The following supplement accompanies the article

Somatic and molt production of *Euphausia mucronata* off central-southern Chile: the influence of coastal upwelling variability

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Supplement 1. In calculations of intermolt period (IMP), we followed the methodology described by Iguchi & Ikeda (1995). From regression analyses of $\log_{10}$IMP on total length (TL) at 3 experimental temperatures (T): 7.5, 11.2 and 18.5°C, we derived an average slope (a) from these regression lines. Initially, we had 4 experimental temperatures (as shown below, S5), but we excluded the dataset at 16°C due to inconsistency with other datasets. The average a was calculated as 0.0224. The intercepts from these regression lines were exponentially related to T: ($\log_{10}b = -0.0632 - 0.0219*T$, $r^2 = 0.978$, n = 3). From these results, IMP is now expressed as a function of T and TL.

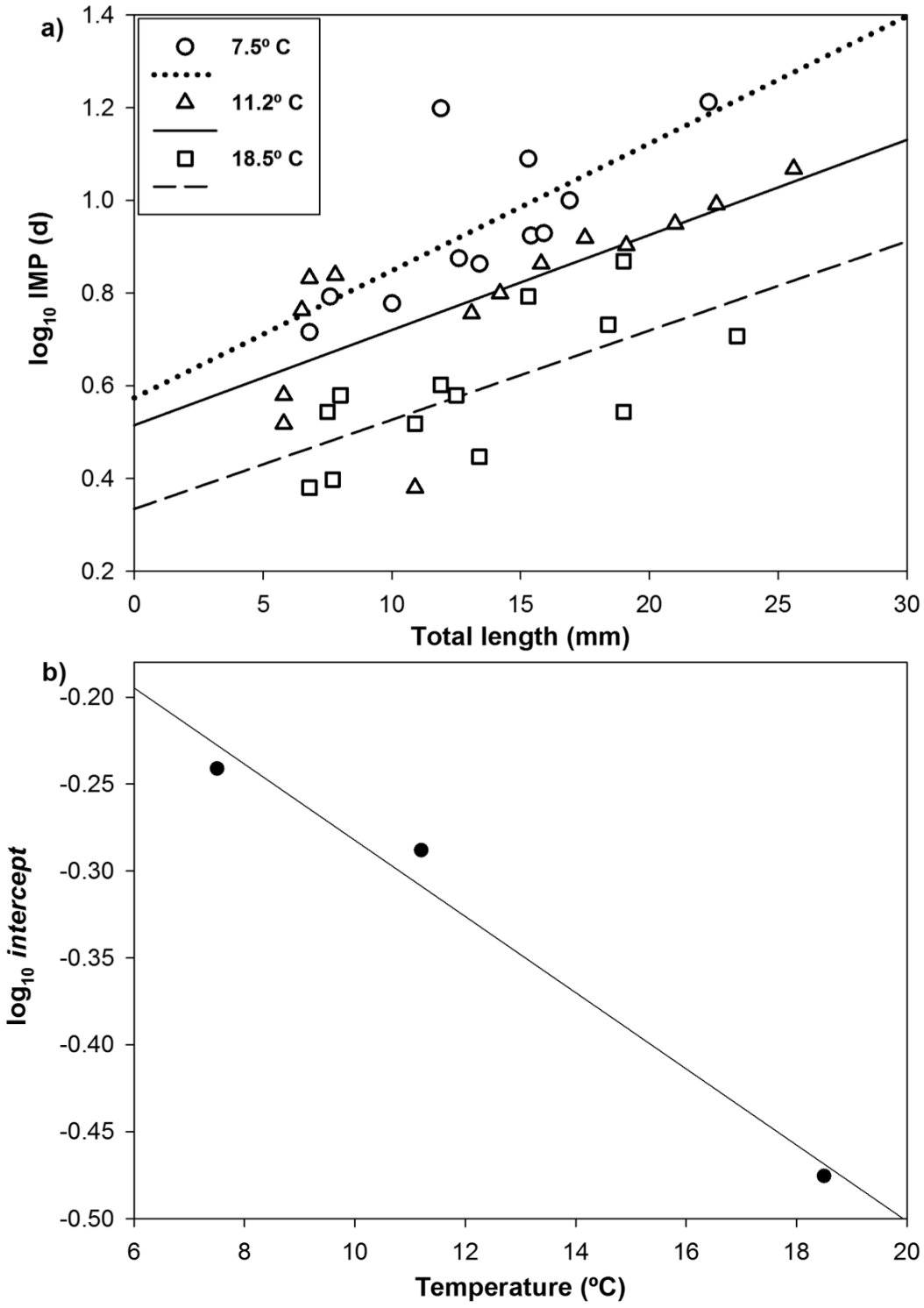

Fig. S1. *Euphausia mucronata.* (a) Relationship between intermolt period (IMP) and total length (TL) in *E. mucronata* from laboratory incubations at 3 different temperatures. Equations from the regression analysis are: $\log_{10}$IMP = 0.574 + 0.0275*TL, r^2 = 0.539, n = 11, $p < 0.05$ (at 7.5ºC); $\log_{10}$IMP = 0.5151 + 0.0205*TL, r^2 = 0.529, n = 14, $p < 0.01$ (at 11.2ºC); and $\log_{10}$IMP = 0.3347 + 0.0192*TL, r^2 = 0.478, n = 13, $p < 0.01$ (at 18.5ºC). (b) Relationship between intercepts of the IMP–TL relationship in (a) and *T* for *E. mucronata* ($\log_{10}$ Intercept = –0.063 – 0.022**T*, r^2 = 0.958, n = 3)

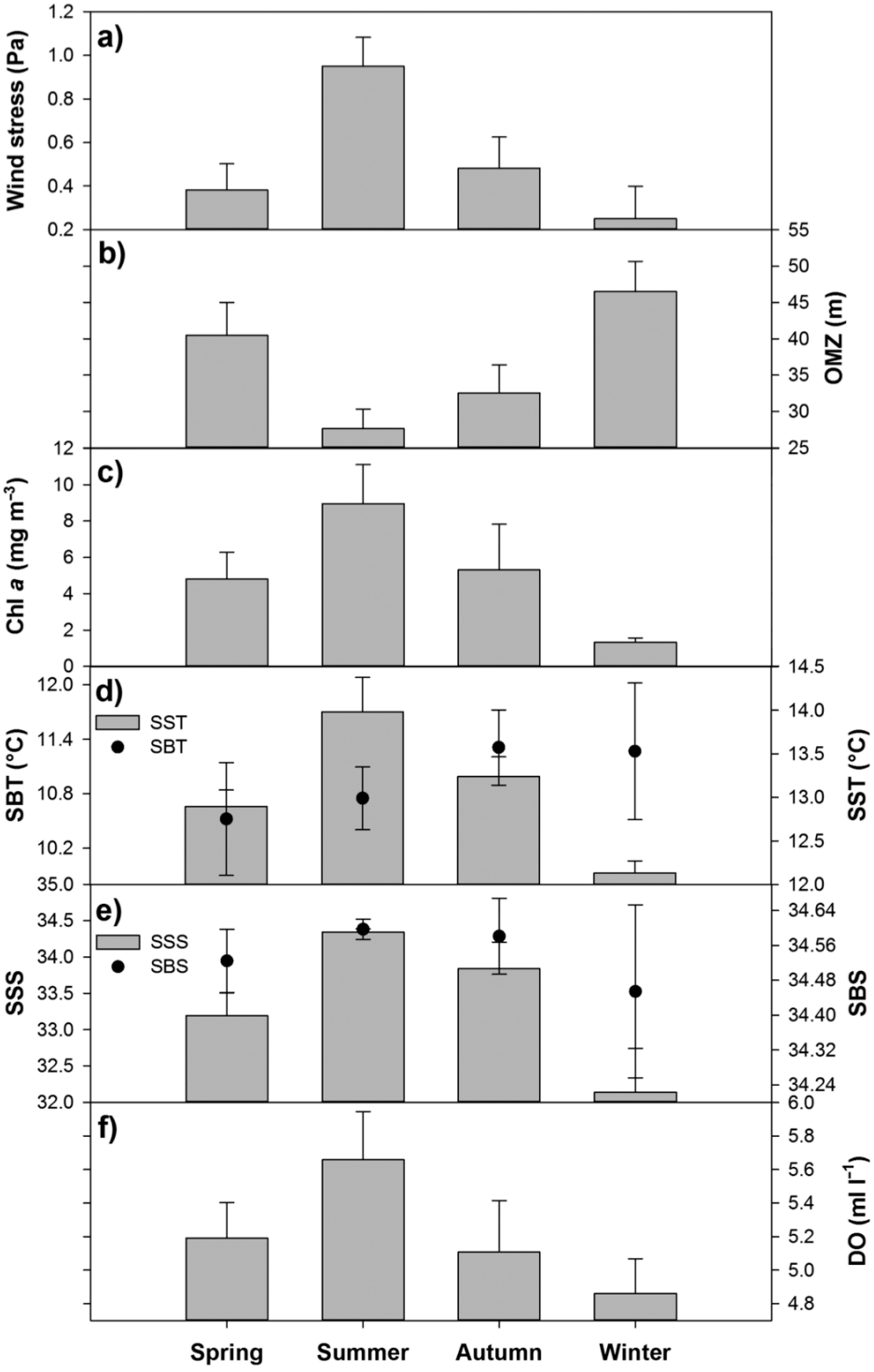

Fig. S2. Seasonal mean (±SD) of the environmental conditions. (a) QuickSCAT satellite alongshore wind stress, (b) depth of the upper boundary of the oxygen minimum zone (OMZ; <1 ml l^{-1}), (c) surface chl *a*, (d) sea surface (SST) and bottom (SBT) temperature, (e) sea surface (SSS) and bottom (SBS) salinity, and (f) sea surface dissolved oxygen (DO) concentration

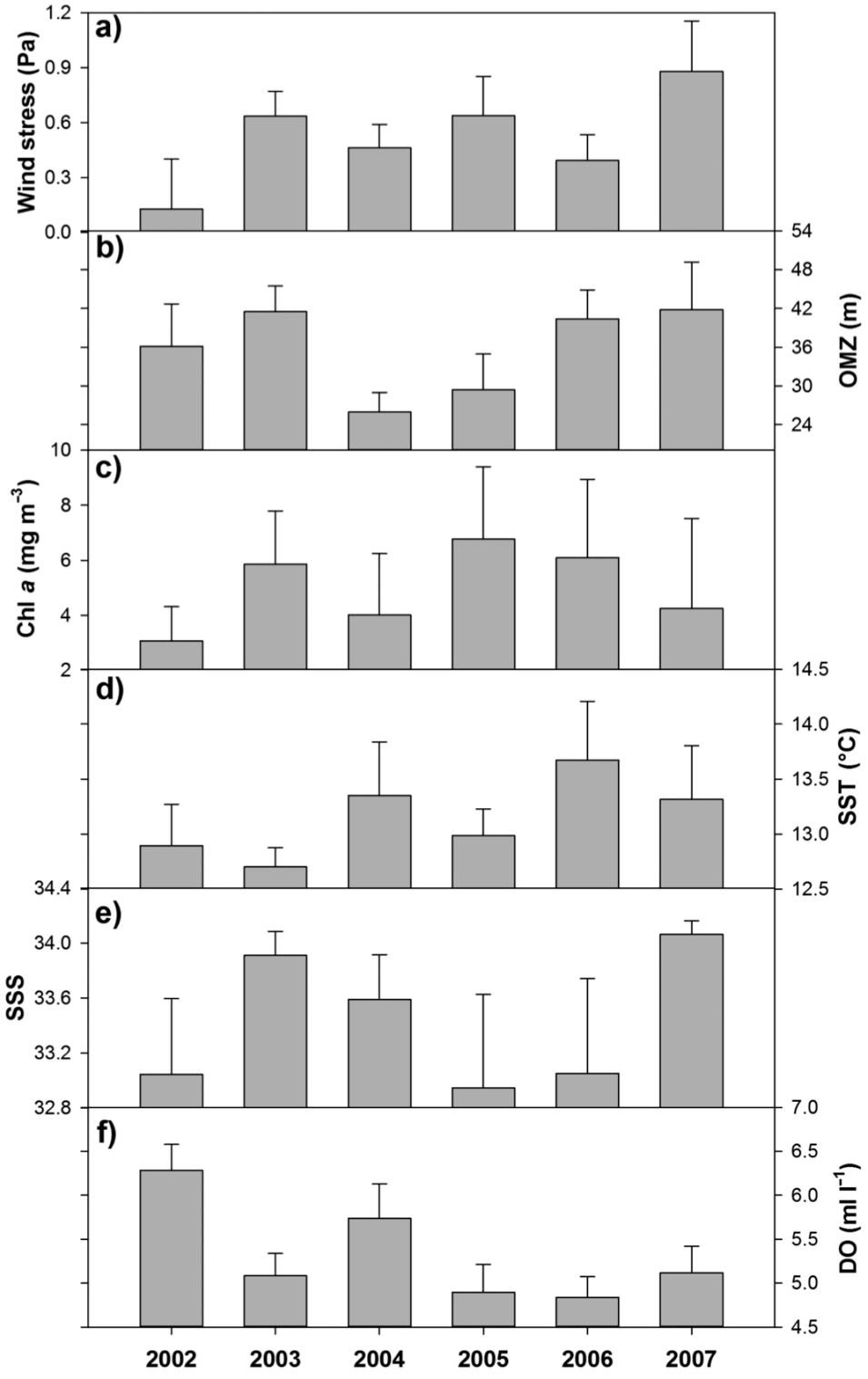

Fig. S3. Inter-annual variability (mean ± SD) of environmental conditions. (a) Satellite alongshore wind stress, (b) depth of the upper boundary of the oxygen minimum zone (OMZ), (c) surface chl *a*, (d) sea surface temperature, (e) sea surface salinity, and (f) sea surface dissolved oxygen (DO) concentration

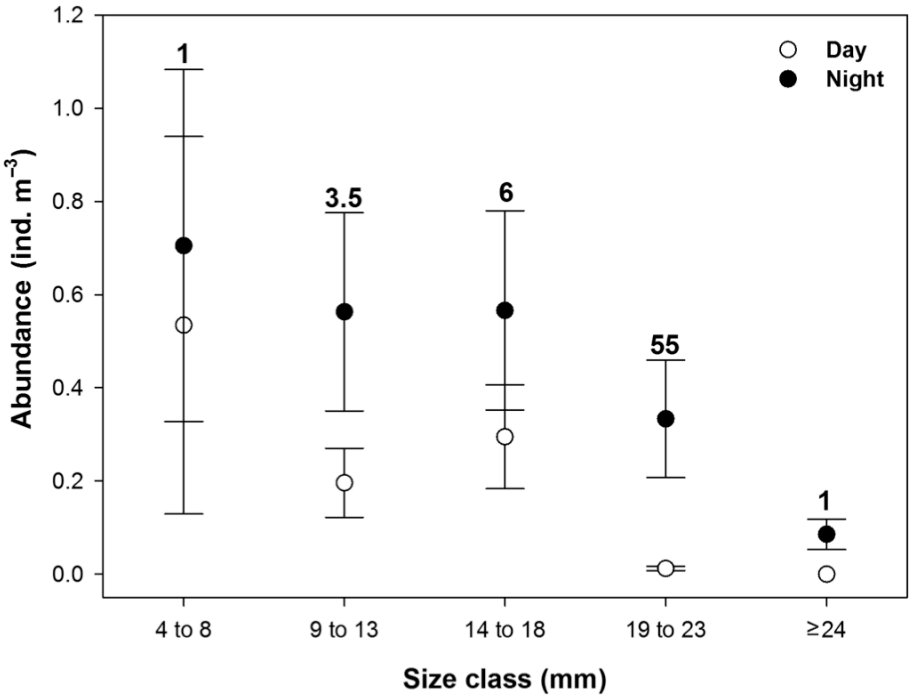

Fig. S4. *Euphausia mucronata.* Night vs. day mean (±SE) abundance (log-transformed) per size class at Stn 18 from 2008 to 2009. Numbers above bars indicate night:day size-dependent catch ratios

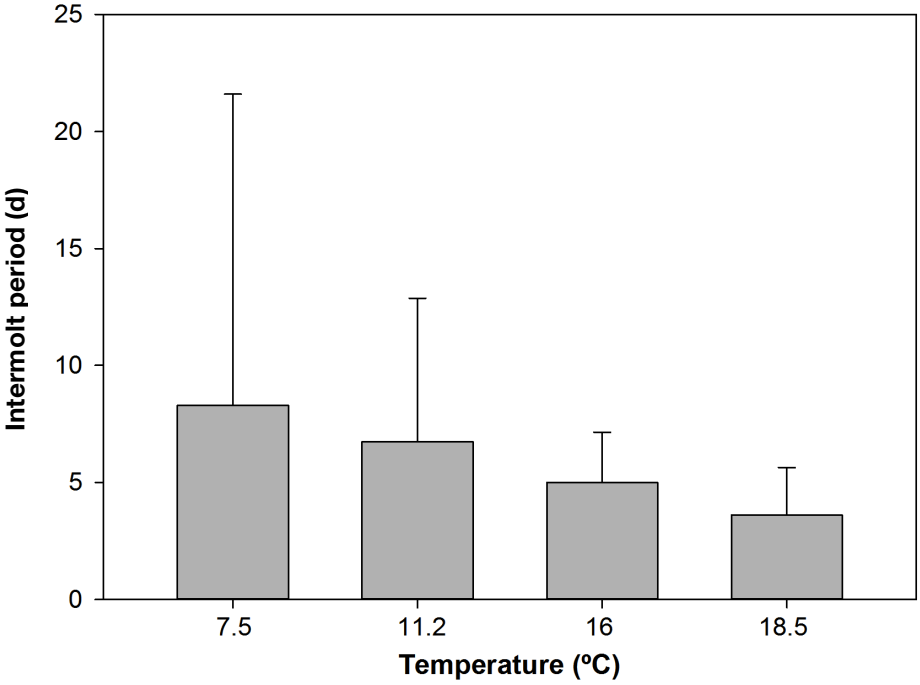

Fig. S5. *Euphausia mucronata*. Median intermolt period of *E. mucronata* at 4 experimental temperatures from laboratory incubations. Bars: upper quartile

Table S1. Annual production, biomass and P/B ratios of several euphausiid species estimated from preserved zooplankton samples. Geographical regions of each study and annual mean values or range are shown. Total production is the sum of somatic, molt, and egg production. Values were integrated to m^2 and/or yr when necessary for comparative purposes according to sampling depths reported for each study. Conversion to carbon content was made assuming a factor of 0.4

Species & geographical region	Total production (mg C m^{-2} yr^{-1})	Biomass (mg C m^{-2})	P/B	Source
Nyctiphanes simplex Bahia Vizcaino, Baja California	694	41	17	Lavaniegos (1995)
Nyctiphanes simplex Bahia Magdalena, Baja California	109[a]	16	7	Gómez-Gutiérrez et al. (1996)
Nyctiphanes australis Storm Bay, south-eastern Tasmania	2250	243	14–23	Ritz & Hosie (1982), Hosie & Ritz (1983)
Euphausia pacifica Toyama Bay, southern Japan Sea	6550	1090	6	Iguchi & Ikeda (1999)
Euphausia pacifica Barkley Sound, Canada	2984–9361[a]	280–580	11–23	Tanasichuk (1998)
Euphausia lucens St. Helena Bay, Benguela Current	5680–19160	1000–4700	10–16	Stuart & Pillar (1988)
Euphausia mucronata Central/southern Chile, Humboldt Current	2432[a,b]	100.3	24	This study

[a]Egg production not estimate

[b]In mg C m^{-3} yr^{-1}

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