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Supplementary Material

Tab. S1 - Fields of the Italian fuel characteristics dataset. (*): All loads are on a dry weight basis, *i.e.*, dehydrated.

Field	Description	Units or Categories	Data format
ID	Unique identifier code of each fuel observation	- 1st and 2nd position: fuel complex identifier (LI = litter only; GR = grass and grass; GS = grass + shrubs; SH = shrubs; LS = litter + grass + shrubs) - 4thto 6thposition: study site identification code. - 8thand 9thposition: numeric code that identifies a fuel sample within an individual study site. The code starts from 01 for each site	Alphanumeric
FuelComplex	Broad group based on the main fuel type responsible for fire spread	- LI = litter only; GR = grass only; SH = shrubs only; GS = grass + shrubs; LS = litter + grass + shrubs	Character string, up to 2 characters
Site	Unique identifier code of each study site (samples within 200 m distance at a location)	Sites are 337	Numeric, integer
Sample	Unique identifier code of each sample at a study site	Number of samples at a study site range from 1 to 15	Numeric, integer
SamplingSeason	Season in which the fuel sampling was carried out. Season corresponds to the typical environment-specific fire season, to describe fuel characteristics dynamic (e.g. level of grass curing) in the nature of their flammable status.	Classes are: summer - winter	Character string, up to 7 characters
Wduff	Duff fuel load* (includes the lower litter)	Mg / ha	Numeric, integer
W1h	Dead fuels upper litter 0-6 mm (i.e. 1h fuel load)	Mg / ha	Numeric, integer
W10h	Dead fuels 6-25 mm (i.e. 10h fuel load)	Mg / ha	Numeric, integer
W100h	Dead fuel 25-75 mm (i.e. 100h fuel load)	Mg / ha	Numeric, integer
WGr	Live grass <6 mm	Mg / ha	Numeric, integer
WSh1h	Live shrubs <6 mm	Mg / ha	Numeric, integer
WSh10h	Live shrubs 6-25 mm	Mg / ha	Numeric, integer

Field	Description	Units or Categories	Data format
Wtot	Total fuel load excluding duff	Mg / ha	Numeric, integer
Cdead	Cover of 1h, 10h and 100h fuels	%	Numeric, integer
CGr	Cover of grass	%	Numeric, integer
CSh	Cover of shrub	%	Numeric, integer
Ddead	Depth of 1h, 10h and 100h fuels	Cm	Numeric, integer
DGr	Depth of grass	Cm	Numeric, integer
DSh	Depth-Height of shrub fuels	Cm	Numeric, integer
CanCov	Tree layer canopy cover	%	Numeric, integer
FuelBed	Pre-defined fuelbed partly based on EFFIS fuel map classes adapted to Italian specificity (see Table 2)	Fuelbeds are organized in 19 classes	Character string
CodFuelBed	Numerical code for each fuelbed	Progressive number from 1 to 17	Numeric, integer
EFFIS_FuelClass	Fuel map class according to European Forest Fire Information System (EFFIS 2017) classification	The EFFIS fuel map is organized in 42 classes	Character string
CodCorine	Code of the Corine land cover class IV level	IV level Corine Land Cover	Character string
ForTypeEU	European Forest Types	European Forest Types classification (Barbati et al. 2014)	Character string
INFC_cat	Forest category of the Italian National inventory	The Italian inventory has 17 forest categories	Character string
Description_IT	Vegetation type description for Italian users	Vegetation classification according to regional Forest and Pastoral Types	Character string
Clim_kgz	Köppen-Geiger climate class	Climate classes according to Kottek et al. (2006)	Character string
Bt	Bioclimates of the worldwide bioclimatic classification system	Classes identified by taking into consideration the macrobioclimate, and ranges in the gradients of the annual ombrothermic index and the simple continentality index according to Rivas-Martinez et al. (2011)	Numeric, integer
Ct	Continentality type of the worldwide bioclimatic classification system	Classes identified by ranges in the gradient of the simple continentality index	Numeric, integer
Ot	Ombrotype of the worldwide bioclimatic classification	Classes identified by ranges in the gradient of the annual ombrothermic	Numeric, integer

Field	Description	Units or Categories	Data format
	system	index according to Rivas-Martinez et al. (2011)	
Tt	Thermotype of the worldwide bioclimatic classification system	Classes identified by identified by ranges in the gradients of the compensated thermicity index and the yearly positive temperature according to Rivas-Martinez et al. (2011)	Numeric, integer
Slope	Sampling point slope	%	Numeric, integer
Aspect	Sampling point aspect	°North	Numeric, integer
Elev	Sampling point elevation	meters a.s.l.	Numeric, integer
Coord_N	Latitude	deg/min/sec	Numeric, integer
Coord_E	Longitude	deg/min/sec	Numeric, integer
UTM_x	Latitude	UTM_WGS84 (EPSG)	Numeric, integer
UTM_y	Longitude	UTM_WGS84 (EPSG)	Numeric, integer
Region	Italian administrative Region	Name of the Region	Character string
Observer	Surname of the observer	-	Character string

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Tab. S2 - Foliage and branches fuel load (Mg ha^{-1}) and source of data by fuel complex.

Fuelbed	Foliage	Branches	Sources
7. Montane beech	3.08	9.54	Bartelink 1997
8. Compact mesophytic broadleaves **9. Porous thermophilous broadleaves**	4.40	6.60	Bovio 1996
10. Mediterranean evergreen broadleaves	6.02	9.17	Lledò et al. 1992
11. Long broadleaved litter	3.29	10.8	Leonardi et al. 1996, Cutini 2000
13. Alpine and Mediterranean short needled conifer	12.4	-	Lehtonen 2005
14. Montane long needled conifer **15. Montane long needled conifer understory with shrubs**	4.80-11.37	7.20	Bovio 1996, Riano et al. 2004
16. Mediterranean long needled conifer **17. Mediterranean long needled conifer understory with shrubs**	6.1-7.54	6.22	Mitsopoulos and Dimitrakopoulos 2007, Fernández-Alonso et al. 2013

Fig. S1 – Scheme showing the structure of the dataset as regards quantitative variables characterizing each fuel observation. Variables name abbreviations are described in Tab. S1.

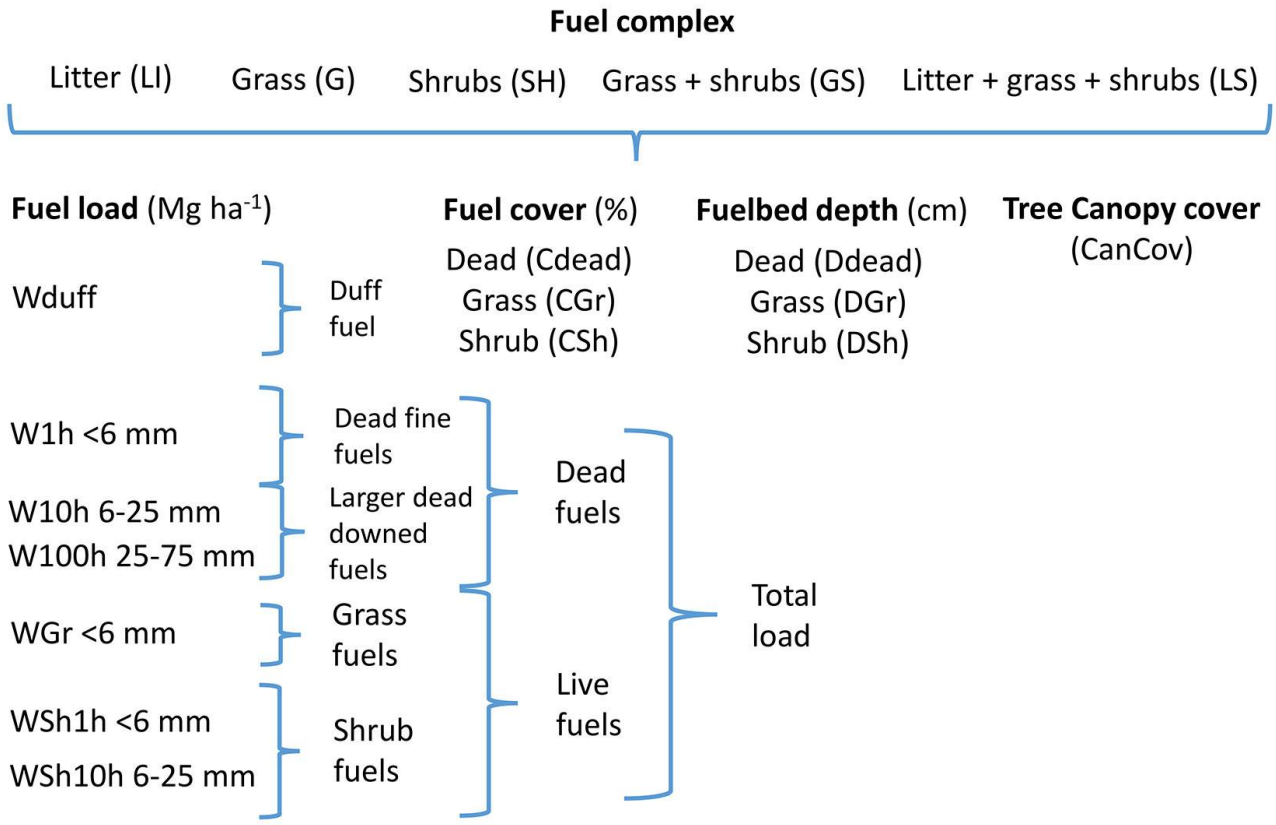

Fig. S2 – Photos describing the 19 fuelbeds included in the dataset.

Fig. S2 – (continued).

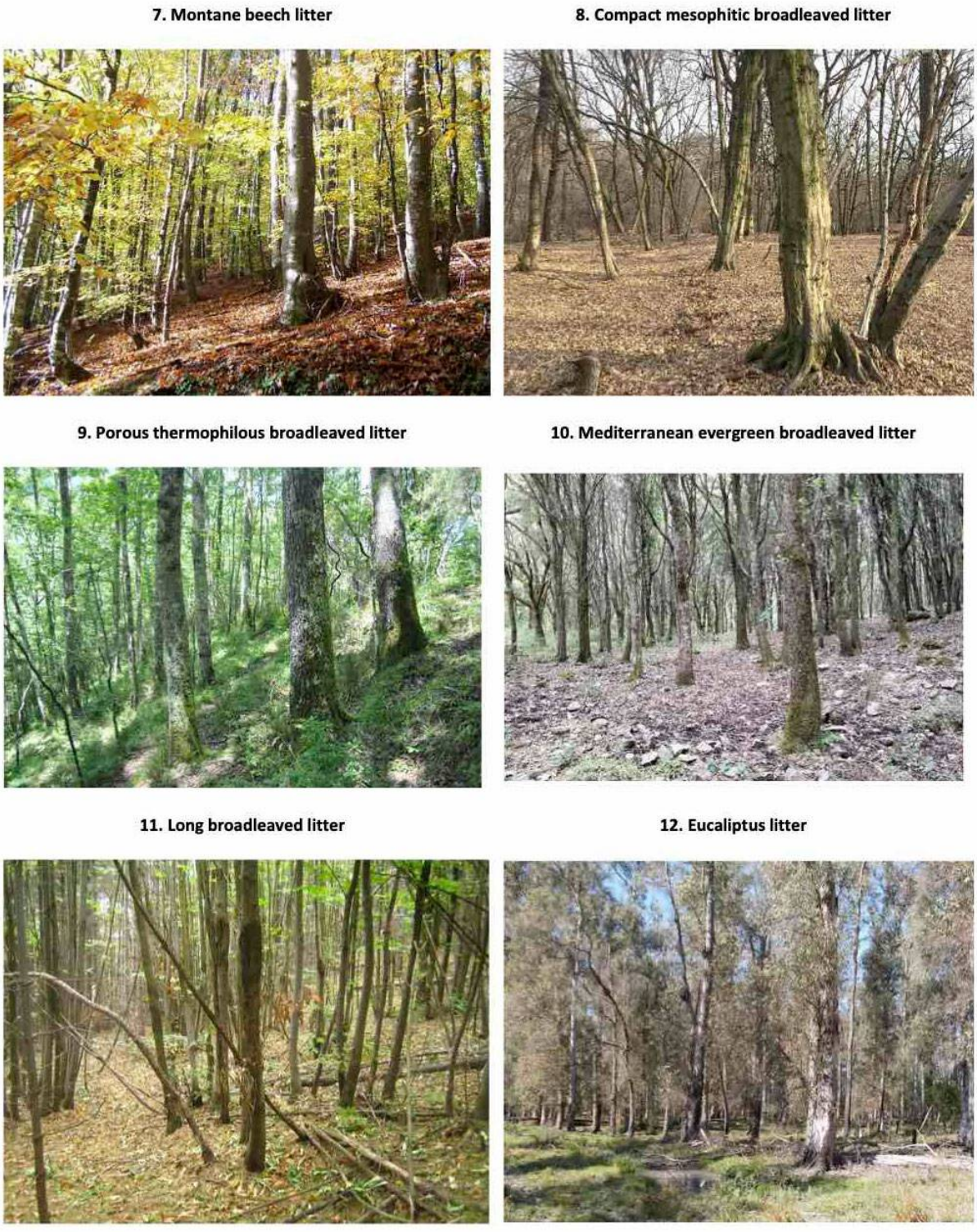

Fig. S2 – (continued).

13. Alpine and Mediterranean short needled conifer litter

14. Montane long needled conifer litter

15. Montane long needled conifer understory with shrubs

16. Mediterranean long needled conifer litter

17. Mediterranean long needled conifer understory with shrubs

18. Riparian vegetation

Fig. S2 – (continued).

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