Figure 1 Location of the Gutun watershed in the Chinese Loess Plateau (a) and the spatial distribution of sample sites (b).
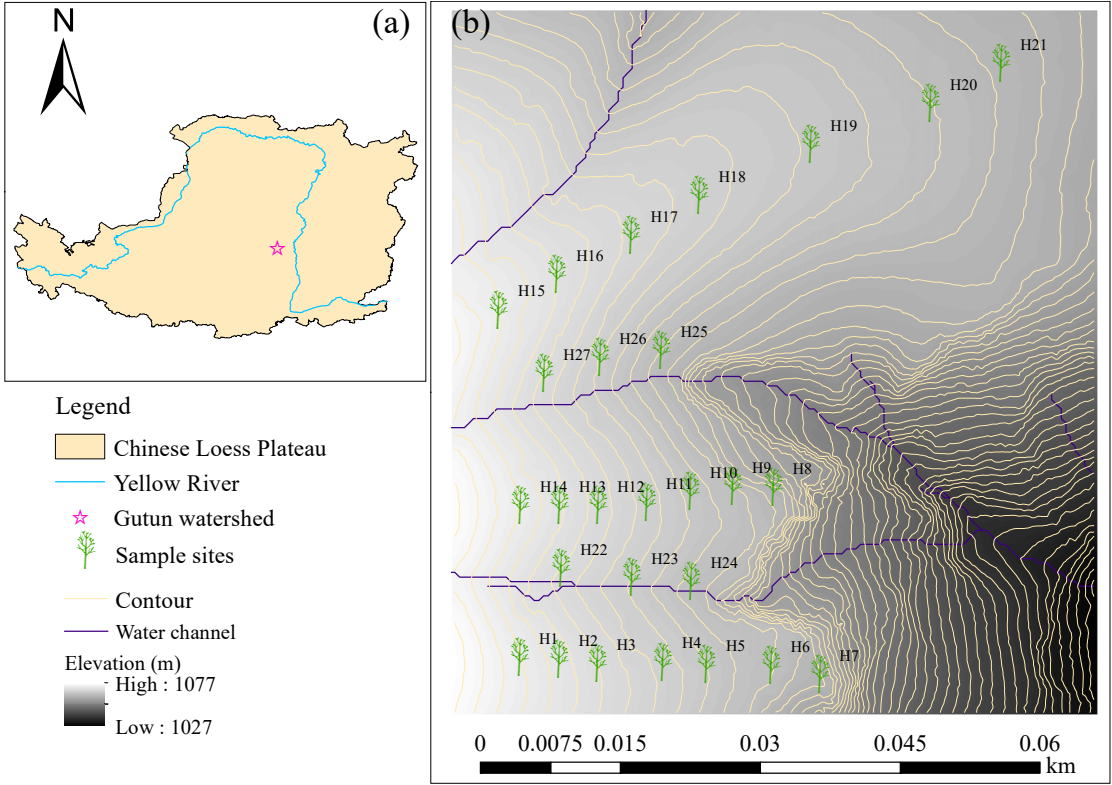
Figure 2 Temporal distribution of precipitation, temperature, and mean soil water content at all sample sites from March 2017 to February 2020.
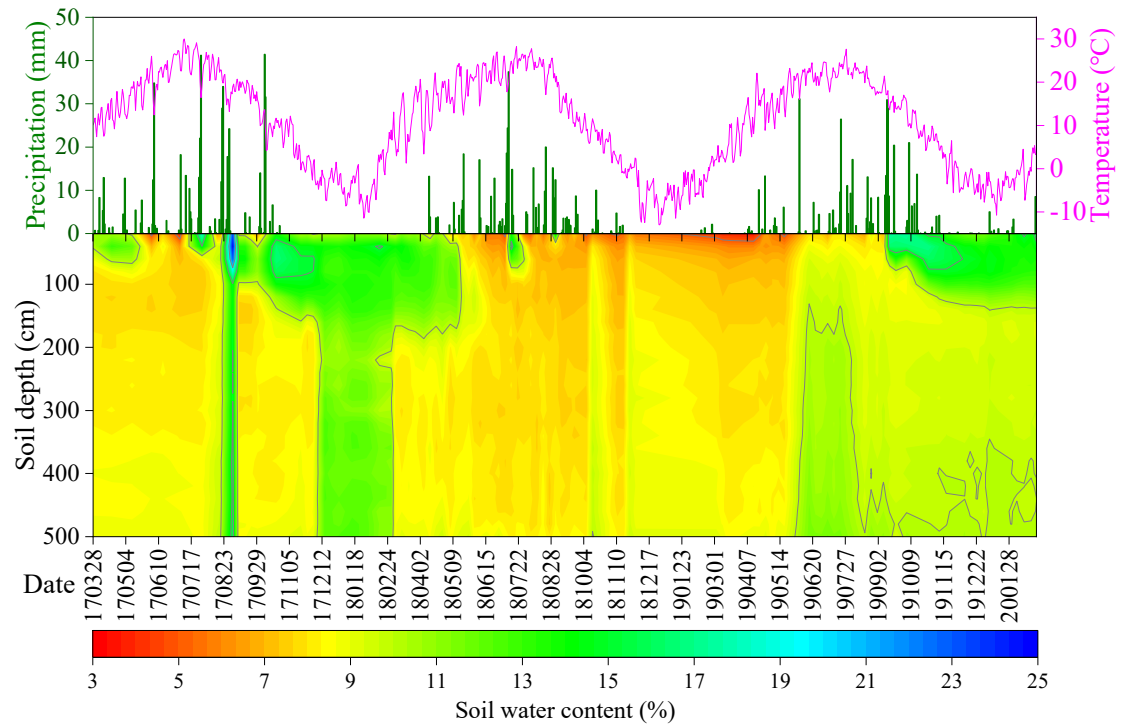
Figure 3 Vertical distribution of root fresh weight density, length density, surface density, and average diameter in the 0–500 cm soil profile.
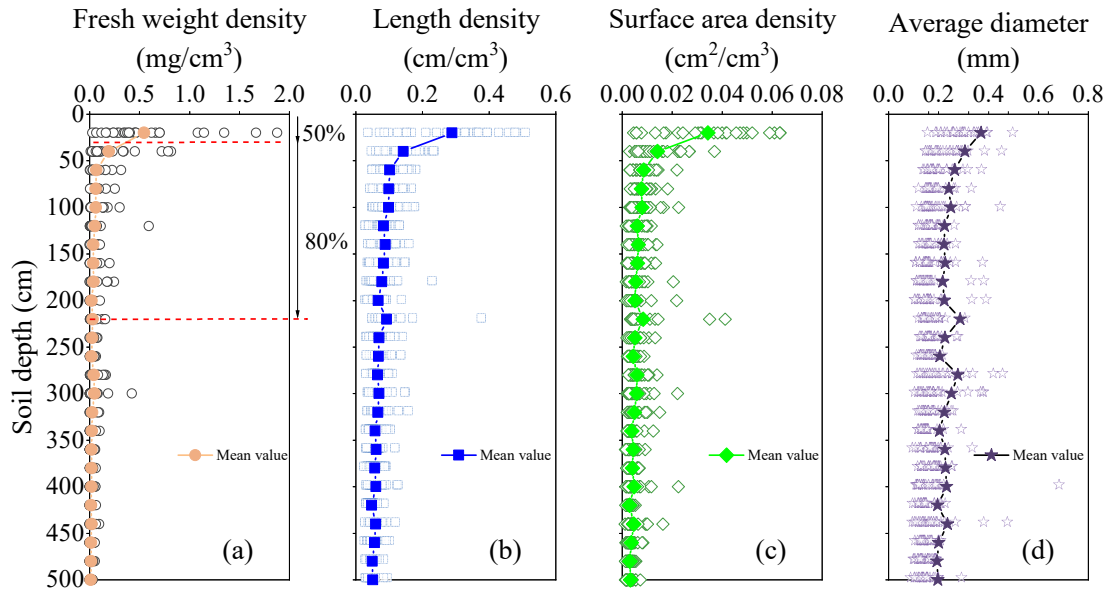
Figure 4 Temporal and spatial dynamics of soil water content within the drier soil layer (DSL-SWC). A white square represents the disappearance of the drier soil layer. CV represents the coefficient of variation.
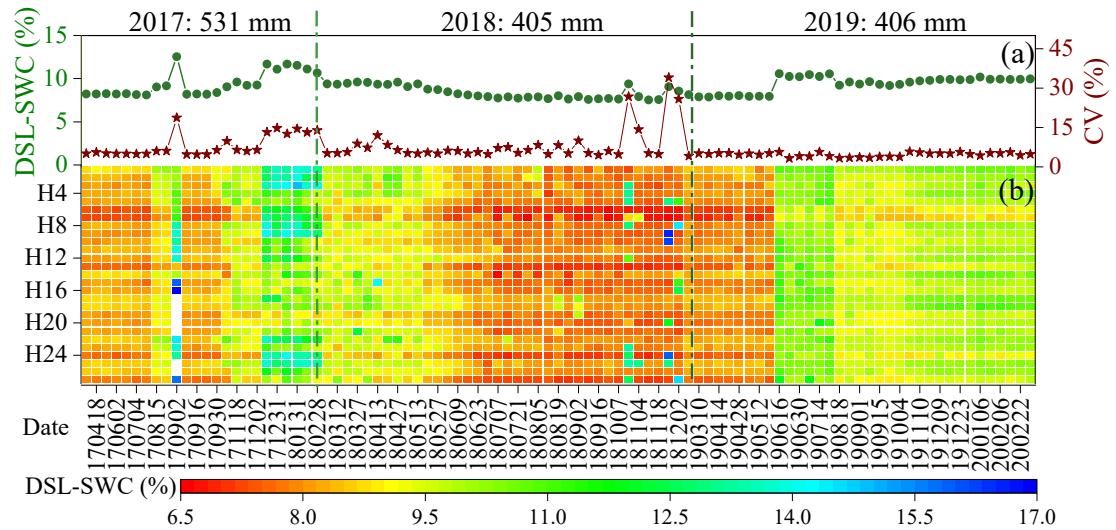
Figure 5 Temporal and spatial dynamics of drier soil layers (DSLs) indices (a: formation depth (DSLFD), b: thickness (DSLT), c: quantitative index (QI). The line-scatter plot shows the time series of mean values at all sample sites. A white square represents the disappearance of DSLs.
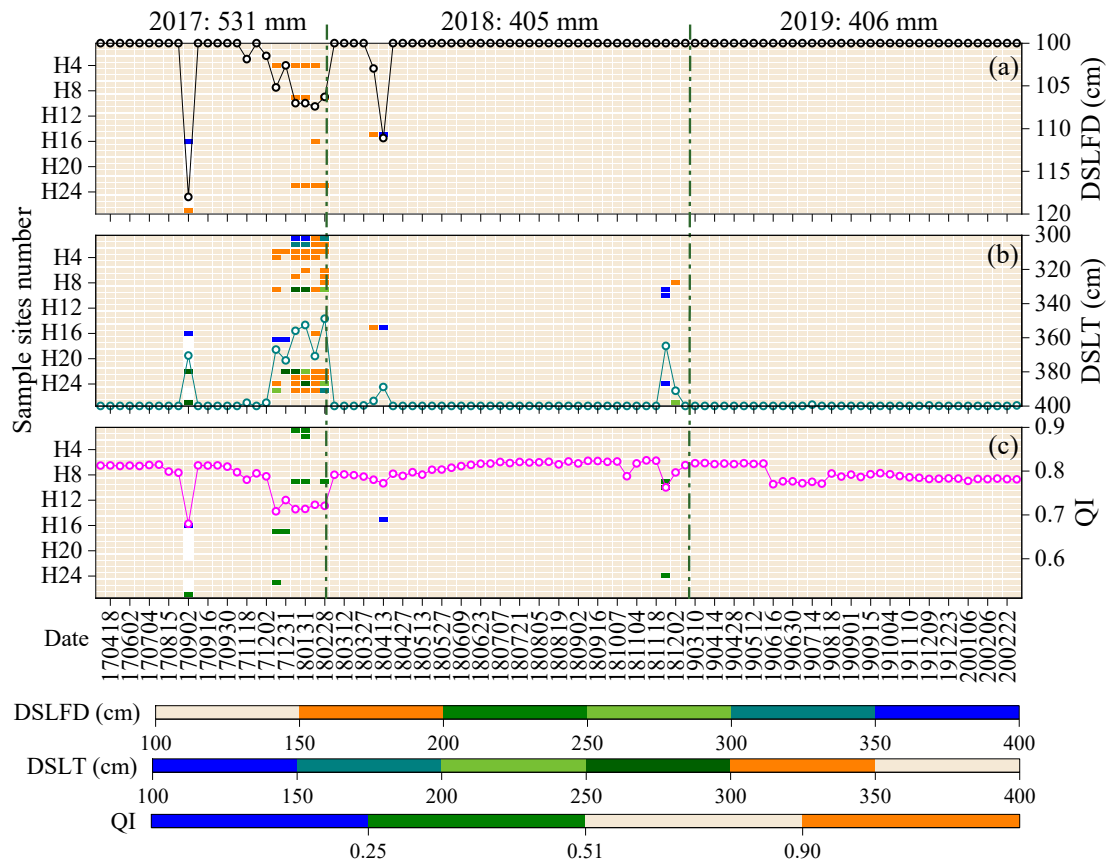
Figure 6 Seasonal dynamics of dried soil layer (DSL) indices from 2017 to 2020. DSL-SWC, soil water content within a DSL (a); DSLFD, the DSL formation depth (b); DSLT, the DSL thickness (c); QI, the quantitative index (d). A dotted line means the DSL indices change with the month.
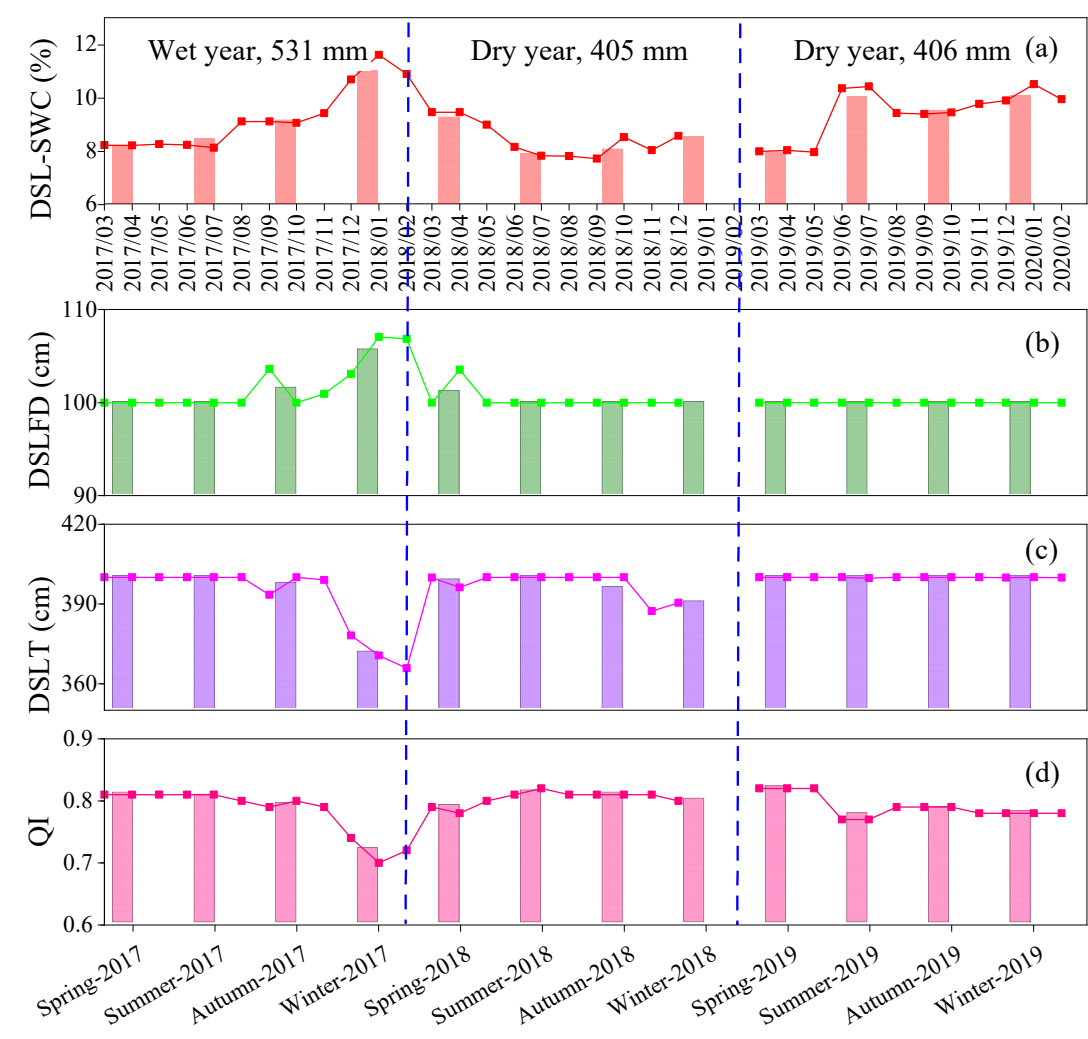
Figure 7. Schematic diagram of dried soil layer (DSL) recovery. Precipitation distribution between August and September 2017 (a), location of DSLs-disappeared sites (b: blue dots), the soil water content pattern after rainfall events in the 0–500 cm profile (c), distribution patterns of root parameters of DSLs-disappeared sites and the mean value of all sites with soil depth (d), and distribution density of soil particle composition of DSLs-disappeared sites and the mean value of all sites (e). Dotted lines show the mean of all sites.