

Assessing landscape and seasonal controls on soil CO₂ fluxes in a karst sinkhole

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Table S1. Pore-size characterization based on the soil samples collected at varying depths at the three sinkhole slope locations at the James Cave field site. Porosity was calculated based on saturated water content of cores, macro-porosity was calculated as the difference between saturated water content and water content at -340 cm pressure head, and micro-porosity was calculated as the water content at -340 cm pressure head.

Sample	Location	Depth (cm)	Porosity (cm ³ cm ⁻³)	Macro-porosity (cm ³ cm ⁻³)	Micro-porosity (cm ³ cm ⁻³)
1	Shoulder	15	0.44	0.08	0.36
2	Shoulder	20	0.44	0.06	0.38
3	Shoulder	35	0.40	0.07	0.33
4	Shoulder	40	0.47	0.11	0.36
5	Backslope	15	0.40	0.02	0.38
6	Backslope	20	0.41	0.07	0.34
7	Backslope	40	0.49	0.15	0.34
8	Toeslope	15	0.43	0.11	0.32
9	Toeslope	20	0.55	0.15	0.40
10	Toeslope	40	0.41	0.08	0.34

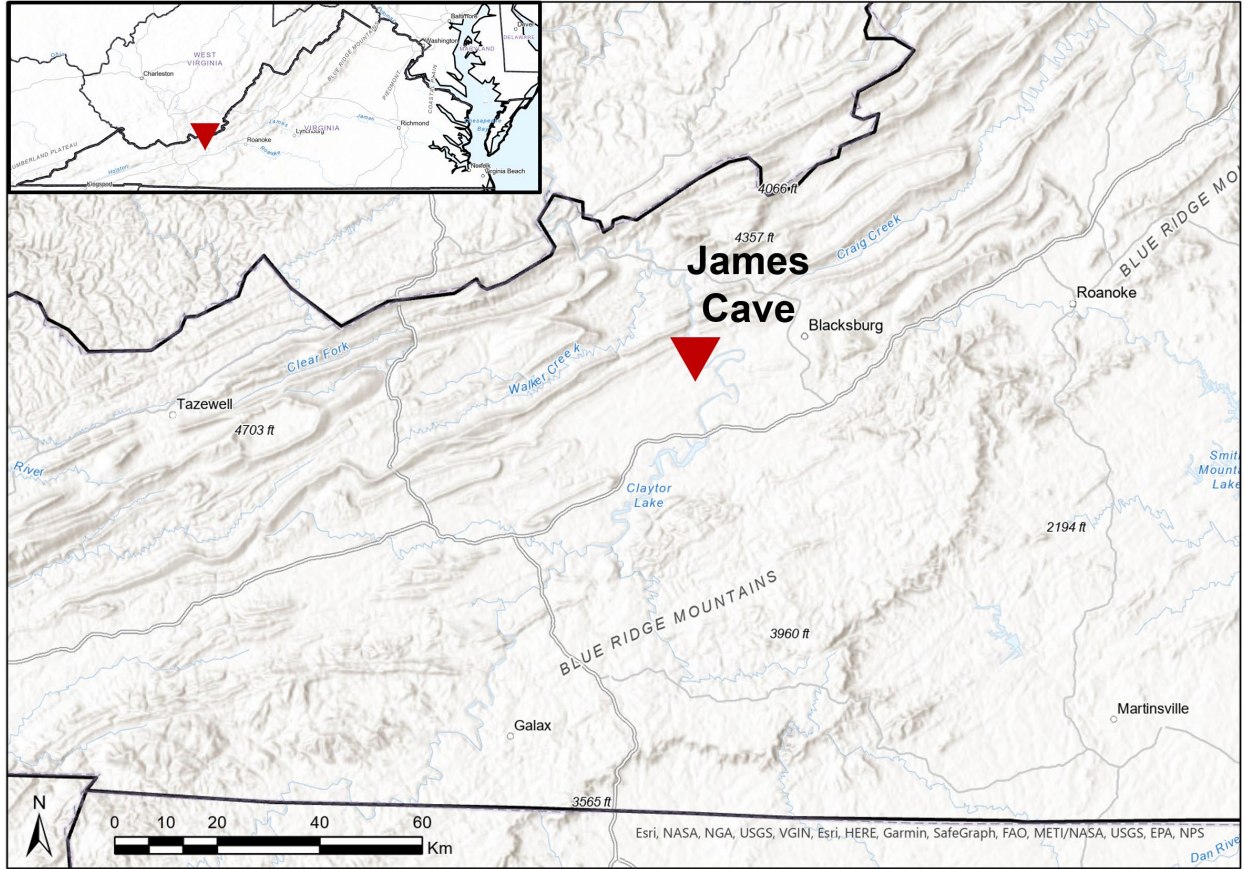


Figure S1. Location of the study site at James Cave in southwest Virginia, U.S.A.

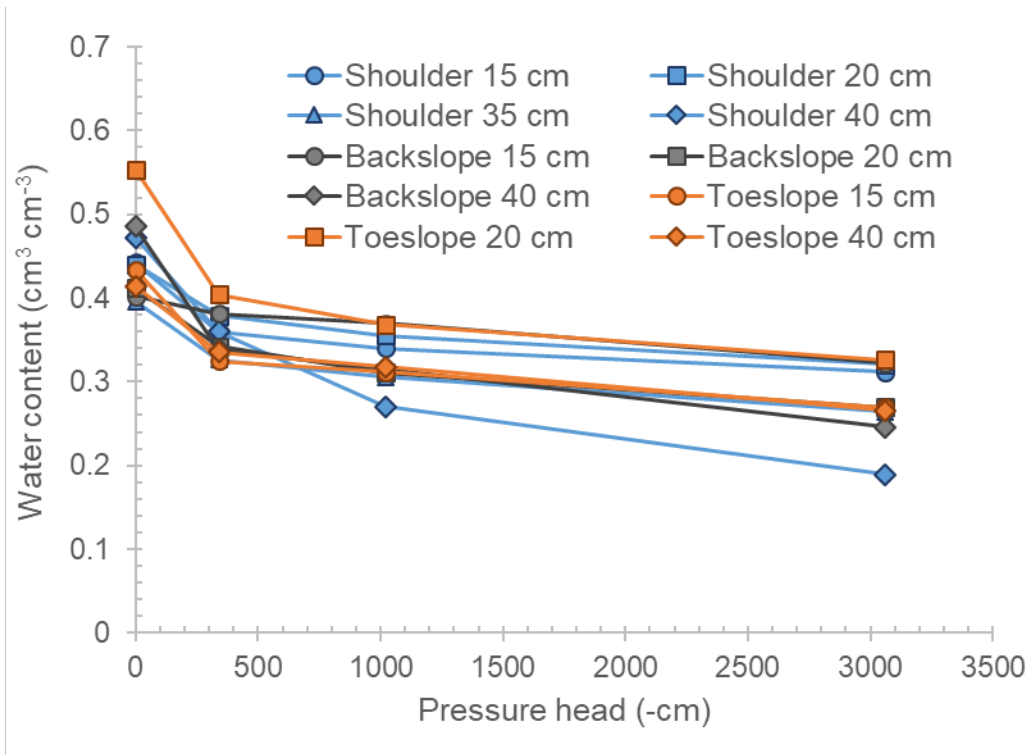


Figure S2. Soil water retention curves for samples collected within the three soil profiles (shoulder, backslope, and toe slope).

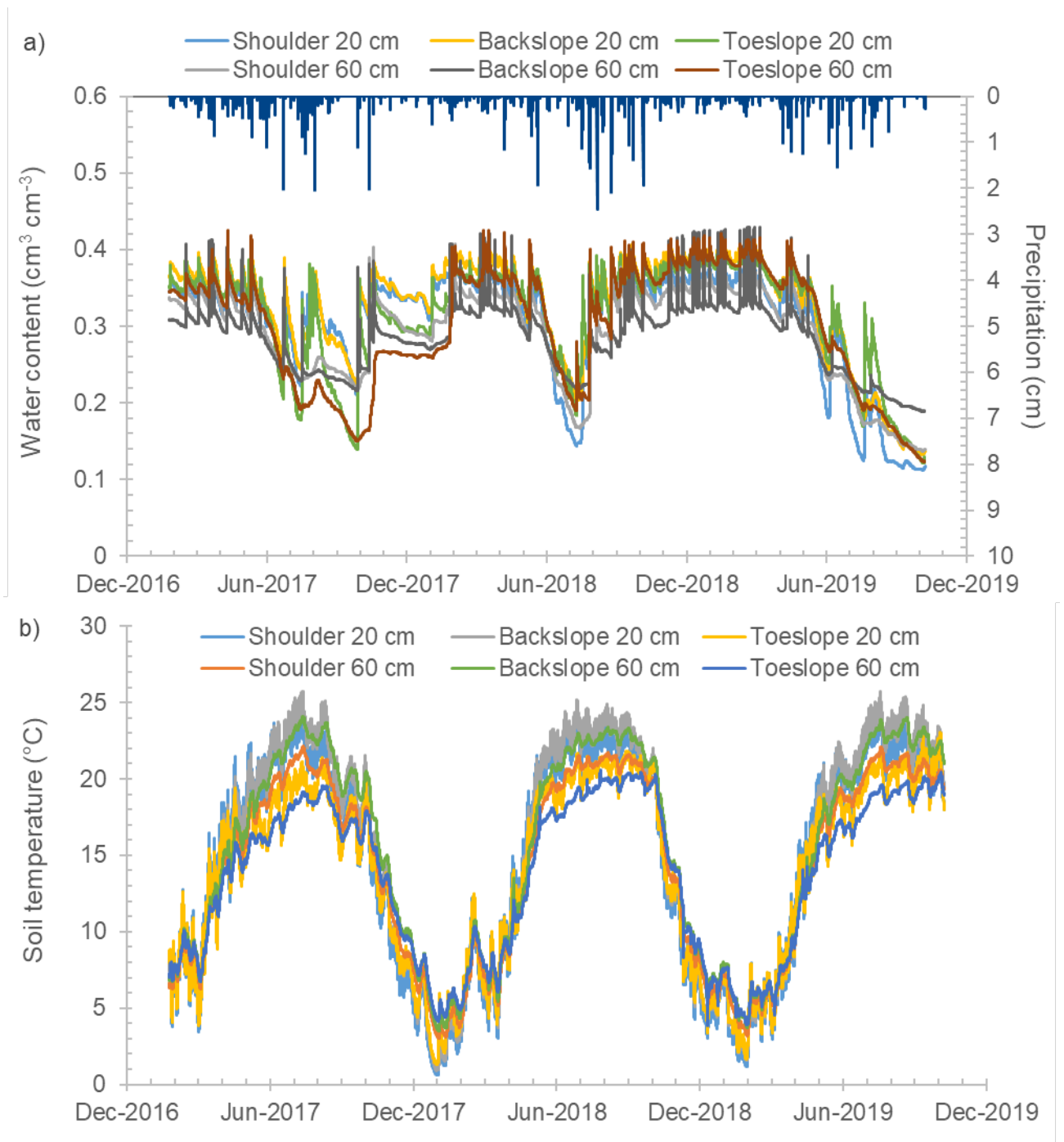


Figure S3. a) Hourly precipitation data (cm) and soil water content ($\text{cm}^3 \text{cm}^{-3}$), and b) soil temperatures ($^{\circ}\text{C}$) for three sinkhole slope positions – shoulder, backslope, and toe slope – at 20 and 60 cm depths.