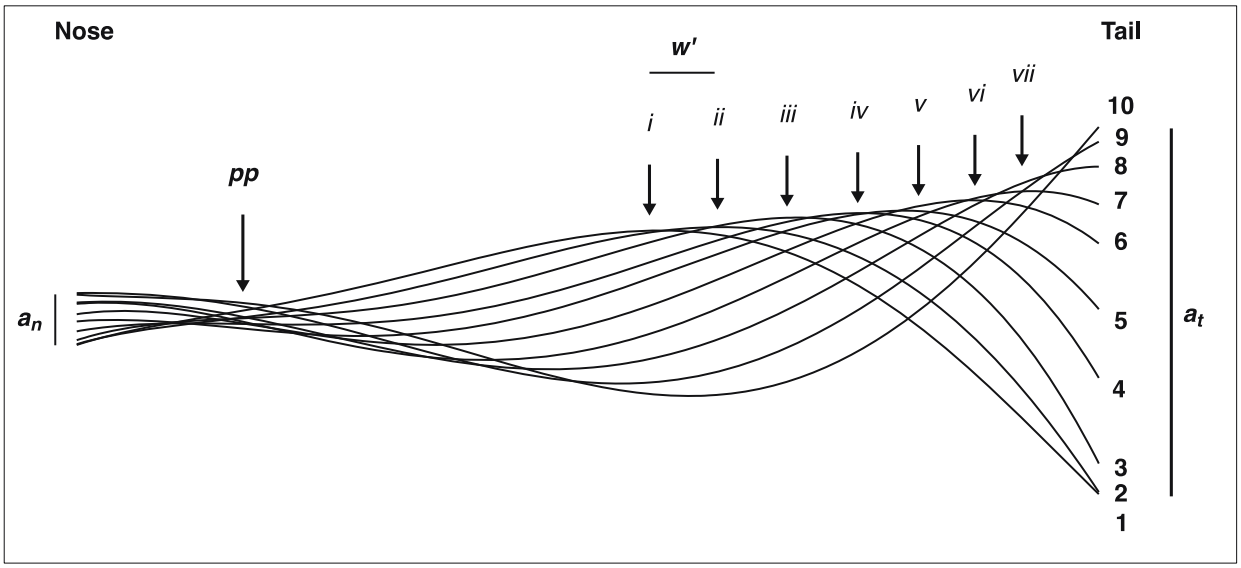

Fig. S1.

Midline analysis of ram and beat-glide swimming in *Engraulis mordax*.

After Shadwick and Gemballa (2006). This shows how midline data was analyzed. Lines are constructed midlines (see Methods) over a half stroke cycle from left-most (#1) to right-most (#10) tail extents (not all are shown). Roman numerals *i* – *vii* show the most lateral point of the body for the corresponding number midline (1 – 7). The distances between these (***w'***) were used to calculate the velocity of the propulsive wave (***w***). ***pp*** is the pivot point, the region of least lateral movement; a_t is the amplitude at the tail; a_n is the amplitude at the nose.

Table S1. Summary of Pearson correlations to assess pairwise linear dependence between measured parameters as in Fig. 4. Significantly correlations within each swimming mode are highlighted in **bold**, and those which are significant in both swimming modes are additionally **underlined**. ***A***, amplitude (***L***); ***θ***, yaw angle (°); ***U***, speed (L s^{-1}); ***F***, tailbeat frequency (str s^{-1}); ***Ds***, distance covered per stroke (***L*** str^{-1}). See Fig. 3 for plots of each relationship.

		Ram filter feeding		
	A	***θ***	***U***	***F***
θ	**r = 0.72, P = 0.01**			
U	r = 0.37, P = 0.24	r = 0.00, P = 1.00		
F	r = -0.44, P = 0.15	r = -0.40, P = 0.20	r = 0.37, P = 0.23	
Ds	**r = 0.76, P = 0.004**	r = 0.38, P = 0.22	**r = 0.67, P = 0.02**	r = -0.42, P = 0.18
		Beat-glide swimming		
	A	***θ***	***U***	***F***
θ	r = 0.09, P = 0.79			
U	r = 0.46, P = 0.13	r = 0.13, P = 0.70		
F	r = 0.22, P = 0.48	r = 0.22, P = 0.49	**r = 0.73, P = 0.01**	
Ds	**r = 0.83, P = 0.003**	r = 0.40, P = 0.25	r = 0.32, P = 0.36	r = 0.27, P = 0.45

Table S2. Depth calculations

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