Supplementary material for Garzke et al manuscript. This file includes analyses and model outputs supporting zooplankton results in main text.

Zooplankton analysis

Abundance data over whole experiment

```
##
##  Shapiro-Wilk normality test
##
## data:  resid(m2)
## W = 0.77499, p-value = 2.801e-12
```

```
##     chisq     ratio       rdf         p
## 25547.960   220.241   116.000     0.000
```

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

```
## Analysis of Deviance Table
##
## Model 1: Nt ~ invTT
## Model 2: Nt ~ invTT + trophic.level
##   NoPar  LogLik Df Deviance Pr(>Chi)
## 1     5 -367.00
## 2     6 -366.37  1    1.272   0.2594
```

Table 1: Table S8: Model selection results for zooplankton abundance, with 1|Tank as a random effect. Model terms are: intercept (Int), trophic treatment (TL), Temperature - weekly average (Tw), temperature - expt average (Tt), interaction terms and 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

Plotting data and model results

Trends within zooplankton species: Daphnia

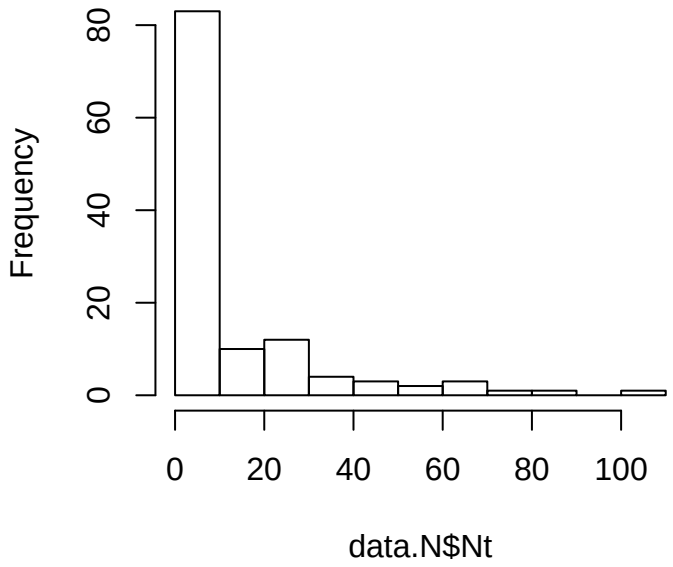


Figure 1: Histogram of abundance of zooplankton (Number / 10L) over all tanks and weeks.

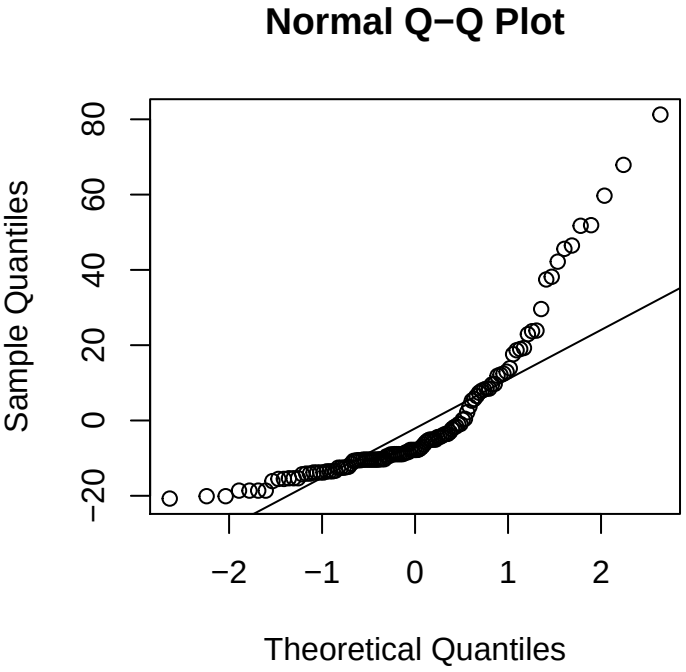


Figure 2: Resid plot of linear model zooplankton (Number / 10L) over all tanks and weeks.

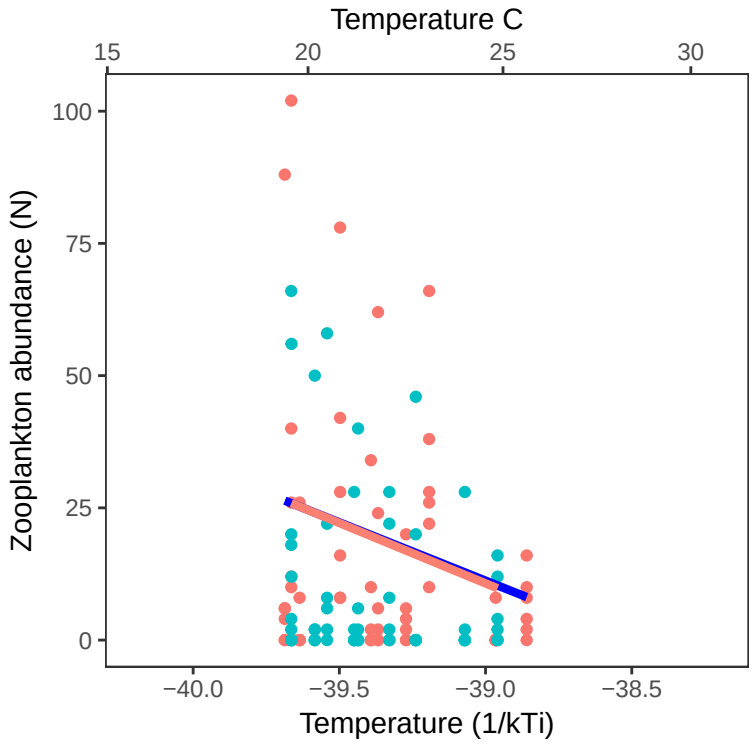
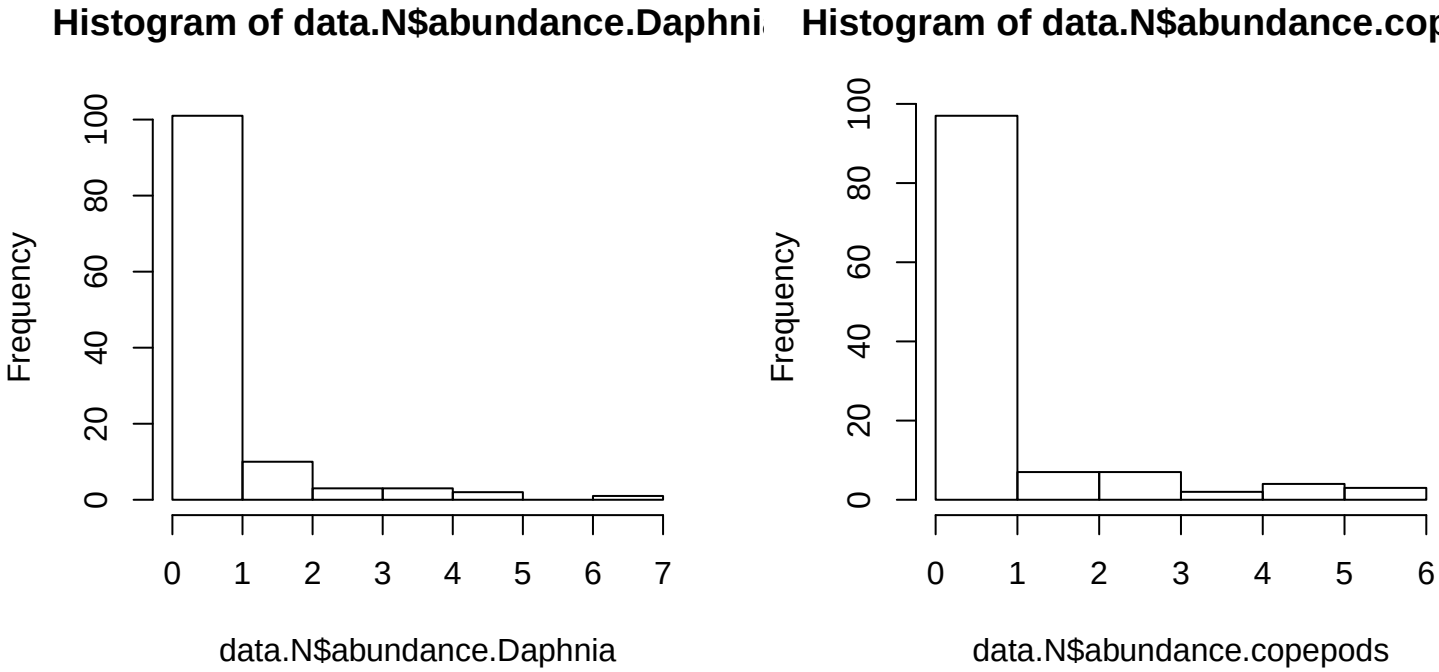
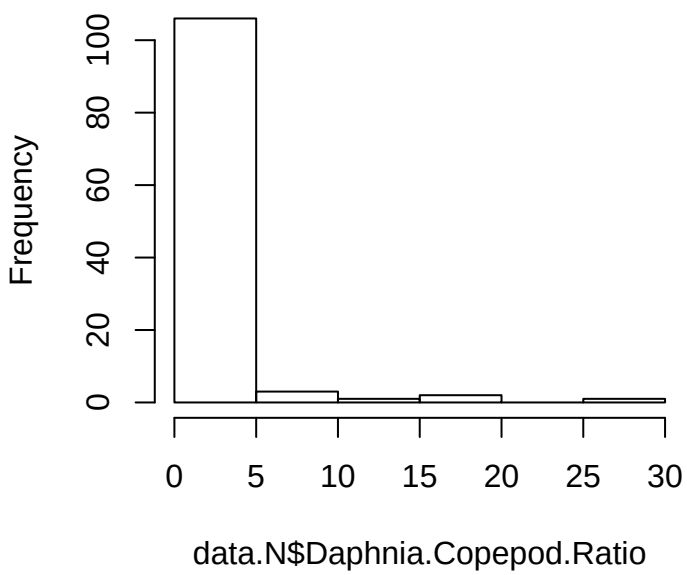


Figure 3: Total Zooplankton abundance and modeled temperature dependence from negative binomial regression.



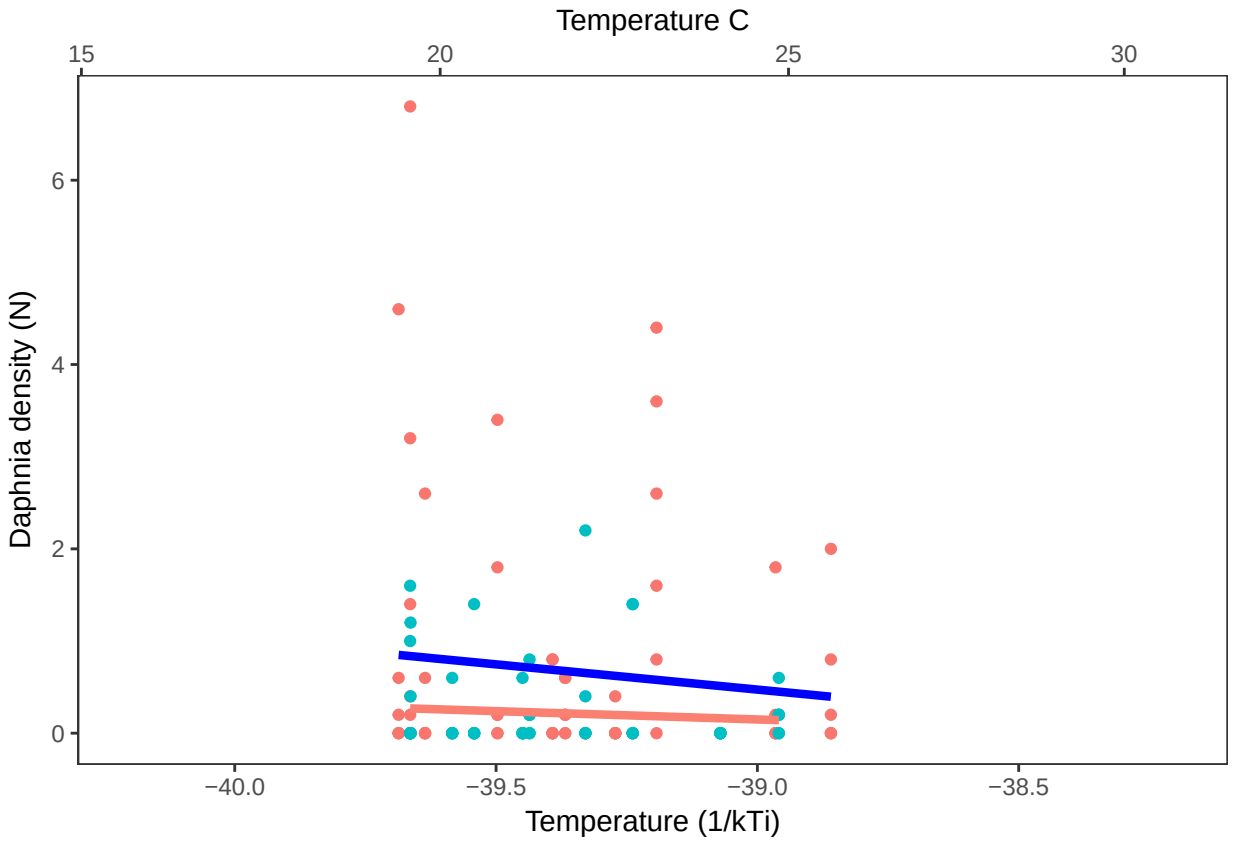



```
##        chisq        ratio          rdf            p
## 141.39313552   1.21890634 116.00000000   0.05457386
```

	(Intercept)	invTT	trophic.level	invTT:trophic.level	zeroInflation	df	logLik	AICc	delta	
poismod.Da	-38.64	0.97	+	+		5	-115.73	241.98	0.00	0.3
poismod.Db	-34.88	0.88	+	NA	T	5	-115.75	242.02	0.04	0.3
poismod.Dd	-0.97	NA	NA	NA		2	-119.71	243.52	1.54	0.1
poismod.Dc	-31.32	0.77	NA	NA		3	-119.33	244.87	2.89	0.0

```
##                     Estimate       se    Pr(>|z|)          LL          UL
## (Intercept)      -34.8832411 29.57400 0.238189608 -92.8482811 23.0817989
## invTT              0.8754168  0.75081 0.243629325  -0.5961708  2.3470044
## trophic.levelPZN  -1.1362396  0.39542 0.004059504  -1.9112628 -0.3612164
```

Plotting data and model results

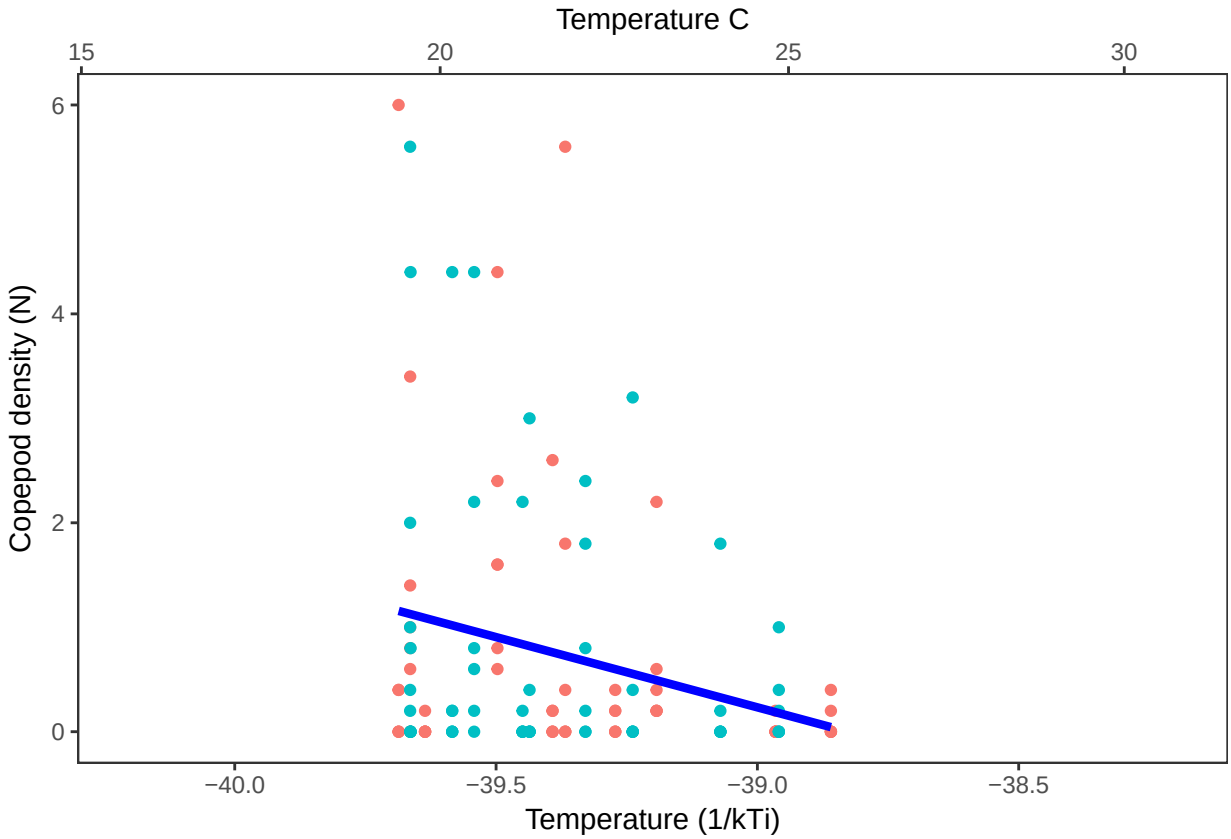


Trends within zooplankton species: Copepods

```
##        chisq        ratio          rdf            p
## 2.125926e+02 1.832695e+00 1.160000e+02 1.159517e-07
```

	(Intercept)	invTT	trophic.level	invTT:trophic.level	zeroInflation	df	logLik	AICc	delta	
poismod.Cb	-87.50	2.21	+	NA	F	5	-135.10	280.72	0.00	0.4
poismod.Cc	-87.63	2.21	NA	NA	T	5	-135.11	280.74	0.02	0.4
poismod.Ca	-96.20	2.43	+	+	F	6	-135.04	282.83	2.12	0.1
poismod.Cd	-0.34	NA	NA	NA	F	3	-140.19	286.59	5.87	0.0

```
##                Estimate       se    Pr(>|z|)          LL         UL
## (Intercept) -87.631290 28.01000 0.001756582 -142.5308904 -32.731690
## invTT         2.214321  0.71017 0.001820737    0.8223874   3.606254
```


Temperature C
15
20
25
30
6
4
2
0
Copepod density (N)
−40.0
−39.5
−39.0
−38.5
Temperature (1/kTi)