# Temperature dependence of biomass and ecosystem function depend on species interactions. Supplementary File 3: Zooplankton figures and tables.

**Section S3.1: Zooplankton Abundance data over whole experiment**

Figure S3. 1: Abundance of zooplankton (Number / 10L) over all tanks and weeks.

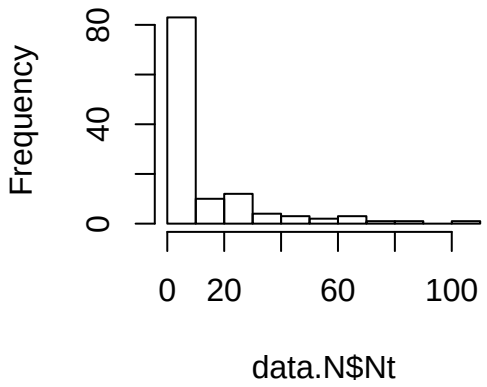
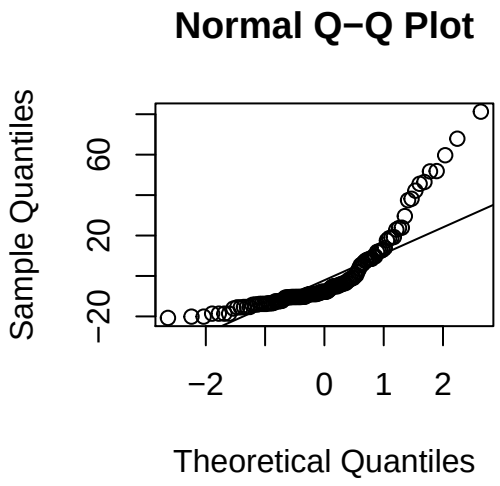



Figure S3. 2: Residual plot for linear model of abundance with normally distributed errors

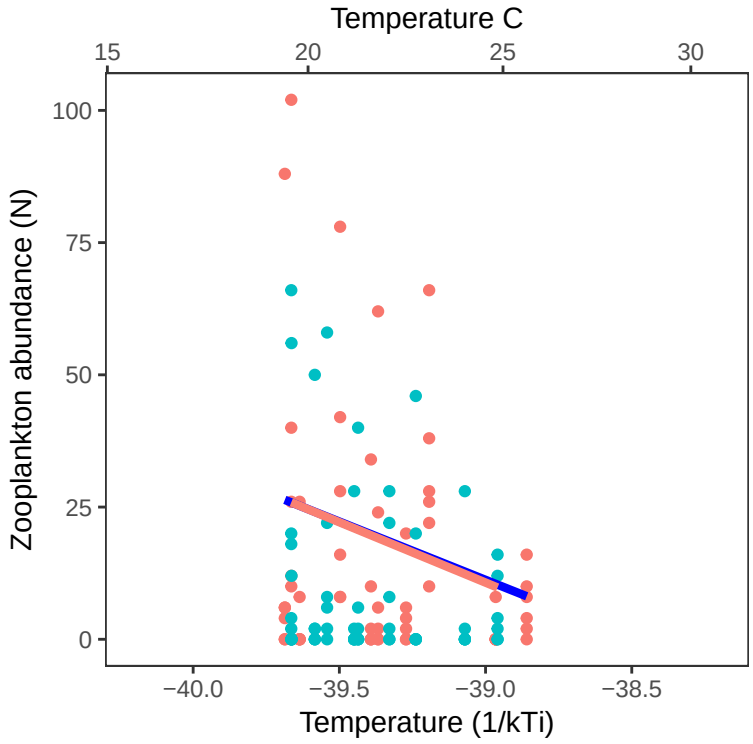



```
##       chisq       ratio         rdf           p
##  97.1449726   0.8374567 116.0000000   0.8975533
```

Table S3. 1: Model selection results for zooplankton abundance, with 1|Tank as a random effect. Model terms are: intercept (Int), Temperature - weekly average (Tw), trophic treatment (TL), statistical estimates

| | Int | Tw | TL | df | logLik | AICc | d | w |
|---|---|---|---|---|---|---|---|---|
| nbinommod1b | -47.41 | 1.28 | NA | 5 | -367.00 | 744.53 | 0.00 | 0.49557915 |
| nbinommod1 | -48.76 | 1.32 | + | 6 | -366.37 | 745.47 | 0.95 | 0.30895745 |
| nbinommod1c | 2.95 | NA | NA | 4 | -369.46 | 747.26 | 2.74 | 0.12621312 |
| nbinommod1a | 3.07 | NA | + | 5 | -368.97 | 748.46 | 3.94 | 0.06925027 |

Figure S3. 3: Total Zooplankton abundance and modeled temperature dependence from negative binomial regression




**Section S3.2: Daphnia and Copepods**

Figure S3. 4: Abundance of Daphnia and Copepods (Number / 10L) over all tanks and weeks.

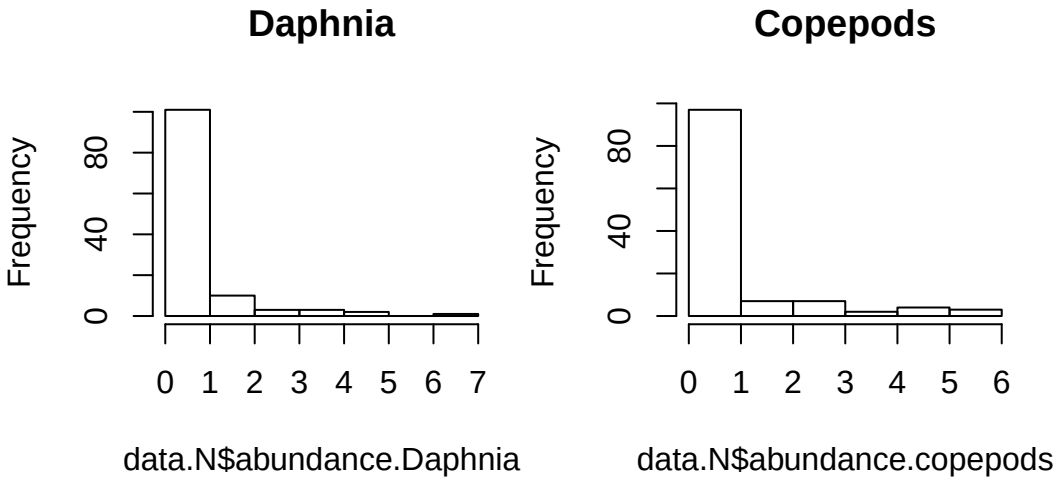



Table S3. 2: Daphnia abundance model selection results for Poisson regression. Model terms are: intercept (Int), trophic treatment (TL), Temperature - weekly average (Tw), and statistical estimates

| | Int | Tw | TL | Tw*TL | df | logLik | AICc | d | w |
|---|---|---|---|---|---|---|---|---|---|

| | Int | Tw | TL | Tw*TL | df | logLik | AICc | d | w |
|---|---|---|---|---|---|---|---|---|---|
| poismod.Db | -34.88 | 0.88 | + | NA | 4 | -115.75 | 239.85 | 0.00 | 0.63118106 |
| poismod.Da | -38.64 | 0.97 | + | + | 5 | -115.73 | 241.98 | 2.13 | 0.21709779 |
| poismod.Dd | -0.97 | NA | NA | NA | 2 | -119.71 | 243.52 | 3.67 | 0.10060719 |
| poismod.Dc | -31.32 | 0.77 | NA | NA | 3 | -119.33 | 244.87 | 5.03 | 0.05111395 |

Table S3. 3: Daphnia abundance model coefficients

| | Estimate | se | Pr(>\|z\|) | LL | UL |
|---|---|---|---|---|---|
| (Intercept) | -34.88 | 29.57 | 0.24 | -92.85 | 23.08 |
| invTT | 0.88 | 0.75 | 0.24 | -0.60 | 2.35 |
| trophic.levelPZN | -1.14 | 0.40 | 0.00 | -1.91 | -0.36 |

Figure S3. 5: Daphnia abundance with modeled temperature dependence from poisson regression; estimates and confidence intervals given in Table S3.3

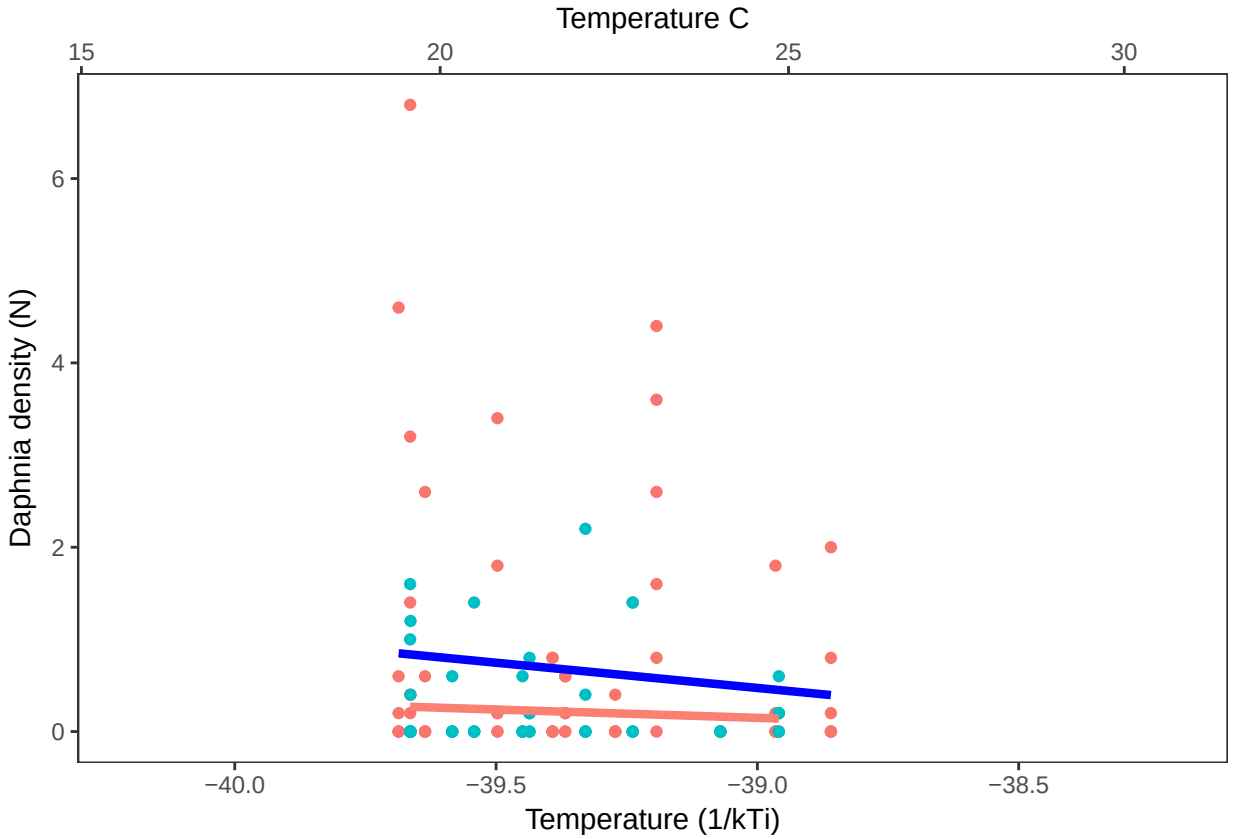



Table S3. 4: Copepod abundance model selection results for Poisson regression. Model terms are: intercept (Int), trophic treatment (TL), Temperature - weekly average (Tw), temperature - expt average (Tt), interaction terms and statistical estimates

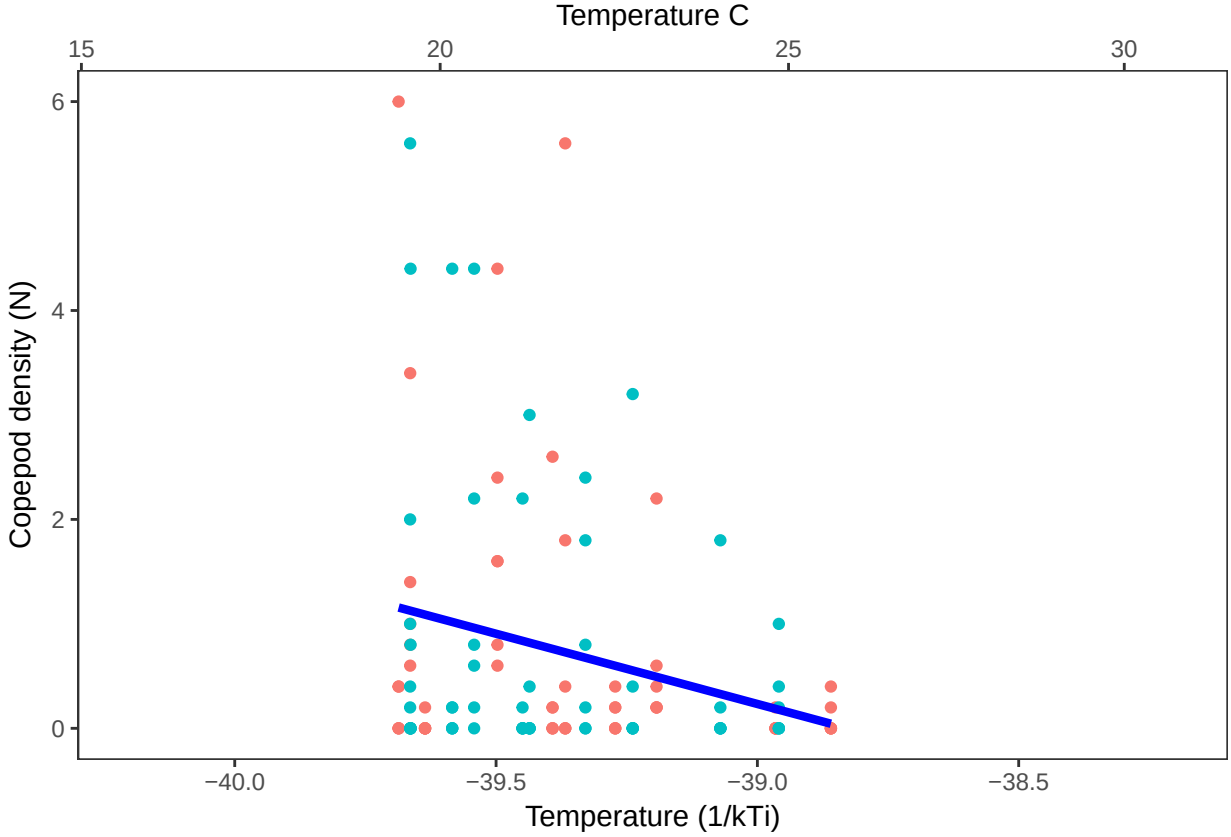
| | Int | Tw | TL | Tw*TL | df | logLik | AICc | d | w |
|---|---|---|---|---|---|---|---|---|---|
| poismod.Cc | -87.63 | 2.21 | NA | NA | 4 | -135.11 | 278.56 | 0.00 | 0.67753474 |

| | Int | Tw | TL | Tw*TL | df | logLik | AICc | d | w |
|---|---|---|---|---|---|---|---|---|---|
| poismod.Cb | -87.50 | 2.21 | + | NA | 5 | -135.10 | 280.72 | 2.16 | 0.23026158 |
| poismod.Ca | -96.20 | 2.43 | + | + | 6 | -135.04 | 282.83 | 4.27 | 0.07997327 |
| poismod.Cd | -0.34 | NA | NA | NA | 3 | -140.19 | 286.59 | 8.03 | 0.01223041 |

Table S3. 5: Copepod abundance model coefficients

| | Estimate | se | Pr(>\|z\|) | LL | UL |
|---|---|---|---|---|---|
| (Intercept) | -87.63 | 28.01 | 0 | -142.54 | -32.73 |
| invTT | 2.21 | 0.71 | 0 | 0.82 | 3.61 |

Figure S3. 6: Copepod abundance with modeled temperature dependence from poisson regression




**Section S3.4: Zooplankton size analysis**

Figure S3. 7: Zooplankton body size (length) over all tanks and weeks.

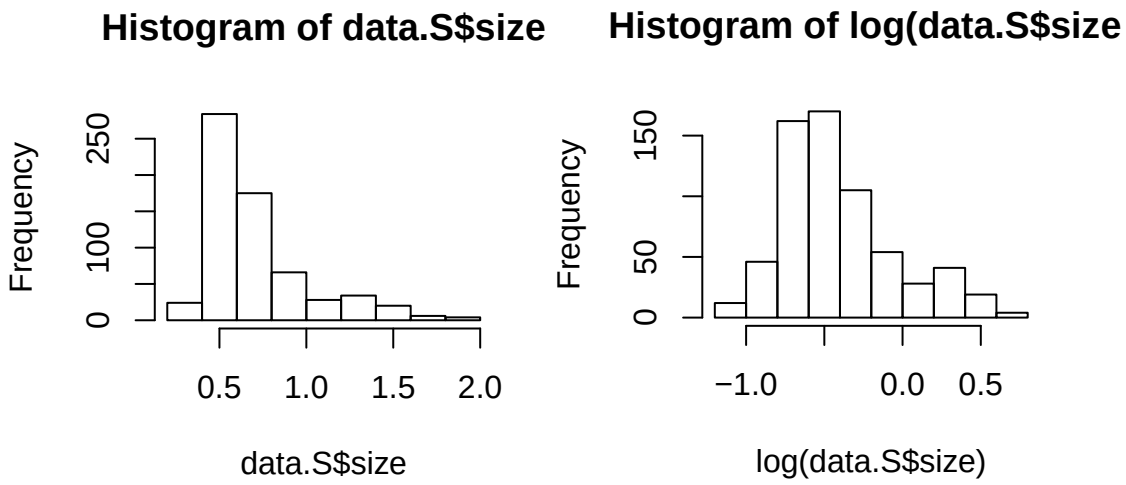
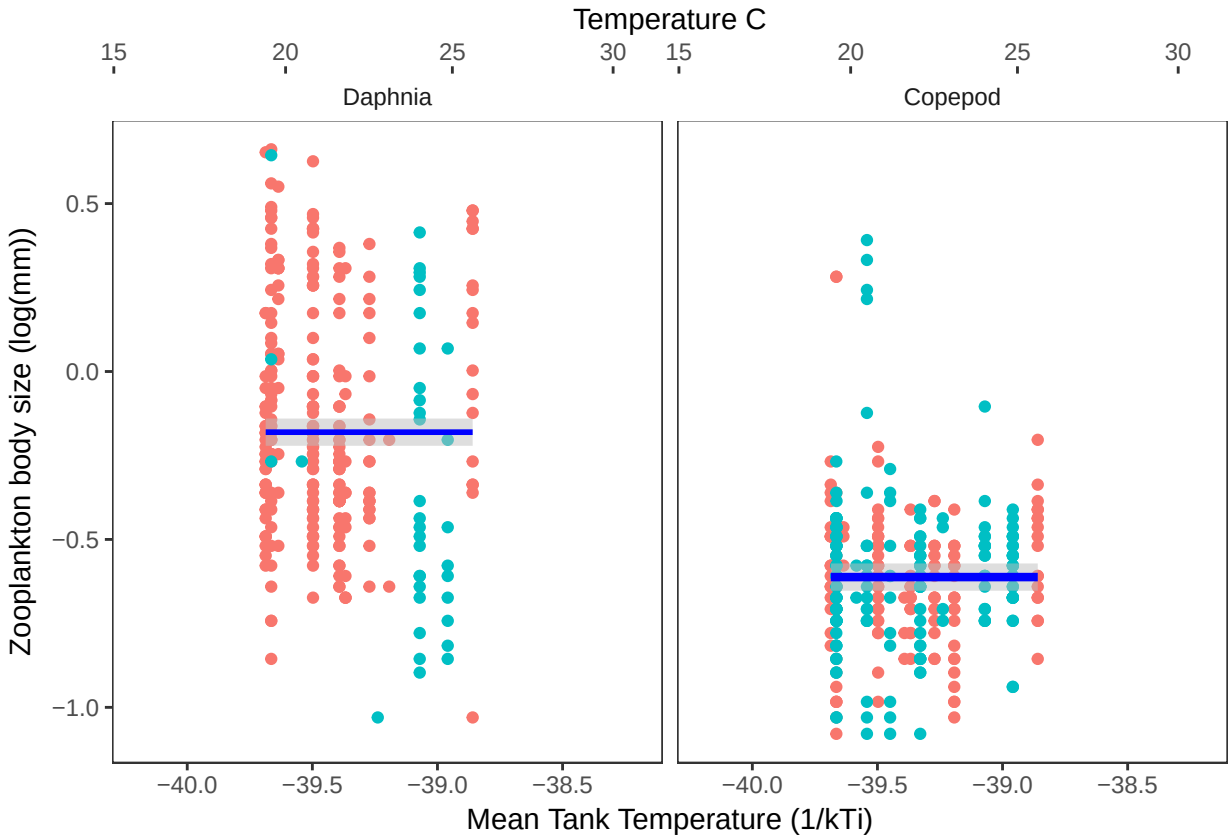



Table S3. 8: Zooplankton body size model selection results. Model terms are: intercept (Int), Temperature - weekly average (Tw), Taxon (Tx), trophic treatment (TL), and statistical estimates

| | Int | Tw | Tx | TL | Tw*Tx | Tw*TL | Tx*TL | Tw*Tx*Tl | df | logLik | AICc | d | w |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| m2h | -0.18 | NA | + | NA | NA | NA | NA | NA | 4 | -93.81 | 195.68 | 0.00 | 4.830802e-01 |
| m2g | -0.15 | NA | + | + | NA | NA | + | NA | 6 | -92.17 | 196.46 | 0.78 | 3.263556e-01 |
| m2l | -8.64 | 0.21 | + | NA | + | NA | NA | NA | 6 | -93.59 | 199.31 | 3.63 | 7.857394e-02 |
| m2e | -3.46 | 0.08 | + | NA | NA | NA | NA | NA | 5 | -94.87 | 199.84 | 4.16 | 6.032350e-02 |
| m2c | -1.45 | 0.03 | + | + | NA | NA | + | NA | 7 | -93.57 | 201.33 | 5.65 | 2.869848e-02 |
| m2a | -0.37 | 0.01 | + | + | + | + | + | + | 10 | -91.64 | 203.62 | 7.94 | 9.096896e-03 |
| m2b | -0.37 | 0.01 | + | + | + | + | + | + | 10 | -91.64 | 203.62 | 7.94 | 9.096896e-03 |
| m2j | -8.42 | 0.21 | + | + | + | NA | NA | NA | 7 | -95.53 | 205.24 | 9.56 | 4.056320e-03 |
| m2m | -1.58 | 0.04 | + | + | NA | + | NA | NA | 7 | -97.26 | 208.70 | 13.02 | 7.180927e-04 |
| m2i | -0.34 | NA | NA | + | NA | NA | NA | NA | 4 | -203.66 | 415.38 | 219.70 | 9.475524e-49 |
| m2d | -4.00 | 0.09 | NA | + | NA | NA | NA | NA | 5 | -204.47 | 419.04 | 223.36 | 1.517993e-49 |
| m2k | -9.85 | 0.24 | NA | + | NA | + | NA | NA | 6 | -204.18 | 420.49 | 224.81 | 7.376626e-50 |
| m2f | -5.03 | 0.12 | NA | NA | NA | NA | NA | NA | 4 | -207.14 | 422.33 | 226.65 | 2.927861e-50 |

Figure S3. 8: Zooplankton body size (length) and modeled effects of predation


Temperature C
15
20
25
30
Daphnia
Copepod
Zooplankton body size (log(mm))
0.5
0.0
−0.5
−1.0
−40.0
−39.5
−39.0
−38.5
Mean Tank Temperature (1/kTi)