|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table S5. ANOVA summary tables for diversity metric comparisons (Observed ASVs, Simpson's Diversity and Shannon's Diversity) between site types (natural and restored) and host species and pairwise tests between site types for each host species from (a) bacterial or (b) fungal datasets. | | | | | |
| **(a) Bacteria - Analysis of Variance Summary Tables** | | | | | | |
| *ANOVA: Observed ASVs Bacteria* |  |  |  |  |  |
|  | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
| HostSpecies | 2 | 76372 | 38186 | 28.2474 | 5.11E-12 |
| SiteType | 1 | 25305 | 25305 | 18.7189 | 2.03E-05 |
| HostSpecies:SiteType | 2 | 22081 | 11041 | 8.1671 | 0.0003477 |
| Residuals | 318 | 429887 | 1352 |  |  |
| *Pairwise tests between site types* |  |  |  |  |  |
| Melaleuca\_quinquenervia: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -40.54 | 7.93 | 318 | -5.111 | <.0001 |
| Microlaena\_stipoides: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -20.08 | 6.74 | 318 | -2.981 | 0.0031 |
| Themeda\_triandra: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 1.39 | 6.79 | 318 | 0.205 | 0.8376 |
| *ANOVA: Simpson’s Diversity Bacteria* |  |  |  |  |  |
|  | Df | Sum Sq | Mean Sq | F | Pr(>F) |
| HostSpecies | 2 | 3.0497 | 1.52483 | 25.2606 | 6.58E-11 |
| SiteType | 1 | 0.3709 | 0.37086 | 6.1438 | 0.013706 |
| HostSpecies:SiteType | 2 | 0.7962 | 0.39812 | 6.5952 | 0.001561 |
| Residuals | 318 | 19.1958 | 0.06036 |  |  |
| *Pairwise tests between site types* |  |  |  |  |  |
| Melaleuca\_quinquenervia: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -0.1683 | 0.053 | 318 | -3.176 | 0.0016 |
| Microlaena\_stipoides: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -0.1226 | 0.045 | 318 | -2.723 | 0.0068 |
| Themeda\_triandra: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 0.0613 | 0.0453 | 318 | 1.352 | 0.1772 |
| *ANOVA: Shannon’s Diversity Bacteria* |  |  |  |  |  |
|  | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
| Source | 2 | 91.289 | 45.645 | 56.648 | < 2.2e-16 |
| SiteType | 1 | 10.749 | 10.749 | 13.34 | 0.0003037 |
| Source:SiteType | 2 | 16.561 | 8.281 | 10.277 | 4.73E-05 |
| Residuals | 318 | 256.23 | 0.806 |  |  |
| *Pairwise tests between site types* |  |  |  |  |  |
| Melaleuca\_quinquenervia: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -0.979 | 0.194 | 318 | -5.056 | <.0001 |
| Microlaena\_stipoides: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -0.445 | 0.164 | 318 | -2.708 | 0.0071 |
| Themeda\_triandra: |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 0.166 | 0.166 | 318 | 1 | 0.3182 |
| *Pairwise tests between hosts – Observed ASVs* |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Melaleuca\_quinquenervia-Microlaena\_stipoides | 34.01 | 5.2 | 318 | 6.536 | <.0001 |
| Melaleuca\_quinquenervia-Themeda\_triandra | 35.27 | 5.22 | 318 | 6.759 | <.0001 |
| Microlaena\_stipoides-Themeda\_triandra | 1.26 | 4.78 | 318 | 0.265 | 0.9622 |
| *Pairwise tests between hosts – Simpson’s Diversity* |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Melaleuca\_quinquenervia-Microlaena\_stipoides | 0.1458 | 0.0348 | 318 | 4.192 | 0.0001 |
| Melaleuca\_quinquenervia-Themeda\_triandra | 0.2436 | 0.0349 | 318 | 6.984 | <.0001 |
| Microlaena\_stipoides-Themeda\_triandra | 0.0978 | 0.0319 | 318 | 3.062 | 0.0067 |
| *Pairwise tests between hosts – Shannon’s Diversity* |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Melaleuca\_quinquenervia-Microlaena\_stipoides | 1.071 | 0.127 | 318 | 8.432 | <.0001 |
| Melaleuca\_quinquenervia-Themeda\_triandra | 1.282 | 0.127 | 318 | 10.059 | <.0001 |
| Microlaena\_stipoides-Themeda\_triandra | 0.211 | 0.117 | 318 | 1.804 | 0.1699 |
| **(b) Fungi - Analysis of Variance Summary Tables** | | | | | |
| *ANOVA: Observed ASVs Fungi* |  |  |  |  |  |
|  | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
| SiteType | 1 | 2615 | 2615 | 3.0723 | 0.080668 |
| HostSpecies | 2 | 10037 | 5018.4 | 5.8961 | 0.003082 |
| HostSpecies:SiteType | 2 | 52830 | 26414.9 | 31.0347 | 5.76E-13 |
| Residuals | 297 | 252788 | 851.1 |  |  |
| *Pairwise Tests between site types– Observed ASVs* |  |  |  |  |  |
| Melaleuca\_quinquenervia |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 37.5 | 6.61 | 297 | 5.67 | <.0001 |
| Microlaena\_stipoides |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -27.5 | 5.62 | 297 | -4.895 | 0.0540 |
| Themeda\_triandra |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 16.7 | 5.45 | 297 | 3.061 | 0.0024 |
| *ANOVA: Simpson’s Diversity Fungi* |  |  |  |  |  |
|  | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
| SiteType | 1 | 0.1238 | 0.123819 | 3.4389 | 0.064669 |
| HostSpecies | 2 | 0.4122 | 0.20609 | 5.7239 | 0.003638 |
| HostSpecies:SiteType | 2 | 0.2771 | 0.138526 | 3.8474 | 0.022406 |
| Residuals | 297 | 10.6935 | 0.036005 |  |  |
| *Pairwise Tests between site types – Simpson’s* |  |  |  |  |  |
| Melaleuca\_quinquenervia |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 0.0797 | 0.043 | 297 | 1.854 | 0.0448 |
| Microlaena\_stipoides |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -0.0384 | 0.0365 | 297 | -1.052 | 0.2937 |
| Themeda\_triandra |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 0.0931 | 0.0354 | 297 | 2.628 | 0.009 |
| *ANOVA: Shannon’s Diversity Fungi* |  |  |  |  |  |
|  | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
| SiteType | 1 | 2.571 | 2.571 | 5.4196 | 0.0205838 |
| HostSpecies | 2 | 8.915 | 4.4573 | 9.3956 | 0.0001105 |
| HostSpecies:SiteType | 2 | 11.873 | 5.9365 | 12.5136 | 6.06E-06 |
| Residuals | 297 | 140.897 | 0.4744 |  |  |
| *Pairwise Tests between site types - Shannon’s* |  |  |  |  |  |
| Melaleuca\_quinquenervia |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 0.674 | 0.156 | 297 | 4.319 | <.0001 |
| Microlaena\_stipoides |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | -0.307 | 0.133 | 297 | -2.317 | 0.0612 |
| Themeda\_triandra |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Natural - Restored | 0.339 | 0.129 | 297 | 2.639 | 0.0088 |
| *Pairwise tests between hosts –Observed ASVs* |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Melaleuca\_quinquenervia - Microlaena\_stipoides | 12.43 | 4.34 | 297 | 2.866 | 0.0123 |
| Melaleuca\_quinquenervia - Themeda\_triandra | 16.19 | 4.28 | 297 | 3.783 | 0.0005 |
| Microlaena\_stipoides - Themeda\_triandra | 3.77 | 3.91 | 297 | 0.963 | 0.6011 |
| *Pairwise tests between hosts – Simpson’s Diversity* |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Melaleuca\_quinquenervia - Microlaena\_stipoides | 0.0747 | 0.0282 | 297 | 2.648 | 0.0231 |
| Melaleuca\_quinquenervia - Themeda\_triandra | 0.0934 | 0.0278 | 297 | 3.352 | 0.0026 |
| Microlaena\_stipoides - Themeda\_triandra | 0.0187 | 0.0254 | 297 | 0.733 | 0.7438 |
| Pairwise tests between hosts –Shannon’s Diversity |  |  |  |  |  |
| contrast | estimate | SE | df | t.ratio | p.value |
| Melaleuca\_quinquenervia - Microlaena\_stipoides | 0.34 | 0.1024 | 297 | 3.321 | 0.0029 |
| Melaleuca\_quinquenervia - Themeda\_triandra | 0.459 | 0.1011 | 297 | 4.542 | <.0001 |
| Microlaena\_stipoides - Themeda\_triandra | 0.119 | 0.0924 | 297 | 1.291 | 0.4016 |