Table S2: Effect of added fixed effects on LMM for sample volume (mL). For pairs that are significantly different (p < 0.05), the greater value is in **bold**; this is determined by the difference between the estimated marginal means (“estimate” column).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Fixed effect | contrast | estimate | SE | df | t.ratio | p.value |
| Vegetation type | beech - grass | -0.1209 | 0.186 | 7.89 | -0.651 | 0.9122 |
| beech - oak | 0.0742 | 0.185 | 7.73 | 0.401 | 0.9766 |
| beech - pine | 0.5617 | 0.187 | 8.13 | 3.002 | 0.0654 |
| grass - oak | 0.1951 | 0.186 | 7.89 | 1.05 | 0.7267 |
| **grass** - pine | 0.6827 | 0.188 | 8.29 | 3.63 | 0.0262 |
| oak - pine | 0.4876 | 0.187 | 8.13 | 2.605 | 0.115 |
| Depth | 5 - **10** | -0.13 | 0.0446 | 958 | -2.91 | 0.0037 |
| Period | Dry - **Moist** | -0.3055 | 0.0542 | 945 | -5.642 | <.0001 |
| Dry - **Rewetting** | -0.3188 | 0.0652 | 944 | -4.894 | <.0001 |
| Moist - Rewetting | -0.0133 | 0.0548 | 944 | -0.243 | 0.9679 |
| Year | **(2017/2018)** - (2019/2020) | 0.37 | 0.0488 | 942 | 7.578 | <.0001 |
| **(2017/2018)** - (2018/2019) | 0.501 | 0.0533 | 942 | 9.4 | <.0001 |
| (2019/2020) - (2018/2019) | 0.131 | 0.0579 | 942 | 2.265 | 0.0613 |
| Year \* period (Within years) | (2017/2018 Dry) - (2017/2018 Moist) | -0.17486 | 0.0677 | 930 | -2.581 | 0.1958 |
| (2017/2018 Dry) - (2017/2018 Rewetting) | -0.2359 | 0.0861 | 930 | -2.739 | 0.1358 |
| (2019/2020 Dry) - **(2019/2020 Moist)** | -0.99356 | 0.125 | 931 | -7.946 | <.0001 |
| (2019/2020 Dry) - **(2019/2020 Rewetting)** | -0.92849 | 0.1386 | 931 | -6.701 | <.0001 |
| (2018/2019 Dry) - **(2018/2019 Moist)** | -0.65795 | 0.1135 | 930 | -5.796 | <.0001 |
| (2018/2019 Dry) - **(2018/2019 Rewetting)** | -0.77731 | 0.1289 | 930 | -6.031 | <.0001 |
| (2017/2018 Moist) - (2017/2018 Rewetting) | -0.06104 | 0.0787 | 930 | -0.775 | 0.9975 |
| (2019/2020 Moist) - (2019/2020 Rewetting) | 0.06507 | 0.0876 | 930 | 0.743 | 0.9981 |
| (2018/2019 Moist) - (2018/2019 Rewetting) | -0.11936 | 0.1038 | 930 | -1.15 | 0.9662 |
| Year \* period (Between years) | **(2017/2018 Dry)** - (2019/2020 Dry) | 1.0224 | 0.1231 | 931 | 8.307 | <.0001 |
| **(2017/2018 Dry)** - (2018/2019 Dry) | 0.87441 | 0.106 | 930 | 8.247 | <.0001 |
| (2019/2020 Dry) - (2018/2019 Dry) | -0.14799 | 0.1429 | 930 | -1.036 | 0.9823 |
| **(2017/2018 Moist)** - (2019/2020 Moist) | 0.20369 | 0.061 | 930 | 3.338 | 0.0246 |
| **(2017/2018 Moist)** - (2018/2019 Moist) | 0.39132 | 0.0722 | 930 | 5.421 | <.0001 |
| (2019/2020 Moist) - (2018/2019 Moist) | 0.18762 | 0.0746 | 930 | 2.515 | 0.2261 |
| **(2017/2018 Rewetting)** - (2019/2020 Rewetting) | 0.3298 | 0.1009 | 930 | 3.268 | 0.0308 |
| (2017/2018 Rewetting) - (2018/2019 Rewetting) | 0.33299 | 0.1077 | 930 | 3.092 | 0.0526 |
| (2019/2020 Rewetting) - (2018/2019 Rewetting) | 0.00319 | 0.1137 | 931 | 0.028 | 1 |
| Year \* vegetation type  (within vegetation types) | **(beech 2017/2018)** - (beech 2019/2020) | 0.31315 | 0.0925 | 922.35 | 3.385 | 0.0356 |
| **(beech 2017/2018)** - (beech 2018/2019) | 0.47186 | 0.1003 | 922.14 | 4.703 | 0.0002 |
| **(grass 2017/2018)** - (grass 2019/2020) | 0.61755 | 0.1121 | 922.66 | 5.507 | <.0001 |
| **(grass 2017/2018)** - (grass 2018/2019) | 0.71766 | 0.1066 | 922.17 | 6.73 | <.0001 |
| **(oak 2017/2018)** - (oak 2019/2020) | 0.59376 | 0.09 | 922.35 | 6.599 | <.0001 |
| **(oak 2017/2018)** - (oak 2018/2019) | 0.37409 | 0.0964 | 922.05 | 3.881 | 0.0062 |
| **(pine 2017/2018)** - (pine 2019/2020) | 0.61095 | 0.1162 | 922.45 | 5.256 | <.0001 |
| **(pine 2017/2018)** - (pine 2018/2019) | 0.68209 | 0.1308 | 923.77 | 5.214 | <.0001 |
| (beech 2019/2020) - (beech 2018/2019) | 0.1587 | 0.1096 | 922.06 | 1.448 | 0.9534 |
| (grass 2019/2020) - (grass 2018/2019) | 0.10011 | 0.1267 | 922.35 | 0.79 | 0.9997 |
| (oak 2019/2020) - (oak 2018/2019) | -0.21968 | 0.1053 | 922.17 | -2.085 | 0.6334 |
| (pine 2019/2020) - (pine 2018/2019) | 0.07114 | 0.1433 | 922.87 | 0.496 | 1 |
| Year \* vegetation type  (within years) | (beech 2017/2018) - (grass 2017/2018) | -0.13471 | 0.2013 | 9.73 | -0.669 | 0.9998 |
| (beech 2017/2018) - (oak 2017/2018) | -0.03617 | 0.2 | 9.48 | -0.181 | 1 |
| (beech 2017/2018) - (pine 2017/2018) | 0.47961 | 0.2035 | 10.15 | 2.357 | 0.4972 |
| (grass 2017/2018) - (oak 2017/2018) | 0.09854 | 0.2008 | 9.63 | 0.491 | 1 |
| (grass 2017/2018) - (pine 2017/2018) | 0.61432 | 0.2042 | 10.3 | 3.009 | 0.2288 |
| (oak 2017/2018) - (pine 2017/2018) | 0.51578 | 0.203 | 10.06 | 2.541 | 0.4085 |
| (beech 2019/2020) - (grass 2019/2020) | 0.16968 | 0.2161 | 12.91 | 0.785 | 0.9993 |
| (beech 2019/2020) - (oak 2019/2020) | 0.24444 | 0.208 | 11.09 | 1.175 | 0.9808 |
| (beech 2019/2020) - (pine 2019/2020) | 0.77741 | 0.2177 | 13.29 | 3.572 | 0.0856 |
| (grass 2019/2020) - (oak 2019/2020) | 0.07476 | 0.2179 | 13.35 | 0.343 | 1 |
| (grass 2019/2020) - (pine 2019/2020) | 0.60772 | 0.2244 | 15 | 2.708 | 0.3071 |
| (oak 2019/2020) - (pine 2019/2020) | 0.53297 | 0.219 | 13.62 | 2.434 | 0.4444 |