

**Supplementary material**

**Bioenergetics of blue swimmer crab (*Portunus armatus*) to inform estimation of release density for stock enhancement**

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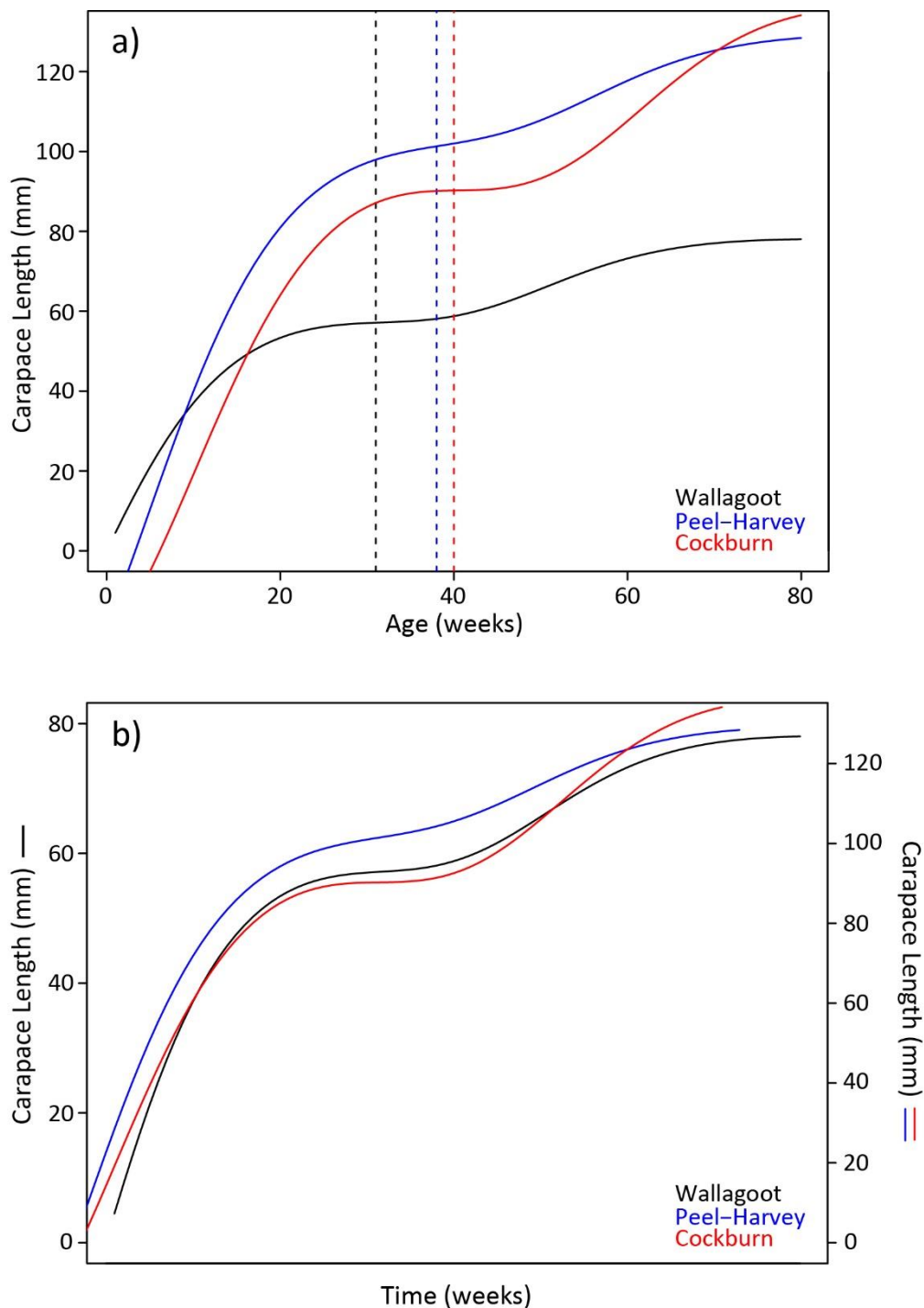
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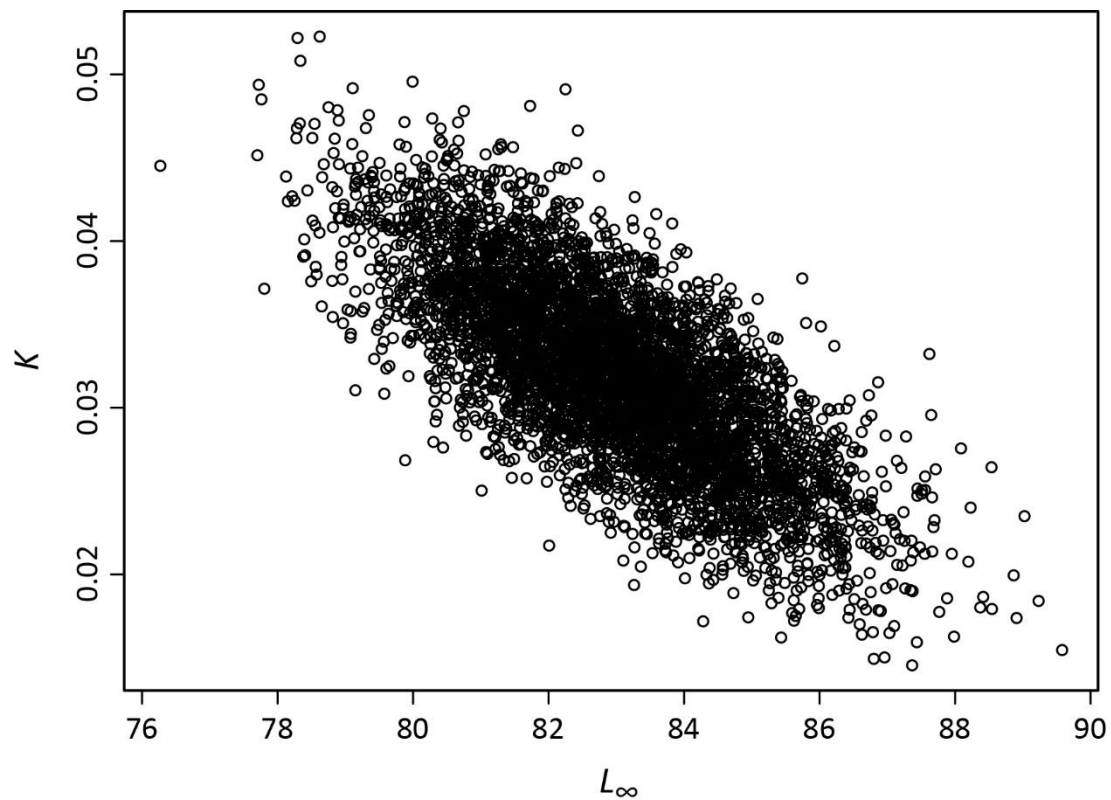
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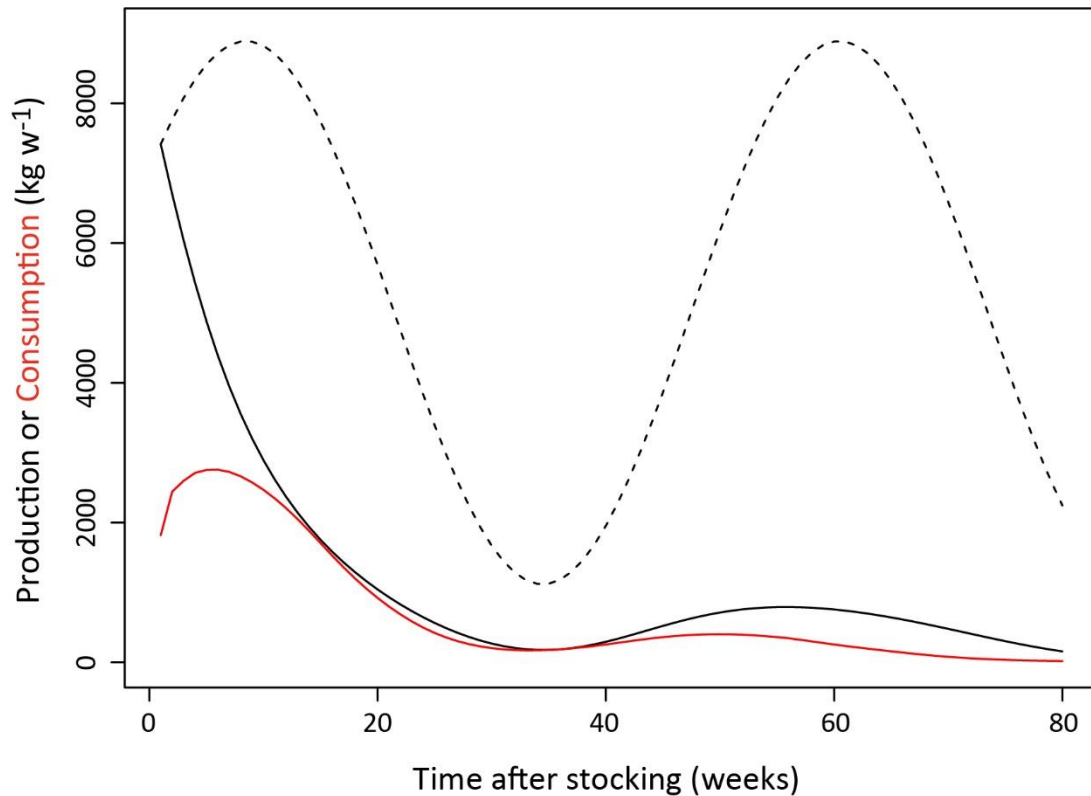
### Supplementary figures



**Figure S1.** Comparison of three BSC seasonal growth curves: the one used in this study (Wallagoot Lake), and that from two estuaries in Potter et al 2001 (Peel-Harvey Estuary, and Cockburn Sound). Plot a) shows the three growth curves plotted on the same age axis; the dotted lines illustrate the slowest growth point of the seasonal oscillation. Plot b) shows the growth curves on separate y axes, and have been shifted along the x axis to align the seasonal oscillations (the dashed lines in the first plot); which was done to illustrate the similarity in the duration and magnitude of the seasonal oscillation in growth (the parameter  $t_s$ ).



**Figure S2.** The sampled distributions of the von Bertalanffy growth parameters  $K$  and  $L_{\infty}$  used in our simulation. Each dot is a single sample drawn from the bivariate distribution. Shown are 5000 samples.



**Figure S3.** Illustration of a simulated solution matching total consumption of the stocked population (red line) and the available production (black line). In this example consumption matches production at around week 35. The available production varies seasonally, and declines overall due to the increasing trophic level of the stocked BSC as they grow. The dotted line illustrates the available production if trophic level of BSC remained constant (in this example,  $TL=2.33$ ) rather than increased with body length, and only the seasonal oscillation occurred. Clearly the model would estimate a higher stocking density with the constant trophic level.