

Table S1. Mixed model regression results for relative force (log transformed) and wake vortex angle, and normalized vortex ring diameter.

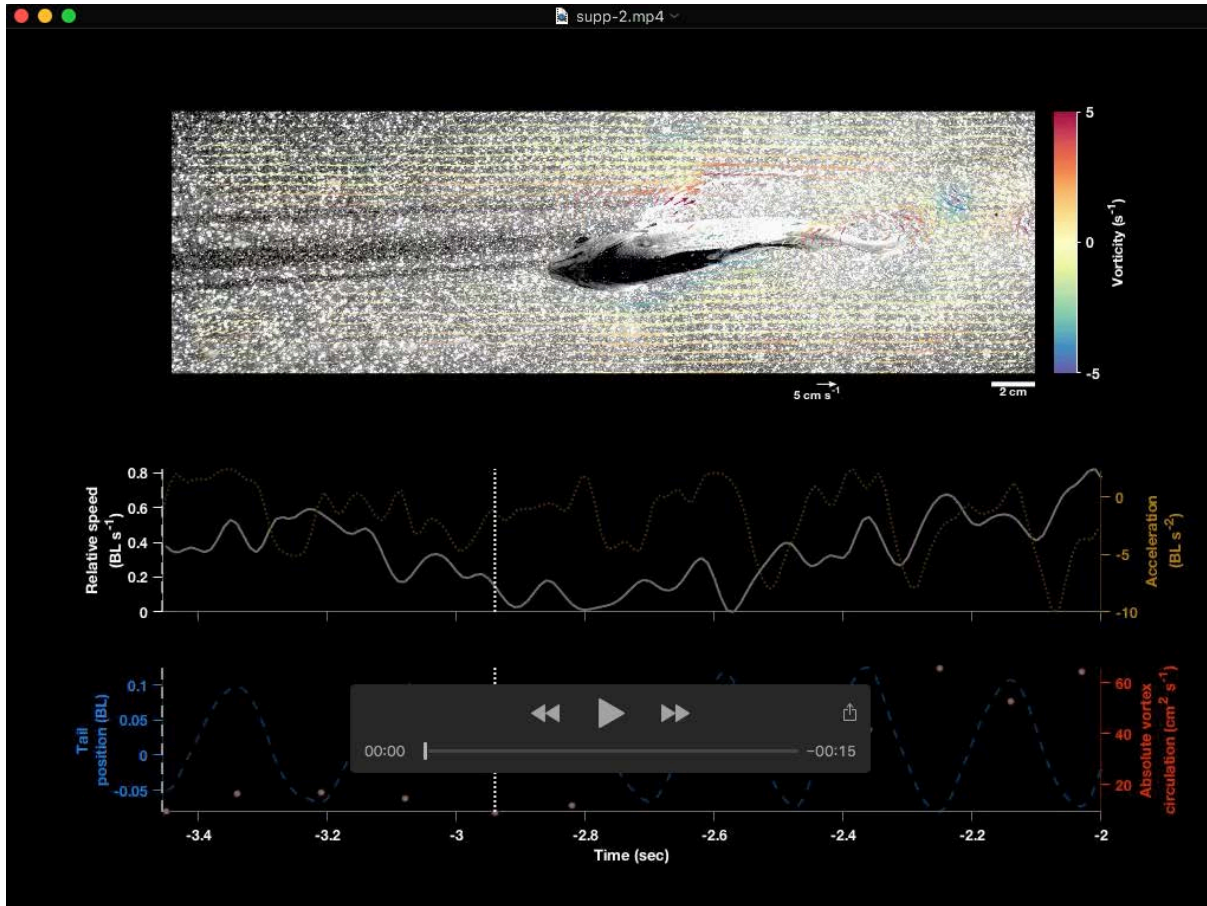
	Force (log transformed)			Wake vortex angle			Normalized vortex ring diameter		
	<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
Intercept	11994.8	1,1096	<0.001	414.40	1,1096	<0.001	403.93	1,1096	<0.001
Acceleration categories ¹	87.60	3,1096	<0.001	3.93	3,1096	0.008	0.15	3,1096	0.933
Tailbeat type ²	239.95	1,1096	<0.001	3.78	1,1096	0.052	11.87	1,1096	0.001
Flow speed ³	283.20	3,1096	<0.001	1.43	3,1096	0.232	20.14	3,1096	<0.001
Tailbeat type × Acceleration	1.10	3,1096	0.347	0.55	3,1096	0.650	0.86	3,1096	0.463
Flow speed × Acceleration	6.88	9,1096	<0.001	3.26	9,1096	0.001	3.12	9,1096	0.001
Tailbeat type × Flow speed	10.25	3,1096	<0.001	0.35	3,1096	0.786	1.43	3,1096	0.232

¹zero (-1 to 1 BL s⁻²), low (1 – 2.5 BL s⁻²), medium (2.5 – 6 BL s⁻²), and high (> 6 BL s⁻²); ²steady or unsteady; ³1.0 BL s⁻¹, 1.5 BL s⁻¹, 2.0 BL s⁻¹, or 2.5 BL s⁻¹

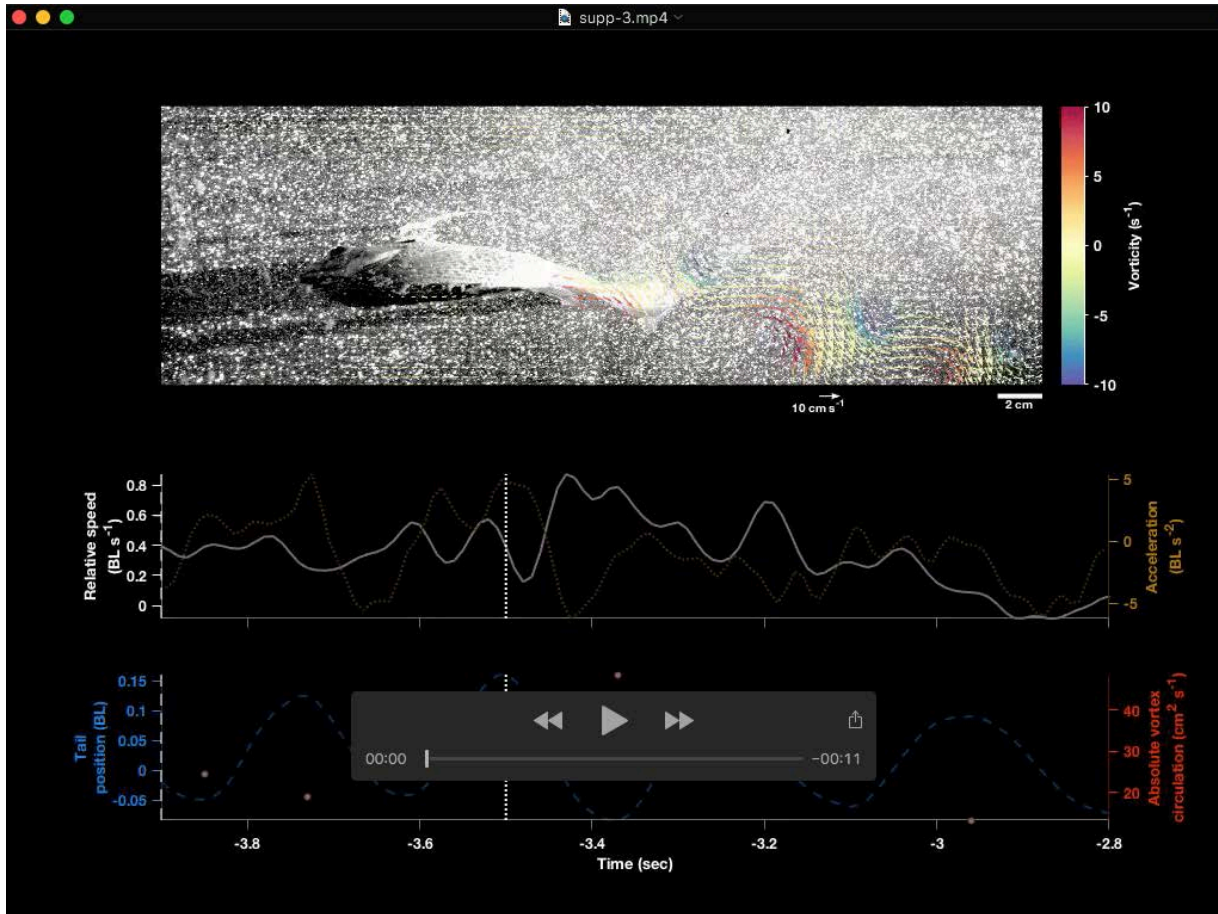
Table S2. Mixed model regression results for tail beat frequency and head and tail amplitude.

	Frequency (log transformed)			Head amplitude			Tail amplitude		
	<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
Intercept	402.67	1,1096	<0.001	259.53	1,1096	<0.001	188.09	1,1096	<0.001
Acceleration categories ¹	108.74	3,1096	<0.001	17.28	3,1096	<0.001	47.77	3,1096	<0.001
Tailbeat type ²	143.45	1,1096	<0.001	13.49	1,1096	<0.001	114.01	1,1096	<0.001
Flow speed ³	146.21	3,1096	<0.001	17.85	3,1096	<0.001	40.39	3,1096	<0.001
Tailbeat type × Acceleration	0.43	3,1096	0.734	0.58	3,1096	0.629	2.38	3,1096	0.068
Flow speed × Acceleration	3.63	9,1096	<0.001	2.01	9,1096	0.035	4.49	9,1096	<0.001
Tailbeat type × Flow speed	15.98	3,1096	<0.001	2.92	3,1096	0.033	14.38	3,1096	<0.001

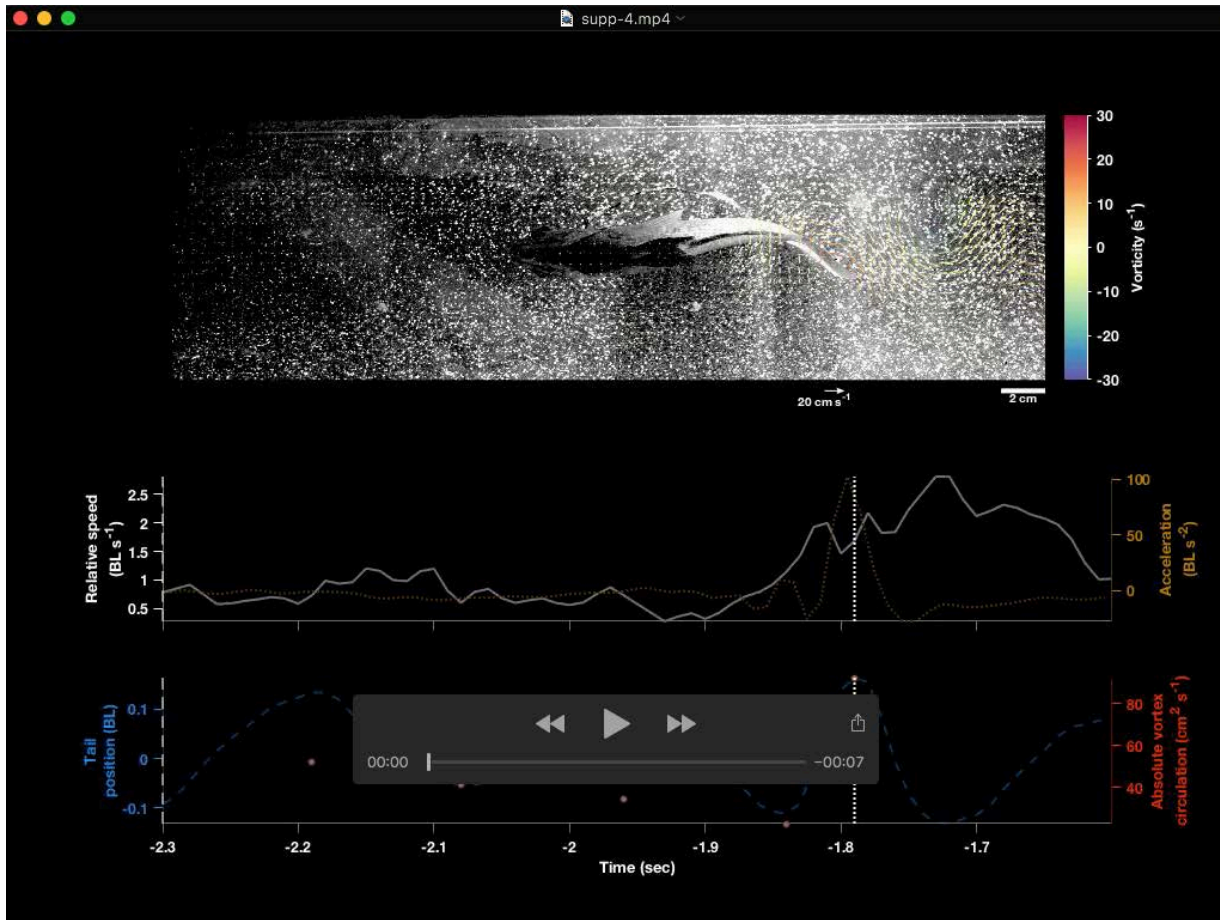
¹zero (-1 to 1 BL s⁻²), low (1 – 2.5 BL s⁻²), medium (2.5 – 6 BL s⁻²), and high (> 6 BL s⁻²); ²steady or unsteady; ³1.0 BL s⁻¹, 1.5 BL s⁻¹, 2.0 BL s⁻¹, or 2.5 BL s⁻¹



Movie 1. Example video, flow patterns, and kinematic variables during steady swimming at 1.5 BL s^{-1} . The top panel shows video, filmed from below, with flow vectors in color. The color indicates vorticity. The bottom two panels show the fish's relative speed within the flow tank (white solid line), the acceleration (brown dotted line), the position of the tail (blue dashed line), and the absolute value of the circulation of vortices shed into the wake (red circles). The current time within the video is shown with a dashed white line, and the time that corresponds to Fig. 3A is shown with a dotted white line. The video is slowed by 10 times.



Movie 2. Example video, flow patterns, and kinematic variables during a medium acceleration starting at 1.5 BL s^{-1} . The top panel shows video, filmed from below, with flow vectors in color. The color indicates vorticity. The bottom two panels show the fish's relative speed within the flow tank (white solid line), the acceleration (brown dotted line), the position of the tail (blue dashed line), and the absolute value of the circulation of vortices shed into the wake (red circles). The current time within the video is shown with a dashed white line, and the time that corresponds to Fig. 3B is shown with a dotted white line. The video is slowed by 10 times.



Movie 3. Example video, flow patterns, and kinematic variables during a high acceleration starting at 1.5 BL s^{-1} . The top panel shows video, filmed from below, with flow vectors in color. The color indicates vorticity. The bottom two panels show the fish's relative speed within the flow tank (white solid line), the acceleration (brown dotted line), the position of the tail (blue dashed line), and the absolute value of the circulation of vortices shed into the wake (red circles). The current time within the video is shown with a dashed white line, and the time that corresponds to Fig. 3C is shown with a dotted white line. The video is slowed by 10 times.