

**Table S1. Results from bending experiments (MTS) in two species of billfish, swordfish (*X. gladius*) and blue marlin (*M. nigricans*)**

	Max Stress (N/mm <sup>2</sup> )				Stiffness (Gpa)				Flexural stiffness (Gpa mm <sup>3</sup> )			
	Area 1	Area 2	Area 3	Area 4	Area 1	Area 2	Area 3	Area 4	Area 1	Area 2	Area 3	Area 4
<b>SWF<sub>LAT</sub></b>	1.4 ± 0.2	1.7 ± 0.3	1.6 ± 0.3	1.6 ± 0.3	12.2 ± 2.6	9.4 ± 1.4	6.8 ± 0.8	5.3 ± 0.5	3.7 10 <sup>5</sup> ± 9.0 10 <sup>4</sup>	5.9 10 <sup>5</sup> ± 9.6 10 <sup>4</sup>	7.9 10 <sup>5</sup> ± 7.9 10 <sup>4</sup>	9.6 10 <sup>5</sup> ± 7.2 10 <sup>4</sup>
<b>SWF<sub>DV</sub></b>	2.1 ± 0.2	2.1 ± 0.2	2.0 ± 0.2	1.3 ± 0.2	12.9 ± 1.3	12.8 ± 1.7	9.4 ± 0.7	3.1 ± 0.4	2.9 10 <sup>4</sup> ± 1.5 10 <sup>3</sup>	7.0 10 <sup>4</sup> ± 7.2 10 <sup>3</sup>	1.0 10 <sup>5</sup> ± 3.8 10 <sup>3</sup>	1.210 <sup>5</sup> ± 5.7 10 <sup>3</sup>
<b>BM<sub>LAT</sub></b>	7.8 ± 2.6	11.0 ± 2.9	9.9 ± 3.6	3.9 ± 1.3	14.5 ± 1.3	12.5 ± 1.2	7.3 ± 1.7	3.5 ± 0.5	4.2 10 <sup>5</sup> ± 4.610 <sup>4</sup>	6.1 10 <sup>5</sup> ± 1.1 10 <sup>4</sup>	7.3 10 <sup>5</sup> ± 2.6 10 <sup>3</sup>	2.0 10 <sup>6</sup> ± 2.6 10 <sup>5</sup>
<b>BM<sub>DV</sub></b>	8.7 ± 2.1	11.0 ± 1.6	9.2 ± 1.2	4.9 ± 0.7	16.4 ± 1.2	15.3 ± 1.9	11.8 ± 0.8	5.7 ± 0.5	2.4 10 <sup>5</sup> ± 4.3 10 <sup>4</sup>	3.9 10 <sup>5</sup> ± 1.0 10 <sup>3</sup>	6.7 10 <sup>5</sup> ± 3.3 10 <sup>4</sup>	1.3 10 <sup>6</sup> ± 1.7 10 <sup>5</sup>

Maximum stress, stiffness and flexural stiffness along the rostrum (Mean ± SE areas 1 and 4 respectively) for swordfishes (SWF) and blue marlin (BM) during lateral (LAT) and dorsoventral (DV) bending