Supplementary material

Does proximity to freshwater refuge affect the size structure of an estuarine predator (*Carcharhinus leucas*) in the north-western Gulf of Mexico?

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Table S1. Test statistics and significance levels for general linear model testing the effects of distance to source of freshwater inflow and estuary on salinity and variance in salinity

Response	Predictor	d.f.	SS	MSS	*F*-value	*P*-value	η
Salinity	Distance to inflow	1	274945	279495	4047.23	<0.01	0.379
	Estuary	5	390751	78150	1150.38	<0.01	0.452
	Distance × Estuary	5	74215	14842	218.49	<0.01	0.197
	Residuals	17215	1169485				
Variance in salinity	Distance to inflow	1	131029	131029	205.45	<0.01	0.368
	Estuary	5	192903	38581	60.49	<0.01	0.447
	Distance × Estuary	5	104727	20945	32.84	<0.01	0.329
	Residuals	842	537002				

Table S2. Test statistics, significance levels, and effect sizes for general linear model testing the effects of independent variables on mean bull shark capture length

	d.f.	SS	MSS	F-value	P-value	η
Model	23	40706	1770	10.67	<0.01	0.279
Estuary	5	5184	1037	6.25	<0.01	0.095
Decade	4	9820	2455	14.80	<0.01	0.130
Season	2	779	390	2.35	0.10	0.032
Distance to river mouth	1	16059	16059	96.79	<0.01	0.167
Estuary × Distance to river mouth	5	7300	1460	8.80	<0.01	0.114
Decade × Distance to river mouth	4	1191	298	1.79	0.13	0.045
Season × Distance to river mouth	2	373	187	1.12	0.33	0.032
Residuals	3158	523978				

Table S3. Test statistics, significance levels and effect sizes for generalised linear model testing the effects of independent variables on size differences of co-occurring bull sharks

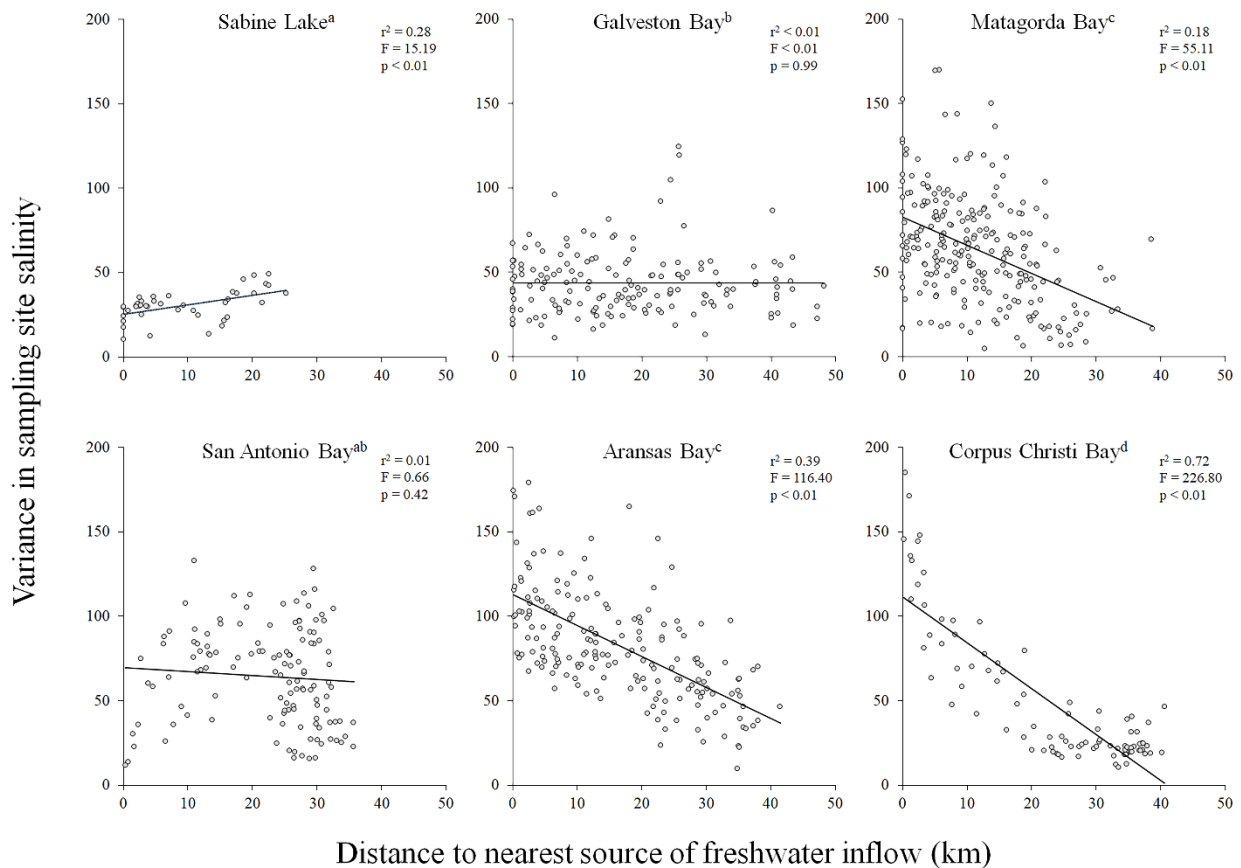|	d.f.	Wald's χ^2	P-value
Estuary	5	34.93	<0.01
Decade	4	136.75	<0.01
Season	1	23.403	<0.01
Distance to river mouth	289	1125.01	<0.01
Bay × Distance to river mouth	113	240.80	<0.01
Decade × Distance to river mouth	351	917.43	<0.01
Season × Distance to river mouth	126	343.58	<0.01

Fig. S1. Effect of distance to nearest source of freshwater inflow on variance in salinity across each sampling site within bays. Superscript letters next to estuary label indicate significant differences in slope based on *post hoc t*-tests and Hochberg's Step-Up Procedure to adjust for multiple comparisons at α = 0.05.