

O’Keefe, K., Nippert, J. B. and McCulloh, K. A. 2019. Plant water uptake along a diversity gradient provides evidence for complementarity in hydrological niches. – Oikos doi: 10.1111/oik.06529

Appendix 1

Table A1. Xylem $\delta^{18}\text{O}$ and δD measured in all species \times diversity treatment combinations throughout the 2017 growing season. Shown are mean \pm 1SEM $\delta^{18}\text{O}$ and δD values measured in *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. mutans* (SORNU), growing in 1, 2, 4 and 16-species plots in June, July, and August 2017.

| Month | Species | Species no. | $\delta^{18}\text{O}$ (‰) | δD (‰) |
|-------|---------|-------------|---------------------------|----------------------|
| June | ASCTU | 1 | -8.95 ± 1.65 | -59.00 ± 7.00 |
| | | 2 | -8.85 ± 0.41 | -53.25 ± 2.56 |
| | | 4 | -8.35 ± 0.64 | -55.75 ± 1.89 |
| | | 16 | -7.40 ± 0.39 | -51.25 ± 1.25 |
| | LESCA | 1 | -7.83 ± 0.24 | -61.33 ± 4.06 |
| | | 2 | -6.35 ± 0.94 | -55.25 ± 2.81 |
| | | 4 | -7.78 ± 0.23 | -53.50 ± 1.32 |
| | | 16 | -6.33 ± 0.94 | -53.75 ± 2.87 |
| | SCHSC | 1 | -6.77 ± 0.58 | -67.67 ± 3.18 |
| | | 2 | -7.48 ± 0.27 | -60.75 ± 1.25 |
| | | 4 | -6.68 ± 0.13 | -58.50 ± 3.78 |
| | | 16 | -7.53 ± 0.13 | -61.75 ± 1.65 |
| | SORNU | 1 | -7.95 ± 0.71 | -63.00 ± 3.11 |
| | | 2 | -7.65 ± 0.44 | -62.50 ± 3.38 |
| | | 4 | -7.83 ± 0.74 | -57.25 ± 3.64 |
| | | 16 | -8.15 ± 0.25 | -56.25 ± 1.03 |
| July | ASCTU | 1 | -8.20 ± 1.50 | -48.00 ± 3.00 |
| | | 2 | -7.40 ± 0.34 | -43.50 ± 2.40 |
| | | 4 | -8.45 ± 0.76 | -52.50 ± 4.73 |
| | | 16 | -8.20 ± 0.38 | -49.00 ± 2.65 |
| | LESCA | 1 | -6.50 ± 0.15 | -48.33 ± 1.20 |
| | | 2 | -7.53 ± 0.42 | -52.50 ± 2.72 |
| | | 4 | -7.08 ± 0.54 | -50.75 ± 3.47 |
| | | 16 | -7.28 ± 0.15 | -49.25 ± 0.48 |
| | LIAAS | 1 | -6.37 ± 0.18 | -42.67 ± 1.20 |
| | | 2 | -6.90 ± 0.15 | -46.67 ± 0.33 |
| | | 4 | -6.38 ± 0.18 | -45.25 ± 0.85 |
| | | 16 | -7.30 ± 0.47 | -48.25 ± 2.29 |

| | | | | |
|--------|-------|------------------|-------------------|-------------------|
| August | SCHSC | 1 | -3.23 ± 0.23 | -41.33 ± 0.88 |
| | | 2 | -4.98 ± 0.44 | -43.75 ± 2.87 |
| | | 4 | -4.78 ± 0.61 | -41.25 ± 1.03 |
| | | 16 | -5.13 ± 0.28 | -40.00 ± 1.08 |
| | SORNU | 1 | -4.75 ± 0.22 | -44.25 ± 0.75 |
| | | 2 | -5.50 ± 0.23 | -43.75 ± 0.95 |
| | | 4 | -6.13 ± 0.36 | -47.00 ± 2.04 |
| | | 16 | -5.83 ± 0.64 | -42.00 ± 3.00 |
| | ASCTU | 1 | -9.10 ± 0.80 | -57.50 ± 4.5 |
| | | 2 | -8.58 ± 0.17 | -57.50 ± 1.44 |
| | | 4 | -9.88 ± 0.24 | -63.00 ± 2.48 |
| | | 16 | -9.25 ± 0.28 | -62.50 ± 1.94 |
| | LESCA | 1 | -8.80 ± 0.46 | -63.67 ± 2.33 |
| | | 2 | -9.03 ± 0.29 | -63.25 ± 1.75 |
| | | 4 | -9.43 ± 0.45 | -66.50 ± 2.40 |
| | | 16 | -9.40 ± 0.42 | -67.00 ± 2.08 |
| | LIAAS | 1 | -10.37 ± 0.22 | -73.67 ± 1.76 |
| | | 2 | -10.83 ± 0.45 | -75.67 ± 2.19 |
| | | 4 | -10.43 ± 0.11 | -74.00 ± 0.91 |
| | | 16 | -10.73 ± 0.17 | -75.25 ± 1.11 |
| SCHSC | 1 | -8.87 ± 0.13 | -71.33 ± 1.20 | |
| | 2 | -9.38 ± 0.14 | -70.50 ± 0.50 | |
| | 4 | -8.65 ± 0.42 | -66.50 ± 0.87 | |
| | 16 | -9.63 ± 0.05 | -69.00 ± 0.71 | |
| SORNU | 1 | -8.58 ± 0.27 | -67.25 ± 1.80 | |
| | 2 | -8.93 ± 0.22 | -69.00 ± 0.91 | |
| | 4 | -9.85 ± 0.22 | -70.75 ± 0.75 | |
| | 16 | -9.48 ± 0.36 | -68.50 ± 1.32 | |

Table A2. Source $\delta^{18}\text{O}$ and δD measured from soil and winter precipitation water samples. Shown are mean \pm 1SEM $\delta^{18}\text{O}$ and δD values measured at 5 cm and 35 cm soil depths in 1, 2, 4 and 16-species plots during June, July, and August 2017. Also shown are the mean \pm 1SEM $\delta^{18}\text{O}$ and δD values for winter precipitation at Cedar Creek.

| | Species no. | Soil depth (cm) | $\delta^{18}\text{O}$ (‰) | δD (‰) |
|----------------------|-------------|------------------|---------------------------|----------------------|
| Soil | | | | |
| June | 1 | 5 | -4.63 ± 0.29 | -75.33 ± 2.33 |
| | | 35 | -7.80 ± 0.71 | -53.00 ± 7.10 |
| | 2 | 5 | -6.30 ± 0.89 | -70.67 ± 1.20 |
| | | 35 | -6.60 ± 0.30 | -41.67 ± 1.76 |
| | 4 | 5 | -3.83 ± 0.32 | -75.00 ± 3.22 |
| | | 35 | -9.07 ± 0.88 | -65.00 ± 7.10 |
| July | 16 | 5 | -7.80 ± 0.61 | -75.67 ± 1.20 |
| | | 35 | -7.63 ± 0.23 | -53.67 ± 1.76 |
| | 1 | 5 | -0.47 ± 0.56 | -49.00 ± 1.15 |
| | | 35 | -6.40 ± 0.06 | -53.00 ± 1.00 |
| | 2 | 5 | -1.40 ± 0.61 | -53.00 ± 2.08 |
| | | 35 | -6.67 ± 0.09 | -53.33 ± 1.76 |
| August | 4 | 5 | -1.80 ± 0.95 | -54.33 ± 2.40 |
| | | 35 | -7.03 ± 0.39 | -58.33 ± 1.45 |
| | 16 | 5 | -3.20 ± 0.95 | -61.67 ± 2.91 |
| | | 35 | -7.07 ± 0.12 | -55.67 ± 2.33 |
| August | 1 | 5 | -5.53 ± 1.24 | -70.67 ± 4.49 |
| | | 35 | -8.23 ± 1.53 | -62.33 ± 9.62 |
| | 2 | 5 | -6.53 ± 0.03 | -74.33 ± 2.19 |
| | | 35 | -7.80 ± 0.46 | -60.67 ± 3.38 |
| | 4 | 5 | -3.93 ± 1.39 | -68.00 ± 1.16 |
| | | 35 | -9.00 ± 1.17 | -67.67 ± 8.95 |
| 16 | 5 | -8.07 ± 1.08 | -77.33 ± 2.40 | |
| | 35 | -8.77 ± 1.28 | -64.67 ± 8.84 | |
| Precipitation | | | -19.21 ± 6.85 | -148.73 ± 57.57 |

Table A3. Fixed effects two-way analysis of variance model comparing volumetric soil moisture across diversity treatments and throughout the growing season. Shown are degrees of freedom (DF), sum of squares (SS), mean squares (MS), F- and p-values for the main effects of diversity and day of year (DOY), as well as their interaction.¹

| Variable | Source | DF | SS | MS | F | p |
|---------------|---------------|----|--------|--------|-------|---------|
| Soil Moisture | Diversity | 3 | 2.40 | 0.80 | 0.30 | 0.82 |
| | DOY | 2 | 368.99 | 184.50 | 69.72 | < 0.01* |
| | Diversity*DOY | 6 | 15.47 | 2.58 | 0.97 | 0.45 |
| | Residuals | 96 | 254.05 | 2.65 | | |

¹Significance is indicated at the $\alpha=0.05$ level with an asterisk (*).

Table A4. Pairwise comparisons of isotope mixing model posterior distributions, for all months combined. Comparisons were made between each species pair (ASCTU = *A. tuberosa*, LESCA = *L. capitata*, LIAAS = *L. aspera*, SCHSC = *S. scoparium*, and SORNU = *S. nutans*), growing within 1, 2, 4 and 16-species plots for each water source (5 cm, 35 cm, and deep soil depths). Shown are the median differences between each pairwise comparison, the proportion of the compared distributions that were different¹, and the 90% credible interval (CI) of the difference between the pairwise comparisons².

| Species no. | Soil depth | Comparison | Median | Proportion different | 90% CI |
|-------------|------------|---------------|--------|----------------------|---------------|
| 1 | 5-cm | ASCTU - LESCA | 0.06 | 0.62 | (-0.24, 0.34) |
| | | ASCTU - LIAAS | 0.10 | 0.68 | (-0.27, 0.46) |
| | | ASCTU - SCHSC | 0.31 | 0.92 | (-0.05, 0.66) |
| | | ASCTU - SORNU | 0.18 | 0.83 | (-0.13, 0.48) |
| | | LESCA - LIAAS | 0.05 | 0.61 | (-0.26, 0.34) |
| | | LESCA - SCHSC | 0.24 | 0.92 | (-0.04, 0.54) |
| | | LESCA - SORNU | 0.13 | 0.81 | (-0.12, 0.36) |
| | | LIAAS - SCHSC | 0.20 | 0.83 | (-0.15, 0.57) |
| | | LIAAS - SORNU | 0.08 | 0.66 | (-0.23, 0.41) |
| | 35-cm | SCHSC - SORNU | -0.12 | 0.26 | (-0.43, 0.18) |
| | | ASCTU - LESCA | -0.02 | 0.47 | (-0.34, 0.33) |
| | | ASCTU - LIAAS | -0.13 | 0.32 | (-0.54, 0.32) |
| | | ASCTU - SCHSC | -0.28 | 0.14 | (-0.66, 0.14) |
| | | ASCTU - SORNU | -0.14 | 0.27 | (-0.48, 0.23) |
| | | LESCA - LIAAS | -0.12 | 0.29 | (-0.45, 0.24) |
| | | LESCA - SCHSC | -0.25 | 0.08 | (-0.56, 0.05) |
| | | LESCA - SORNU | -0.13 | 0.21 | (-0.38, 0.13) |
| | | LIAAS - SCHSC | -0.14 | 0.27 | (-0.55, 0.25) |
| | Deep | LIAAS - SORNU | -0.01 | 0.48 | (-0.39, 0.34) |
| | | SCHSC - SORNU | 0.13 | 0.75 | (-0.19, 0.46) |
| | | ASCTU - LESCA | -0.03 | 0.24 | (-0.16, 0.03) |
| | | ASCTU - LIAAS | 0.02 | 0.60 | (-0.12, 0.17) |
| | | ASCTU - SCHSC | -0.02 | 0.31 | (-0.15, 0.05) |
| | | ASCTU - SORNU | -0.03 | 0.24 | (-0.16, 0.03) |
| | | LESCA - LIAAS | 0.05 | 0.84 | (-0.02, 0.20) |
| | | LESCA - SCHSC | 0.01 | 0.60 | (-0.04, 0.07) |
| | | LESCA - SORNU | 0.00 | 0.50 | (-0.05, 0.05) |
| 2 | 5-cm | LIAAS - SCHSC | -0.05 | 0.22 | (-0.19, 0.04) |
| | | LIAAS - SORNU | -0.05 | 0.16 | (-0.20, 0.02) |
| | | SCHSC - SORNU | -0.01 | 0.40 | (-0.07, 0.04) |
| | | ASCTU - LESCA | 0.07 | 0.73 | (-0.12, 0.25) |
| | | ASCTU - LIAAS | 0.19 | 0.85 | (-0.12, 0.48) |
| | | ASCTU - SCHSC | 0.24 | 0.95 | (0.01, 0.45)* |
| | | ASCTU - SORNU | 0.22 | 0.96 | (0.02, 0.41)* |
| | | LESCA - LIAAS | 0.13 | 0.75 | (-0.19, 0.42) |
| | | LESCA - SCHSC | 0.17 | 0.88 | (-0.08, 0.40) |
| | | LESCA - SORNU | 0.15 | 0.88 | (-0.06, 0.36) |

| | | | | | |
|---|-------|---------------|-------|------|----------------|
| | | LIAAS - SCHSC | 0.04 | 0.59 | (-0.29, 0.38) |
| | | LIAAS - SORNU | 0.03 | 0.56 | (-0.29, 0.35) |
| | | SCHSC - SORNU | -0.02 | 0.45 | (-0.26, 0.23) |
| | 35-cm | ASCTU - LESCA | -0.06 | 0.30 | (-0.26, 0.14) |
| | | ASCTU - LIAAS | -0.24 | 0.13 | (-0.56, 0.11) |
| | | ASCTU - SCHSC | -0.24 | 0.06 | (-0.47, 0.01) |
| | | ASCTU - SORNU | -0.22 | 0.05 | (-0.44, 0.00) |
| | | LESCA - LIAAS | -0.18 | 0.20 | (-0.51, 0.17) |
| | | LESCA - SCHSC | -0.18 | 0.13 | (-0.42, 0.08) |
| | | LESCA - SORNU | -0.16 | 0.12 | (-0.38, 0.07) |
| | | LIAAS - SCHSC | 0.00 | 0.50 | (-0.37, 0.37) |
| | | LIAAS - SORNU | 0.02 | 0.53 | (-0.34, 0.36) |
| | | SCHSC - SORNU | 0.02 | 0.55 | (-0.25, 0.28) |
| | Deep | ASCTU - LESCA | 0.00 | 0.44 | (-0.04, 0.04) |
| | | ASCTU - LIAAS | 0.03 | 0.80 | (-0.03, 0.16) |
| | | ASCTU - SCHSC | 0.00 | 0.57 | (-0.04, 0.06) |
| | | ASCTU - SORNU | 0.00 | 0.56 | (-0.04, 0.05) |
| | | LESCA - LIAAS | 0.04 | 0.83 | (-0.02, 0.17) |
| | | LESCA - SCHSC | 0.01 | 0.62 | (-0.03, 0.06) |
| | | LESCA - SORNU | 0.01 | 0.61 | (-0.03, 0.06) |
| | | LIAAS - SCHSC | -0.03 | 0.25 | (-0.16, 0.04) |
| | | LIAAS - SORNU | -0.03 | 0.24 | (-0.16, 0.04) |
| | | SCHSC - SORNU | 0.00 | 0.50 | (-0.06, 0.05) |
| 4 | 5-cm | ASCTU - LESCA | 0.17 | 0.89 | (-0.06, 0.36) |
| | | ASCTU - LIAAS | 0.25 | 0.92 | (-0.05, 0.51) |
| | | ASCTU - SCHSC | 0.42 | 1.00 | (0.19, 0.63)* |
| | | ASCTU - SORNU | 0.23 | 0.93 | (-0.02, 0.46) |
| | | LESCA - LIAAS | 0.09 | 0.69 | (-0.22, 0.37) |
| | | LESCA - SCHSC | 0.26 | 0.96 | (0.02, 0.49)* |
| | | LESCA - SORNU | 0.07 | 0.66 | (-0.19, 0.32) |
| | | LIAAS - SCHSC | 0.17 | 0.83 | (-0.12, 0.48) |
| | | LIAAS - SORNU | -0.02 | 0.46 | (-0.34, 0.31) |
| | | SCHSC - SORNU | -0.19 | 0.12 | (-0.46, 0.07) |
| | 35-cm | ASCTU - LESCA | -0.17 | 0.13 | (-0.39, 0.08) |
| | | ASCTU - LIAAS | -0.30 | 0.08 | (-0.60, 0.04) |
| | | ASCTU - SCHSC | -0.43 | 0.01 | (-0.65, -0.17) |
| | | ASCTU - SORNU | -0.24 | 0.08 | (-0.49, 0.04) |
| | | LESCA - LIAAS | -0.13 | 0.27 | (-0.46, 0.21) |
| | | LESCA - SCHSC | -0.26 | 0.05 | (-0.51, 0.00) |
| | | LESCA - SORNU | -0.07 | 0.34 | (-0.35, 0.21) |
| | | LIAAS - SCHSC | -0.13 | 0.27 | (-0.48, 0.21) |
| | | LIAAS - SORNU | 0.06 | 0.60 | (-0.31, 0.41) |
| | | SCHSC - SORNU | 0.19 | 0.86 | (-0.10, 0.47) |
| | Deep | ASCTU - LESCA | 0.00 | 0.51 | (-0.05, 0.05) |
| | | ASCTU - LIAAS | 0.03 | 0.80 | (-0.03, 0.15) |

| | | | | | |
|----|-------|---------------|-------|------|---------------|
| | | ASCTU - SCHSC | 0.00 | 0.53 | (-0.05, 0.05) |
| | | ASCTU - SORNU | 0.00 | 0.59 | (-0.04, 0.07) |
| | | LESCA - LIAAS | 0.03 | 0.79 | (-0.03, 0.15) |
| | | LESCA - SCHSC | 0.00 | 0.51 | (-0.05, 0.05) |
| | | LESCA - SORNU | 0.00 | 0.58 | (-0.04, 0.06) |
| | | LIAAS - SCHSC | -0.03 | 0.21 | (-0.15, 0.03) |
| | | LIAAS - SORNU | -0.03 | 0.26 | (-0.15, 0.04) |
| | | SCHSC - SORNU | 0.00 | 0.57 | (-0.04, 0.06) |
| 16 | 5-cm | ASCTU - LESCA | 0.18 | 0.90 | (-0.06, 0.40) |
| | | ASCTU - LIAAS | 0.06 | 0.62 | (-0.22, 0.34) |
| | | ASCTU - SCHSC | 0.21 | 0.92 | (-0.04, 0.44) |
| | | ASCTU - SORNU | 0.14 | 0.82 | (-0.11, 0.37) |
| | | LESCA - LIAAS | -0.12 | 0.26 | (-0.43, 0.19) |
| | | LESCA - SCHSC | 0.03 | 0.57 | (-0.23, 0.30) |
| | | LESCA - SORNU | -0.04 | 0.40 | (-0.32, 0.23) |
| | | LIAAS - SCHSC | 0.16 | 0.78 | (-0.17, 0.46) |
| | | LIAAS - SORNU | 0.08 | 0.65 | (-0.24, 0.40) |
| | | SCHSC - SORNU | -0.07 | 0.33 | (-0.35, 0.20) |
| | 35-cm | ASCTU - LESCA | -0.18 | 0.12 | (-0.43, 0.08) |
| | | ASCTU - LIAAS | -0.11 | 0.31 | (-0.46, 0.22) |
| | | ASCTU - SCHSC | -0.22 | 0.09 | (-0.47, 0.05) |
| | | ASCTU - SORNU | -0.15 | 0.19 | (-0.41, 0.13) |
| | | LESCA - LIAAS | 0.07 | 0.61 | (-0.30, 0.42) |
| | | LESCA - SCHSC | -0.04 | 0.42 | (-0.32, 0.25) |
| | | LESCA - SORNU | 0.04 | 0.58 | (-0.26, 0.33) |
| | | LIAAS - SCHSC | -0.11 | 0.33 | (-0.46, 0.27) |
| | | LIAAS - SORNU | -0.03 | 0.45 | (-0.40, 0.35) |
| | | SCHSC - SORNU | 0.07 | 0.66 | (-0.23, 0.37) |
| | Deep | ASCTU - LESCA | 0.00 | 0.52 | (-0.05, 0.05) |
| | | ASCTU - LIAAS | 0.05 | 0.84 | (-0.02, 0.17) |
| | | ASCTU - SCHSC | 0.00 | 0.58 | (-0.04, 0.06) |
| | | ASCTU - SORNU | 0.00 | 0.59 | (-0.04, 0.07) |
| | | LESCA - LIAAS | 0.05 | 0.83 | (-0.03, 0.17) |
| | | LESCA - SCHSC | 0.00 | 0.56 | (-0.05, 0.06) |
| | | LESCA - SORNU | 0.00 | 0.57 | (-0.05, 0.07) |
| | | LIAAS - SCHSC | -0.04 | 0.21 | (-0.17, 0.04) |
| | | LIAAS - SORNU | -0.04 | 0.21 | (-0.17, 0.04) |
| | | SCHSC - SORNU | 0.00 | 0.51 | (-0.06, 0.06) |

¹ Where 0 = no difference between species and 1 = the species pair was completely different.

² 90% credible intervals that did not overlap zero are indicated with an asterisk (*).

Table A5. Pairwise comparisons of isotope mixing model posterior distributions for each month. Comparisons were made between each species pair (ASCTU = *A. tuberosa*, LESCA = *L. capitata*, LIAAS = *L. aspera*, SCHSC = *S. scoparium*, and SORNU = *S. nutans*) growing within 1, 2, 4 and 16-species plots for each water source (5 cm, 35 cm, and deep soil depths) in June, July, and August 2017. Shown are the median differences between each pairwise comparison, the proportion of the compared distributions that were different¹, and the 90% credible interval (CI) of the difference between the pairwise comparisons².

| Month | Species no. | Soil depth | Comparison | Median | Proportion different | 90% CI | |
|-------|-------------|---------------|---------------|---------------|----------------------|---------------|---------------|
| June | 1 | 5-cm | ASCTU - LESCA | 0.04 | 0.58 | (-0.34, 0.42) | |
| | | | ASCTU - LIAAS | 0.14 | 0.72 | (-0.27, 0.54) | |
| | | | ASCTU - SCHSC | 0.03 | 0.55 | (-0.39, 0.42) | |
| | | | LESCA - LIAAS | 0.10 | 0.68 | (-0.28, 0.45) | |
| | | | LESCA - SCHSC | -0.01 | 0.47 | (-0.39, 0.34) | |
| | | | LIAAS - SCHSC | -0.11 | 0.31 | (-0.50, 0.28) | |
| | | 35-cm | ASCTU - LESCA | 0.11 | 0.67 | (-0.33, 0.51) | |
| | | | ASCTU - LIAAS | 0.02 | 0.54 | (-0.42, 0.44) | |
| | | | ASCTU - SCHSC | 0.13 | 0.69 | (-0.33, 0.57) | |
| | | | LESCA - LIAAS | -0.09 | 0.34 | (-0.47, 0.31) | |
| | | | LESCA - SCHSC | 0.02 | 0.53 | (-0.37, 0.44) | |
| | | | LIAAS - SCHSC | 0.11 | 0.68 | (-0.30, 0.52) | |
| | | Deep | ASCTU - LESCA | -0.13 | 0.15 | (-0.43, 0.06) | |
| | | | ASCTU - LIAAS | -0.14 | 0.12 | (-0.43, 0.04) | |
| | | | ASCTU - SCHSC | -0.13 | 0.13 | (-0.43, 0.05) | |
| | | | LESCA - LIAAS | -0.01 | 0.44 | (-0.13, 0.10) | |
| | | | LESCA - SCHSC | 0.00 | 0.48 | (-0.12, 0.10) | |
| | | | LIAAS - SCHSC | 0.00 | 0.54 | (-0.10, 0.11) | |
| | 2 | 5-cm | ASCTU - LESCA | 0.25 | 0.83 | (-0.19, 0.65) | |
| | | | ASCTU - LIAAS | 0.14 | 0.76 | (-0.20, 0.47) | |
| | | | ASCTU - SCHSC | 0.15 | 0.75 | (-0.21, 0.48) | |
| | | | LESCA - LIAAS | -0.11 | 0.33 | (-0.49, 0.31) | |
| | | | LESCA - SCHSC | -0.10 | 0.33 | (-0.49, 0.31) | |
| | | | LIAAS - SCHSC | 0.00 | 0.50 | (-0.32, 0.32) | |
| | | | 35-cm | ASCTU - LESCA | -0.23 | 0.21 | (-0.66, 0.25) |
| | | | | ASCTU - LIAAS | -0.10 | 0.34 | (-0.47, 0.29) |
| | | | | ASCTU - SCHSC | -0.11 | 0.33 | (-0.49, 0.30) |
| | | LESCA - LIAAS | | 0.13 | 0.70 | (-0.30, 0.52) | |
| | | LESCA - SCHSC | | 0.12 | 0.69 | (-0.31, 0.52) | |
| | | LIAAS - SCHSC | | -0.01 | 0.48 | (-0.35, 0.34) | |
| | | Deep | ASCTU - LESCA | -0.02 | 0.36 | (-0.14, 0.11) | |
| | | | ASCTU - LIAAS | -0.04 | 0.23 | (-0.16, 0.04) | |
| | | | ASCTU - SCHSC | -0.03 | 0.29 | (-0.15, 0.06) | |
| | | 4 | 5-cm | ASCTU - LESCA | 0.03 | 0.55 | (-0.30, 0.39) |

| | | | | | | |
|------|-------|------|---------------|-------|------|---------------|
| | | | ASCTU - LIAAS | 0.17 | 0.80 | (-0.17, 0.54) |
| | | | ASCTU - SCHSC | 0.06 | 0.60 | (-0.32, 0.44) |
| | | | LESCA - LIAAS | 0.15 | 0.79 | (-0.17, 0.45) |
| | | | LESCA - SCHSC | 0.03 | 0.56 | (-0.33, 0.36) |
| | | | LIAAS - SCHSC | -0.12 | 0.28 | (-0.48, 0.23) |
| | 35-cm | | ASCTU - LESCA | 0.00 | 0.51 | (-0.40, 0.37) |
| | | | ASCTU - LIAAS | -0.14 | 0.27 | (-0.54, 0.25) |
| | | | ASCTU - SCHSC | -0.05 | 0.42 | (-0.47, 0.38) |
| | | | LESCA - LIAAS | -0.14 | 0.24 | (-0.47, 0.20) |
| | | | LESCA - SCHSC | -0.05 | 0.41 | (-0.42, 0.34) |
| | | | LIAAS - SCHSC | 0.09 | 0.65 | (-0.29, 0.48) |
| | Deep | | ASCTU - LESCA | -0.02 | 0.34 | (-0.15, 0.07) |
| | | | ASCTU - LIAAS | -0.03 | 0.29 | (-0.15, 0.06) |
| | | | ASCTU - SCHSC | -0.01 | 0.45 | (-0.14, 0.12) |
| | | | LESCA - LIAAS | 0.00 | 0.45 | (-0.09, 0.07) |
| | | | LESCA - SCHSC | 0.01 | 0.62 | (-0.07, 0.14) |
| | | | LIAAS - SCHSC | 0.02 | 0.67 | (-0.06, 0.14) |
| 16 | 5-cm | | ASCTU - LESCA | 0.06 | 0.60 | (-0.36, 0.44) |
| | | | ASCTU - LIAAS | -0.07 | 0.33 | (-0.39, 0.23) |
| | | | ASCTU - SCHSC | -0.14 | 0.22 | (-0.46, 0.17) |
| | | | LESCA - LIAAS | -0.13 | 0.28 | (-0.50, 0.27) |
| | | | LESCA - SCHSC | -0.20 | 0.20 | (-0.58, 0.21) |
| | | | LIAAS - SCHSC | -0.07 | 0.34 | (-0.36, 0.23) |
| | 35-cm | | ASCTU - LESCA | -0.07 | 0.39 | (-0.46, 0.36) |
| | | | ASCTU - LIAAS | 0.09 | 0.69 | (-0.24, 0.44) |
| | | | ASCTU - SCHSC | 0.15 | 0.77 | (-0.20, 0.50) |
| | | | LESCA - LIAAS | 0.16 | 0.75 | (-0.26, 0.54) |
| | | | LESCA - SCHSC | 0.22 | 0.81 | (-0.21, 0.61) |
| | | | LIAAS - SCHSC | 0.06 | 0.62 | (-0.28, 0.38) |
| | Deep | | ASCTU - LESCA | 0.00 | 0.53 | (-0.10, 0.13) |
| | | | ASCTU - LIAAS | -0.01 | 0.35 | (-0.11, 0.05) |
| | | | ASCTU - SCHSC | 0.00 | 0.46 | (-0.10, 0.08) |
| | | | LESCA - LIAAS | -0.01 | 0.33 | (-0.15, 0.05) |
| | | | LESCA - SCHSC | -0.01 | 0.43 | (-0.14, 0.08) |
| | | | LIAAS - SCHSC | 0.01 | 0.61 | (-0.05, 0.09) |
| July | 1 | 5-cm | ASCTU - LESCA | 0.05 | 0.62 | (-0.27, 0.38) |
| | | | ASCTU - LIAAS | 0.06 | 0.64 | (-0.25, 0.39) |
| | | | ASCTU - SCHSC | 0.37 | 0.93 | (-0.04, 0.69) |
| | | | ASCTU - SORNU | 0.23 | 0.90 | (-0.08, 0.54) |
| | | | LESCA - LIAAS | 0.01 | 0.54 | (-0.23, 0.25) |
| | | | LESCA - SCHSC | 0.32 | 0.93 | (-0.04, 0.54) |
| | | | LESCA - SORNU | 0.18 | 0.90 | (-0.06, 0.40) |
| | | | LIAAS - SCHSC | 0.31 | 0.93 | (-0.05, 0.53) |
| | | | LIAAS - SORNU | 0.17 | 0.89 | (-0.07, 0.39) |
| | | | SCHSC - SORNU | -0.14 | 0.21 | (-0.36, 0.21) |

| | | | | | |
|---------------|---------------|---------------|-------|---------------|---------------|
| 2 | 35-cm | ASCTU - LESCA | 0.11 | 0.68 | (-0.31, 0.47) |
| | | ASCTU - LIAAS | 0.09 | 0.65 | (-0.33, 0.44) |
| | | ASCTU - SCHSC | -0.19 | 0.22 | (-0.57, 0.20) |
| | | ASCTU - SORNU | -0.04 | 0.42 | (-0.43, 0.30) |
| | | LESCA - LIAAS | -0.02 | 0.45 | (-0.35, 0.31) |
| | | LESCA - SCHSC | -0.30 | 0.09 | (-0.56, 0.07) |
| | | LESCA - SORNU | -0.16 | 0.18 | (-0.43, 0.16) |
| | | LIAAS - SCHSC | -0.28 | 0.10 | (-0.54, 0.10) |
| | | LIAAS - SORNU | -0.13 | 0.22 | (-0.42, 0.18) |
| | | SCHSC - SORNU | 0.15 | 0.79 | (-0.19, 0.39) |
| | Deep | ASCTU - LESCA | -0.14 | 0.15 | (-0.42, 0.07) |
| | | ASCTU - LIAAS | -0.14 | 0.18 | (-0.41, 0.09) |
| | | ASCTU - SCHSC | -0.16 | 0.12 | (-0.43, 0.05) |
| | | ASCTU - SORNU | -0.17 | 0.09 | (-0.44, 0.03) |
| | | LESCA - LIAAS | 0.00 | 0.53 | (-0.14, 0.17) |
| | | LESCA - SCHSC | -0.01 | 0.42 | (-0.16, 0.11) |
| | | LESCA - SORNU | -0.02 | 0.36 | (-0.16, 0.08) |
| | | LIAAS - SCHSC | -0.02 | 0.39 | (-0.18, 0.11) |
| | | LIAAS - SORNU | -0.02 | 0.34 | (-0.18, 0.07) |
| SCHSC - SORNU | | -0.01 | 0.44 | (-0.13, 0.09) | |
| 2 | 5-cm | ASCTU - LESCA | -0.01 | 0.48 | (-0.26, 0.26) |
| | | ASCTU - LIAAS | 0.04 | 0.62 | (-0.20, 0.30) |
| | | ASCTU - SCHSC | 0.24 | 0.95 | (0.00, 0.47)* |
| | | ASCTU - SORNU | 0.18 | 0.90 | (-0.06, 0.40) |
| | | LESCA - LIAAS | 0.05 | 0.64 | (-0.21, 0.31) |
| | | LESCA - SCHSC | 0.25 | 0.95 | (-0.01, 0.49) |
| | | LESCA - SORNU | 0.18 | 0.90 | (-0.06, 0.41) |
| | | LIAAS - SCHSC | 0.20 | 0.91 | (-0.05, 0.43) |
| | | LIAAS - SORNU | 0.13 | 0.83 | (-0.11, 0.35) |
| | | SCHSC - SORNU | -0.07 | 0.30 | (-0.28, 0.15) |
| | 35-cm | ASCTU - LESCA | 0.01 | 0.53 | (-0.35, 0.37) |
| | | ASCTU - LIAAS | -0.04 | 0.42 | (-0.40, 0.31) |
| | | ASCTU - SCHSC | -0.20 | 0.15 | (-0.51, 0.13) |
| | | ASCTU - SORNU | -0.14 | 0.24 | (-0.44, 0.19) |
| | | LESCA - LIAAS | -0.05 | 0.40 | (-0.42, 0.30) |
| | | LESCA - SCHSC | -0.22 | 0.14 | (-0.53, 0.11) |
| | | LESCA - SORNU | -0.15 | 0.22 | (-0.45, 0.17) |
| | | LIAAS - SCHSC | -0.17 | 0.20 | (-0.47, 0.18) |
| | | LIAAS - SORNU | -0.10 | 0.30 | (-0.40, 0.23) |
| SCHSC - SORNU | | 0.07 | 0.67 | (-0.21, 0.33) | |
| Deep | ASCTU - LESCA | -0.01 | 0.46 | (-0.16, 0.14) | |
| | ASCTU - LIAAS | -0.01 | 0.46 | (-0.16, 0.16) | |
| | ASCTU - SCHSC | -0.03 | 0.30 | (-0.18, 0.08) | |
| | ASCTU - SORNU | -0.03 | 0.29 | (-0.18, 0.07) | |
| | LESCA - LIAAS | 0.00 | 0.49 | (-0.15, 0.17) | |

| | | | | | |
|----|-------|---------------|-------|------|---------------|
| | | LESCA - SCHSC | -0.02 | 0.34 | (-0.17, 0.08) |
| | | LESCA - SORNU | -0.03 | 0.33 | (-0.17, 0.08) |
| | | LIAAS - SCHSC | -0.02 | 0.35 | (-0.19, 0.09) |
| | | LIAAS - SORNU | -0.02 | 0.34 | (-0.19, 0.08) |
| | | SCHSC - SORNU | 0.00 | 0.49 | (-0.10, 0.10) |
| 4 | 5-cm | ASCTU - LESCA | 0.07 | 0.65 | (-0.22, 0.37) |
| | | ASCTU - LIAAS | 0.09 | 0.72 | (-0.17, 0.37) |
| | | ASCTU - SCHSC | 0.28 | 0.94 | (-0.02, 0.58) |
| | | ASCTU - SORNU | 0.13 | 0.79 | (-0.13, 0.42) |
| | | LESCA - LIAAS | 0.02 | 0.57 | (-0.21, 0.25) |
| | | LESCA - SCHSC | 0.22 | 0.91 | (-0.05, 0.47) |
| | | LESCA - SORNU | 0.06 | 0.68 | (-0.17, 0.29) |
| | | LIAAS - SCHSC | 0.19 | 0.91 | (-0.05, 0.41) |
| | | LIAAS - SORNU | 0.04 | 0.64 | (-0.16, 0.24) |
| | | SCHSC - SORNU | -0.15 | 0.14 | (-0.38, 0.09) |
| | 35-cm | ASCTU - LESCA | -0.01 | 0.49 | (-0.43, 0.38) |
| | | ASCTU - LIAAS | 0.01 | 0.51 | (-0.38, 0.35) |
| | | ASCTU - SCHSC | -0.19 | 0.20 | (-0.59, 0.19) |
| | | ASCTU - SORNU | -0.04 | 0.44 | (-0.43, 0.32) |
| | | LESCA - LIAAS | 0.01 | 0.52 | (-0.30, 0.32) |
| | | LESCA - SCHSC | -0.19 | 0.17 | (-0.51, 0.15) |
| | | LESCA - SORNU | -0.03 | 0.43 | (-0.34, 0.28) |
| | | LIAAS - SCHSC | -0.20 | 0.12 | (-0.48, 0.10) |
| | | LIAAS - SORNU | -0.04 | 0.38 | (-0.31, 0.23) |
| | | SCHSC - SORNU | 0.16 | 0.82 | (-0.15, 0.44) |
| | Deep | ASCTU - LESCA | -0.05 | 0.32 | (-0.25, 0.13) |
| | | ASCTU - LIAAS | -0.08 | 0.21 | (-0.27, 0.07) |
| | | ASCTU - SCHSC | -0.08 | 0.22 | (-0.27, 0.08) |
| | | ASCTU - SORNU | -0.08 | 0.22 | (-0.27, 0.07) |
| | | LESCA - LIAAS | -0.03 | 0.33 | (-0.17, 0.09) |
| | | LESCA - SCHSC | -0.02 | 0.35 | (-0.17, 0.10) |
| | | LESCA - SORNU | -0.02 | 0.35 | (-0.17, 0.09) |
| | | LIAAS - SCHSC | 0.00 | 0.52 | (-0.10, 0.12) |
| | | LIAAS - SORNU | 0.00 | 0.52 | (-0.10, 0.11) |
| | | SCHSC - SORNU | 0.00 | 0.49 | (-0.11, 0.11) |
| 16 | 5-cm | ASCTU - LESCA | 0.00 | 0.50 | (-0.28, 0.27) |
| | | ASCTU - LIAAS | 0.06 | 0.63 | (-0.24, 0.35) |
| | | ASCTU - SCHSC | 0.25 | 0.93 | (-0.03, 0.52) |
| | | ASCTU - SORNU | 0.20 | 0.87 | (-0.10, 0.48) |
| | | LESCA - LIAAS | 0.06 | 0.68 | (-0.18, 0.29) |
| | | LESCA - SCHSC | 0.26 | 0.97 | (0.03, 0.46) |
| | | LESCA - SORNU | 0.20 | 0.92 | (-0.04, 0.43) |
| | | LIAAS - SCHSC | 0.19 | 0.91 | (-0.04, 0.43) |
| | | LIAAS - SORNU | 0.14 | 0.82 | (-0.12, 0.40) |
| | | SCHSC - SORNU | -0.05 | 0.34 | (-0.29, 0.19) |

| | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|
| 35-cm | ASCTU - LESCA | 0.08 | 0.63 | (-0.31, 0.47) | |
| | ASCTU - LIAAS | -0.01 | 0.48 | (-0.42, 0.40) | |
| | ASCTU - SCHSC | -0.17 | 0.24 | (-0.54, 0.22) | |
| | ASCTU - SORNU | -0.14 | 0.29 | (-0.53, 0.27) | |
| | LESCA - LIAAS | -0.10 | 0.30 | (-0.42, 0.23) | |
| | LESCA - SCHSC | -0.26 | 0.08 | (-0.53, 0.05) | |
| | LESCA - SORNU | -0.22 | 0.12 | (-0.53, 0.10) | |
| | LIAAS - SCHSC | -0.16 | 0.21 | (-0.47, 0.17) | |
| | LIAAS - SORNU | -0.12 | 0.27 | (-0.46, 0.22) | |
| | SCHSC - SORNU | 0.03 | 0.58 | (-0.28, 0.33) | |
| | Deep | ASCTU - LESCA | -0.07 | 0.22 | (-0.28, 0.07) |
| | | ASCTU - LIAAS | -0.04 | 0.37 | (-0.25, 0.13) |
| | | ASCTU - SCHSC | -0.07 | 0.21 | (-0.28, 0.06) |
| | | ASCTU - SORNU | -0.05 | 0.30 | (-0.27, 0.11) |
| | | LESCA - LIAAS | 0.03 | 0.68 | (-0.09, 0.18) |
| | | LESCA - SCHSC | 0.00 | 0.49 | (-0.11, 0.10) |
| | | LESCA - SORNU | 0.01 | 0.60 | (-0.10, 0.15) |
| | | LIAAS - SCHSC | -0.03 | 0.31 | (-0.18, 0.08) |
| | | LIAAS - SORNU | -0.02 | 0.42 | (-0.17, 0.13) |
| SCHSC - SORNU | 0.02 | 0.62 | (-0.09, 0.15) | | |

| | | | | | | |
|--------|---|---------------|---------------|-------|---------------|---------------|
| August | 1 | 5-cm | ASCTU - LESCA | -0.08 | 0.37 | (-0.47, 0.33) |
| | | | ASCTU - LIAAS | -0.10 | 0.35 | (-0.49, 0.33) |
| | | | ASCTU - SCHSC | -0.07 | 0.39 | (-0.44, 0.33) |
| | | | ASCTU - SORNU | -0.12 | 0.29 | (-0.46, 0.24) |
| | | | LESCA - LIAAS | -0.02 | 0.47 | (-0.42, 0.40) |
| | | | LESCA - SCHSC | 0.02 | 0.53 | (-0.37, 0.39) |
| | | | LESCA - SORNU | -0.03 | 0.44 | (-0.39, 0.29) |
| | | | LIAAS - SCHSC | 0.03 | 0.56 | (-0.37, 0.41) |
| | | | LIAAS - SORNU | -0.02 | 0.47 | (-0.39, 0.32) |
| | | SCHSC - SORNU | -0.05 | 0.40 | (-0.37, 0.26) | |
| | | 35-cm | ASCTU - LESCA | 0.23 | 0.78 | (-0.27, 0.66) |
| | | | ASCTU - LIAAS | 0.18 | 0.73 | (-0.31, 0.61) |
| | | | ASCTU - SCHSC | 0.22 | 0.79 | (-0.23, 0.62) |
| | | | ASCTU - SORNU | 0.30 | 0.88 | (-0.13, 0.66) |
| | | | LESCA - LIAAS | -0.05 | 0.43 | (-0.50, 0.40) |
| | | | LESCA - SCHSC | -0.02 | 0.47 | (-0.43, 0.42) |
| | | | LESCA - SORNU | 0.06 | 0.59 | (-0.30, 0.46) |
| | | | LIAAS - SCHSC | 0.04 | 0.56 | (-0.37, 0.46) |
| | | | LIAAS - SORNU | 0.12 | 0.68 | (-0.25, 0.50) |
| | | SCHSC - SORNU | 0.08 | 0.65 | (-0.25, 0.42) | |
| | | Deep | ASCTU - LESCA | -0.12 | 0.16 | (-0.43, 0.07) |
| | | | ASCTU - LIAAS | -0.05 | 0.36 | (-0.37, 0.15) |
| | | | ASCTU - SCHSC | -0.11 | 0.16 | (-0.42, 0.04) |
| | | | ASCTU - SORNU | -0.14 | 0.08 | (-0.45, 0.01) |
| | | | LESCA - LIAAS | 0.07 | 0.82 | (-0.07, 0.22) |

| | | | | | |
|---|-------|---------------|-------|------|----------------|
| | | LESCA - SCHSC | 0.01 | 0.57 | (-0.13, 0.09) |
| | | LESCA - SORNU | -0.01 | 0.35 | (-0.15, 0.04) |
| | | LIAAS - SCHSC | -0.06 | 0.15 | (-0.21, 0.04) |
| | | LIAAS - SORNU | -0.09 | 0.04 | (-0.23, 0.00) |
| | | SCHSC - SORNU | -0.02 | 0.21 | (-0.10, 0.03) |
| 2 | 5-cm | ASCTU - LESCA | -0.10 | 0.27 | (-0.40, 0.21) |
| | | ASCTU - LIAAS | 0.06 | 0.60 | (-0.31, 0.43) |
| | | ASCTU - SCHSC | -0.08 | 0.31 | (-0.39, 0.22) |
| | | ASCTU - SORNU | -0.03 | 0.44 | (-0.33, 0.26) |
| | | LESCA - LIAAS | 0.17 | 0.77 | (-0.19, 0.51) |
| | | LESCA - SCHSC | 0.02 | 0.56 | (-0.28, 0.31) |
| | | LESCA - SORNU | 0.08 | 0.70 | (-0.23, 0.35) |
| | | LIAAS - SCHSC | -0.14 | 0.26 | (-0.49, 0.21) |
| | | LIAAS - SORNU | -0.09 | 0.35 | (-0.45, 0.25) |
| | | SCHSC - SORNU | 0.06 | 0.65 | (-0.24, 0.33) |
| | 35-cm | ASCTU - LESCA | 0.10 | 0.72 | (-0.25, 0.45) |
| | | ASCTU - LIAAS | -0.20 | 0.22 | (-0.58, 0.22) |
| | | ASCTU - SCHSC | 0.06 | 0.62 | (-0.25, 0.40) |
| | | ASCTU - SORNU | 0.02 | 0.54 | (-0.28, 0.36) |
| | | LESCA - LIAAS | -0.30 | 0.10 | (-0.67, 0.10) |
| | | LESCA - SCHSC | -0.05 | 0.37 | (-0.34, 0.29) |
| | | LESCA - SORNU | -0.09 | 0.29 | (-0.37, 0.26) |
| | | LIAAS - SCHSC | 0.26 | 0.87 | (-0.12, 0.62) |
| | | LIAAS - SORNU | 0.22 | 0.82 | (-0.15, 0.59) |
| | | SCHSC - SORNU | -0.04 | 0.40 | (-0.32, 0.26) |
| | Deep | ASCTU - LESCA | 0.00 | 0.49 | (-0.08, 0.06) |
| | | ASCTU - LIAAS | 0.12 | 0.96 | (0.00, 0.29)* |
| | | ASCTU - SCHSC | 0.03 | 0.77 | (-0.05, 0.07) |
| | | ASCTU - SORNU | 0.01 | 0.62 | (-0.07, 0.05) |
| | | LESCA - LIAAS | 0.12 | 0.97 | (0.01, 0.29)* |
| | | LESCA - SCHSC | 0.03 | 0.81 | (-0.04, 0.07) |
| | | LESCA - SORNU | 0.01 | 0.65 | (-0.06, 0.05) |
| | | LIAAS - SCHSC | -0.10 | 0.06 | (-0.27, 0.00) |
| | | LIAAS - SORNU | -0.11 | 0.03 | (-0.28, -0.01) |
| | | SCHSC - SORNU | -0.02 | 0.25 | (-0.06, 0.03) |
| 4 | 5-cm | ASCTU - LESCA | 0.06 | 0.64 | (-0.30, 0.41) |
| | | ASCTU - LIAAS | 0.04 | 0.59 | (-0.32, 0.41) |
| | | ASCTU - SCHSC | 0.10 | 0.71 | (-0.26, 0.37) |
| | | ASCTU - SORNU | 0.01 | 0.53 | (-0.34, 0.35) |
| | | LESCA - LIAAS | -0.02 | 0.46 | (-0.38, 0.36) |
| | | LESCA - SCHSC | 0.03 | 0.57 | (-0.32, 0.32) |
| | | LESCA - SORNU | -0.05 | 0.39 | (-0.40, 0.30) |
| | | LIAAS - SCHSC | 0.05 | 0.61 | (-0.32, 0.34) |
| | | LIAAS - SORNU | -0.02 | 0.44 | (-0.40, 0.32) |
| | | SCHSC - SORNU | -0.09 | 0.31 | (-0.36, 0.26) |

| | | | | | |
|-------|---------------|---------------|-------|---------------|----------------|
| 16 | 35-cm | ASCTU - LESCA | -0.05 | 0.41 | (-0.44, 0.38) |
| | | ASCTU - LIAAS | -0.08 | 0.34 | (-0.47, 0.35) |
| | | ASCTU - SCHSC | -0.05 | 0.40 | (-0.34, 0.37) |
| | | ASCTU - SORNU | -0.02 | 0.46 | (-0.36, 0.40) |
| | | LESCA - LIAAS | -0.04 | 0.43 | (-0.43, 0.37) |
| | | LESCA - SCHSC | 0.00 | 0.50 | (-0.30, 0.38) |
| | | LESCA - SORNU | 0.03 | 0.57 | (-0.32, 0.42) |
| | | LIAAS - SCHSC | 0.04 | 0.58 | (-0.26, 0.41) |
| | | LIAAS - SORNU | 0.07 | 0.64 | (-0.28, 0.45) |
| | | SCHSC - SORNU | 0.03 | 0.58 | (-0.31, 0.32) |
| | Deep | ASCTU - LESCA | -0.02 | 0.38 | (-0.13, 0.09) |
| | | ASCTU - LIAAS | 0.04 | 0.73 | (-0.08, 0.13) |
| | | ASCTU - SCHSC | -0.05 | 0.12 | (-0.16, 0.02) |
| | | ASCTU - SORNU | 0.00 | 0.49 | (-0.11, 0.07) |
| | | LESCA - LIAAS | 0.05 | 0.83 | (-0.05, 0.14) |
| | | LESCA - SCHSC | -0.03 | 0.18 | (-0.13, 0.02) |
| | | LESCA - SORNU | 0.02 | 0.64 | (-0.08, 0.08) |
| | | LIAAS - SCHSC | -0.09 | 0.02 | (-0.17, -0.02) |
| | | LIAAS - SORNU | -0.04 | 0.19 | (-0.12, 0.04) |
| | | SCHSC - SORNU | 0.05 | 0.94 | (0.00, 0.10)* |
| 5-cm | ASCTU - LESCA | 0.09 | 0.69 | (-0.25, 0.46) | |
| | ASCTU - LIAAS | 0.07 | 0.65 | (-0.26, 0.44) | |
| | ASCTU - SCHSC | -0.02 | 0.43 | (-0.33, 0.22) | |
| | ASCTU - SORNU | 0.04 | 0.61 | (-0.28, 0.36) | |
| | LESCA - LIAAS | -0.02 | 0.47 | (-0.41, 0.38) | |
| | LESCA - SCHSC | -0.12 | 0.25 | (-0.47, 0.17) | |
| | LESCA - SORNU | -0.05 | 0.40 | (-0.43, 0.29) | |
| | LIAAS - SCHSC | -0.10 | 0.28 | (-0.46, 0.17) | |
| | LIAAS - SORNU | -0.03 | 0.43 | (-0.41, 0.31) | |
| | SCHSC - SORNU | 0.06 | 0.68 | (-0.20, 0.38) | |
| 35-cm | ASCTU - LESCA | -0.12 | 0.28 | (-0.53, 0.28) | |
| | ASCTU - LIAAS | -0.17 | 0.19 | (-0.55, 0.22) | |
| | ASCTU - SCHSC | 0.00 | 0.50 | (-0.25, 0.37) | |
| | ASCTU - SORNU | -0.06 | 0.36 | (-0.38, 0.31) | |
| | LESCA - LIAAS | -0.06 | 0.41 | (-0.46, 0.39) | |
| | LESCA - SCHSC | 0.13 | 0.75 | (-0.18, 0.53) | |
| | LESCA - SORNU | 0.06 | 0.61 | (-0.30, 0.48) | |
| | LIAAS - SCHSC | 0.18 | 0.86 | (-0.11, 0.54) | |
| | LIAAS - SORNU | 0.12 | 0.72 | (-0.23, 0.49) | |
| | SCHSC - SORNU | -0.06 | 0.33 | (-0.38, 0.20) | |
| Deep | ASCTU - LESCA | 0.02 | 0.66 | (-0.06, 0.14) | |
| | ASCTU - LIAAS | 0.09 | 0.95 | (0.00, 0.19)* | |
| | ASCTU - SCHSC | 0.02 | 0.69 | (-0.06, 0.06) | |
| | ASCTU - SORNU | 0.01 | 0.65 | (-0.07, 0.08) | |
| | LESCA - LIAAS | 0.07 | 0.86 | (-0.06, 0.18) | |

| | | | |
|---------------|-------|------|---------------|
| LESCA - SCHSC | 0.00 | 0.49 | (-0.12, 0.06) |
| LESCA - SORNU | 0.00 | 0.46 | (-0.13, 0.06) |
| LIAAS - SCHSC | -0.08 | 0.04 | (-0.17, 0.00) |
| LIAAS - SORNU | -0.08 | 0.06 | (-0.18, 0.00) |
| SCHSC - SORNU | 0.00 | 0.47 | (-0.05, 0.06) |

¹ Where 0 = no difference between species and 1 = the species pair was completely different.

² 90% credible intervals that did not overlap zero are indicated with an asterisk (*).

Table A6. Difference in deep water used by *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU) growing in diverse plots (2, 4 and 16-species) relative to monocultures, during all months combined and during June, July and August 2017. Shown is the median binary logarithm of the relative difference (\pm 90% credible interval)¹ between deep water used in a diverse plot compared to a monoculture plot².

| Month | Species | Species no. | 90% CI | Median | |
|--------------|----------------|--------------------|---------------|---------------|-------|
| All | ASCTU | 2 | (-5.49, 2.21) | -1.70 | |
| | | 4 | (-5.67, 2.23) | -1.80 | |
| | | 16 | (-5.50, 2.30) | -1.68 | |
| | LESCA | 2 | (-4.34, 3.39) | -0.45 | |
| | | 4 | (-4.09, 3.66) | -0.15 | |
| | | 16 | (-3.95, 3.84) | -0.04 | |
| | LIAAS | 2 | (-4.13, 3.16) | -0.46 | |
| | | 4 | (-4.13, 3.10) | -0.49 | |
| | | 16 | (-3.61, 3.38) | -0.15 | |
| | SCHSC | 2 | (-4.12, 3.44) | -0.37 | |
| | | 4 | (-4.45, 3.12) | -0.62 | |
| | | 16 | (-4.05, 3.57) | -0.24 | |
| | SORNU | 2 | (-3.68, 3.97) | 0.18 | |
| | | 4 | (-3.58, 4.15) | 0.26 | |
| | | 16 | (-3.46, 4.19) | 0.36 | |
| | June | ASCTU | 2 | (-4.98, 1.99) | -1.52 |
| | | | 4 | (-5.38, 1.93) | -1.69 |
| | | | 16 | (-6.08, 1.36) | -2.39 |
| LESCA | | 2 | (-4.09, 3.98) | -0.02 | |
| | | 4 | (-4.43, 3.51) | -0.39 | |
| | | 16 | (-4.12, 3.97) | -0.01 | |
| SCHSC | | 2 | (-4.61, 3.40) | -0.52 | |
| | | 4 | (-4.37, 3.62) | -0.38 | |
| | | 16 | (-4.79, 3.33) | -0.69 | |
| SORNU | | 2 | (-4.18, 3.59) | -0.33 | |
| | | 4 | (-3.54, 4.29) | 0.33 | |
| | | 16 | (-4.17, 3.64) | -0.29 | |
| July | | ASCTU | 2 | (-4.86, 2.02) | -1.41 |
| | | | 4 | (-4.28, 2.61) | -0.70 |
| | | | 16 | (-4.22, 2.57) | -0.81 |
| | | LESCA | 2 | (-3.47, 4.06) | 0.30 |
| | | | 4 | (-3.31, 4.06) | 0.41 |
| | | | 16 | (-4.31, 3.43) | -0.44 |
| | LIAAS | 2 | (-3.74, 3.96) | 0.12 | |
| | | 4 | (-4.41, 3.27) | -0.60 | |
| | | 16 | (-3.37, 3.99) | 0.34 | |
| | SCHSC | 2 | (-4.02, 3.83) | -0.07 | |
| | | 4 | (-3.94, 4.06) | 0.13 | |
| | | 16 | (-4.02, 3.86) | -0.04 | |

| | | | | |
|--------|-------|----|---------------|-------|
| August | SORNU | 2 | (-3.70, 4.05) | 0.15 |
| | | 4 | (-3.37, 4.29) | 0.41 |
| | | 16 | (-2.93, 4.65) | 0.84 |
| | ASCTU | 2 | (-6.73, 0.83) | -2.91 |
| | | 4 | (-4.42, 2.10) | -1.34 |
| | | 16 | (-6.10, 1.06) | -2.53 |
| | LESCA | 2 | (-4.89, 3.09) | -0.95 |
| | | 4 | (-3.12, 4.10) | 0.31 |
| | | 16 | (-3.17, 4.22) | 0.32 |
| | LIAAS | 2 | (-1.48, 2.27) | 0.39 |
| | | 4 | (-1.66, 1.62) | -0.11 |
| | | 16 | (-1.45, 1.91) | 0.13 |
| | SCHSC | 2 | (-1.74, 2.19) | 0.03 |
| | | 4 | (-4.82, 1.06) | -1.59 |
| | | 16 | (-1.85, 2.14) | -0.04 |
| | SORNU | 2 | (-1.95, 3.61) | 0.53 |
| | | 4 | (-0.49, 4.58) | 1.57 |
| | | 16 | (-1.50, 4.12) | 1.01 |

¹ Where -1 = a two-fold decrease and +1 = a two-fold increase in a water source used relative to a monoculture.

²See Appendix 1 Table A7 for pairwise comparison statistics.

Table A7. Pairwise comparisons of isotope mixing model posterior distributions, for all months combined. Comparisons were made between diverse plots (2, 4 and 16-species) relative to monocultures for each species (ASCTU = *A. tuberosa*, LESCA = *L. capitata*, LIAAS = *L. aspera*, SCHSC = *S. scoparium*, and SORNU = *S. nutans*) and each water source (5 cm, 35 cm, and deep soil depths). Shown are the median differences between each pairwise comparison, the proportion of the compared distributions that were different¹, and the 90% credible interval (CI) of the difference between the pairwise comparisons.

| Soil depth | Species | Species | Median | Proportion different | 90% CI | |
|------------|---------|---------|--------|----------------------|---------------|---------------|
| | | no. | | | | |
| 5-cm | ASCTU | 2 | -0.07 | 0.35 | (-0.35, 0.19) | |
| | | 4 | -0.18 | 0.16 | (-0.46, 0.10) | |
| | | 16 | -0.07 | 0.35 | (-0.36, 0.21) | |
| | LESCA | 2 | -0.06 | 0.30 | (-0.27, 0.14) | |
| | | 4 | -0.08 | 0.27 | (-0.29, 0.14) | |
| | | 16 | 0.05 | 0.65 | (-0.19, 0.28) | |
| | LIAAS | 2 | 0.01 | 0.52 | (-0.37, 0.39) | |
| | | 4 | -0.04 | 0.43 | (-0.40, 0.32) | |
| | | 16 | -0.12 | 0.30 | (-0.47, 0.25) | |
| | SCHSC | 2 | -0.14 | 0.22 | (-0.45, 0.16) | |
| | | 4 | -0.07 | 0.36 | (-0.37, 0.23) | |
| | | 16 | -0.16 | 0.19 | (-0.48, 0.15) | |
| | SORNU | 2 | -0.04 | 0.39 | (-0.28, 0.20) | |
| | | 4 | -0.14 | 0.20 | (-0.41, 0.14) | |
| | | 16 | -0.11 | 0.24 | (-0.39, 0.15) | |
| | 35-cm | ASCTU | 2 | 0.12 | 0.70 | (-0.19, 0.45) |
| | | | 4 | 0.23 | 0.86 | (-0.10, 0.56) |
| | | | 16 | 0.11 | 0.69 | (-0.22, 0.46) |
| LESCA | | 2 | 0.07 | 0.70 | (-0.15, 0.29) | |
| | | 4 | 0.08 | 0.71 | (-0.16, 0.32) | |
| | | 16 | -0.05 | 0.36 | (-0.30, 0.21) | |
| LIAAS | | 2 | 0.01 | 0.52 | (-0.42, 0.44) | |
| | | 4 | 0.06 | 0.60 | (-0.36, 0.48) | |
| | | 16 | 0.13 | 0.68 | (-0.31, 0.55) | |
| SCHSC | | 2 | 0.15 | 0.78 | (-0.17, 0.48) | |
| | | 4 | 0.08 | 0.66 | (-0.24, 0.39) | |
| | | 16 | 0.17 | 0.80 | (-0.16, 0.50) | |
| SORNU | | 2 | 0.04 | 0.59 | (-0.22, 0.30) | |
| | | 4 | 0.13 | 0.78 | (-0.17, 0.43) | |
| | | 16 | 0.11 | 0.73 | (-0.18, 0.41) | |
| Deep | | ASCTU | 2 | -0.03 | 0.22 | (-0.16, 0.03) |
| | | | 4 | -0.03 | 0.21 | (-0.16, 0.03) |
| | | | 16 | -0.03 | 0.22 | (-0.16, 0.03) |
| | LESCA | 2 | 0.00 | 0.42 | (-0.05, 0.03) | |
| | | 4 | 0.00 | 0.47 | (-0.05, 0.05) | |
| | | 16 | 0.00 | 0.49 | (-0.05, 0.05) | |
| | LIAAS | 2 | -0.02 | 0.40 | (-0.17, 0.12) | |

| | | | | |
|-------|----|-------|------|---------------|
| | 4 | -0.02 | 0.40 | (-0.17, 0.11) |
| | 16 | -0.01 | 0.47 | (-0.16, 0.13) |
| SCHSC | 2 | 0.00 | 0.43 | (-0.07, 0.05) |
| | 4 | -0.01 | 0.38 | (-0.08, 0.04) |
| | 16 | 0.00 | 0.46 | (-0.07, 0.06) |
| SORNU | 2 | 0.00 | 0.54 | (-0.05, 0.05) |
| | 4 | 0.00 | 0.55 | (-0.05, 0.06) |
| | 16 | 0.00 | 0.57 | (-0.05, 0.07) |

¹ Where 0 = no difference between diversity treatments and 1 = the diversity comparison was completely different

Table A8. Pairwise comparisons of isotope mixing model posterior distributions, for each month. Comparisons were made between diverse plots (2, 4 and 16-species) relative to monocultures for each species (ASCTU = *A. tuberosa*, LESCA = *L. capitata*, LIAAS = *L. aspera*, SCHSC = *S. scoparium*, and SORNU = *S. nutans*) and each water source (5 cm, 35 cm, and deep soil depths) in June, July, and August 2017. Shown are the median differences between each pairwise comparison, the proportion of the compared distributions that were different¹, and the 90% credible interval (CI) of the difference between the pairwise comparisons.

| Month | Soil depth | Species | Species | | | |
|-------|------------|---------|---------|---------------|----------------------|---------------|
| | | | no. | Median | Proportion different | 90% CI |
| June | 5-cm | ASCTU | 2 | -0.08 | 0.37 | (-0.46, 0.32) |
| | | | 4 | 0.01 | 0.52 | (-0.39, 0.40) |
| | | | 16 | 0.12 | 0.71 | (-0.26, 0.49) |
| | | LESCA | 2 | 0.13 | 0.69 | (-0.30, 0.51) |
| | | | 4 | 0.00 | 0.50 | (-0.31, 0.32) |
| | | | 16 | 0.13 | 0.71 | (-0.29, 0.52) |
| | | SCHSC | 2 | -0.08 | 0.35 | (-0.42, 0.28) |
| | | | 4 | 0.04 | 0.58 | (-0.31, 0.41) |
| | | | 16 | -0.10 | 0.31 | (-0.44, 0.26) |
| | SORNU | 2 | 0.04 | 0.57 | (-0.32, 0.40) | |
| | | 4 | 0.04 | 0.57 | (-0.34, 0.43) | |
| | | 16 | -0.06 | 0.39 | (-0.39, 0.31) | |
| | 35-cm | ASCTU | 2 | 0.21 | 0.78 | (-0.26, 0.64) |
| | | | 4 | 0.13 | 0.68 | (-0.34, 0.57) |
| | | | 16 | 0.05 | 0.58 | (-0.39, 0.43) |
| | | LESCA | 2 | -0.13 | 0.31 | (-0.53, 0.32) |
| | | | 4 | 0.01 | 0.52 | (-0.34, 0.37) |
| | | | 16 | -0.14 | 0.30 | (-0.54, 0.31) |
| | | SCHSC | 2 | 0.09 | 0.67 | (-0.27, 0.45) |
| | | | 4 | -0.03 | 0.44 | (-0.41, 0.34) |
| | | | 16 | 0.12 | 0.71 | (-0.25, 0.47) |
| | SORNU | 2 | -0.03 | 0.45 | (-0.43, 0.36) | |
| | | 4 | -0.05 | 0.41 | (-0.48, 0.36) | |
| | | 16 | 0.07 | 0.61 | (-0.34, 0.43) | |
| | Deep | ASCTU | 2 | -0.11 | 0.20 | (-0.41, 0.08) |
| | | | 4 | -0.11 | 0.19 | (-0.42, 0.08) |
| | | | 16 | -0.13 | 0.13 | (-0.43, 0.04) |
| LESCA | | 2 | 0.00 | 0.50 | (-0.12, 0.13) | |
| | | 4 | -0.01 | 0.43 | (-0.13, 0.08) | |
| | | 16 | 0.00 | 0.50 | (-0.12, 0.13) | |
| SCHSC | | 2 | -0.01 | 0.41 | (-0.11, 0.06) | |
| | | 4 | -0.01 | 0.43 | (-0.11, 0.07) | |
| | | 16 | -0.01 | 0.38 | (-0.11, 0.05) | |
| SORNU | 2 | -0.01 | 0.44 | (-0.11, 0.08) | | |
| | 4 | 0.01 | 0.56 | (-0.10, 0.13) | | |
| | 16 | 0.00 | 0.45 | (-0.11, 0.08) | | |
| July | 5-cm | ASCTU | 2 | -0.03 | 0.44 | (-0.35, 0.30) |

| | | | | | | |
|--------|-------|-------|----|-------|------|---------------|
| | | | 4 | -0.04 | 0.42 | (-0.40, 0.31) |
| | | | 16 | -0.06 | 0.39 | (-0.41, 0.30) |
| | | LESCA | 2 | -0.09 | 0.27 | (-0.34, 0.17) |
| | | | 4 | -0.03 | 0.42 | (-0.28, 0.22) |
| | | | 16 | -0.12 | 0.18 | (-0.34, 0.11) |
| | | LIAAS | 2 | -0.05 | 0.36 | (-0.29, 0.20) |
| | | | 4 | -0.02 | 0.44 | (-0.24, 0.20) |
| | | | 16 | -0.07 | 0.32 | (-0.32, 0.18) |
| | | SCHSC | 2 | -0.16 | 0.19 | (-0.38, 0.19) |
| | | | 4 | -0.13 | 0.24 | (-0.38, 0.22) |
| | | | 16 | -0.18 | 0.16 | (-0.40, 0.17) |
| | | SORNU | 2 | -0.09 | 0.24 | (-0.30, 0.13) |
| | | | 4 | -0.15 | 0.12 | (-0.35, 0.07) |
| | | | 16 | -0.09 | 0.25 | (-0.33, 0.14) |
| | 35-cm | ASCTU | 2 | 0.17 | 0.75 | (-0.26, 0.55) |
| | | | 4 | 0.13 | 0.68 | (-0.33, 0.57) |
| | | | 16 | 0.15 | 0.70 | (-0.32, 0.59) |
| | | LESCA | 2 | 0.08 | 0.65 | (-0.26, 0.42) |
| | | | 4 | 0.01 | 0.52 | (-0.31, 0.36) |
| | | | 16 | 0.13 | 0.78 | (-0.18, 0.44) |
| | | LIAAS | 2 | 0.05 | 0.59 | (-0.31, 0.38) |
| | | | 4 | 0.04 | 0.60 | (-0.25, 0.36) |
| | | | 16 | 0.05 | 0.61 | (-0.28, 0.40) |
| | | SCHSC | 2 | 0.16 | 0.80 | (-0.18, 0.40) |
| | | | 4 | 0.12 | 0.74 | (-0.22, 0.39) |
| | | | 16 | 0.18 | 0.82 | (-0.17, 0.42) |
| | | SORNU | 2 | 0.08 | 0.71 | (-0.19, 0.34) |
| | | | 4 | 0.14 | 0.80 | (-0.14, 0.39) |
| | | | 16 | 0.07 | 0.65 | (-0.24, 0.36) |
| | Deep | ASCTU | 2 | -0.12 | 0.20 | (-0.40, 0.10) |
| | | | 4 | -0.08 | 0.33 | (-0.37, 0.18) |
| | | | 16 | -0.08 | 0.31 | (-0.37, 0.18) |
| | | LESCA | 2 | 0.01 | 0.56 | (-0.14, 0.16) |
| | | | 4 | 0.01 | 0.59 | (-0.13, 0.16) |
| | | | 16 | -0.01 | 0.42 | (-0.16, 0.10) |
| | | LIAAS | 2 | 0.00 | 0.52 | (-0.16, 0.17) |
| | | | 4 | -0.02 | 0.39 | (-0.17, 0.09) |
| | | | 16 | 0.01 | 0.57 | (-0.15, 0.16) |
| | | SCHSC | 2 | 0.00 | 0.49 | (-0.12, 0.10) |
| | | | 4 | 0.00 | 0.52 | (-0.12, 0.12) |
| | | | 16 | 0.00 | 0.49 | (-0.13, 0.10) |
| | | SORNU | 2 | 0.00 | 0.53 | (-0.09, 0.10) |
| | | | 4 | 0.01 | 0.58 | (-0.08, 0.12) |
| | | | 16 | 0.02 | 0.66 | (-0.07, 0.15) |
| August | 5-cm | ASCTU | 2 | -0.13 | 0.28 | (-0.48, 0.24) |

| | | | | | |
|-------|-------|----|-------|------|---------------|
| | | 4 | -0.25 | 0.15 | (-0.58, 0.16) |
| | | 16 | -0.25 | 0.13 | (-0.58, 0.13) |
| | LESCA | 2 | -0.15 | 0.23 | (-0.49, 0.20) |
| | | 4 | -0.09 | 0.35 | (-0.46, 0.30) |
| | | 16 | -0.06 | 0.40 | (-0.44, 0.35) |
| | LIAAS | 2 | 0.03 | 0.55 | (-0.40, 0.44) |
| | | 4 | -0.09 | 0.35 | (-0.48, 0.33) |
| | | 16 | -0.06 | 0.40 | (-0.46, 0.36) |
| | SCHSC | 2 | -0.15 | 0.22 | (-0.46, 0.18) |
| | | 4 | -0.08 | 0.34 | (-0.40, 0.23) |
| | | 16 | -0.21 | 0.12 | (-0.51, 0.10) |
| | SORNU | 2 | -0.04 | 0.39 | (-0.32, 0.24) |
| | | 4 | -0.12 | 0.25 | (-0.38, 0.23) |
| | | 16 | -0.09 | 0.30 | (-0.37, 0.24) |
| 35-cm | ASCTU | 2 | 0.31 | 0.87 | (-0.14, 0.69) |
| | | 4 | 0.38 | 0.90 | (-0.12, 0.75) |
| | | 16 | 0.42 | 0.94 | (-0.03, 0.79) |
| | LESCA | 2 | 0.18 | 0.77 | (-0.22, 0.57) |
| | | 4 | 0.09 | 0.63 | (-0.35, 0.52) |
| | | 16 | 0.06 | 0.58 | (-0.41, 0.49) |
| | LIAAS | 2 | -0.07 | 0.40 | (-0.50, 0.39) |
| | | 4 | 0.11 | 0.66 | (-0.33, 0.52) |
| | | 16 | 0.05 | 0.58 | (-0.38, 0.47) |
| | SCHSC | 2 | 0.15 | 0.78 | (-0.19, 0.48) |
| | | 4 | 0.12 | 0.72 | (-0.21, 0.45) |
| | | 16 | 0.21 | 0.87 | (-0.10, 0.53) |
| | SORNU | 2 | 0.03 | 0.58 | (-0.26, 0.32) |
| | | 4 | 0.07 | 0.66 | (-0.27, 0.35) |
| | | 16 | 0.07 | 0.65 | (-0.27, 0.36) |
| Deep | ASCTU | 2 | -0.14 | 0.09 | (-0.45, 0.02) |
| | | 4 | -0.10 | 0.22 | (-0.41, 0.08) |
| | | 16 | -0.13 | 0.11 | (-0.44, 0.03) |
| | LESCA | 2 | -0.02 | 0.34 | (-0.15, 0.05) |
| | | 4 | 0.01 | 0.56 | (-0.13, 0.11) |
| | | 16 | 0.01 | 0.56 | (-0.13, 0.13) |
| | LIAAS | 2 | 0.03 | 0.64 | (-0.13, 0.21) |
| | | 4 | -0.01 | 0.45 | (-0.16, 0.10) |
| | | 16 | 0.01 | 0.56 | (-0.14, 0.13) |
| | SCHSC | 2 | 0.00 | 0.51 | (-0.07, 0.05) |
| | | 4 | -0.03 | 0.15 | (-0.10, 0.02) |
| | | 16 | 0.00 | 0.48 | (-0.08, 0.05) |
| | SORNU | 2 | 0.01 | 0.65 | (-0.04, 0.05) |
| | | 4 | 0.04 | 0.90 | (-0.01, 0.10) |
| | | 16 | 0.02 | 0.76 | (-0.03, 0.08) |

¹ Where 0 = no difference between diversity treatments and 1 = the diversity comparison was completely different.

Table A9. Pairwise comparisons of Bayesian standard ellipse area posterior distributions. Comparisons were made between each diversity treatment for each species (ASCTU = *A. tuberosa*, LESCA = *L. capitata*, LIAAS = *L. aspera*, SCHSC = *S. scoparium*, and SORNU = *S. nutans*). Shown are the median differences between each pairwise comparison, the proportion of the compared distributions that were different¹, and the 90% credible interval (CI) of the difference between the pairwise comparisons.

| Species | Species no. Comparison | Median | Proportion different | 90% CI |
|----------------|-------------------------------|---------------|-----------------------------|----------------|
| ASCTU | 1 - 2 | -0.57 | 0.05 | (-0.82, -0.02) |
| | 1 - 4 | -0.35 | 0.19 | (-0.73, 0.44) |
| | 1 - 16 | -0.37 | 0.18 | (-0.75, 0.44) |
| | 2 - 4 | 0.52 | 0.84 | (-0.25, 2.01) |
| | 2 - 16 | 0.46 | 0.82 | (-0.27, 2.07) |
| | 4 - 16 | -0.02 | 0.47 | (-0.51, 0.96) |
| LESCA | 1 - 2 | 0.05 | 0.55 | (-0.51, 1.17) |
| | 1 - 4 | -0.15 | 0.34 | (-0.61, 0.73) |
| | 1 - 16 | 0.49 | 0.80 | (-0.33, 2.13) |
| | 2 - 4 | -0.20 | 0.30 | (-0.59, 0.57) |
| | 2 - 16 | 0.43 | 0.79 | (-0.30, 1.82) |
| | 4 - 16 | 0.77 | 0.91 | (-0.12, 2.45) |
| LIAAS | 1 - 2 | -0.06 | 0.45 | (-0.66, 1.46) |
| | 1 - 4 | -0.20 | 0.34 | (-0.68, 0.96) |
| | 1 - 16 | -0.33 | 0.23 | (-0.74, 0.68) |
| | 2 - 4 | -0.14 | 0.39 | (-0.67, 1.10) |
| | 2 - 16 | -0.27 | 0.28 | (-0.72, 0.73) |
| | 4 - 16 | -0.16 | 0.36 | (-0.64, 0.94) |
| SCHSC | 1 - 2 | -0.43 | 0.10 | (-0.73, 0.16) |
| | 1 - 4 | -0.31 | 0.19 | (-0.68, 0.41) |
| | 1 - 16 | -0.34 | 0.17 | (-0.69, 0.35) |
| | 2 - 4 | 0.21 | 0.68 | (-0.42, 1.35) |
| | 2 - 16 | 0.15 | 0.63 | (-0.42, 1.26) |
| | 4 - 16 | -0.05 | 0.45 | (-0.52, 0.86) |
| SORNU | 1 - 2 | -0.02 | 0.47 | (-0.51, 0.95) |
| | 1 - 4 | -0.08 | 0.41 | (-0.53, 0.81) |
| | 1 - 16 | 0.07 | 0.56 | (-0.46, 1.12) |
| | 2 - 4 | -0.06 | 0.43 | (-0.53, 0.85) |
| | 2 - 16 | 0.10 | 0.59 | (-0.44, 1.17) |
| | 4 - 16 | 0.17 | 0.65 | (-0.41, 1.36) |

¹ Where 0 = no difference between diversity comparisons and 1 = the diversity comparison was completely different.

Table A10. Pairwise comparisons of Bayesian isotopic niche space overlap posterior distributions. Comparisons were made between each species pair (ASCTU = *A. tuberosa*, LESCA = *L. capitata*, LIAAS = *L. aspera*, SCHSC = *S. scoparium*, and SORNU = *S. nutans*) growing within 1, 2, 4 and 16-species plots. Shown are the median differences between each pairwise comparison, the proportion of the compared distributions that were different¹, and the 90% credible interval (CI) of the difference between the pairwise comparisons².

| Species comparison | Species no. comparison | Median | Proportion different | 90% CI |
|--------------------|------------------------|--------|----------------------|---------------|
| ASCTU - LESCA | 1 - 2 | -0.27 | 0.23 | (-0.60, 0.52) |
| | 1 - 4 | 0.37 | 0.79 | (-0.30, 1.74) |
| | 1 - 16 | 0.24 | 0.70 | (-0.37, 1.49) |
| | 2 - 4 | 0.82 | 0.95 | (0.00, 2.59)* |
| | 2 - 16 | 0.65 | 0.91 | (-0.11, 2.02) |
| | 4 - 16 | -0.09 | 0.39 | (-0.51, 0.80) |
| ASCTU - LIAAS | 1 - 2 | -0.45 | 0.15 | (-0.80, 0.50) |
| | 1 - 4 | -0.07 | 0.45 | (-0.63, 1.54) |
| | 1 - 16 | 0.06 | 0.55 | (-0.56, 1.81) |
| | 2 - 4 | 0.72 | 0.84 | (-0.36, 3.63) |
| | 2 - 16 | 0.99 | 0.88 | (-0.21, 4.39) |
| | 4 - 16 | 0.15 | 0.61 | (-0.53, 1.61) |
| ASCTU - SCHSC | 1 - 2 | -0.11 | 0.44 | (-0.74, 1.93) |
| | 1 - 4 | 0.49 | 0.75 | (-0.43, 4.27) |
| | 1 - 16 | 0.91 | 0.90 | (-0.19, 5.68) |
| | 2 - 4 | 0.64 | 0.84 | (-0.30, 3.67) |
| | 2 - 16 | 1.14 | 0.94 | (-0.08, 5.13) |
| | 4 - 16 | 0.30 | 0.71 | (-0.37, 1.84) |
| ASCTU - SORNU | 1 - 2 | -0.34 | 0.24 | (-0.82, 0.84) |
| | 1 - 4 | 0.44 | 0.77 | (-0.35, 2.77) |
| | 1 - 16 | 0.62 | 0.85 | (-0.21, 3.64) |
| | 2 - 4 | 1.26 | 0.94 | (-0.05, 6.76) |
| | 2 - 16 | 1.56 | 0.97 | (0.12, 7.74)* |
| | 4 - 16 | 0.16 | 0.63 | (-0.41, 1.41) |
| LESCA - LIAAS | 1 - 2 | 0.00 | 0.50 | (-0.65, 1.64) |
| | 1 - 4 | 0.15 | 0.58 | (-0.62, 2.10) |
| | 1 - 16 | 0.43 | 0.76 | (-0.38, 2.70) |
| | 2 - 4 | 0.18 | 0.61 | (-0.54, 2.03) |
| | 2 - 16 | 0.45 | 0.80 | (-0.30, 2.53) |
| | 4 - 16 | 0.27 | 0.68 | (-0.42, 2.01) |
| LESCA - SCHSC | 1 - 2 | 0.74 | 0.89 | (-0.19, 2.62) |
| | 1 - 4 | 0.35 | 0.75 | (-0.37, 1.91) |
| | 1 - 16 | 1.08 | 0.97 | (0.07, 3.22)* |
| | 2 - 4 | -0.21 | 0.27 | (-0.62, 0.49) |
| | 2 - 16 | 0.22 | 0.71 | (-0.32, 1.20) |
| | 4 - 16 | 0.57 | 0.88 | (-0.14, 1.92) |
| LESCA - SORNU | 1 - 2 | -0.03 | 0.47 | (-0.46, 0.80) |
| | 1 - 4 | 0.15 | 0.64 | (-0.39, 1.16) |
| | 1 - 16 | 0.22 | 0.70 | (-0.31, 1.14) |

| | | | | |
|---------------|--------|-------|------|---------------|
| | 2 - 4 | 0.21 | 0.69 | (-0.38, 1.10) |
| | 2 - 16 | 0.23 | 0.73 | (-0.29, 1.17) |
| | 4 - 16 | 0.05 | 0.56 | (-0.40, 0.96) |
| LIAAS - SCHSC | 1 - 2 | 0.16 | 0.63 | (-0.45, 1.33) |
| | 1 - 4 | 0.36 | 0.80 | (-0.27, 1.74) |
| | 1 - 16 | 0.43 | 0.81 | (-0.26, 1.81) |
| | 2 - 4 | 0.19 | 0.66 | (-0.38, 1.66) |
| | 2 - 16 | 0.20 | 0.69 | (-0.38, 1.68) |
| | 4 - 16 | 0.03 | 0.54 | (-0.46, 0.88) |
| LIAAS - SORNU | 1 - 2 | 0.09 | 0.58 | (-0.56, 1.49) |
| | 1 - 4 | 0.36 | 0.74 | (-0.41, 2.29) |
| | 1 - 16 | 0.49 | 0.83 | (-0.26, 2.30) |
| | 2 - 4 | 0.29 | 0.69 | (-0.44, 1.85) |
| | 2 - 16 | 0.38 | 0.78 | (-0.33, 2.11) |
| | 4 - 16 | 0.11 | 0.60 | (-0.46, 1.24) |
| SCHSC - SORNU | 1 - 2 | 0.38 | 0.83 | (-0.21, 1.73) |
| | 1 - 4 | 0.15 | 0.65 | (-0.39, 1.21) |
| | 1 - 16 | 0.34 | 0.81 | (-0.25, 1.61) |
| | 2 - 4 | -0.18 | 0.27 | (-0.54, 0.48) |
| | 2 - 16 | -0.03 | 0.46 | (-0.44, 0.67) |
| | 4 - 16 | 0.17 | 0.67 | (-0.31, 1.08) |

¹ Where 0 = no difference between species comparisons and 1 = the species comparison was completely different.

² 90% credible intervals that did not overlap zero are indicated with an asterisk (*).

Table A11. Pairwise comparisons of Bayesian convex hull area posterior distributions. Comparisons were made between each diversity treatment (1, 2, 4 and 16-species plots). Shown are the median differences between each pairwise comparison, the proportion of the compared distributions that were different¹ (where 0 = no difference between diversity comparisons and 1 = the diversity comparison was completely different), and the 90% credible interval (CI) of the difference between the pairwise comparisons.

| Species no. comparison | Median | Proportion different | 90% CI |
|-------------------------------|---------------|-----------------------------|----------------|
| 1 - 2 | 0.83 | 0.89 | (-0.19, 3.82) |
| 1 - 4 | -0.20 | 0.33 | (-0.60, 1.08) |
| 1 - 16 | 0.09 | 0.56 | (-0.53, 1.95) |
| 2 - 4 | -0.56 | 0.03 | (-0.75, -0.15) |
| 2 - 16 | -0.41 | 0.10 | (-0.71, 0.19) |
| 4 - 16 | 0.34 | 0.79 | (-0.31, 1.35) |

¹ Where 0 = no difference between species comparisons and 1 = the species comparison was completely different.

Table A12. Linear regression results comparing leaf physiology and plant growth to each water source exhibited by plants growing in diverse communities relative to monocultures. Separate models were analyzed for photosynthesis, A_{net} , transpiration, E , stomatal conductance, g_s , instantaneous water use efficiency, WUE_i , predawn leaf water potential, Ψ_{pd} , midday leaf water potential, Ψ_{md} , and aboveground biomass. Shown are the model estimates, standard error (SE), 90% confidence intervals, and regression coefficients (R^2).

| Source | Variable | Coefficient | Estimate | SE | 90% CI | R^2 |
|--------|--------------------|----------------|----------|--------|-------------------|-------|
| 5-cm | A_{net} | Intercept | 20.28 | 4.74 | (11.47, 29.09) | 0.07 |
| | | Shift in 5-cm | -39.02 | 48.53 | (-129.27, 51.23) | |
| | E | Intercept | 4.60 | 0.59 | (3.50, 5.69) | 0.54 |
| | | Shift in 5-cm | -18.63 | 6.03 | (-29.85, -7.42) | |
| | g_s | Intercept | 0.36 | 0.04 | (0.30, 0.42) | 0.78 |
| | | Shift in 5-cm | -1.90 | 0.36 | (-2.56, -1.23) | |
| | WUE_i | Intercept | 3.81 | 1.51 | (1.01, 6.61) | 0.25 |
| | | Shift in 5-cm | 24.83 | 15.43 | (-3.86, 53.51) | |
| | Ψ_{pd} | Intercept | -0.35 | 0.11 | (-0.55, -0.15) | 0.06 |
| | | Shift in 5-cm | 0.81 | 1.12 | (-1.27, 2.89) | |
| | Ψ_{Md} | Intercept | -0.56 | 0.28 | (-1.08, -0.05) | 0.38 |
| | | Shift in 5-cm | -6.30 | 2.82 | (-11.55, -1.06) | |
| | Biomass | Intercept | 7.9 | 10.11 | (-9.63, 25.43) | 0.32 |
| | | Shift in 5-cm | 358.27 | 124.39 | (142.57, 573.96) | |
| 35-cm | A_{net} | Intercept | 18.68 | 4.97 | (9.43, 27.92) | 0.02 |
| | | Shift in 35-cm | -17.01 | 40.86 | (-93.00, 58.98) | |
| | E | Intercept | 3.38 | 0.87 | (1.75, 5.00) | 0.04 |
| | | Shift in 35-cm | -4.08 | 7.17 | (-17.41, 9.25) | |
| | g_s | Intercept | 0.23 | 0.07 | (0.10, 0.37) | 0.05 |
| | | Shift in 35-cm | -0.39 | 0.61 | (-1.51, 0.74) | |
| | WUE_i | Intercept | 5.92 | 1.77 | (2.63, 9.21) | <0.01 |
| | | Shift in 35-cm | 1.19 | 14.52 | (-25.82, 28.20) | |
| | Ψ_{pd} | Intercept | -0.34 | 0.11 | (-0.55, -0.13) | 0.04 |
| | | Shift in 35-cm | 0.56 | 0.92 | (-1.15, 2.28) | |
| | Ψ_{Md} | Intercept | -1.32 | 0.35 | (-1.98, -0.67) | 0.04 |
| | | Shift in 35-cm | 1.68 | 2.88 | (-3.68, 7.05) | |
| | Biomass | Intercept | 17.13 | 11.94 | (-3.58, 37.84) | 0.10 |
| | | Shift in 35-cm | 167.11 | 118.49 | (-38.36, 372.58) | |
| Deep | A_{net} | Intercept | 16.47 | 2.28 | (12.22, 20.70) | 0.01 |
| | | Shift in Deep | 9.13 | 41.60 | (-68.22, 86.48) | |
| | E | Intercept | 2.74 | 0.39 | (2.02, 3.46) | 0.07 |
| | | Shift in Deep | 5.61 | 7.11 | (-7.62, 18.84) | |
| | g_s | Intercept | 0.17 | 0.03 | (0.11, 0.23) | 0.13 |
| | | Shift in Deep | 0.65 | 0.58 | (-0.44, 1.73) | |
| | WUE_i | Intercept | 6.28 | 0.79 | (4.81, 7.75) | 0.03 |
| | | Shift in Deep | -7.22 | 14.45 | (-34.09, 19.66) | |
| | Ψ_{pd} | Intercept | -0.29 | 0.05 | (-0.38, -0.19) | 0.02 |
| | | Shift in Deep | 0.41 | 0.91 | (-1.34, 2.16) | |
| | Ψ_{Md} | Intercept | -1.26 | 0.14 | (-1.53, -0.99) | 0.23 |
| | | Shift in Deep | 4.06 | 2.60 | (-0.78, 8.90) | |
| | Biomass | Intercept | 33.98 | 8.90 | (18.54, 49.41) | 0.03 |
| | | Shift in Deep | -153.88 | 197.47 | (-496.31, 188.55) | |

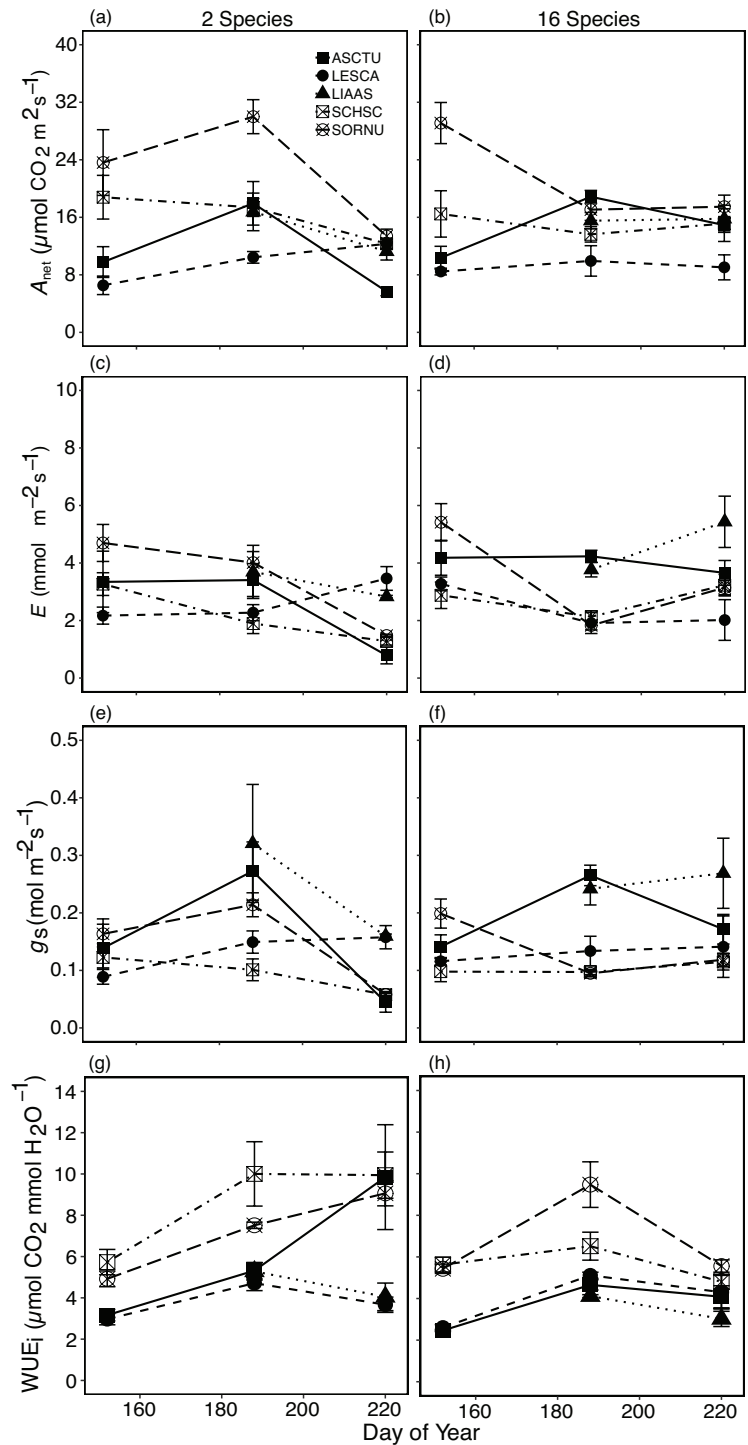


Figure A1. Leaf photosynthesis, A_{net} (a–b), transpiration, E (c–d), stomatal conductance, g_s (e–f), and instantaneous water-use efficiency, WUE_i (g–h) measured in *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU), growing in 2 (a, c, e) and 16-species plots (b, d, f). Shown are the mean \pm 1SEM for each species measured across the 2017 growing season.

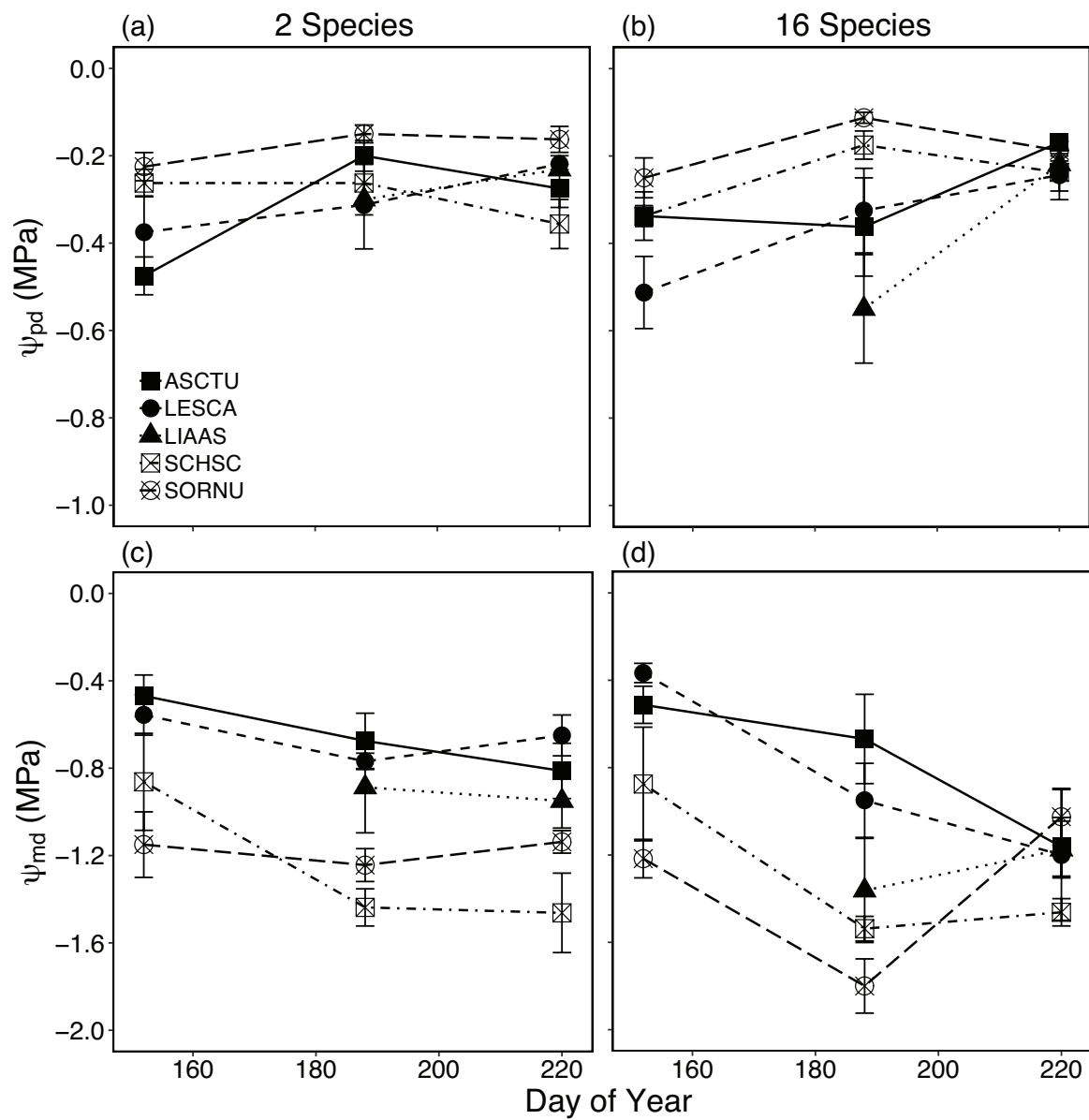


Figure A2. Predawn leaf water potential, Ψ_{pd} (a–b) and midday leaf water potential, Ψ_{md} (c–d) measured in *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU), growing in 2 (a, d) and 16-species plots (b, d). Shown are the mean \pm 1 SEM for each species measured across the 2017 growing season.

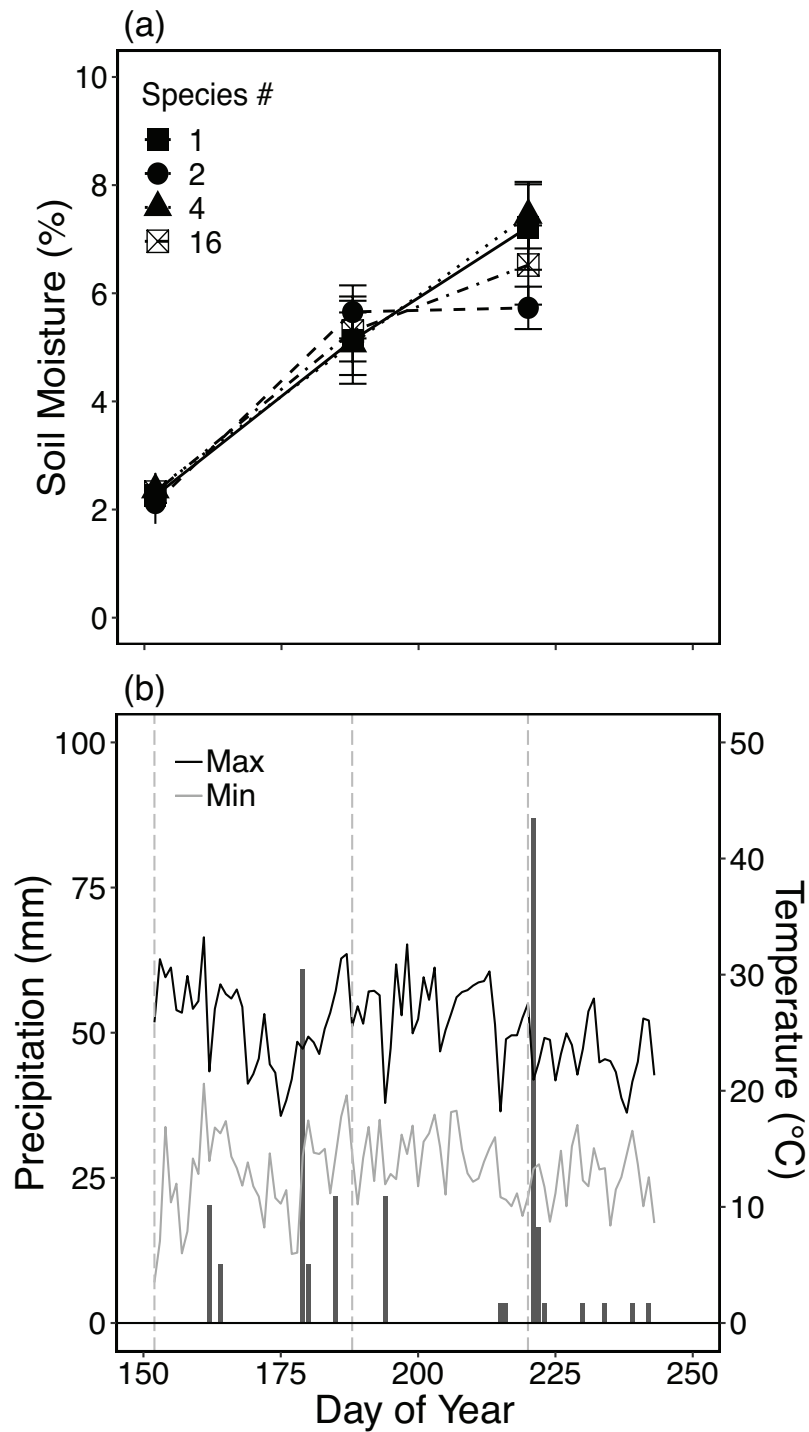


Figure A3. Volumetric soil moisture (a) and daily air temperature and precipitation (b) measured between June – August 2017. Top: shown are mean ± 1 SEM volumetric soil moisture (%) measured at 10 cm depth in 1, 2, 4 and 16-species plots across the 2017 growing season. Bottom: shown are daily precipitation (dark gray bars), as well as daily maximum (“Max”, black line) and minimum (“Min”, gray line) air temperature measured throughout the study period. Dotted lines in (b) indicate days that plant and soil samples were collected for isotope analyses.

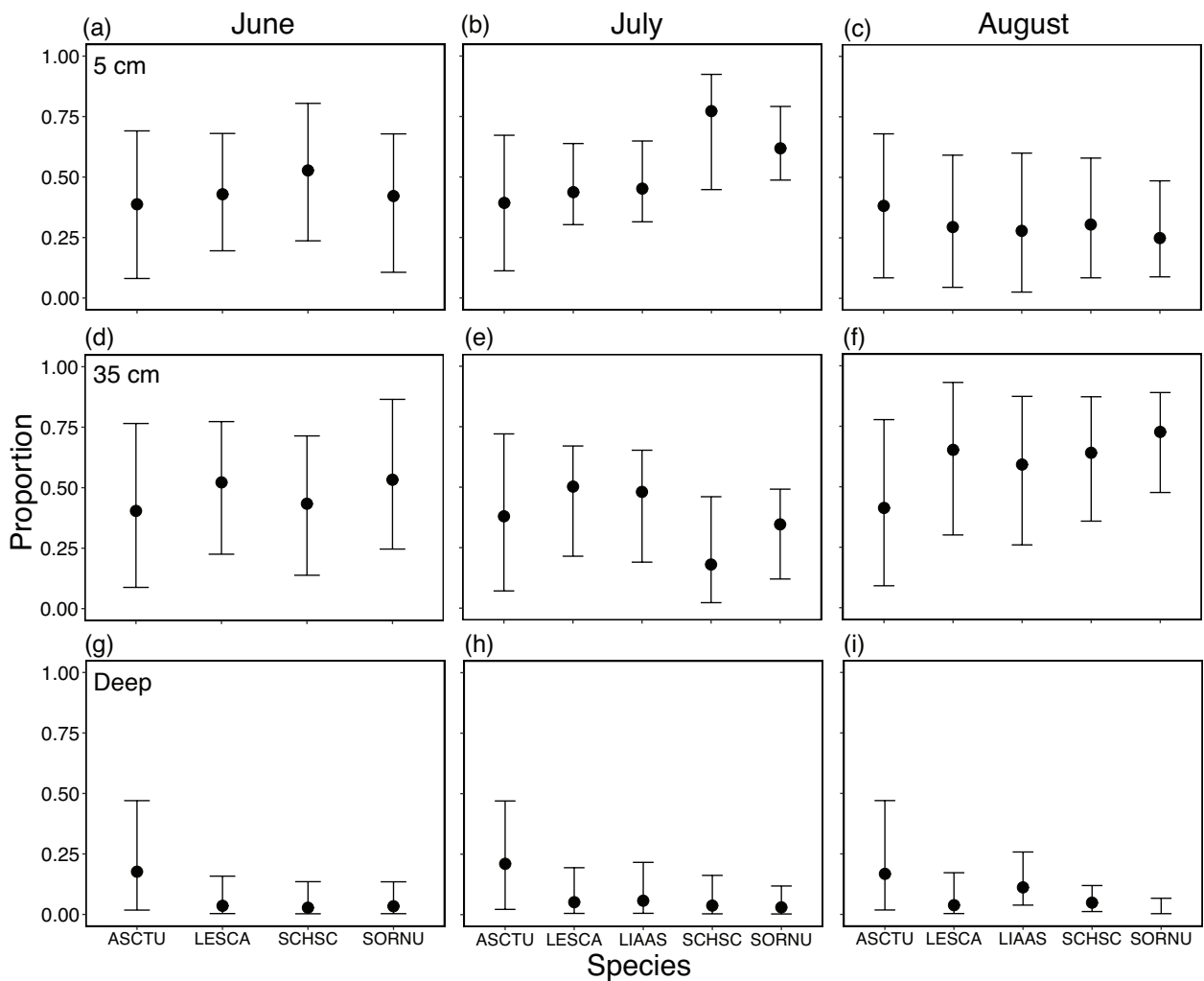


Figure A4. Median (\pm 90% credible interval) posterior density estimates for proportional contribution of 5 cm (a–c), 35 cm (d–f), and deep (g–i) source water to plant xylem water. Shown are estimates for *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU), growing in monoculture plots during June (a, d, g), July (b, e, h), and August (c, f, i) 2017. See Supplementary material Appendix 1 Table A5 for pairwise comparison statistics.

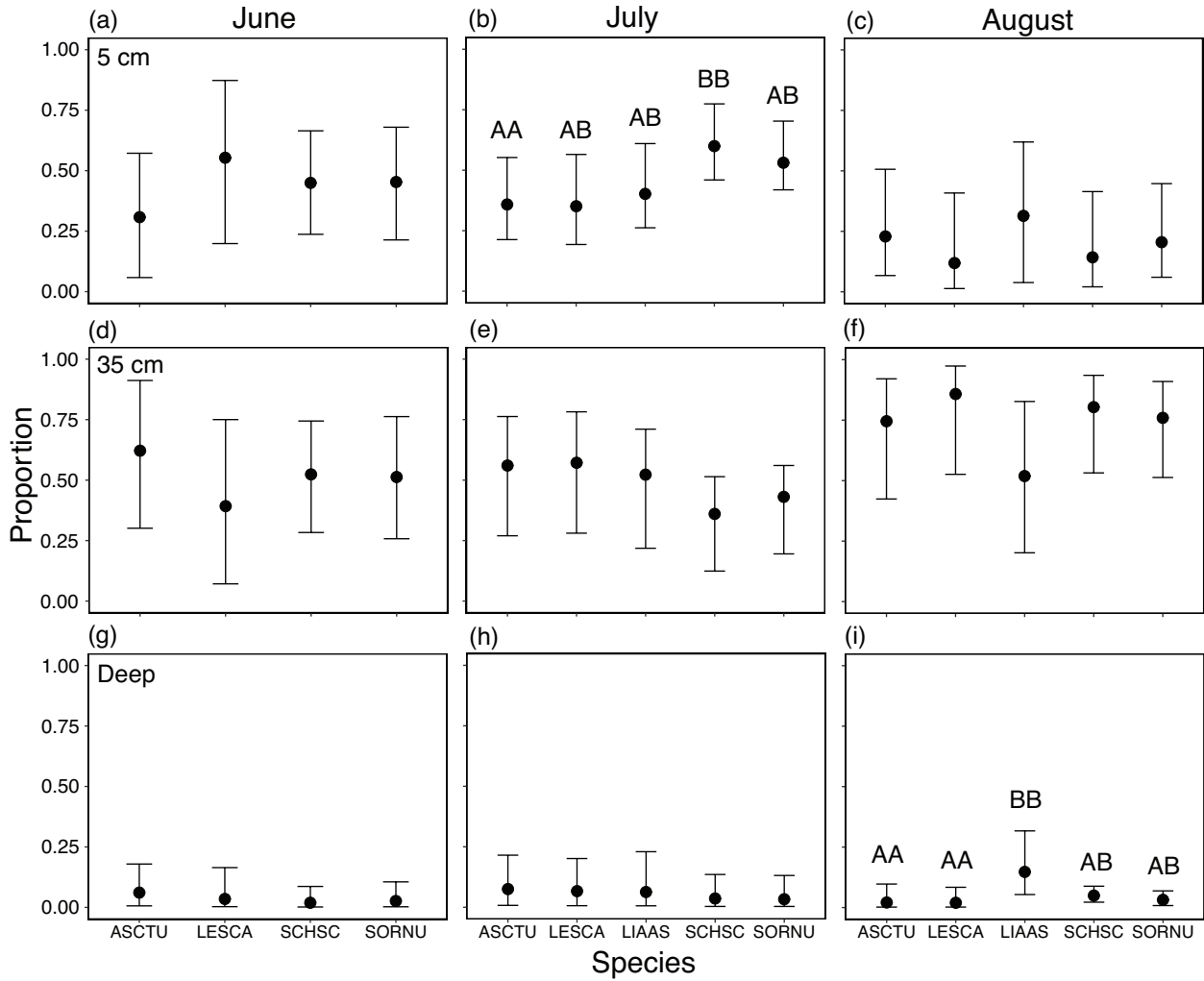


Figure A5. Median (\pm 90% credible interval) posterior density estimates for proportional contribution of 5 cm (a–c), 35 cm (d–f), and deep (g–i) source water to plant xylem water. Shown are estimates for *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU), growing in 2-species plots during June (a, d, g), July (b, e, h), and August (c, f, i) 2017. Letters indicate that the 90% credible intervals of the difference between pairwise comparisons did not overlap zero, which suggests substantial differences exist among those species. See Supplementary material Appendix 1 Table A5 for all pairwise comparison statistics.

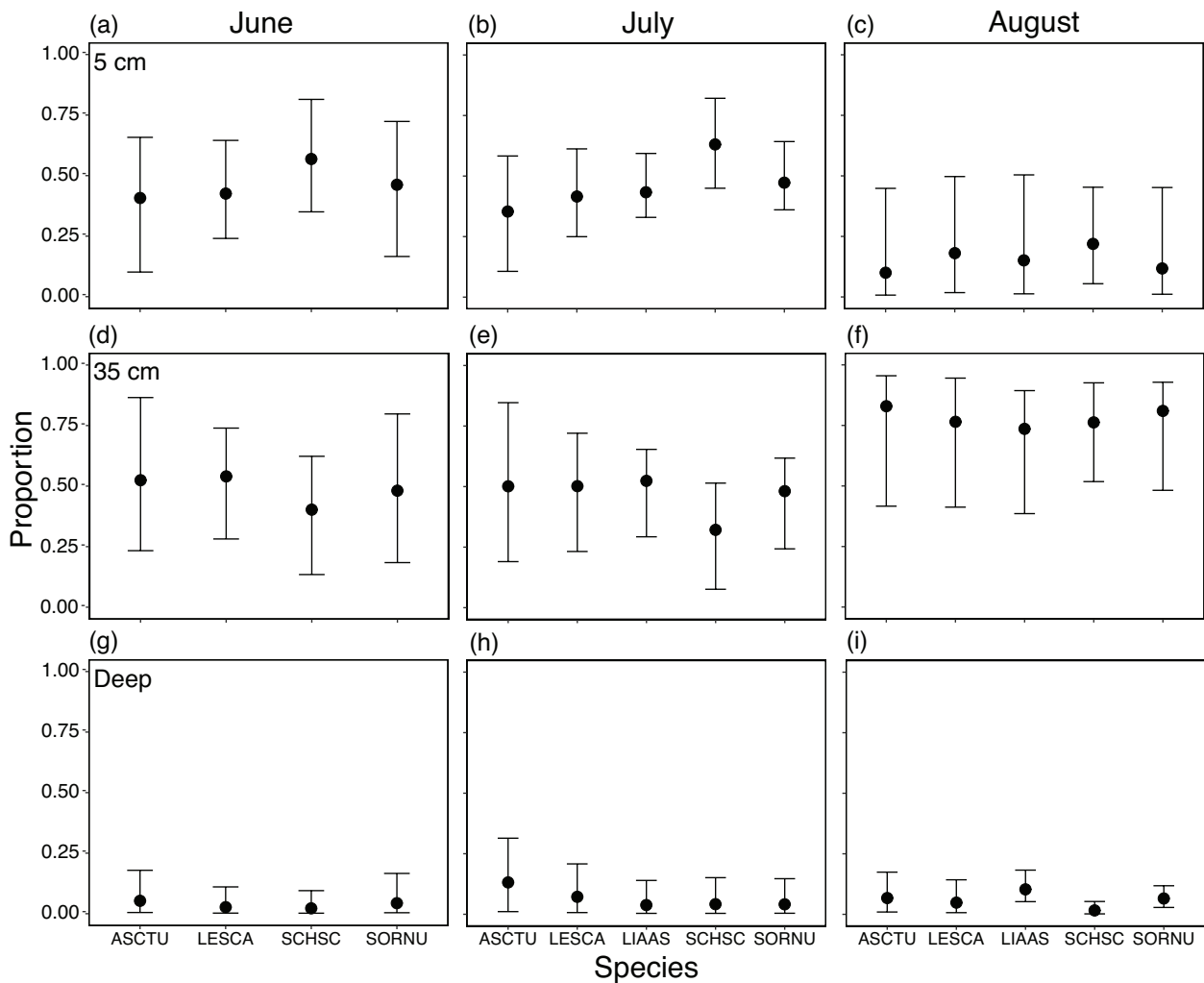


Figure A6. Median (\pm 90% credible interval) posterior density estimates for proportional contribution of 5 cm (a–c), 35 cm (d–f), and deep (g–i) source water to plant xylem water. Shown are estimates for *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU), growing in 4-species plots during June (a, d, g), July (b, e, h), and August (c, f, i) 2017. See Supplementary material Appendix 1: Table A5 for pairwise comparison statistics.

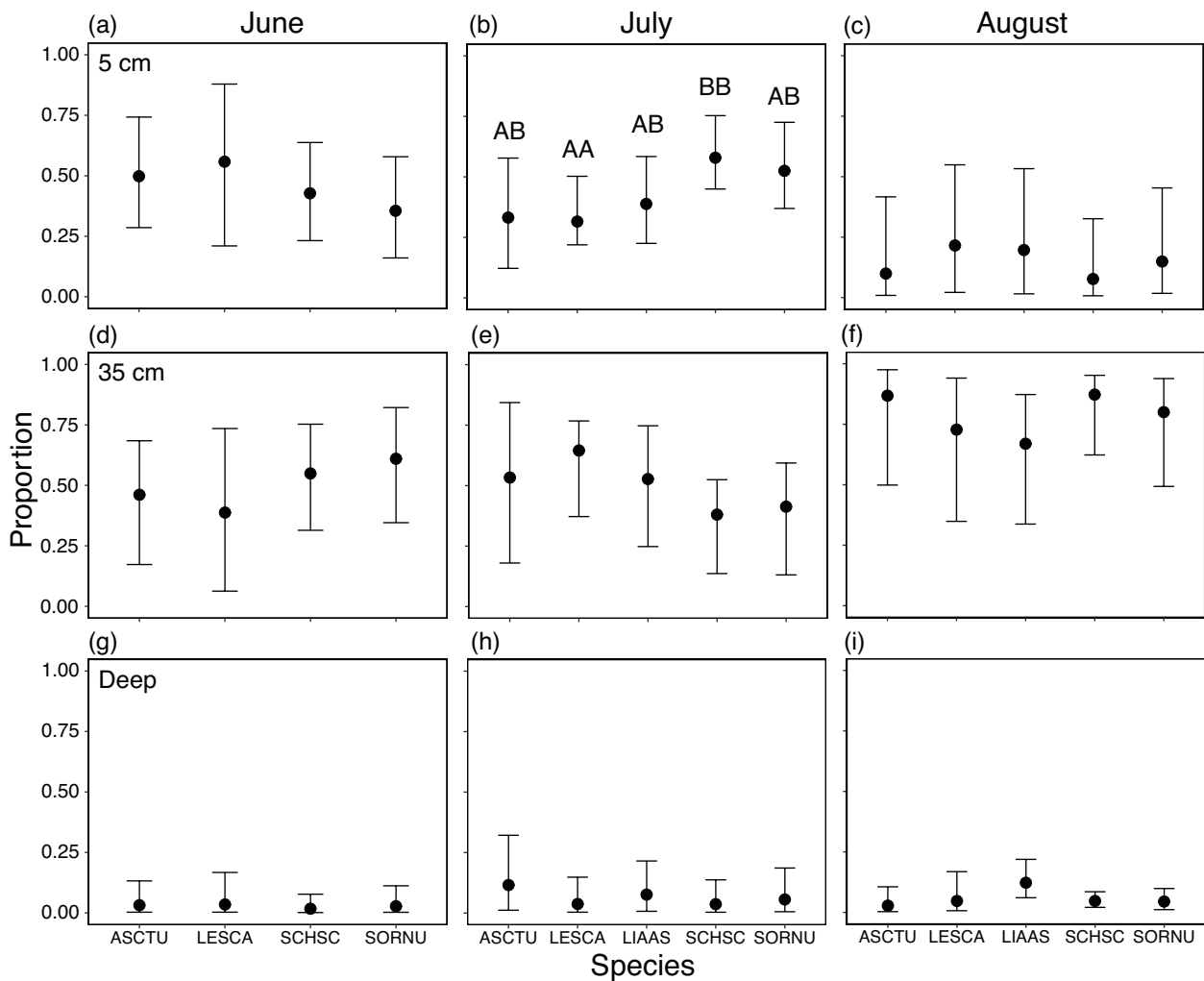


Figure A7. Median (\pm 90% credible interval) posterior density estimates for proportional contribution of 5 cm (a–c), 35 cm (d–f), and deep (g–i) source water to plant xylem water. Shown are estimates for *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU), growing in 16-species plots during June (a, d, g), July (b, e, h), and August (c, f, i) 2017. Letters indicate that the 90% credible intervals of the difference between pairwise comparisons did not overlap zero, which suggests substantial differences exist among those species. See Supplementary material Appendix 1 Table A5 for all pairwise comparison statistics.

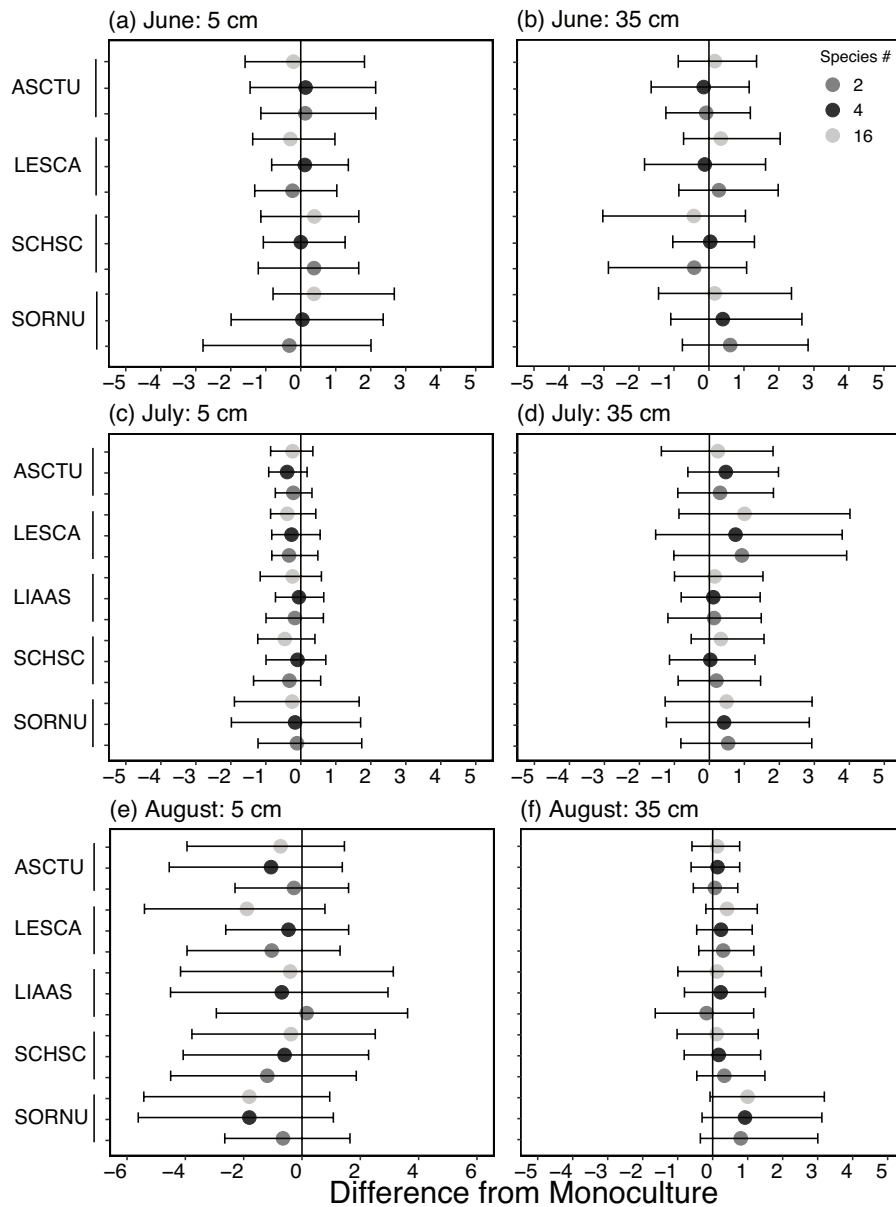


Figure A8. Difference in 5 cm (a, c, e) and 35 cm (b, d, f) water sources used by *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU) growing in diverse plots (2, 4 and 16-species) relative to monocultures, during June (a–b), July (c–d), and August (e–f) 2017. Shown is the median binary logarithm of the relative difference (\pm 90% credible interval) between a particular water source used in a diverse plot compared to a monoculture plot, where -1 = a two-fold decrease and +1 = a two-fold increase in a water source used relative to a monoculture. See Supplementary material Appendix 1 Table A8 for pairwise comparison statistics.

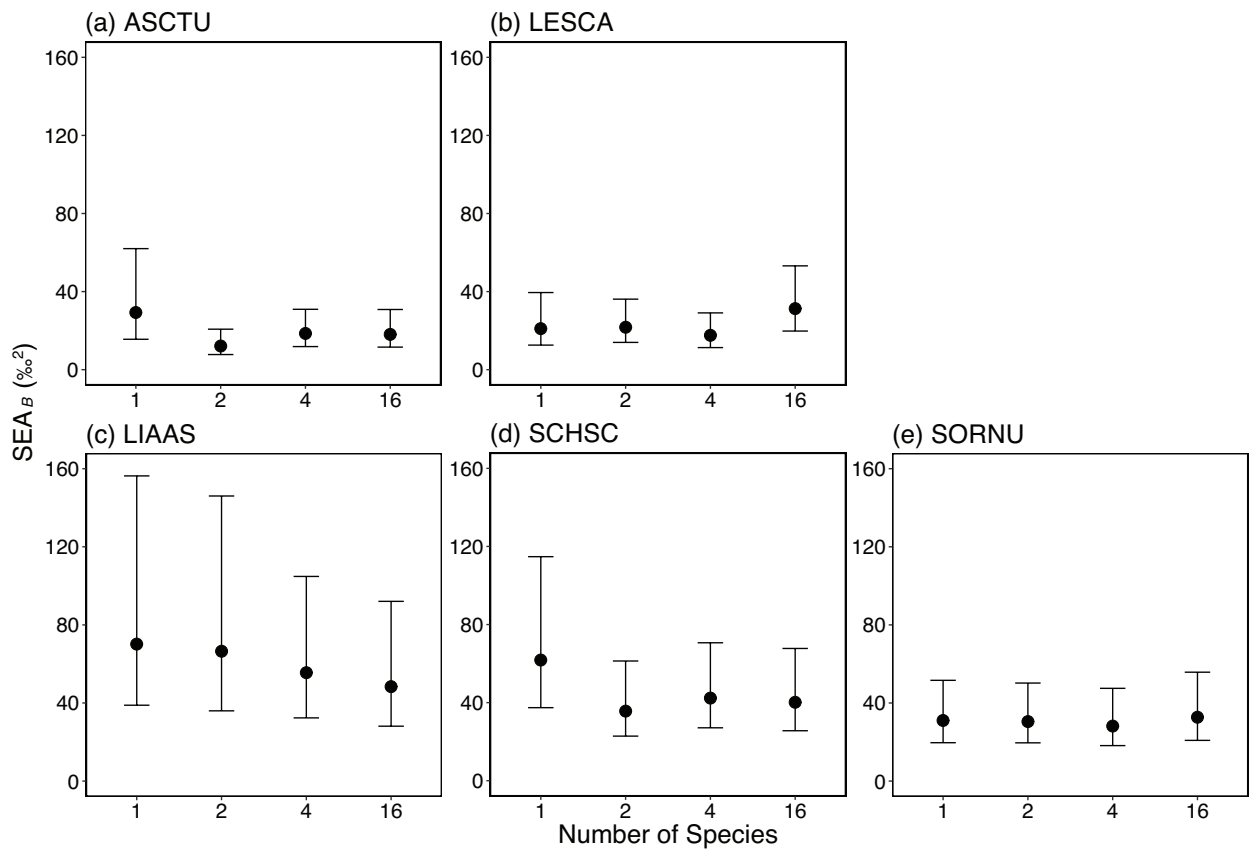


Figure A9. Median Bayesian standard ellipse area (\pm 90% credible interval) for *A. tuberosa* (ASCTU), *L. capitata* (LESCA), *L. aspera* (LIAAS), *S. scoparium* (SCHSC), and *S. nutans* (SORNU), growing in 1, 2, 4 and 16-species plots. See Supplementary material Appendix 1 Table A9 for pairwise comparison statistics.

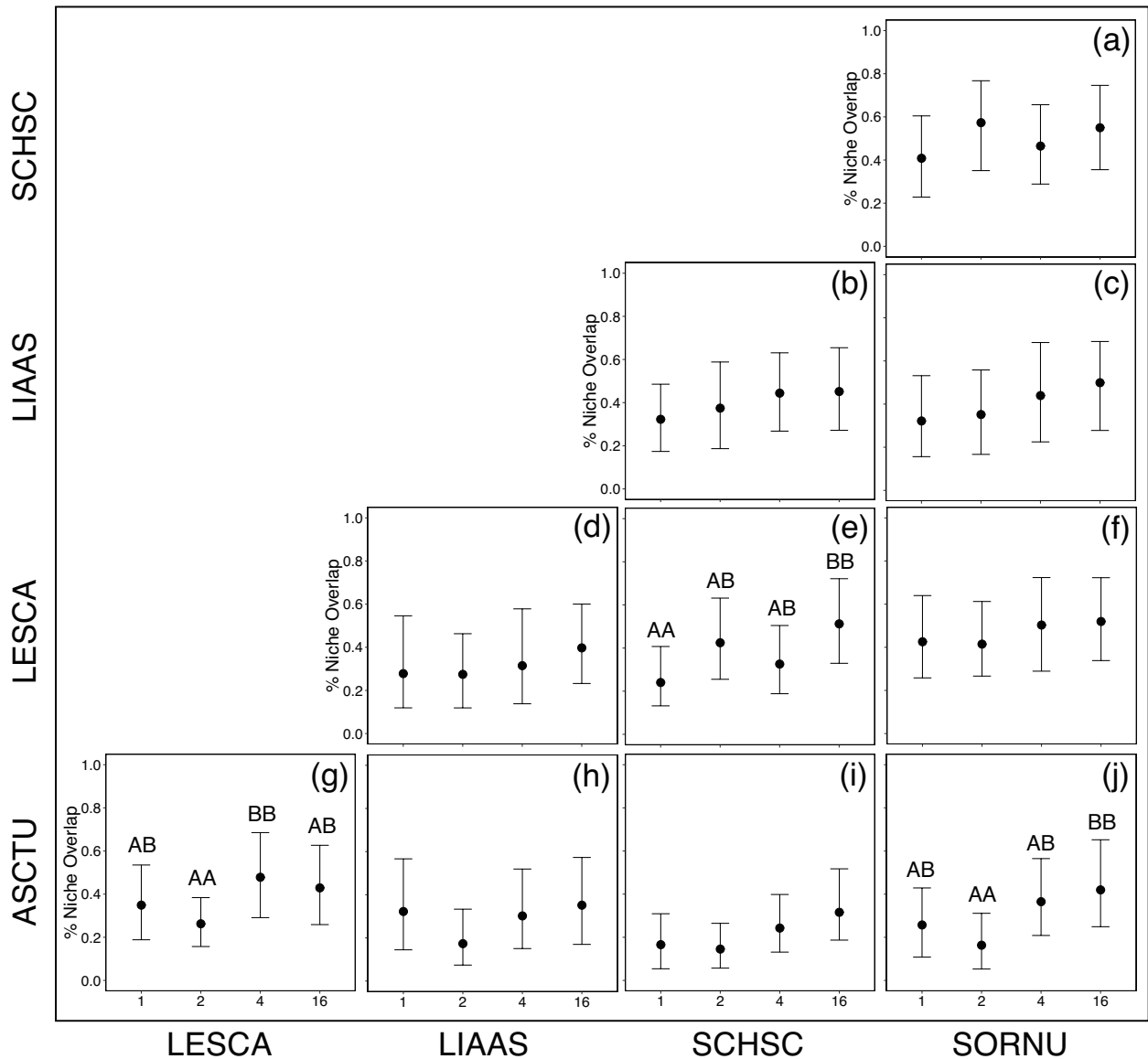


Figure A10. Median Bayesian isotopic niche space overlap (\pm 90% credible interval) for all combinations of species pairwise comparisons growing across the diversity gradient. Individual species pairs are shown in each figure panel, and the shaded bars indicate overlap calculated for that species pair in each diversity treatment. Shown are percent niche overlap values calculated for SCHSC-SORNU (a), LIAAS-SCHSC (b), LIAAS-SORNU (c), LESCA-LIAAS (d), LESCA-SCHSC (e), LESCA-SORNU (f), ASCTU-LESCA (g), ASCTU-LIAAS (h), ASCTU-SCHSC (i), and ASCTU-SORNU (j) species pairs. Letters indicate that the 90% credible intervals of the difference between pairwise comparisons did not overlap zero, which suggests substantial differences exist among those species. See Supplementary material Appendix 1 Table A10 for all pairwise comparison statistics.

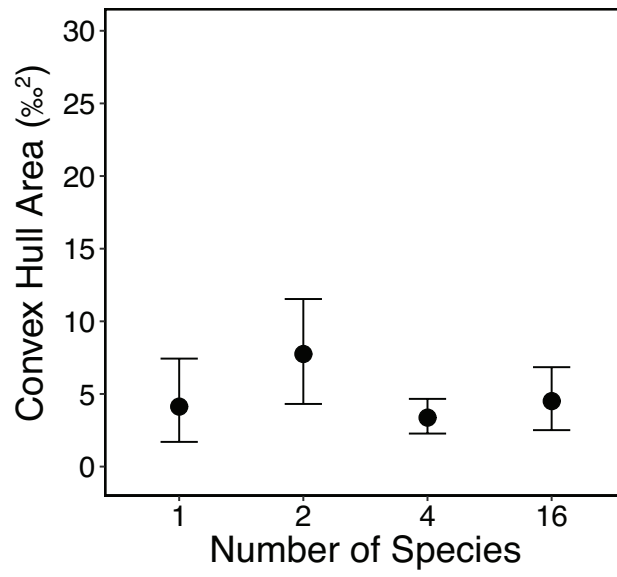


Figure A11. Median Bayesian convex hull area (\pm 90% credible interval) for 1, 2, 4 and 16-species plots. See Supplementary material Appendix 1 Table A11 for pairwise comparison statistics.