

Supplementary Information (SI)

	Environmental Parameters			
	Salinity	Temperature	Dissolved Oxygen	Depth
	(‰)	(°C)	(mg/L)	(m)
Minimum	11.20	14.50	0.10	2.80
25 th quartile	28.30	26.90	4.90	7.30
Mean	31.67	27.83	5.681	10.39
75 th quartile	35.90	29.40	6.60	12.80
Maximum	38.60	31.20	10.30	23.00

Table S1 Summary of environmental parameters measured throughout survey.

<i>Models</i>	<i>AICc</i>	<i>Delta_AICc</i>
model 4	568.098	0
model 3	569.197	1.099
model 2	571.434	3.335
model 1	573.865	5.767

Table S2 AICc table of models for species richness analysis.

Component	Term	Estimate	Std Error	t-value	p-value	
A. parametric coefficients	(Intercept)	3.124	0.072	43.298	0.0000	***
	Term	edf	Ref. df	F-value	p-value	
B. smooth terms	s(year)	1.000	1.000	2.544	0.113	
	s(do)	4.978	5.605	2.132	0.062	
	s(temp)	3.773	4.509	3.359	0.007	**
	s(catch)	4.218	4.963	56.818	0.000	***

Signif. codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S3 GAM output for final model of species richness.

<i>Models</i>	<i>AICc</i>	<i>Delta_AICc</i>
model 4	172.836	0
model 3	174.013	1.1774
model 2	181.077	8.241
model 1	184.056	12.043

Table S4 AICc table of models for species diversity analysis.

Component	Term	Estimate	Std Error	t-value	p-value	
A. parametric coefficients	(Intercept)	0.751	0.026	29.427	0.0000	***
	Term	edf	Ref. df	F-value	p-value	
B. smooth terms	s(salinity)	3.358	4.059	1.983	0.095	
	s(do)	4.929	5.571	2.319	0.049	*
	s(temp)	2.712	3.337	2.135	0.105	
	s(catch)	7.233	8.198	16.259	0.000	***

Signif. codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S5 GAM output for final model of species diversity.

<i>Models</i>	<i>AICc</i>	<i>Delta_AICc</i>
model 2	-305.916	0
model 1 (full)	-302.150	3.766

Table S6 AICc table of models for relative abundance analysis.

Component	Term	Estimate	Std Error	t-value	p-value	
A. parametric coefficients	(Intercept)	0.070	0.012	5.933	0.0000	***
	regionUpper	0.132	0.017	7.929	0.0000	***
Component	Term	edf	Ref. df	F-value	p-value	
B. smooth terms	s(year)	7.916	8.713	2.330	0.026	*
	s(salinity)	1.002	1.005	4.916	0.028	*
	s(temp)	2.249	2.765	1.834	0.195	
	s(depth)	3.058	3.698	2.823	0.043	*

Significant codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S7 GAM output of final for relative abundance

<i>Models</i>	<i>K</i>	<i>AICc</i>	<i>Delta_AICc</i>	<i>ModelLik</i>	<i>AICcWt</i>	<i>LL</i>	<i>Cum.Wt</i>
model 1	12	233.449	0.000	1.000	0.534	-103.858	0.534
model 2	11	233.721	0.272	0.873	0.466	-105.131	0.999
full	22	248.531	15.082	0.001	0.0002	-99.289	1.000

Table S8 AICc table of logistic regression models for Atlantic Sharpnose Shark.

	Estimate	Standard Error	z value	Pr(> z)	
(Intercept)	894.415	359.275	2.490	0.0128	*
fregionUpper:depth	0.166	0.058	2.855	0.0043	**
sal:do	0.030	0.020	1.507	0.1319	
temp:do	0.091	0.037	2.473	0.0134	*
year:do	0.055	0.029	1.925	0.0542	

Significant codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S9 GLM output of final model for Atlantic Sharpnose Shark.

<i>Models</i>	<i>K</i>	<i>AICc</i>	<i>Delta_AICc</i>	<i>ModelLik</i>	<i>AICcWt</i>	<i>LL</i>	<i>Cum.Wt</i>
model 1	10	228.157	0.000	1.000	5.064e-01	-103.474	0.506
model 2	9	228.208	0.051	0.975	4.937e-01	-104.612	0.999
full	22	252.289	24.132	5.753e-06	2.913e-06	-101.168	1.000

Table S10 AICc table of logistic regression models for Gafftopsail Catfish.

	Estimate	Standard Error	z value	Pr(> z)	
(Intercept)	-1,063.463	422.069	-2.520	0.0117	*
fregionUpper	2.011	0.386	5.214	0.0000	***
temp:do	-0.125	0.050	-2.478	0.0132	*
temp:depth	0.035	0.019	1.806	0.0709	
year:depth	-0.052	0.022	-2.347	0.0189	*

Significant codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S11 GLM output of final model for Gafftopsail Catfish.

<i>Models</i>	<i>K</i>	<i>AICc</i>	<i>Delta_AICc</i>	<i>ModelLik</i>	<i>AICcWt</i>	<i>LL</i>	<i>Cum.Wt</i>
model 1	11	143.408	0.0000	1.000	0.550	-59.975	0.550
model 2	10	143.810	0.402	0.818	0.450	-61.301	0.999
full	22	163.092	19.684	5.316e-05	2.924e-05	-56.570	1.000

Table S12 AICc table of logistic regression models for Red Drum.

	Estimate	Standard Error	z value	Pr(> z)	
(Intercept)	2,121.090	754.745	2.810	0.0049	**
fregionUpper	3.818	0.824	4.632	0.0000	***
sal	0.143	0.168	0.854	0.3931	
temp	-0.430	0.111	-3.869	0.0001	***
sal:depth	-0.041	0.020	-2.108	0.0350	*
year:do	0.117	0.046	2.530	0.0114	*
year:depth	0.049	0.029	1.648	0.0994	

Signif. codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S13 GLM output of final model for Red Drum.

<i>Models</i>	<i>K</i>	<i>AICc</i>	<i>Delta_AICc</i>	<i>ModelLik</i>	<i>AICcWt</i>	<i>LL</i>	<i>Cum.Wt</i>
model 3	12	244.212	0.000	1.000	0.364	-109.240	0.364
model 2	13	244.437	0.225	0.894	0.325	-108.202	0.689
model 1	14	244.523	0.3109	0.856	0.311	-107.082	0.999
full	22	259.759	15.546	0.0004	0.0001	-104.903	1.000

Table S14 AICc table of logistic regression models for presence probability of Blacktip Sharks.

	Estimate	Standard Error	z value	Pr(> z)	
(Intercept)	-2,223.559	1,233.375	-1.803	0.0714	
fregionUpper:sal	0.097	0.049	1.965	0.0495	*
fregionUpper:depth	-0.130	0.058	-2.239	0.0252	*
sal:depth	-0.012	0.007	-1.838	0.0661	
temp:year	-0.040	0.022	-1.830	0.0672	
temp:do	0.086	0.042	2.058	0.0395	*

Signif. codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S15 GLM output of final model for Blacktip Shark

<i>Models</i>	<i>K</i>	<i>AICc</i>	<i>Delta_AICc</i>	<i>ModelLik</i>	<i>AICcWt</i>	<i>LL</i>	<i>Cum.Wt</i>
model 1	11	224.086	0.000	1.000	0.385	-100.314	0.385
model 2	10	224.520	0.434	0.805	0.310	-101.655	0.696
model 3	9	224.557	0.472	0.790	0.304	-102.787	0.999
full	22	245.455	21.369	2.289e-05	8.822e-06	-97.751	1.000

Table S16 AICc table of logistic regression models for Spinner Shark.

	Estimate	Standard Error	z value	Pr(> z)	
(Intercept)	-3,427.568	1,623.236	-2.112	0.0347	*
fregionUpper	0.869	0.331	2.628	0.0086	**
depth	0.067	0.041	1.633	0.1025	
sal:do	-0.029	0.014	-2.002	0.0453	*
temp:year	-0.059	0.028	-2.078	0.0377	*

Signif. codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S17 GLM output of final model for Spinner Shark.

<i>Models</i>	<i>K</i>	<i>AICc</i>	<i>Delta_AICc</i>	<i>ModelLik</i>	<i>AICcWt</i>	<i>LL</i>	<i>Cum.Wt</i>
model 1	7	202.586	0.000	1.000	0.999	-93.990	0.999
full	22	230.119	27.533	1.050e-06	1.050e-06	-90.083	1.000

Table S18 AICc table of logistic regression models for Bull Shark.

	Estimate	Standard Error	z value	Pr(> z)	
(Intercept)	-30.451	14.274	-2.133	0.0329	*
fregionUpper	1.401	0.356	3.941	0.0001	***
do	0.263	0.116	2.274	0.0230	*
depth	-0.096	0.046	-2.081	0.0374	*
sal:temp	-0.031	0.015	-2.018	0.0436	*

Signif. codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Table S19 GLM output of final model for Bull shark.