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Interactive comment on "Growth and production of the copepod community in the southern area of the Humboldt Current System" *by* R. Escribano et al.

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On behalf of all coauthors I wish to thank Lidia for her valuable and useful comments and suggestions to improve our work. Our responses to her specific comments are as follow: We have attended your comments regarding Methods and Discussion and concluded that there are issues needing more detailed descriptions about procedures for calculations g and other parameters. 1) In our work we did not estimate g, but instead we used published/unpublished data on g from previous studies in the same region and same species. We admit that there is some missing information in Table 2 which are plotted in Figure 6. We have now fully revised these data and completed and corrected

Table 2 (attached), so that Table2 and Fig. 6 have consistent information. In Table 2 we also added mean values of g along with their SD for different developmental stages. Also, in order to have more data on g for all the species, we used some estimates of g from the same upwelling zone, but at northern Chile from previous studies not this one. This is now clearly described in Table 2 and in the text. 2) As we said above g was compiled for different species, stages and from two different areas and now fully presented in Table 2. From all these data mean g was estimated for each species, although in Fig 7 we separate mean values for northern and southern Chile, just to show if any large difference depending of the origin of g. The grand mean comes from the complete data set. 3) We agree that our description of upwelling variability through the time series was not as clear as we intended. To better demonstrate that upwelling conditions varied substantially from year to year we have now assessed the number of days favorable for upwelling (positive wind stress) for the same upwelling period each year. Considering that upwelling is strongly seasonal, we consider the upwelling period from September to March each year cycle. Therefore we had 3 comparable upwelling periods: I) September 2004-March 2005, II) September 2005-March 2006, III)September 2006-March 2007. The number of days having favorable winds for upwelling increased markedly from the I to the III period and so supporting our argument. This now should be clear in a new Fig. 4 (attached) and its description in the text. 4) With respect to our conceptual model (Fig. 13) I must stress that the model uses our calculations of CB, CP and PP on an annual basis, but now since we remade Fig. 4 for three equal upwelling periods, we have to illustrate this effect on the model as to represent the changes in upwelling conditions from year to year. For that, we have modified the model (see new Fig 13) now representing changes in upwelling with a vertical bar including the number of days with winds favorable for upwelling. This now shows that increased upwelling (in terms of more persistence) from 2004 to 2006 is linked to a greater biomass loss and consequently less CP. 5) Thank you for your suggestions for corrections in the text. We are certainly considering all of them.

TABLE 2

SPECIE	STAGES	SIZE RANGE (mm)	g ± SD (d^{-1})	TEMP. (°C)	REFERENCE
A. tonsa	C1, C3, C5 (Nor)	0.53 – 0.87	0.22 ± 0.035	12	Hidalgo P. (Unpublished data)
	C1 to C5 (Nor)	ND	0.20 ± 0.06	12	Hidalgo P. (Unpublished data)
	C1 to C5 (Sou)	ND	0.25 ± 0.05	12	Hidalgo P. (Unpublished data)
	C1, C2, C4 (Sou)	0.53 – 0.73	0.093 ± 0.042	12	Vargas et al. (2010)
	C3 (Sou)	0.658	0.21 ± 0.01	13	Vargas et al. (2010)
C. patagoniensis	C1 to C5 (Sou)	0.85 – 2.15	0.29 ± 0.056	12	Hidalgo P. (Unpublished data)
C. chilensis	C1 to C5 (Nor)	0.61 – 1.96	0.27 ± 0.11	16.5	Escribano & McLaren (1999)
	C1 to C5 (Nor)	2.33	0.114	15	Escribano et al. (1998)
	C1 to C5 (Nor)	ND	0.21 ± 0.05	12	Hidalgo P. (Unpublished data)
	C1 to AD (Nor)	2.55	0.28	14.6	Ulloa et al. (2001)
	C1 to AD (Nor)	2.35	0.35	18.5	Ulloa et al. (2001)
E. inermis	C1 to AD (Nor)	4.77	0.193	16	Hidalgo et al. (2005)
P. Cf indicus	C1 to C5 (Nor)	ND	0.24 ± 0.07	12	Hidalgo P. (Unpublished data)
	C1 to C5 (Sou)	ND	0.27 ± 0.04	12	Hidalgo P. (Unpublished data)
	C2 (Sou)	0.427	0.13	14	Vargas et al. (2010)
	C2 (Sou)	0.427	0.25 ± 0.064	13	Vargas et al. (2010)
	C3 (Sou)	0.593	0.29 ± 0.072	13	Vargas et al. (2010)
	C3 (Sou)	0.593	0.35 ± 0.03	14	Vargas et al. (2010)
	C4 (Sou)	0.725	0.053 ± 0.006	12	Vargas et al. (2010)
	C1 to C5 (Nor)	0.35 – 0.84	0.23 ± 0.11	12	Yáñez et al. (2012)
	C1 to C5 (Sou)	0.35 – 0.84	0.3 ± 0.15	12	Yañez et al. (2012)
R. nasutus	C1 to AD	1.45 – 5.88	ND	ND	Hidalgo P. (Unpublished data)

Fig. 1. New Table 2

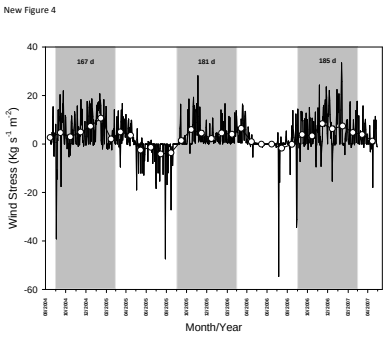

Fig. 2. New Figure 4

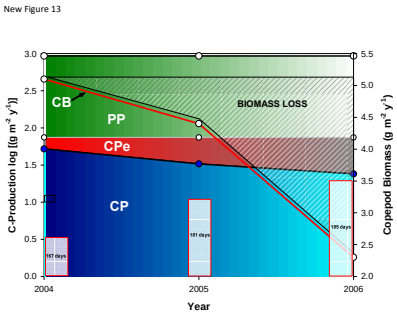

Fig. 3. Ne Figure 13