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Marine and Freshwater Research

Supplementary Material

A re-examination of the growth of the gummy shark (*Mustelus antarcticus*) from Queensland, Australia

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Table S1. Relative performance and mean parameter estimates for the three candidate growth functions used to assess the growth of 44 *Mustelus antarcticus* as reported by Rigby *et al*. (2016).

Function	LOOIC	LOOICw	L_∞ (mm)	L_0 (mm)	k/g (year^{-1})	σ
Sexes combined						
Gompertz	455.3	0	1836 (1786–1885)	273 (262–283)	0.091 (0.091–0.097)	41.2 (32.3–52.8)
Logistic	502.2	0	1838 (1788–1888)	272 (260–284)	0.16 (0.149–0.173)	67.9 (53.1–86.7)
von Bertalanffy	**418.3**	**1**	**1852 (1836–1901)**	**261 (251–270)**	**0.044 (0.041–0.046)**	**28 (22.6–35.0)**
Female						
Gompertz	330.3	0	1841 (1792–1890)	269 (257–280)	0.091 (0.086−0.097)	47.9 (35.7–64.1)
Logistic	362.2	0	1842 (1793–1891)	268 (256–279)	0.159 (0.145−0.173)	77.4 (59.2–97.1)
von Bertalanffy	**299.5**	**1**	**1853 (1803–1902)**	**260 (250–270)**	**0.044 (0.041–0.046)**	**30.2 (23.4–39.6)**
Male						
Gompertz	126.6	0.22	1479 (1430–1528)	262 (251–272)	0.118 (0.109–0.128)	30.6 (19.9–48.7)
Logistic	135	0	1479 (1430–1528)	262 (251–273)	0.203 (0.185–0.223)	42.7 (27.1–67.5)
von Bertalanffy	**124.1**	**0.78**	**1483 (1433–1532)**	**258 (248–268)**	**0.06 (0.055–0.066)**	**27.5 (18.2–43.5)**

The parameter estimates shown are the mean values of the posterior distributions of the respective parameters and numbers in parentheses are the 95% credible intervals from their posterior distributions generated by the 'BayesGrowth' package using the R statistical software. Note: LOOIC is the leave-one-out information criterion; LOOICw is the LOOIC weights; L_∞ is the asymptotic length; L_0 is the length at $t = 0$; k and g are the growth coefficients of the von Bertalanffy, Gompertz and Logistic functions (see Table 1); and σ is the estimated residual error.

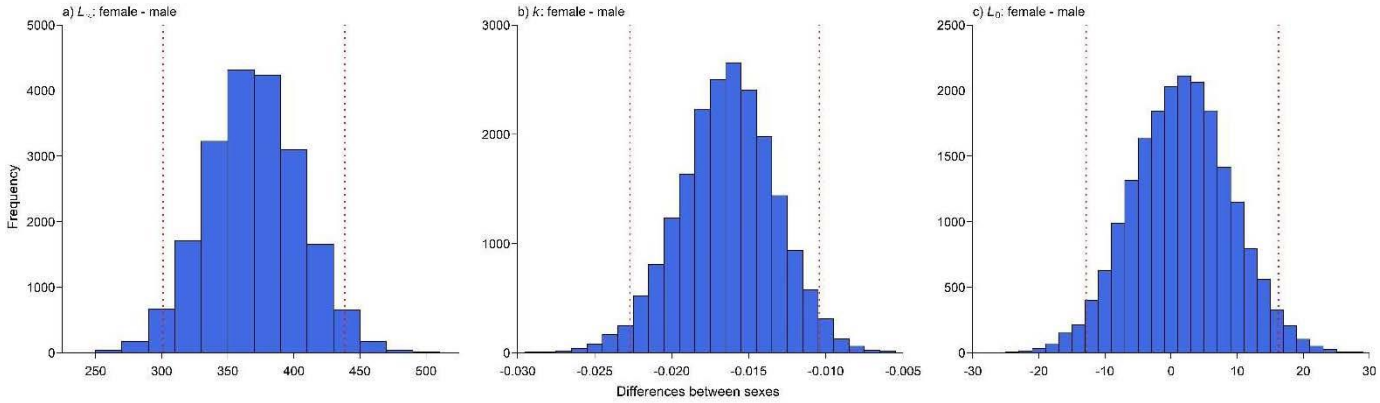

Fig. S1. Frequency histograms of v_{diff}, representing the result of subtracting the vector of posterior estimates of each parameter for males from the vector of posterior estimates for females. Red dotted lines represent the 95% confidence interval of the distribution of v_{diff}. Significant differences were detected if the 95% confidence interval did not include zero.

Reference

Rigby, C.L., White, W.T., Smart, J.J., and Simpfendorfer, C.A. (2016) Life histories of two deep-water Australian endemic elasmobranchs: Argus skate *Dipturus polyommata* and eastern spotted gummy shark *Mustelus walkeri*. *Journal of Fish Biology* **88**, 1149-1174.