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| **Species Differences – post-hoc Tukey HSD test** | | | | | | | | | |
| Ambient | | | | | Heatwave | | | | |
| **Species Comparisons** | **Difference (Weeks)** | **Lower CI (Weeks)** | **Upper CI (Weeks)** | ***p*-value** | **Species Comparisons** | **Difference (Weeks)** | **Lower CI (Weeks)** | **Upper CI (Weeks)** | ***p*-value** |
| PIEN-PIED | 4.6 | 2.8 | 6.4 | 4.71 × 10-9 | PIEN-PIED | 4.9 | 2.4 | 7.4 | 5.78 × 10-6 |
| PIFL-PIED | 15.7 | 13.9 | 17.5 | 4.84 × 10-10 | PIFL-PIED | 13.6 | 11.0 | 16.1 | 4.63 × 10-10 |
| PIPO-PIED | -3.9 | -5.7 | -2.1 | 4.27 × 10-7 | PIPO-PIED | -4.4 | -6.9 | -1.8 | 6.80 × 10-5 |
| PSME-PIED | 4.8 | 3.0 | 6.6 | 1.18 × 10-9 | PSME-PIED | 3.4 | 0.9 | 6.0 | 2.80 × 10-3 |
| PIFL-PIEN | 11.1 | 9.3 | 12.9 | 4.84 × 10-10 | PIFL-PIEN | 8.7 | 6.1 | 11.2 | 4.64 × 10-10 |
| PIPO-PIEN | -8.5 | -10.3 | -6.7 | 4.84 × 10-10 | PIPO-PIEN | -9.3 | -11.8 | -6.7 | 4.64 × 10-10 |
| PSME-PIEN | 0.3 | -1.6 | 2.1 | 0.9950 | PSME-PIEN | -1.5 | -4.0 | 1.1 | 0.4931 |
| PIPO-PIFL | -19.6 | -21.4 | -17.8 | 4.84 × 10-10 | PIPO-PIFL | -17.9 | -20.5 | -15.4 | 4.63 × 10-10 |
| PSME-PIFL | -10.9 | -12.7 | -9.1 | 4.84 × 10-10 | PSME-PIFL | -10.2 | -12.7 | -7.6 | 4.63 × 10-10 |
| PSME-PIPO | 8.7 | 6.9 | 10.5 | 4.84 × 10-10 | PSME-PIPO | 7.8 | 5.2 | 10.3 | 4.63 × 10-10 |
| Species (all) |  |  |  | < 2 × 10-16 | Species (all) |  |  |  | < 2 × 10-16 |

TABLE S4 | Results from post-hoc Tukey HSD test, with separate analyses for ambient and heatwave treatments. Tests are performed on original data, which are not stress normalized. Highlighted cells indicate species which are significantly different (*p* < 0.05). Species comparison codes are defined as: PIPO = *Pinus ponderosa*; PIED = *Pinus edulis*; PIFL = *Pinus flexilis*; PIEN = *Picea engelmanni*; PSME = *Pseudostuga menziesii*

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| **Species Differences, Normalized for Water Stress – post-hoc Tukey HSD test** | | | | | | | | | |
| Ambient | | | | | Heatwave | | | | |
| **Species Comparisons** | **Difference (Weeks)** | **Lower CI (Weeks)** | **Upper CI (Weeks)** | ***p*-value** | **Species Comparisons** | **Difference (Weeks)** | **Lower CI (Weeks)** | **Upper CI (Weeks)** | ***p*-value** |
| PIEN-PIED | 1.3 | -0.5 | 3.0 | 0.2923 | PIEN-PIED | 1.2 | -1.6 | 3.9 | 0.7638 |
| PIFL-PIED | 8.6 | 6.8 | 10.3 | 4.84 × 10-10 | PIFL-PIED | 7.9 | 5.2 | 10.7 | 4.97 × 10-10 |
| PIPO-PIED | -4.0 | -5.8 | -2.2 | 1.17 × 10-7 | PIPO-PIED | -4.9 | -7.7 | -2.2 | 3.01 × 10-5 |
| PSME-PIED | 1.5 | -0.3 | 3.2 | 0.1596 | PSME-PIED | 0.2 | -2.5 | 3.0 | 0.9993 |
| PIFL-PIEN | 7.3 | 5.5 | 9.1 | 4.84 × 10-10 | PIFL-PIEN | 6.8 | 4.0 | 9.5 | 9.78 × 10-9 |
| PIPO-PIEN | -5.3 | -7.0 | -3.5 | 4.90 × 10-10 | PIPO-PIEN | -6.1 | -8.9 | -3.3 | 1.92 × 10-7 |
| PSME-PIEN | 0.2 | -1.6 | 2.0 | 0.9976 | PSME-PIEN | -0.9 | -3.7 | 1.8 | 0.8799 |
| PIPO-PIFL | -12.6 | -14.3 | -10.8 | 4.84 × 10-10 | PIPO-PIFL | -12.8 | -15.6 | -10.1 | 4.63 × 10-10 |
| PSME-PIFL | -7.1 | -8.9 | -5.3 | 4.84 × 10-10 | PSME-PIFL | -7.7 | -10.4 | -4.9 | 5.70 × 10-10 |
| PSME-PIPO | 5.5 | 3.7 | 7.2 | 4.85 × 10-10 | PSME-PIPO | 5.1 | 2.4 | 7.9 | 1.14 × 10-5 |
| Species (all) |  |  |  | < 2 × 10-16 | Species (all) |  |  |  | < 2 × 10-16 |

TABLE S5 | Results from post-hoc Tukey HSD test, with separate analyses for ambient and heatwave treatments. Tests are performed on data which were normalized for water stress. Highlighted cells indicate species which are significantly different (*p* < 0.05). Species comparison codes are defined as: PIPO = *Pinus ponderosa*; PIED = *Pinus edulis*; PIFL = *Pinus flexilis*; PIEN = *Picea engelmanni*; PSME = *Pseudostuga menziesii*

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| **Species Differences, Normalized for Permanent Stomatal Closure Stress – post-hoc Tukey HSD test** | | | | | | | | | |
| Ambient | | | | | Heatwave | | | | |
| **Species Comparisons** | **Difference (Weeks)** | **Lower CI (Weeks)** | **Upper CI (Weeks)** | ***p*-value** | **Species Comparisons** | **Difference (Weeks)** | **Lower CI (Weeks)** | **Upper CI (Weeks)** | ***p*-value** |
| PIEN-PIED | 0.2 | -2.5 | 2.9 | 0.9996 | PIEN-PIED | -0.8 | -3.2 | 1.6 | 0.8761 |
| PIFL-PIED | 7.4 | 4.7 | 10.1 | 8.38 × 10-9 | PIFL-PIED | 5.4 | 3.0 | 7.8 | 7.66 × 10-7 |
| PIPO-PIED | -1.8 | -4.5 | 0.9 | 0.3423 | PIPO-PIED | -2.8 | -5.2 | -0.4 | 0.014658 |
| PSME-PIED | 1.3 | -1.4 | 4.0 | 0.6568 | PSME-PIED | 0.5 | -1.9 | 2.9 | 0.9755 |
| PIFL-PIEN | 7.2 | 4.5 | 9.9 | 1.70 × 10-8 | PIFL-PIEN | 6.2 | 3.8 | 8.6 | 3.02 × 10-8 |
| PIPO-PIEN | -2.0 | -4.7 | 0.7 | 0.2423 | PIPO-PIEN | -2.0 | -4.4 | 0.4 | 0.1420 |
| PSME-PIEN | 1.1 | -1.6 | 3.8 | 0.7795 | PSME-PIEN | 1.3 | -1.1 | 3.7 | 0.5416 |
| PIPO-PIFL | -9.2 | -11.9 | -6.5 | 1.78 × 10-11 | PIPO-PIFL | -8.2 | -10.6 | -5.8 | 1.26 × 10-11 |
| PSME-PIFL | -6.1 | -8.8 | -3.4 | 8.49 × 10-7 | PSME-PIFL | -4.9 | -7.3 | -2.5 | 5.76 × 10-6 |
| PSME-PIPO | 3.1 | 0.4 | 5.8 | 0.018236 | PSME-PIPO | 3.3 | 0.9 | 5.7 | 2.70 × 10-3 |
| Species (all) |  |  |  | 1.8 × 10-11 | Species (all) |  |  |  | 3.5 × 10-11 |

TABLE S6 | Results from post-hoc Tukey HSD test, with separate analyses for ambient and heatwave treatments. Tests are performed on data which were normalized for permanent stomatal closure stress. Highlighted cells indicate species which are significantly different (*p* < 0.05). Species comparison codes are defined as: PIPO = *Pinus ponderosa*; PIED = *Pinus edulis*; PIFL = *Pinus flexilis*; PIEN = *Picea engelmanni*; PSME = *Pseudostuga menziesii*