**Table S1.** Monthly analyses of intersexual size dimorphism, evaluated with a log-transformed allometric growth equation model for the chela propodus length (PrL) of the porcellanid crab *Petrolisthes japonicus*. The linear equation model was as follows: lnPrL ~ lnCW + lnCW × Sex, where CW is the carapace width and Sex is female or male. The coefficient estimate with a standard error (SE) for the explanatory variable, including the Sex, was the output for males, representing changes in the response variable relative to the baseline category (female). The statistical significance of the coefficient estimates and each model was evaluated with *t*-tests and *F*-tests, respectively. The data for October and November were pooled because of the small sample size in November

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Month | Coefficients | Estimate | SE | *t* value | *P* | *R*2 | *F* | *df* | *P* |
| April | Intercept | -0.0082 | 0.0388 | -0.211 | 0.8330 | 0.9806 | 1842 | 2, 73 | < 0.0001 |
| InCW | 1.2266 | 0.0240 | 51.195 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0347 | 0.0075 | 4.619 | < 0.0001 |  |  |  |  |
| May | Intercept | -0.0454 | 0.0271 | -1.677 | 0.0957 | 0.9834 | 4228 | 2, 143 | < 0.0001 |
| InCW | 1.2346 | 0.0160 | 77.124 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0647 | 0.0045 | 14.347 | < 0.0001 |  |  |  |  |
| June | Intercept | -0.0603 | 0.0304 | -1.984 | 0.0497 | 0.9849 | 3685 | 2, 113 | < 0.0001 |
| InCW | 1.2294 | 0.0170 | 72.343 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0816 | 0.0047 | 17.357 | < 0.0001 |  |  |  |  |
| July | Intercept | -0.0817 | 0.0364 | -2.241 | 0.0274 | 0.9810 | 2401 | 2, 93 | < 0.0001 |
| InCW | 1.2490 | 0.0199 | 62.709 | < 0.0001 |  |  |  |  |
| lnCW ×S ex-Male | 0.0798 | 0.0046 | 17.258 | < 0.0001 |  |  |  |  |
| August | Intercept | 0.0053 | 0.0527 | 0.101 | 0.9200 | 0.9732 | 836 | 2, 46 | < 0.0001 |
| InCW | 1.1921 | 0.0294 | 40.567 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0586 | 0.0092 | 6.396 | < 0.0001 |  |  |  |  |
| September | Intercept | 0.0645 | 0.0244 | 2.650 | 0.0097 | 0.9823 | 2271 | 2, 82 | < 0.0001 |
| InCW | 1.1687 | 0.0200 | 58.380 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0377 | 0.0098 | 3.840 | 0.0002 |  |  |  |  |
| October-November | Intercept | 0.1001 | 0.0357 | 2.804 | 0.0079 | 0.9868 | 1420 | 2, 38 | < 0.0001 |
| InCW | 1.1610 | 0.0297 | 39.154 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0467 | 0.0169 | 2.761 | 0.0088 |  |  |  |  |
| December | Intercept | 0.1228 | 0.0233 | 5.276 | < 0.0001 | 0.9886 | 3288 | 2, 76 | < 0.0001 |
| InCW | 1.1562 | 0.0161 | 71.938 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0280 | 0.0070 | 4.017 | 0.0001 |  |  |  |  |
| January | Intercept | 0.0523 | 0.0287 | 1.824 | 0.0715 | 0.9789 | 2062 | 2, 89 | < 0.0001 |
| InCW | 1.1955 | 0.0198 | 60.456 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0131 | 0.0082 | 1.594 | 0.1144 |  |  |  |  |
| February | Intercept | 0.0090 | 0.0293 | 0.309 | 0.7585 | 0.9863 | 2341 | 2, 65 | < 0.0001 |
| InCW | 1.2275 | 0.0188 | 65.294 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0160 | 0.0068 | 2.336 | 0.0226 |  |  |  |  |
| March | Intercept | 0.0410 | 0.0405 | 1.011 | 0.3160 | 0.9714 | 1089 | 2, 64 | < 0.0001 |
| InCW | 1.2067 | 0.0260 | 46.402 | < 0.0001 |  |  |  |  |
| lnCW × Sex-Male | 0.0137 | 0.0090 | 1.523 | 0.1330 |  |  |  |  |