Supplementary Material

Quantifying conditional probabilities of fish-turbine encounters and impacts

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1 Supplementary Tables

Table S1. Model component probability estimates for an **(A)** axial flow tidal turbine during day, **(B)** an axial flow tidal turbine during night, **(C)** a cross-flow tidal turbine during day and, **(D)** a cross-flow tidal turbine during night.

A) Axial-Flow Turbine Day

Model Component				Active Avoidance		Passive Avoidance	
Domain	1						
Zone of Influence	0.0636						
Entrainment							
Empirical	0.00245						
Admiralty Inlet avoidance	0.0118			0.0236		0.790	
Shen *et al.* (2016) avoidance	0.0399			0.372		0	
Collision	Courtney *et al.* 2022	Yoshida *et al*. 2021	Romero-Gomez and Richmond, 2014	Zone of Influence (Shen *et al*. 2016)	Entrainment (Viehman and Zydlewski, 2015)	Zone of Influence (Shen *et al.* 2016)	Entrainment (Viehman and Zydlewski, 2015)
No avoidance	0.0374	0.0408	0.0258 - 0.0372		0.020		0.937
Admiralty Inlet avoidance	0.000443	0.000484	0.000305 - 0.000441	0.0236	0.020	0.790	0.937
Shen *et al.* (2016) avoidance	0.00149	0.00163	0.000103 - 0.00148	0.372	0.020	0	0.937

Blade strike							
Literature	0.13	0.05	0.40 - 0.133				
Admiralty Inlet avoidance	0.00154	0.000592	0.00473 - 0.00157	0.0236		0.790	
Shen *et al.* (2016) avoidance	0.00519	0.00199	0.0159 - 0.00532	0.372		0	
Collision and blade strike							
No avoidance	0.00486	0.00204	0.0103 - 0.00496		0.020		0.937
Admiralty Inlet avoidance	0.0000576	0.0000242	0.000122 - 0.0000588	0.0236	0.020	0.790	0.937
Shen *et al.* (2016) avoidance	0.000194	0.0000815	0.000412 - 0.000198	0.372	0.020	0	0.937

B) Axial-Flow Turbine Night

Model Component				Active Avoidance		Passive Avoidance	
Domain	1						
Zone of Influence	0.0649						
Entrainment							
Empirical	0.00250						
Admiralty Inlet avoidance	0.0118			0.0241		0.792	
Shen *et al.* (2016) avoidance	0.0408			0.372		0	
Collision	Courtney *et al*. 2022	Yoshida *et al.* 2021	Romero-Gomez and Richmond, 2014	Zone of Influence (Shen *et al.* 2016)	Entrainment (Viehman and Zydlewski, 2015)	Zone of Influence (Shen *et al.* 2016)	Entrainment (Viehman and Zydlewski, 2015)
No avoidance	0.288	0.324	0.199 - 0.287		0.109		0.559
Admiralty Inlet avoidance	0.00343	0.00385	0.00236 - 0.00342	0.0241	0.109	0.790	0.559
Shen *et al.* (2016) avoidance	0.0117	0.0132	0.00812 - 0.0117	0.372	0.109	0	0.559

Blade strike							
Literature	0.13	0.022	0.40 - 0.133				
Admiralty Inlet avoidance	0.00154	0.000261	0.00475 - 0.00158	0.0241		0.792	
Shen *et al.* (2016) avoidance	0.00530	0.000987	0.0163 - 0.00544	0.372		0	
Collision and blade strike							
No avoidance	0.0375	0.00714	0.0678 - 0.0347		0.109		0.559
Admiralty Inlet avoidance	0.000446	0.0000849	0.000947 - 0.000456	0.0241	0.109	0.792	0.559
Shen *et al.* (2016) avoidance	0.00153	0.000291	0.00325 - 0.00156	0.372	0.109	0	0.559

C) Cross-Flow Turbine Day

Model Component				Active Avoidance		Passive Avoidance	
Domain	1						
Zone of Influence	0.0636						
Entrainment							
Empirical	0.0144						
Admiralty Inlet avoidance	0.0118			0.0236		0.790	
Shen *et al.* (2016) avoidance	0.0399			0.372		0	
Collision	Courtney *et al.* 2022	Yoshida *et al.* 2021	Romero-Gomez and Richmond, 2014	Zone of Influence (Shen *et al.* 2016)	Entrainment (Viehman and Zydlewski, 2015)	Zone of Influence (Shen *et al.* 2016)	Entrainment (Viehman and Zydlewski, 2015)
No avoidance	0.0374	0.0408	0.0307 - 0.0389		0.020		0.937
Admiralty Inlet avoidance	0.000443	0.000484	0.000364 - 0.000461	0.0236	0.020	0.790	0.937
Shen *et al.* (2016) avoidance	0.00149	0.00163	0.00122 - 0.00155	0.372	0.020	0	0.937

Blade strike							
Literature	0.13	0.05	0.285 - 0.0951				
Admiralty Inlet avoidance	0.00154	0.000592	0.00845 - 0.00140	0.0236		0.790	
Shen *et al.* (2016) avoidance	0.00519	0.00199	0.0284 - 0.00474	0.372		0	
Collision and blade strike							
No avoidance	0.00486	0.00204	0.0219 -0.00462		0.020		0.937
Admiralty Inlet avoidance	0.0000576	0.0000242	0.000259 - 0.0000548	0.0236	0.020	0.790	0.937
Shen *et al.* (2016) avoidance	0.000194	0.0000815	0.000875 - 0.000184	0.372	0.020	0	0.937

D) Cross-Flow Turbine Night

Model Component				Active Avoidance		Passive Avoidance	
Domain	1						
Zone of Influence	0.0649						
Entrainment							
Empirical	0.0146						
Admiralty Inlet avoidance	0.0118			0.0241		0.792	
Shen *et al.* (2016) avoidance	0.0408			0.372		0	
Collision	Courtney *et al.* 2022	Yoshida *et al.* 2021	Romero-Gomez and Richmond, 2014	Zone of Influence (Shen *et al.* 2016)	Entrainment (Viehman and Zydlewski, 2015)	Zone of Influence (Shen *et al.* 2016)	Entrainment (Viehman and Zydlewski, 2015)
No avoidance	0.288	0.324	0.237 - 0.300		0.109		0.559
Admiralty Inlet avoidance	0.00343	0.00385	0.00113 - 0.00347	0.0241	0.109	0.790	0.559
Shen *et al.* (2016) avoidance	0.0117	0.0132	0.00388 - 0.0119	0.372	0.109	0	0.559

Blade strike							
Literature	0.13	0.022	0.285 - 0.0951				
Admiralty Inlet avoidance	0.00154	0.000261	0.00847 - 0.00141	0.0241		0.792	
Shen *et al.* (2016) avoidance	0.00530	0.000897	0.0291 - 0.00485	0.372		0	
Collision and blade strike							
No avoidance	0.0375	0.00714	0.0678 - 0.0285		0.109		0.559
Admiralty Inlet avoidance	0.000446	0.0000849	0.000806 - 0.000413	0.0241	0.109	0.792	0.559
Shen *et al.* (2016) avoidance	0.00153	0.000291	0.00277 - 0.00141	0.372	0.109	0	0.559