Testing the Mediterranean European seabass DEB model from Stavrakidis-Zachou *et al.* 2018 with our wild Atlantic European seabass length dataset

The DEB model was twice successfully parametrized for European seabass (Lika *et al.*, 2014 and Stavrakidis-Zachou *et al.*, 2018). The DEB parameter values from those studies were extracted from aquaculture data and applied to the Mediterranean Sea.

To test this model on our wild seabass dataset, we calculated the von Bertalanffy parameters $L_{w\infty}$ (the ultimate physical length, cm, eq. 9) and k (the growth rate, d^{-1}, eq. A.1).

$$k = \frac{\dot{v}}{3\left(\frac{\kappa\{\dot{p}_{Am}\}}{[p_M]}\right)\left(f+\left(\frac{[E_G]\dot{v}}{\kappa\{\dot{p}_{Am}\}}\right)\right)} \qquad (A.1)$$

With $f = 1$, these parameters were equal to 113.1 and 0.00102, respectively. To model a $L_{w\infty}$ of 80.4 cm, such as estimated by Bertignac (1987), we found that f should be around 0.71. We then compared this model ($f = 0.71$ and T reconstructed from tagged wild seabass, *Fig.*2) with our wild seabass dataset and observed growth rates too fast for juveniles (*Fig. S1*). These results highlighted the need to compile new data and obtain new parameter estimates.

It is also worth noting that the egg energy had to be increased from 2.8 J (i.e. the value calculated following Devauchelle & Coves (1988)) to 3.8 J in the model of Stavrakidis-Zachou *et al.* (2018) for individuals to hatch.

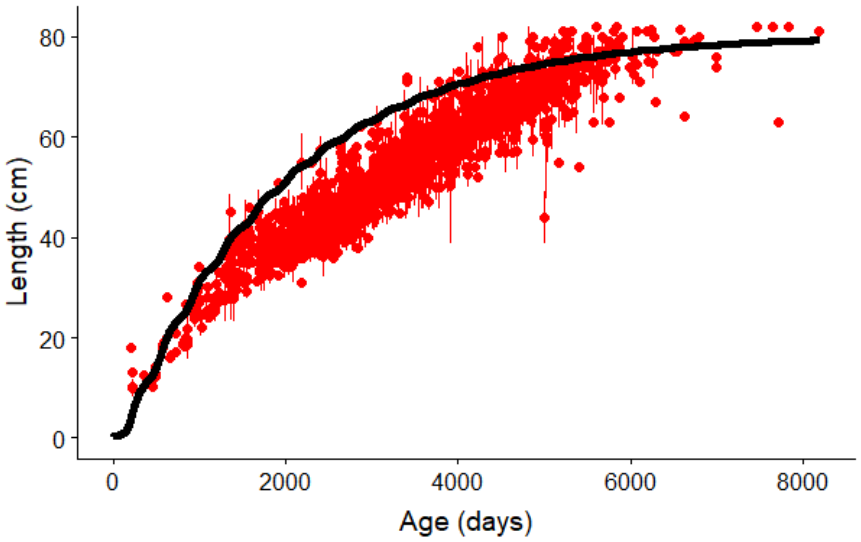

Figure S1. Fit using the DEB model of Stavrakidis-Zachou et al. *(2018) (black line) at f=0.71 and T reconstructed from tagged seabass, to our length-at-age dataset for wild seabass (red dots with their standard deviation error bars).*