-0.6m and with a high percentage of grassland), and clear-cuts, where slash was not removed.
3	Medium-heigh shrubs (shrub cover >60%; tree cover <50%)	Shrubs between 0.6 and 2.0 m.
4	Tall shrubs (shrub cover >60%; tree cover <50%)	High shrubs (between 2.0 and 4.0 m) and young trees resulting from natural regeneration or forestation
5	Tree stands (>4m) with a clean ground surface (shrub cover <30%)	The ground fuel was removed either by prescribed burning or by mechanical means. This situation may also occur in closed canopies in which the lack of sunlight inhibits the growth of surface vegetation
6	Tree stands (>4m) with medium surface fuels (shrubs cover >30%)	The base of the canopies is well above the surface fuel layer (>0.5). The fuel consists essentially of small shrubs, grass, litter, and duff.

7	Tree stand (>4m) with heavy surface fuels (shrub cover >30%)	Stands with a very dense surface fuel layer and with a very small vertical gap to the canopy base (<0.5m)

S2

Table S2. Intervals of Explanatory variables.

	Range	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
slope	0.00-64.84	2.19	6.83	11.67	18.11	43.49					
elevation	0.00-3138.00	101.25	276.50	430.50	612.00	1925.75					
distance to road	0.00-4707.44	60.36	206.07	398.19	718.81	2820.06					
value forest	0.00-7.00	0.50	1.50	2.50	3.50	4.50	5.50	6.50			
max weekly temp	1.51-27.92	3.40	7.17	10.94	14.72	18.49	22.26	26.03	29.80	33.58	37.35
acc week prec	0.00-18.75	0.03	1.25	3.60	6.25	9.30	17.50	21.45	22.15	32.00	81.78
day without prec	0.00-14.05	1.25	5.50	13.50	27.00	74.75	64.48				
distance to protected area	0.00-16217.56	0.00	507.25	1798.49	3721.10	10538.65					
distance to human	46.90-25052.21	1969.02	5089.43	7574.89	10705.62	18800.69					
atm temperature	-2.96-36.55	-0.98	2.97	6.92	10.87	14.82	18.77	22.72	26.67	30.62	34.57
solar radiation	12.00-381.00	48.90	122.70	196.50	270.30	344.10					

S3

Table S3: Area of ecosystem services exposed (in km2) and the percentage of change.

		low fire probability			medium fire probability			high fire probability		
		low ES	med ES	high ES	low ES	med ES	high ES	low ES	med ES	high ES
Carbon Mass	2020	10.461	2.091	522	3.837	1.789	690	738	691	210
	2050	3.618	930	227	7.897	1.914	674	3.389	1.634	543
		-65%	-56%	-57%	106%	7%	-2%	359%	137%	159%

Biodiversity	2020	1.513	10.691	617	143	5.157	857	70	1.376	233
	2050	938	3.732	262	594	8.585	846	167	4.729	593
		-38%	-65%	-58%	317%	66%	-1%	138%	244%	155%
Outdoor Recreation	2020	5.073	2.878	820	1.983	1.953	979	472	650	354
	2050	1.888	1.257	414	3.780	2.439	924	1.805	1.717	769
		-63%	-56%	-50%	91%	25%	-6%	282%	164%	117%
Pollination	2020	1.773	509	409	1.316	687	603	428	289	531
	2050	880	284	221	1.400	646	473	1.126	552	829
		-50%	-44%	-46%	6%	-6%	-22%	163%	91%	56%
Soil Retention	2020	13.085	7	0	6.265	36	2	1.628	9	1
	2050	4.795	9	0	10.460	14	1	5.526	28	2
		-63%	29%	0%	67%	-61%	-50%	239%	211%	100%
Exposure	2020	6.381	3.235	474	2.709	1.924	626	667	603	266
	2050	2.424	1.242	225	4.826	2.719	584	2.403	1.732	547
		-62%	-62%	-53%	78%	41%	-7%	260%	187%	106%

References

Lasaponara, R., Lanorte, A., and Pignatti, S.: Characterization and Mapping of Fuel Types for the Mediterranean Ecosystems of Pollino National Park in Southern Italy by Using Hyperspectral MIVIS Data, Earth Interactions, 10, 1–11, https://doi.org/10.1175/EI165.1, 2006.