The files

‘VWC\_RLD\_2009.csv’

‘VWC\_RLD\_2010.csv’

‘VWC\_RLD\_2011.csv’

Contain the following columns:

A: Year

B: DOY (Julian date or day of year)

C: Block (experimental replicate)

D: Ring (experimental plot)

E: CO2 (CO2 treatment; 385=ambient CO2; 585=elevated CO2)

F: H2O (precipitation treatment; con= control precipitation; dry=reduced precipitation)

G: VWCRLD (Soil volumetric water content, weighted for the proportion of roots present in each soil depth category)

The file ‘weighted\_VWC\_ANOVA\_2009thru2011.sas’ uses the mixed procedure in sas to run a mixed-model repeated measures ANOVA, in which CO2, precipitation treatment, and the CO2\*precipitation interaction are considered fixed effects, block is considered a random effect, and the block\*CO2\*precipitation interaction is the subject of repeated measures. The model results are presented in Table S8 and the model-corrected means (lsmeans) are presented in Extended Data Fig. 7.