Supplementary Material

**Supplementary Table 1.** Sample sizes (*n*) of larvae per species and treatment used in the behavioural assay and subsequent morphological analysis.

|  |  |  |
| --- | --- | --- |
| **Species (habitat type)** | **Treatment** | ***n*** |
| *C. lunulatum* (fishless habitat) | Fish | 15 |
| Control | 16 |
| *C. mercuriale* (fish habitat) | Fish | 19 |
| Control | 16 |
| *C. ornatum* (fish habitat) | Fish | 14 |
| Control | 13 |
| *C. pulchellum* (fishless habitat) | Fish | 15 |
| Control | 15 |

**Supplementary Table 2.** Model results of Linear mixed-effect models (LMM) examining differences in **(A)** PC1: lamella size, **(B)** PC2: foraging activity, and **(C)** PC3: movement activity between species, habitat types, and treatments. For fixed effects, Wald-*χ2*-values, degrees of freedom (DF), and *P*-values are presented. All significant effects (*P* < 0.05) are given in **bold letters**.

|  |  |  |  |
| --- | --- | --- | --- |
| **(A) PC1: Lamella Size** | | | |
| **Fixed Effects** | **Wald*-χ2*** | **DF** | ***P*** |
| **Habitat** | **126.789** | **1** | **< 0.001** |
| **Treatment** | **9.289** | **1** | **0.002** |
| **Head width** | **66.689** | **1** | **< 0.001** |
| **Habitat:Species** | **6.916** | **2** | **0.031** |
| Habitat×Treatment | < 0.001 | 1 | 0.991 |
| Habitat:Species×Treatment | 2.549 | 2 | 0.280 |
| **(B) PC2: Foraging Activity** | | | |
| **Fixed Effects** | ***Wald-χ2*** | **DF** | ***P*** |
| **Habitat** | **5.293** | **1** | **0.021** |
| Treatment | 0.402 | 1 | 0.526 |
| Head width | 0.020 | 1 | 0.888 |
| Habitat:Species | 3.474 | 2 | 0.176 |
| Habitat×Treatment | 0.219 | 1 | 0.640 |
| Habitat:Species×Treatment | 0.685 | 2 | 0.710 |
| **(C) PC3: Movement Activity** | | | |
| **Fixed Effects** | **Wald-*χ2*** | **DF** | ***P*** |
| Habitat | 2.360 | 1 | 0.124 |
| **Treatment** | **6.164** | **1** | **0.013** |
| Head width | 0.074 | 1 | 0.786 |
| Habitat:Species | 1.483 | 2 | 0.476 |
| **Habitat×Treatment** | **4.994** | **1** | **0.025** |
| Habitat:Species×Treatment | 0.989 | 2 | 0.610 |

Chart, histogram

Description automatically generated**Supplementary Figure 1.** Results ofa principal component analysis (PCA) conducted on the behavioural variables and lamellae morphometrics of larval *Coenagrion* damselflies. Depicted are eigenvalues of the first 10 major axes.