Supplemental Material for "Widespread multi-year droughts in Italy: identification and causes of development"

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This Supplemental Material contains:

- Supplemental Figures S1-S5

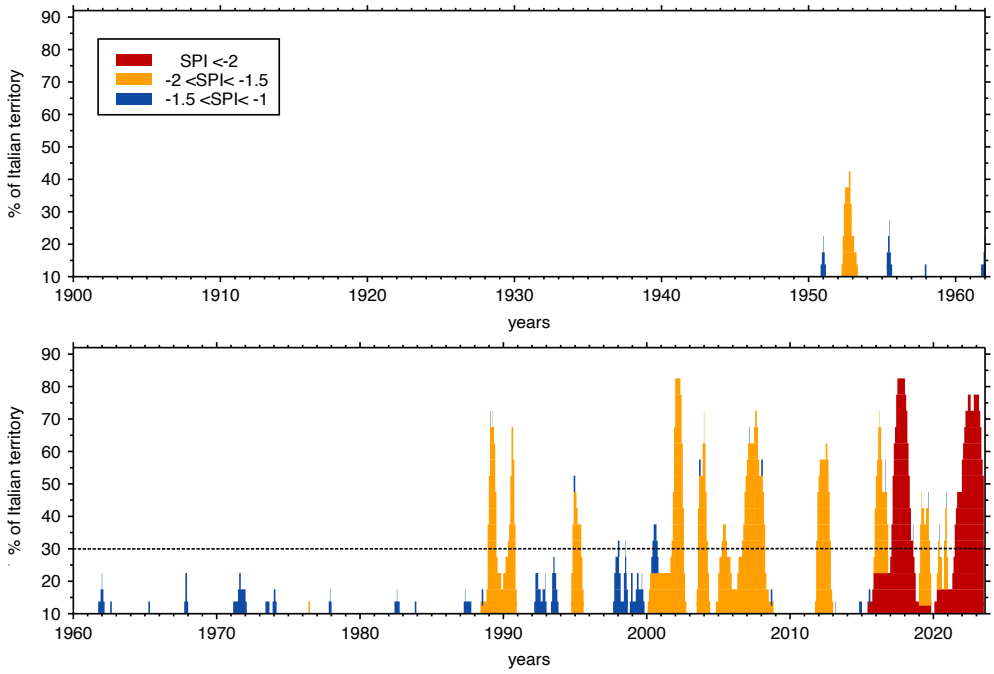

Fig. S1 Percentage area extent (%) of the Italian territory under drought conditions (SPEI-12 ≤ -1) according to the GPCC based SPEI-12. The dashed black line indicate the 30% threshold used for the definition of widespread droughts. Blue, yellow and red indicate whether moderate, severe or extreme drought conditions were reached at the peak intensity of each event.

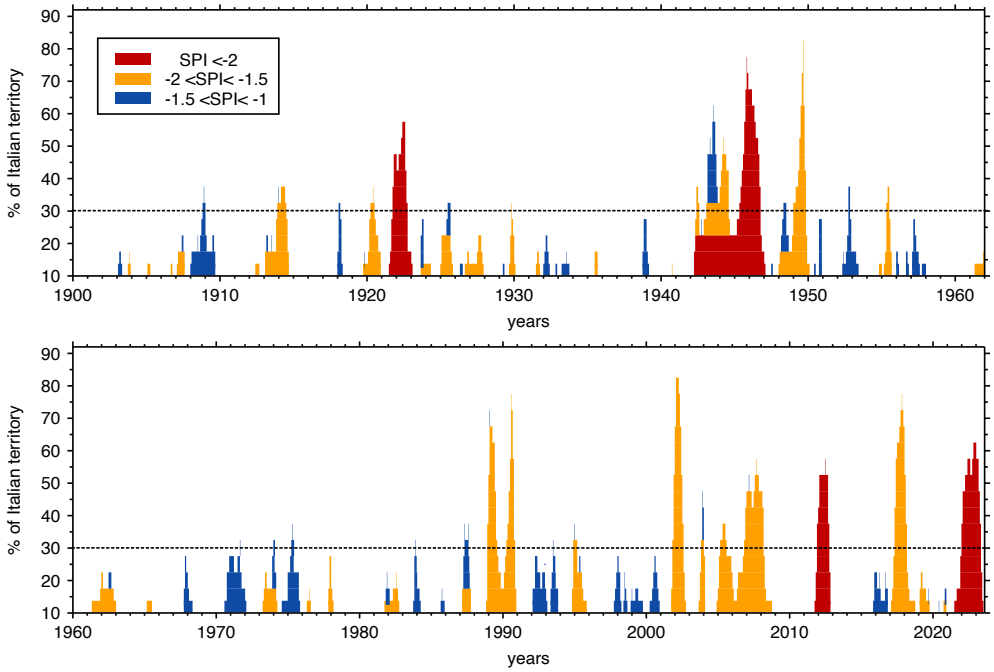

Fig. S2 Percentage area extent (%) of the Italian territory under drought conditions (SPI-12 ≤ -1) according to the GPCC based SPI-12. The dashed black line indicate the 30% threshold used for the definition of widespread droughts. Blue, yellow and red indicate whether moderate, severe or extreme drought conditions were reached at the peak intensity of each event.

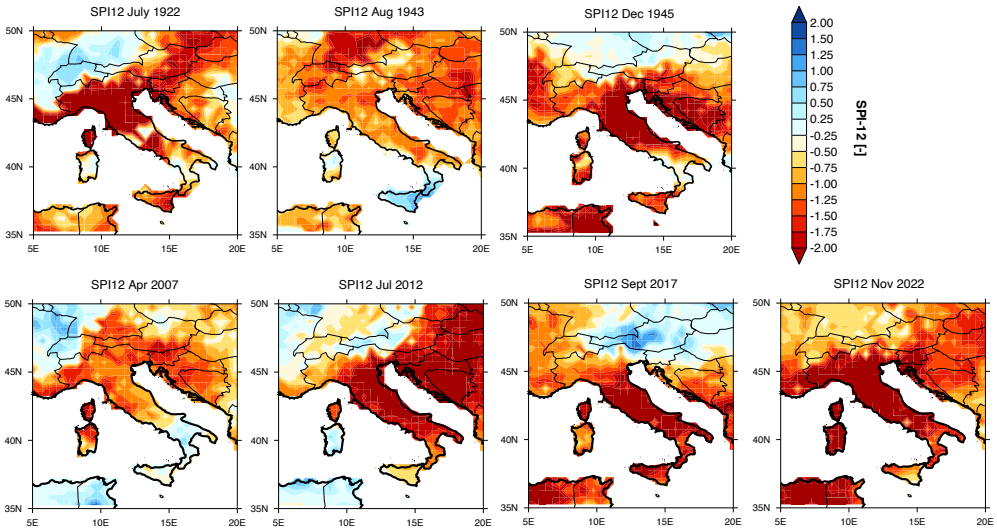

Fig. S3 Spatial pattern of SPI-12 at the month of maximum drought extension over the Italian territory during the seven widespread MYWD events.

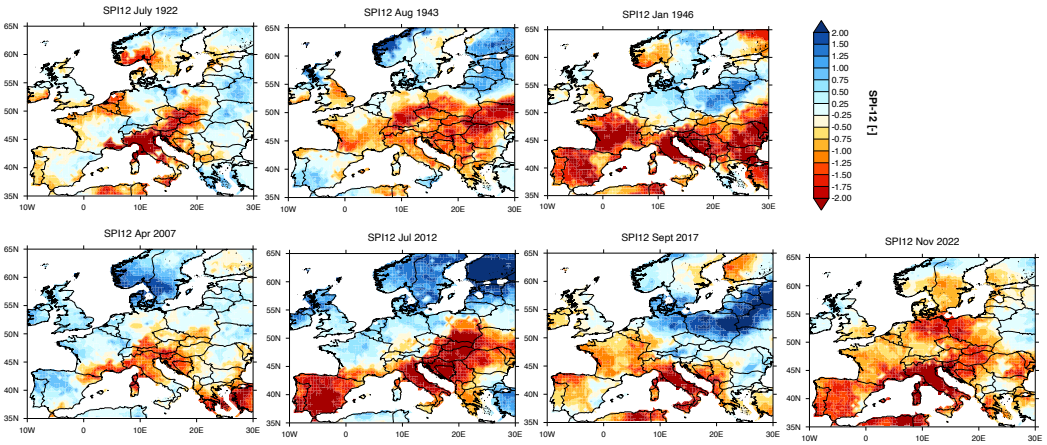

Fig. S4 As in figure S3 but for a European domain.

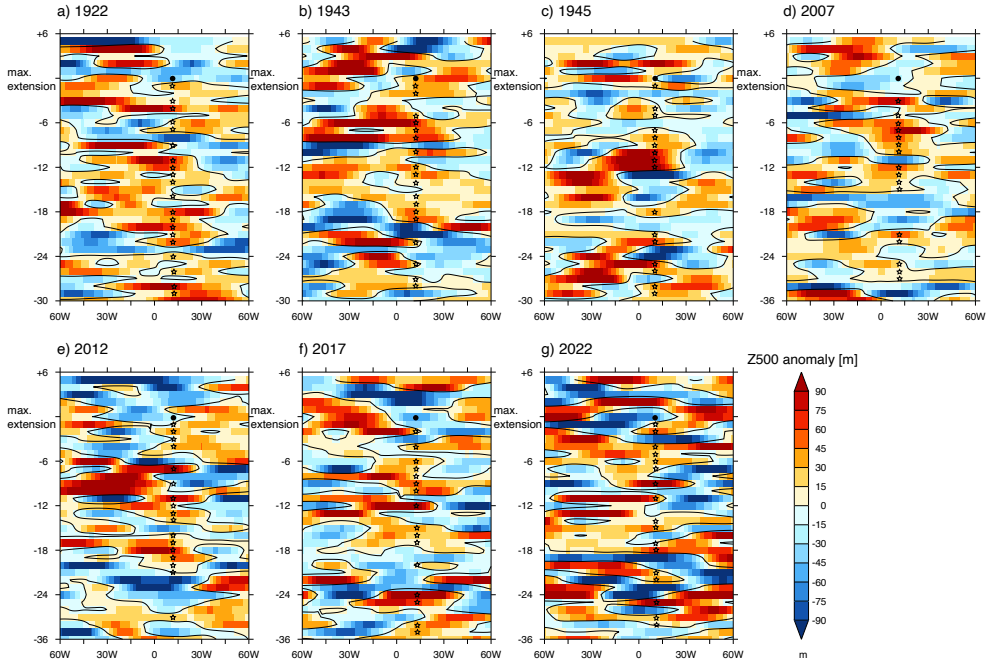

Fig. S5 Hovmöller diagram of the Z500 monthly anomalies (units: meters) for the WMYD events occurred in (a) 1921-22, (b) 1942-43, (c) 1945-46, (d) 2006-08, (e) 2011-2013, (f) 2017-18 and (g) 2021-23. Negative times on the y-axis denote months before the month of maximum areal extent of the drought (indicated by the black circle) according to SPEI-12 (see Table 1 in the paper). Z500 anomalies are latitudinally averaged in a 40°N-50°N band. Star symbols at 12°E (the averaged longitudinal position of Italy) highlight positive Z500 anomalies over Italy in the months prior to the drought maximum extent.