**Table S2.** Coefficient estimates with standard errors (SE) for the explanatory variables in the generalised linear model (GLM) or linear model (LM) to evaluate the effects of temperature (*T*) and salinity (*S*) on larval survival (alive or not) and duration to reach the juvenile stage (days), and carapace length (mm) of juveniles of *Paratya improvisa*. Four models were applied in the binomial- and Poisson-GLM analyses for larval survival and larval duration, respectively, and those in the LM analysis for the carapace length: model 1, *y* ~ *T* + *S* + *T*2 + *S*2 + *T* × *S*; model 2, *y* ~ *T* + *S* + *T*2 + *S*2; model 3, *y* ~ *T* + *S* + *T* × *S*; and model 4, *y* ~ *T* + *S*. The Bayesian information criterion (BIC) was calculated for each model to select the best model with the minimum BIC. The bold BIC value was the minimum among those of four models

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Larval survival | |  |  | Larval duration | |  |  | Carapace length | |  |  |
| Model | Coefficient | Estimate | SE | *z* value | *P* | Estimate | SE | *z* value | *P* | Estimate | SE | *t* value | *P* |
| 1 | Intercept | -60.2230 | 12.7102 | -4.738 | <0.0001 | 11.3096 | 1.3563 | 8.339 | <0.0001 | 1.6710 | 0.3306 | 5.055 | <0.0001 |
|  | *T* | 4.7988 | 0.9577 | 5.011 | <0.0001 | -0.6614 | 0.1028 | -6.433 | <0.0001 | -0.0154 | 0.0247 | -0.624 | 0.5336 |
|  | *S* | 0.8130 | 0.2920 | 2.784 | 0.0054 | 0.0001 | 0.0376 | 0.003 | 0.9980 | 1.229×10−5 | 0.0098 | 0.001 | 0.9990 |
|  | *T*2 | -0.0936 | 0.0177 | -5.275 | <0.0001 | 0.0119 | 0.0020 | 6.111 | <0.0001 | -0.0001 | 0.0005 | -0.134 | 0.8934 |
|  | *S*2 | -0.0337 | 0.0061 | -5.568 | <0.0001 | 0.0016 | 0.0010 | 1.596 | 0.1110 | -0.0004 | 0.0002 | -1.728 | 0.0862 |
|  | *T* × *S* | -0.0040 | 0.0081 | -0.491 | 0.6236 | -0.0011 | 0.0014 | -0.812 | 0.4170 | 0.0003 | 0.0003 | 0.916 | 0.3615 |
|  | BIC | 155.7 |  |  |  | 649.1 |  |  |  | -308.9 |  |  |  |
| 2 | Intercept | -58.4198 | 12.1570 | -4.805 | <0.0001 | 11.6631 | 1.2831 | 9.090 | <0.0001 | 1.5740 | 0.3130 | 5.029 | <0.0001 |
|  | *T* | 4.7067 | 0.9352 | 5.033 | <0.0001 | -0.6802 | 0.1002 | -6.791 | <0.0001 | -0.0106 | 0.0242 | -0.440 | 0.6610 |
|  | *S* | 0.6937 | 0.1589 | 4.365 | <0.0001 | -0.0237 | 0.0234 | -1.013 | 0.3110 | 0.0073 | 0.0057 | 1.288 | 0.2000 |
|  | *T*2 | -0.0926 | 0.0176 | -5.273 | <0.0001 | 0.0121 | 0.0019 | 6.212 | <0.0001 | -0.0001 | 0.0005 | -0.205 | 0.8380 |
|  | *S*2 | -0.0332 | 0.0060 | -5.559 | <0.0001 | 0.0014 | 0.0010 | 1.464 | 0.1430 | -0.0004 | 0.0002 | -1.612 | 0.1090 |
|  | BIC | **150.2** |  |  |  | **644.8** |  |  |  | -313.0 |  |  |  |
| 3 | Intercept | 21.1512 | 3.8001 | 5.566 | <0.0001 | 3.3702 | 0.3915 | 8.607 | <0.0001 | 1.7258 | 0.0956 | 18.046 | <0.0001 |
|  | *T* | -0.6187 | 0.1244 | -4.974 | <0.0001 | -0.0439 | 0.0156 | -2.816 | 0.0049 | -0.0175 | 0.0037 | -4.709 | <0.0001 |
|  | *S* | -0.8737 | 0.1892 | -4.617 | <0.0001 | 0.0511 | 0.0350 | 1.461 | 0.1442 | -0.0073 | 0.0088 | -0.834 | 0.4060 |
|  | *T* × *S* | 0.0231 | 0.0063 | 3.652 | 0.0003 | -0.0017 | 0.0014 | -1.245 | 0.2132 | 0.0002 | 0.0003 | 0.650 | 0.5170 |
|  | BIC | 220.5 |  |  |  | 675.6 |  |  |  | -315.7 |  |  |  |
| 4 | Intercept | 9.5567 | 1.4489 | 6.596 | <0.0001 | 3.7996 | 0.1842 | 20.630 | <0.0001 | 1.6708 | 0.0444 | 37.616 | <0.0001 |
|  | *T* | -0.2199 | 0.0450 | -4.882 | <0.0001 | -0.0613 | 0.0070 | -8.715 | <0.0001 | -0.0153 | 0.0016 | -9.354 | <0.0001 |
|  | *S* | -0.2224 | 0.0240 | -9.249 | <0.0001 | 0.0079 | 0.0047 | 1.680 | 0.0929 | -0.0017 | 0.0011 | -1.452 | 0.1490 |
|  | BIC | 231.0 |  |  |  | 672.1 |  |  |  | **-320.3** |  |  |  |