Supplementary Material
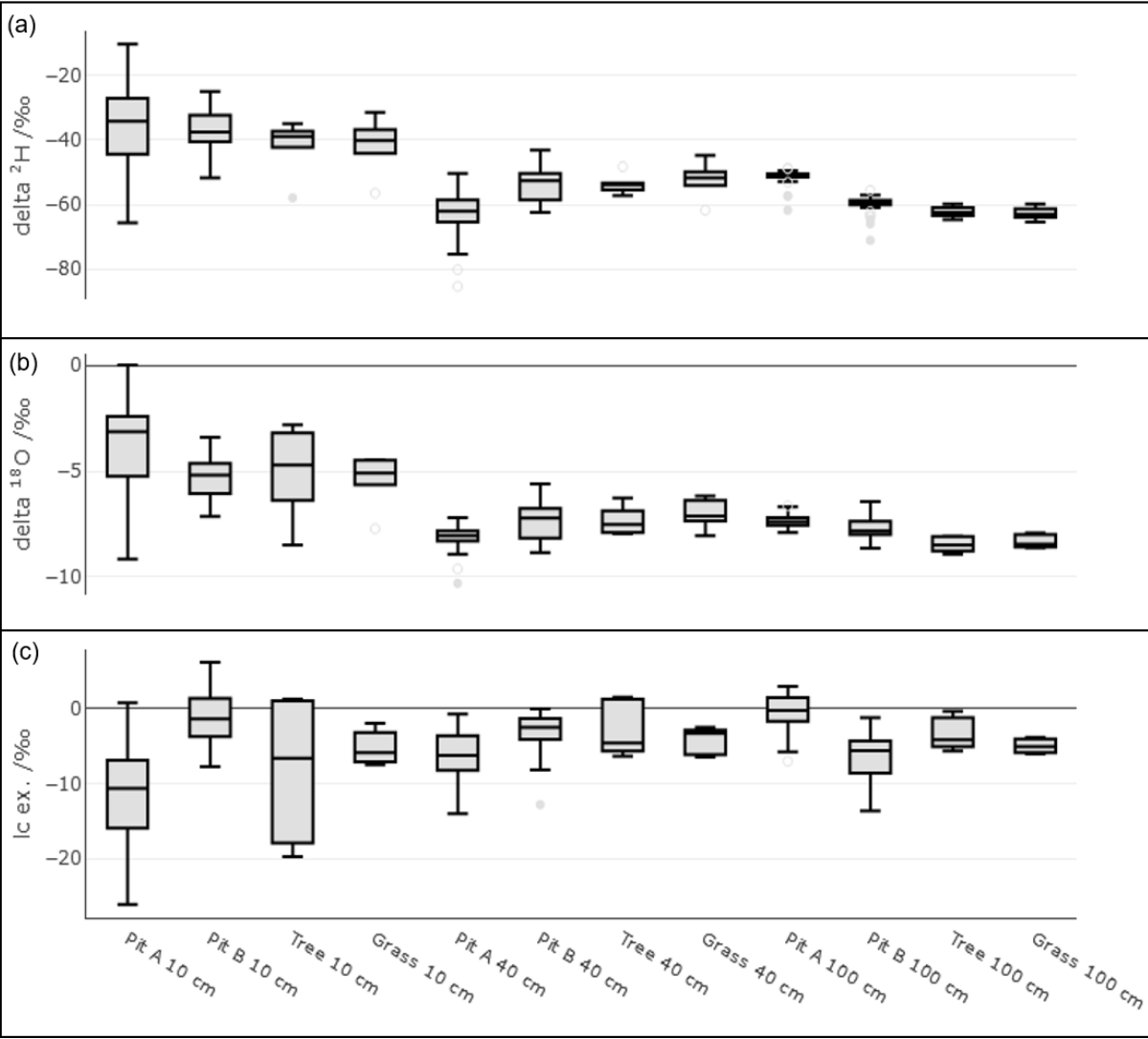
Figure S1: Box plots showing *in situ* and bulk soil sampling results at certain depths. For comparison bulk soil sampling results were estimated via mean of the depths above (for example 10 – 20 cm and 20 – 40 cm samples to calculate the result for 40 cm).
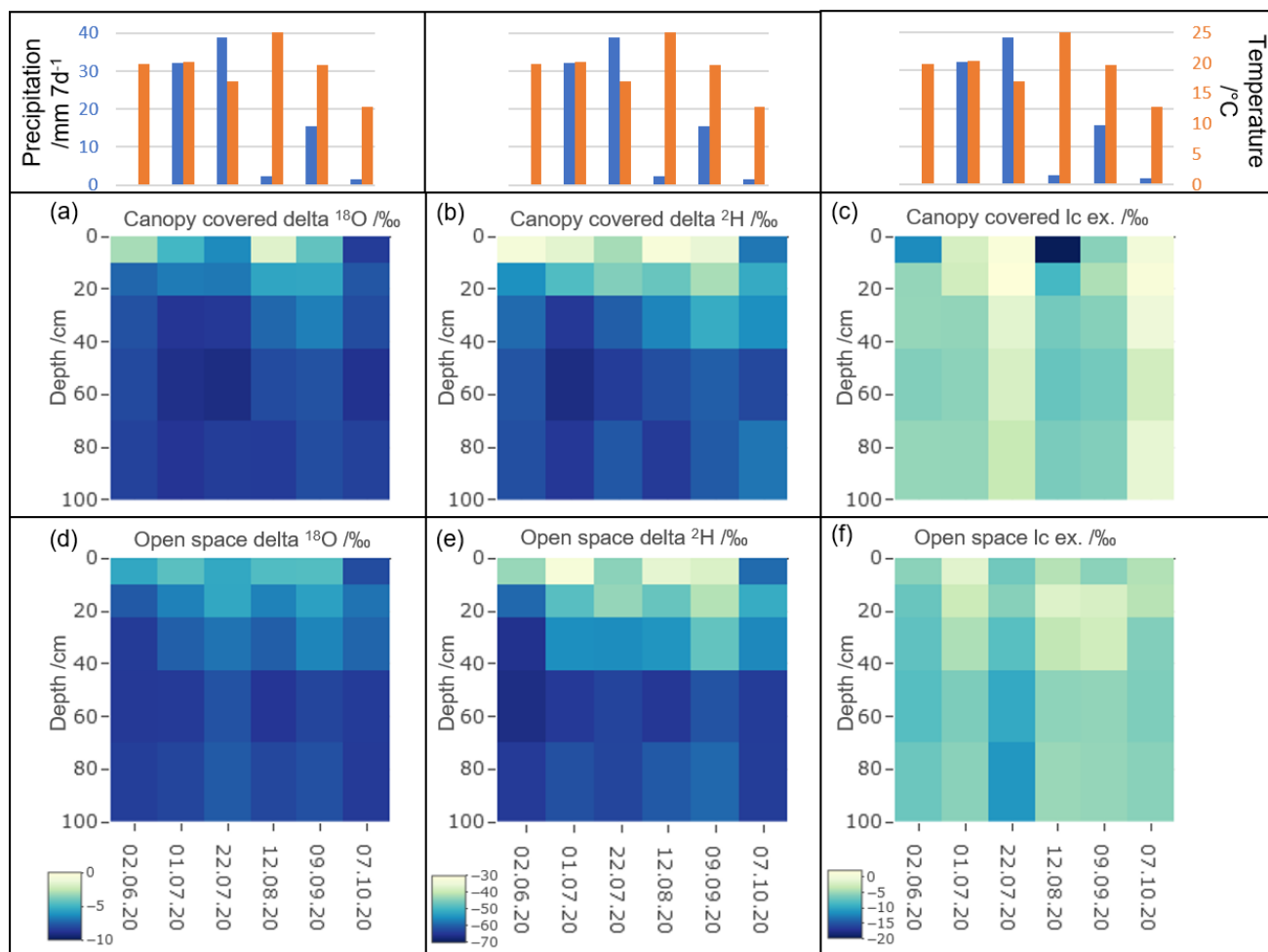
Figure S2: Monthly bulk soil sampling isotopic results from two locations of the site. "Canopy covered" (a – c) is closer to Northern Willow and Pit A and "Open space" (d – f) is closer to Pit B and Southern Willow. On top of the plots is antecedent precipitation as 7d sum before sampling and the daily mean temperature.
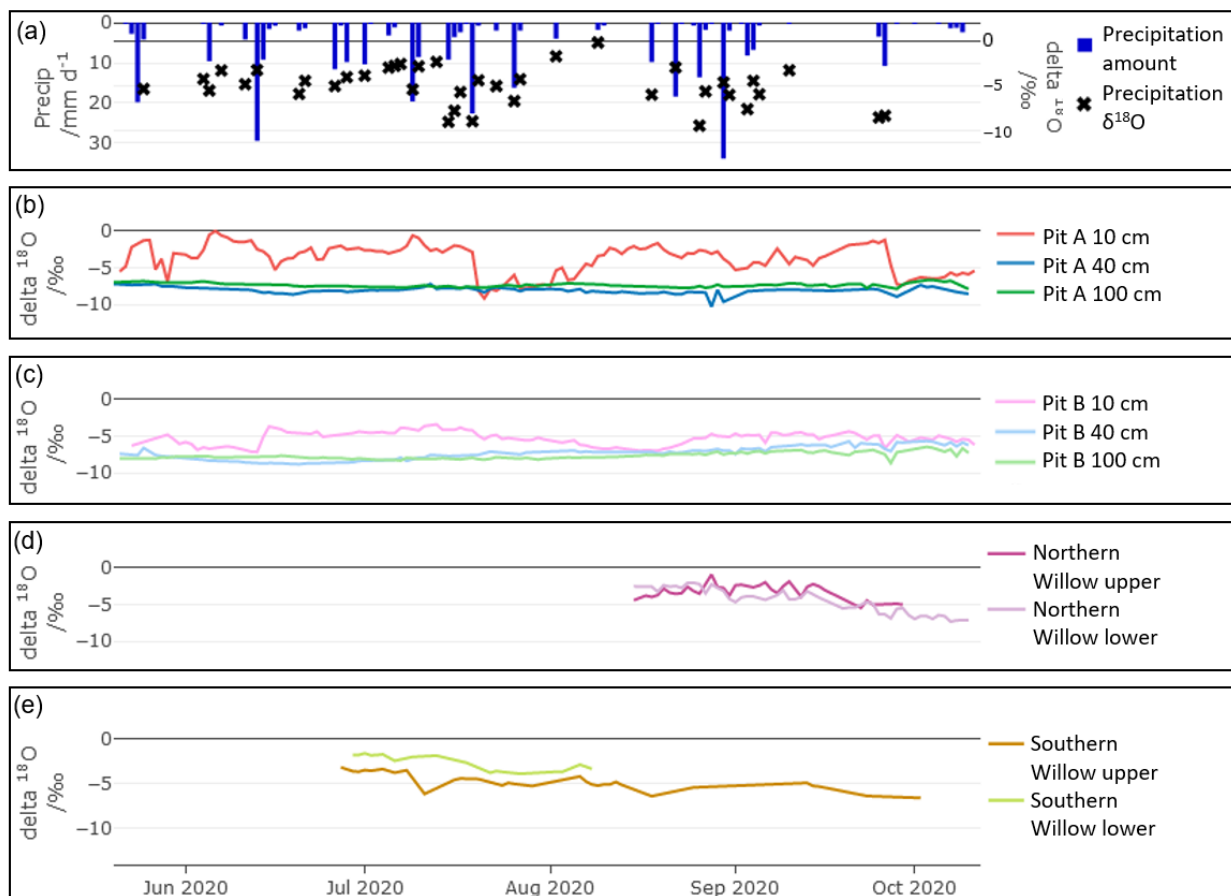
Figure S3: *In situ* time series of daily ¹⁸O in: Precipitation (a), Pit A (b), Pit B (c), Northern Willow (d), and Southern Willow (e).

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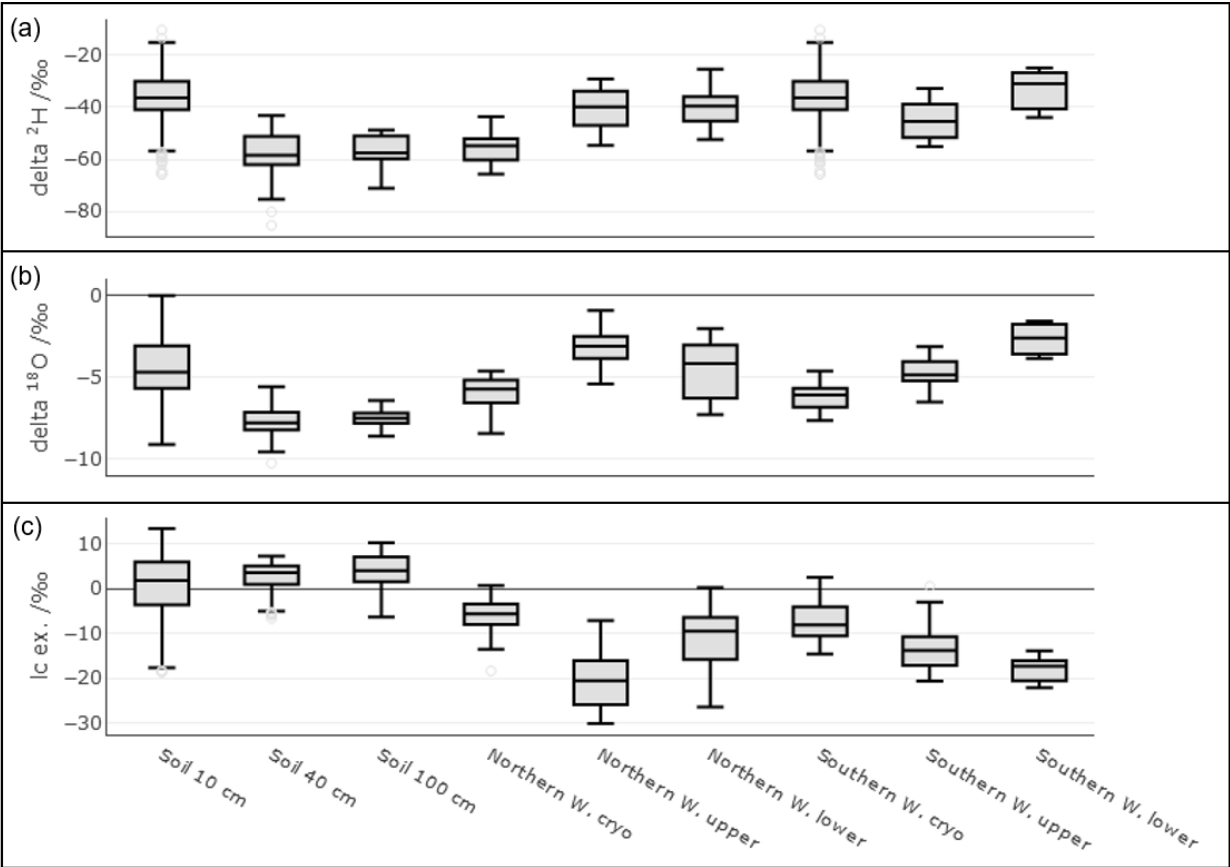
Figure S4: Box plots showing daily means of *in situ* soil and xylem water isotopic composition as well as the monthly cryogenic vacuum extracted twig water isotopic composition of the two willow trees.

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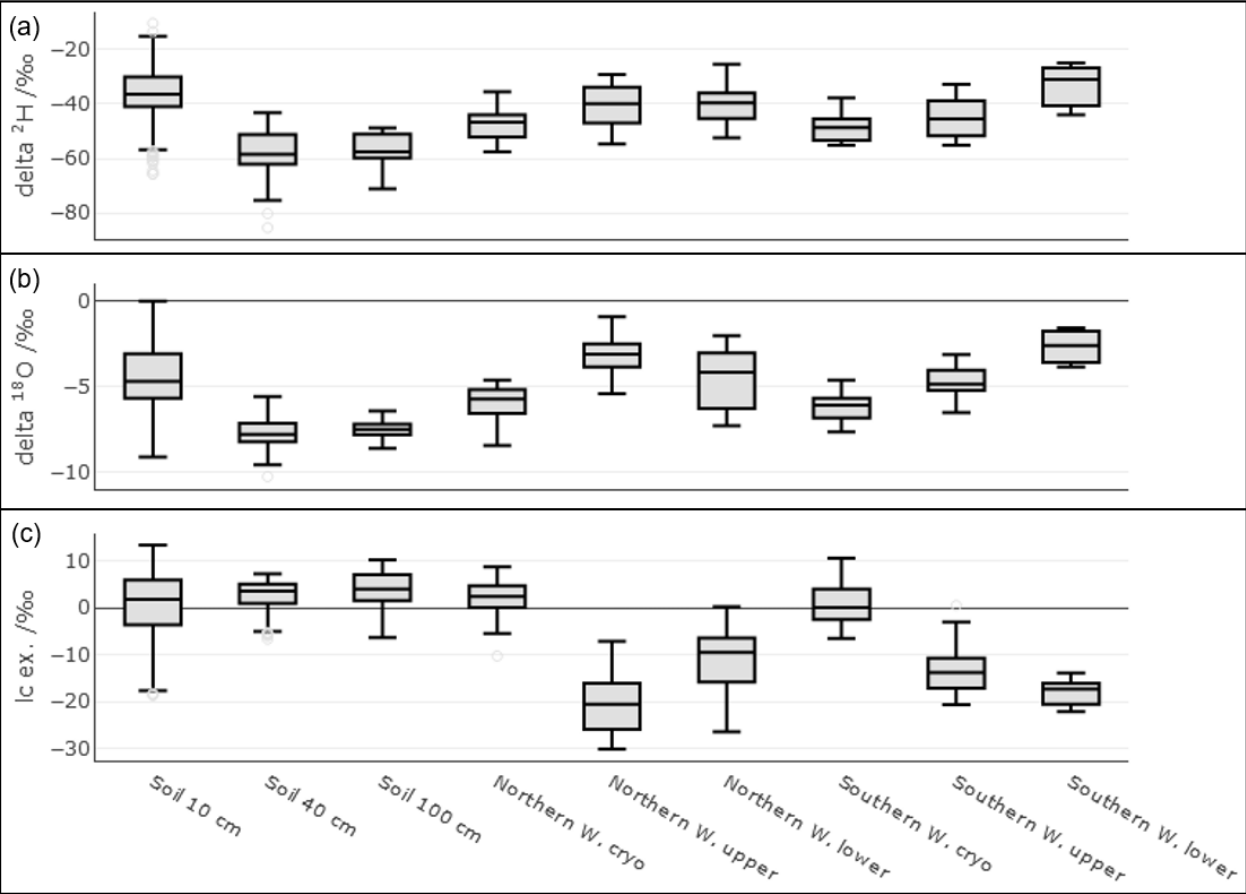
Figure S5: Box plots showing daily means of *in situ* soil and xylem water isotopic composition as well as the monthly cryogenic vacuum extracted twig water isotopic composition of the two willow trees. Cryogenic vacuum extracted water results of δ^2H is corrected by 8.1‰ after Chen et al. (2020).

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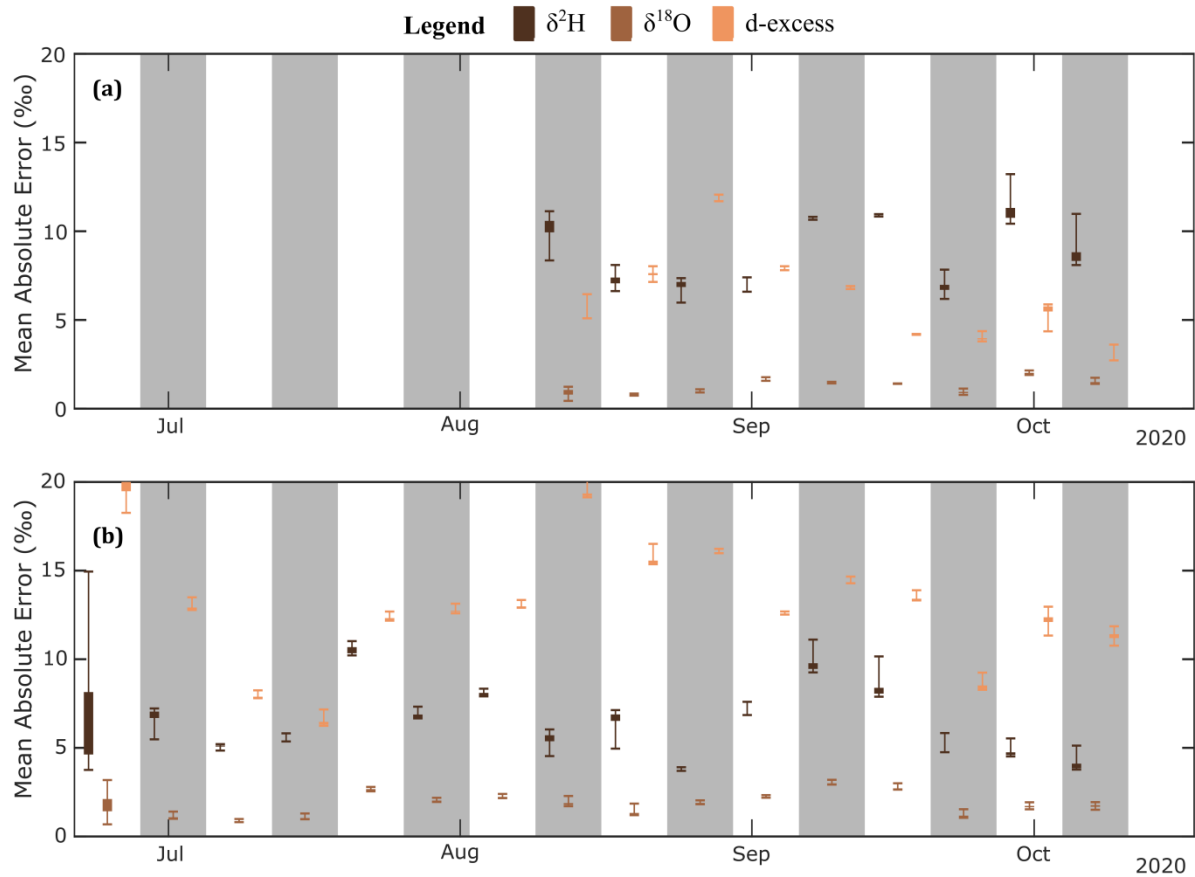
30 **Figure S6: Box plot of mean absolute error for each isotope and week for (a) the Northern Willow, and (b) the Southern Willow.**