

## Spatial and seasonal patterns in acoustic detections of sperm whales *Physeter macrocephalus* along the continental slope in the western North Atlantic Ocean

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### Supplement

**Table S1.** Results from the generalized estimating equation generalized linear model (GEE-GLM) of sperm whale occurrence at each recording site. Season was specified as a categorical variable with winter as the reference level; spring was omitted from the model at Norfolk Canyon due to limited data coverage. Results are shown on the log odds ratio (link) scale.

Parameter	Estimate	Standard Error	<i>z</i>	<i>p</i> (>  <i>z</i>  )
<b><i>Georges Bank</i></b>				
Intercept	-1.560	0.056	-27.725	<0.001***
Season				
Spring	1.007	0.080	12.552	<0.001***
Summer	0.102	0.087	1.177	0.239
Fall	-0.026	0.079	-0.355	0.738
<b><i>Norfolk Canyon</i></b>				
Intercept	-1.470	0.054	-27.008	<0.001***
Season				
Summer	0.078	0.077	1.017	0.309
Fall	-1.260	0.107	-11.809	<0.001***
<b><i>Cape Hatteras</i></b>				
Intercept	-0.234	0.031	-7.667	<0.001***
Season				
Spring	-0.990	0.054	-18.433	<0.001***
Summer	-1.198	0.049	-24.635	<0.001***
Fall	-1.985	0.057	-34.829	<0.001***
<b><i>Onslow Bay</i></b>				
Intercept	-2.500	0.081	-30.948	<0.001***
Season				
Spring	0.920	0.099	9.307	<0.001***
Summer	0.867	0.095	9.132	<0.001***
Fall	0.316	0.100	3.158	0.002**

**Table S2.** Results of least-squares means pairwise comparisons among seasons based on GEE-GLMs of sperm whale occurrence at each recording site. Spring was omitted at Norfolk Canyon due to limited data coverage. Results are shown on the log odds ratio (link) scale.

Contrast	Estimate	Standard Error	<i>z</i> ratio	p value
<b><i>Georges Bank</i></b>				
Winter – Spring	-1.007	0.298	-3.379	<0.001***
Winter – Summer	-0.102	0.389	-0.263	0.793
Winter – Fall	0.026	0.383	0.085	0.933
Spring – Summer	0.905	0.304	2.979	0.003**
Spring – Fall	1.034	0.211	4.905	<0.001***
Summer - Fall	0.129	0.311	0.414	0.680
<b><i>Norfolk Canyon</i></b>				
Winter – Summer	-0.078	0.494	-0.158	0.875
Winter – Fall	1.260	0.425	2.964	0.003***
Summer - Fall	1.338	0.430	3.113	0.002***
<b><i>Cape Hatteras</i></b>				
Winter – Spring	0.990	0.203	4.889	<0.001***
Winter – Summer	1.198	0.403	2.972	0.003**
Winter – Fall	1.985	0.347	5.724	<0.001***
Spring – Summer	0.207	0.332	0.625	0.532
Spring – Fall	0.995	0.256	3.886	<0.001***
Summer - Fall	0.787	0.386	2.039	0.041*
<b><i>Onslow Bay</i></b>				
Winter – Spring	-0.920	0.333	-2.764	0.006**
Winter – Summer	-0.867	0.316	-2.742	0.006**
Winter – Fall	-0.316	0.219	-1.441	0.150
Spring – Summer	0.054	0.346	0.156	0.1495
Spring – Fall	0.604	0.349	1.729	0.084
Summer - Fall	0.550	0.309	1.782	0.075