

Table S1. Overall characterization of the study sites, in terms of the climatological normal, topography, forest stand characteristics and weather variables for the first 2 years after fire occurrence (prior sampling). Meteorological characterization of the three populations, segmented by the first (Nov 2017-Oct 2018) and second (Nov 2018- Oct 2019), hydrological years after fire, reflecting the conditions of pine natural regeneration.

Climatological normal		Mira	Tocha	Leiria
\bar{x} annual prec. (mm)		845	945	790
\bar{x} temp. (°C)		13.3	15.5	15.9
Topography	Condition^[1]			
Elevation a.s.l (m)	U	29.2±5	57.2±21.2	64.9±6.4
	B	21.3±15.7	50±10	49±15
Distance to sea (m)	U	2011±425.3	3191±349.4	2027±1549
	B	4408±1179.2	3715±564.8	1936±508.8
Stand characteristics				
Tree density (trees·m ⁻²)	U	977.6±351	1007.2±383.9	770.2±367.2
	B	1807.0±555.5	2192.0±671.4	1214.4±749.2
Tree age (years)	U	41.3±8.1	46.9±6.2	46.5±5
	B	39.7±8.6	36.7±11.9	32.3±16.8
2 years "regeneration" weather				
Precipitation (mm)	Year			
\bar{x} annual	2018	1115	1082	952
	2019	960	832	741
Σ Spring	2018	489.3	479	445.9
	2019	271.6	125	206.2
Σ Summer	2018	129.1	249	78.6
	2019	69	67.2	58.3
Temperature (°C)				
\bar{x} annual	2018	15.3	15.2	15.4
	2019	15.6	15.5	15.7
Max	2018	39.9	40.5	40.8
	2019	34.9	35.4	35.8
Aridity				
Max. days no rain	2018	98	98	100
	2019	30	30	35
Max. days temp. $\geq 35^\circ\text{C}$	2018	9	9	10
	2019	4	3	1

^[1]U: unburnt sites. B: burnt sites.

Table S2. Characterization of the native and invasive plants on the three locations (Mira, Tocha, and Leiria) in both unburnt (U) and burnt (B) conditions. Different letters indicate statistically significant differences ($p < 0.05$) between each combination of populations \times condition, for each of the studied variables. Values presented are mean \pm standard deviation.

	Condition ^[1]	Mira	Tocha	Leiria
Native plants				
Total cover (%)	U	19 \pm 13(b)	41 \pm 17(b)	30 \pm 18(b)
	B	33 \pm 8(c)	19 \pm 16(c)	81 \pm 15(a)
Woody cover (%)	U	16 \pm 15(b)	35 \pm 22(b)	21 \pm 21(b)
	B	20 \pm 12(b)	15 \pm 12(b)	77 \pm 1(a)
Herbaceous cover (%)	U	3 \pm 5(a)	2 \pm 2(a)	8 \pm 8(a)
	B	13 \pm 12(a)	4 \pm 7(a)	3 \pm 3(a)
Height (cm)	U	113.3 \pm 12.5(b)	60.4 \pm 37.4(ab)	52.8 \pm 30.5(a)
	B	35.2 \pm 8.6(a)	45.1 \pm 14(a)	55.3 \pm 20(a)
Invasive plants				
Total cover (%)	U	26 \pm 20(a)	1 \pm 1(b)	10 \pm 8(ab)
	B	17 \pm 11(a)	15 \pm 13(a)	7 \pm 3(a)
Woody cover (%)	U	6 \pm 10(b)	0 \pm 0(b)	0 \pm 0(b)
	B	12 \pm 6(ab)	8 \pm 8(a)	4 \pm 4(ab)
Herbaceous cover (%)	U	20 \pm 13(b)	1 \pm 1(c)	10 \pm 7 (bc)
	B	5 \pm 7(a)	7 \pm 6(a)	3 \pm 2(a)
Height (cm)	U	120 \pm 157.8(ab)	67.5 \pm 75.4(ab)	50 \pm 15.4(b)
	B	29.5 \pm 16.9(a)	32.9 \pm 11.8(a)	27.5 \pm 16.2(a)

^[1]U: unburnt sites. B: burnt sites.