

Table S1. Catch data for the nine ecomorphotypes (EMTs) and component species sampled by the Northeast Area Monitoring and Assessment Program (NEAMAP) Nearshore Bottom Trawl Survey, 2008-2019. The number of individuals collected (count) and aggregate biomass (kg) are provided, along with the number and percentage (% frequency of occurrence [FO]) of sites at which the EMT or species was encountered.

Ecomorphotype				
Species	Count	Biomass (kg)	No. Sites	% FO
<i>Demersal Fish</i>	5,880,232	331,424.81	3,514	99.5
Atlantic croaker (<i>Micropogonias undulatus</i>)	1,089,291	81,884.01	1,065	30.2
Weakfish (<i>Cynoscion regalis</i>)	1,113,584	72,698.90	1,871	53.0
Scup (<i>Stenotomus chrysops</i>)	1,814,077	53,032.16	2,273	64.4
Spot (<i>Leiostomus xanthurus</i>)	928,445	50,213.99	1,103	31.2
Kingfishes (<i>Menticirrhus spp.</i>)	170,524	20,243.34	2,034	57.6
Striped bass (<i>Morone saxatilis</i>)	3,701	12,425.23	268	7.6
Spotted hake (<i>Urophycis regia</i>)	164,543	5,512.83	2,147	60.8
Silver perch (<i>Bairdiella chrysoura</i>)	176,043	5,306.89	713	20.2
Silver hake (<i>Merluccius bilinearis</i>)	160,325	5,286.68	1,438	40.7
Atlantic sturgeon (<i>Acipenser oxyrinchus</i>)	244	4,858.67	157	4.4
Black seabass (<i>Centropristis striata</i>)	10,674	4,008.48	1,221	34.6
Sheepshead (<i>Archosargus probatocephalus</i>)	873	2,881.21	190	5.4
Striped searobin (<i>Prionotus evolans</i>)	8,730	2,175.24	910	25.8
Northern searobin (<i>Prionotus carolinus</i>)	10,919	1,312.72	823	23.3
Red drum (<i>Sciaenops ocellatus</i>)	98	1,269.72	37	1.0
Red hake (<i>Urophycis chuss</i>)	11,500	1,225.66	564	16.0
Ocean pout (<i>Zoarces americanus</i>)	922	906.03	102	2.9
Atlantic cutlassfish (<i>Trichiurus lepturus</i>)	68,138	759.51	467	13.2
Goosefish (<i>Lophius americanus</i>)	296	670.77	204	5.8
Atlantic moonfish (<i>Selene setapinnis</i>)	97,905	616.18	646	18.3
Northern puffer (<i>Sphoeroides maculatus</i>)	4,627	601.12	1,047	29.6
Pigfish (<i>Orthopristis chrysoptera</i>)	9,918	561.70	348	9.9
Tautog (<i>Tautoga onitis</i>)	715	537.77	140	4.0
Banded drum (<i>Larimus fasciatus</i>)	14,444	341.87	300	8.5
Black drum (<i>Pogonias cromis</i>)	514	322.18	163	4.6
Northern sennet (<i>Sphyræna borealis</i>)	3,653	290.12	422	11.9
Striped burrfish (<i>Chilomycterus schoepfii</i>)	1,041	269.17	383	10.8
Inshore lizardfish (<i>Synodus foetens</i>)	1,955	219.39	455	12.9
Pinfish (<i>Lagodon rhomboides</i>)	3,875	200.57	368	10.4

Ecomorphotype

Species	Count	Biomass (kg)	No. Sites	%FO
<i>Demersal (cont.)</i>				
Haddock (<i>Melanogrammus aeglefinus</i>)	1,425	159.92	42	1.2
Longhorn sculpin (<i>Myoxocephalus octodecemspinosus</i>)	554	156.74	103	2.9
Northern stargazer (<i>Astroscopus guttatus</i>)	102	141.78	88	2.5
Sea raven (<i>Hemitripterus americanus</i>)	102	72.05	70	2.0
Atlantic spadefish (<i>Chaetodipterus faber</i>)	1,379	53.33	135	2.8
Cunner (<i>Tautoglabrus adspersus</i>)	254	52.37	49	1.4
Atlantic cod (<i>Gadus morhua</i>)	39	46.19	30	0.9
Gray triggerfish (<i>Balistes capriscus</i>)	50	32.99	37	1.1
Striped cusk-eel (<i>Ophidion marginatum</i>)	346	14.71	153	4.3
Spotted seatrout (<i>Cynoscion nebulosus</i>)	121	14.02	42	1.2
American eel (<i>Anguilla rostrata</i>)	44	10.77	26	0.7
Spotfin mojarra (<i>Eucinostomus argenteus</i>)	385	5.36	92	2.6
Sand lances (<i>Ammodytes</i> spp.)	3,080	3.80	28	0.8
Silver jenny (<i>Eucinostomus gula</i>)	212	3.73	73	2.1
Florida pompano (<i>Trachinotus carolinus</i>)	24	2.42	10	0.3
Lookdown (<i>Selene vomer</i>)	80	2.32	23	0.7
Silver seatrout (<i>Cynoscion nothus</i>)	16	1.80	7	0.2
Star drum (<i>Stellifer lanceolatus</i>)	173	1.69	8	0.2
Feather blenny (<i>Hypsoblennius hentz</i>)	7	1.68	1	<0.1
Bluespotted cometfish (<i>Fistularia tabacaria</i>)	58	1.66	51	1.4
Orange filefish (<i>Aluterus schoepfii</i>)	15	1.66	15	0.4
African pompano (<i>Alectis ciliaris</i>)	8	1.40	7	0.2
Red goatfish (<i>Mullus auratus</i>)	36	1.12	27	0.8
Pollock (<i>Pollachius virens</i>)	12	1.08	12	0.3
Fourbeard rockling (<i>Enchelyopus cimbrius</i>)	21	1.00	7	0.2
Oyster toadfish (<i>Opsanus tau</i>)	3	0.89	2	0.1
Conger eel (<i>Conger oceanicus</i>)	2	0.85	2	0.1
Gizzard shad (<i>Dorosoma cepedianum</i>)	10	0.76	9	0.3
Lumpfish (<i>Cyclopterus lumpus</i>)	1	0.76	1	<0.1
Planehead filefish (<i>Stephanolepis hispidus</i>)	11	0.63	11	0.3
Carolina hake (<i>Urophycis earllii</i>)	3	0.52	2	0.1
Permit (<i>Trachinotus falcatus</i>)	2	0.50	2	0.1
White hake (<i>Urophycis tenuis</i>)	4	0.49	2	0.1
Spotfin butterflyfish (<i>Chaetodon ocellatus</i>)	27	0.33	16	0.5
Bigeye (<i>Priacanthus arenatus</i>)	5	0.24	5	0.1
Atlantic needlefish (<i>Strongylura marina</i>)	3	0.23	2	0.1
Short bigeye (<i>Pristigenys alta</i>)	9	0.19	9	0.3
Gag (<i>Mycteroperca microlepis</i>)	1	0.12	1	<0.1
Scrawled filefish (<i>Aluterus scriptus</i>)	1	0.12	1	<0.1
Black grouper (<i>Mycteroperca bonaci</i>)	2	0.08	2	0.1
Pipefishes (<i>Syngnathus</i> spp.)	11	0.06	5	0.1
Lined seahorse (<i>Hippocampus erectus</i>)	7	0.05	6	0.2
Fawn cusk-eel (<i>Lepophidium cervinum</i>)	2	0.05	2	0.1
Dotterel filefish (<i>Aluterus heudeloti</i>)	1	0.05	1	<0.1
Dwarf goatfish (<i>Upeneus parvus</i>)	2	0.04	2	0.1
Fringed filefish (<i>Monacanthus ciliatus</i>)	1	0.04	1	<0.1
Naked goby (<i>Gobiosoma bosc</i>)	1	0.02	1	<0.1

Ecomorphotype

Species	Count	Biomass (kg)	No. Sites	%FO
<i>Demersal (cont.)</i>				
Red snapper (<i>Lutjanus campechanus</i>)	1	0.02	1	<0.1
Snowy grouper (<i>Epinephelus niveatus</i>)	1	0.02	1	<0.1
Silver porgy (<i>Diplodus argenteus</i>)	1	0.02	1	<0.1
Bandtail puffer (<i>Spheroides spengleri</i>)	1	0.01	1	<0.1
Spotted driftfish (<i>Ariomma regulus</i>)	1	0.01	1	<0.1
Horned boxfish (<i>Lactoria cornuta</i>)	1	0.01	1	<0.1
<i>Pelagic Fish</i>	<i>5,744,444</i>	<i>108,726.82</i>	<i>3,406</i>	<i>96.4</i>
Butterfish (<i>Peprilus triacanthus</i>)	3,308,558	72,952.12	3,201	90.6
Striped anchovy (<i>Anchoa hepsetus</i>)	1,174,584	14,545.69	1,102	31.2
Bluefish (<i>Pomatomus saltatrix</i>)	83,015	8,298.74	1,416	40.1
Atlantic menhaden (<i>Brevoortia tyrannus</i>)	57,840	2,633.75	504	14.3
Blueback herring (<i>Alosa aestivalis</i>)	170,506	2,414.67	753	21.3
Bay anchovy (<i>Anchoa mitchilli</i>)	794,159	2,344.53	1,219	34.5
Alewife (<i>Alosa pseudoharengus</i>)	42,571	2,230.77	867	24.5
Atlantic herring (<i>Clupea harengus</i>)	23,724	884.17	358	10.1
American shad (<i>Alosa sapidissima</i>)	22,283	675.12	915	25.9
Harvestfish (<i>Peprilus paru</i>)	12,710	507.38	221	6.3
Atlantic thread herring (<i>Opisthonema oglinum</i>)	23,866	387.36	155	4.4
Round herring (<i>Etrumeus teres</i>)	19,117	373.93	188	5.3
Rough scad (<i>Trachurus lathami</i>)	4,460	158.71	351	9.9
Cobia (<i>Rachycentron canadum</i>)	8	54.26	2	0.1
Hickory shad (<i>Alosa mediocris</i>)	431	52.09	63	1.8
Blue runner (<i>Caranx crysos</i>)	988	51.43	199	5.6
Atlantic mackerel (<i>Scomber scombrus</i>)	499	45.96	182	5.2
Round scad (<i>Decapterus punctatus</i>)	1,769	33.69	157	4.4
Spanish mackerel (<i>Scomberomorus maculatus</i>)	283	31.75	40	1.1
Bigeye scad (<i>Selar crumenophthalmus</i>)	448	20.21	92	2.6
Crevalle jack (<i>Caranx hippos</i>)	54	5.12	26	0.7
Spanish sardine (<i>Sardinella aurita</i>)	937	5.04	36	1.0
King mackerel (<i>Scomberomorus cavalla</i>)	1	4.62	1	<0.1
Silver anchovy (<i>Engraulis eurystole</i>)	1,171	4.51	11	0.3
Atlantic bonito (<i>Sarda sarda</i>)	10	3.36	2	0.1
Banded rudderfish (<i>Seriola zonata</i>)	11	1.64	8	0.2
Cero (<i>Scomberomorus regalis</i>)	76	1.25	3	0.1
Atlantic bumper (<i>Chloroscombrus chrysurus</i>)	321	1.19	17	0.5
White mullet (<i>Mugil curema</i>)	13	1.18	4	0.1
Sharksucker (<i>Echeneis naucrates</i>)	6	0.71	3	0.1
Chub mackerel (<i>Scomber japonicus</i>)	5	0.63	5	0.1
Mackerel scad (<i>Decapterus macarellus</i>)	1	0.46	1	<0.1
Guaguanche (<i>Sphyaena guachancho</i>)	9	0.20	1	<0.1
Barrelfish (<i>Hyperoglyphe perciformis</i>)	6	0.19	3	0.1
Striped mullet (<i>Mugil cephalus</i>)	1	0.16	1	<0.1
Smooth puffer (<i>Lagocephalus laevigatus</i>)	2	0.12	2	0.1
Remora (<i>Remora remora</i>)	1	0.11	1	<0.1

Ecomorphotype

Species	Count	Biomass (kg)	No. Sites	%FO
<i>Flatfish</i>	55,038	17,079.83	3,041	86.1
Summer flounder (<i>Paralichthys dentatus</i>)	13,390	7,155.94	2,556	72.4
Winter flounder (<i>Pseudopleuronectes americanus</i>)	18,640	5,881.48	984	27.9
Windowpane (<i>Scophthalmus aquosus</i>)	15,611	3,004.16	2,050	58.0
Fourspot flounder (<i>Hippoglossina oblonga</i>)	3,659	749.38	467	13.2
Hogchoker (<i>Trinectes maculatus</i>)	1,983	166.26	217	6.1
Yellowtail flounder (<i>Pleuronectes ferruginea</i>)	158	68.22	38	1.1
Blackcheck tonguefish (<i>Symphurus plagiusa</i>)	684	32.79	150	4.2
Gulf Stream flounder (<i>Citharichthys arctifrons</i>)	910	21.33	98	2.8
Witch flounder (<i>Glyptocephalus cynoglossus</i>)	1	0.22	1	<0.1
Naked sole (<i>Gymnachirus melas</i>)	1	0.03	1	<0.1
Ocellated flounder (<i>Ancylopsetta ommata</i>)	1	0.02	1	<0.1
<i>Cephalopod</i>	1,309,723	28,233.56	3,138	88.8
Longfin inshore squid (<i>Doryteuthis pealeii</i>)	1,275,827	27,744.52	3,025	85.6
Northern shortfin squid (<i>Illex illecebrosus</i>)	11,446	308.72	103	2.9
Atlantic brief squid (<i>Lolliguncula brevis</i>)	22,437	177.88	331	9.4
Atlantic shore octopus (<i>Octopus vulgaris</i>)	12	2.43	12	0.3
Bobtail squid (<i>Semirossia tenera</i>)	1	0.01	1	<0.1
<i>Benthic Arthropod</i>	167,737	34,842.82	2,611	73.9
Horseshoe crab (<i>Limulus polyphemus</i>)	26,968	30,684.48	1,706	48.3
White shrimp (<i>Litopenaeus setiferus</i>)	123,786	2,517.03	264	7.5
American lobster (<i>Homarus americanus</i>)	3,312	920.68	483	13.7
Common spider crab (<i>Libinia emarginata</i>)	2,148	226.81	475	13.4
Atlantic rock crab (<i>Cancer irroratus</i>)	2,549	199.64	515	14.6
Brown shrimp (<i>Farfantepenaeus aztecus</i>)	4,764	103.77	339	9.6
Blue crab (<i>Callinectes sapidus</i>)	560	62.60	196	5.5
Lady crab (<i>Ovalipes ocellatus</i>)	2,139	54.61	423	12.0
Six spine spider crab (<i>Libinia dubia</i>)	417	43.92	157	4.4
Jonah crab (<i>Cancer borealis</i>)	163	17.45	58	1.6
Iridescent swimming crab (<i>Portunus gibbesii</i>)	541	4.98	61	1.7
Mantis shrimp (<i>Squilla empusa</i>)	179	4.00	52	1.5
Lesser blue crab (<i>Callinectes similis</i>)	63	1.74	12	0.3
Pink shrimp (<i>Farfantepenaeus duorarum</i>)	15	0.41	8	0.2
Speckled crab (<i>Arenaeus cribrarius</i>)	13	0.37	6	0.2
Roughneck shrimp (<i>Rimapenaeus constrictus</i>)	119	0.33	18	0.5
Peppermint shrimp (<i>Lysemata wurdemanni</i>)	1	<0.01	1	<0.1
<i>Skate</i>	227,578	194,399.67	3,490	98.8
Little skate (<i>Leucoraja erinacea</i>)	150,820	82,103.28	2,409	68.2
Winter skate (<i>Leucoraja ocellata</i>)	40,651	65,972.97	2,001	56.7
Clearnose skate (<i>Raja eglanteria</i>)	36,082	46,304.39	2,411	68.3
Barndoor skate (<i>Dipturus laevis</i>)	25	19.03	17	0.5

Ecomorphotype

	Species	Count	Biomass (kg)	No. Sites	%FO
<i>Dogfish</i>		<i>35,206</i>	<i>65,070.42</i>	<i>2,411</i>	<i>68.3</i>
	Spiny dogfish (<i>Squalus acanthias</i>)	21,308	38,404.63	1,287	36.44
	Smooth dogfish (<i>Mustelus canis</i>)	13,898	26,665.79	1,966	55.66
<i>Ray</i>		<i>15,401</i>	<i>56,121.54</i>	<i>997</i>	<i>28.2</i>
	Cownose ray (<i>Rhinoptera bonasus</i>)	5,674	18,195.64	256	7.25
	Spiny butterfly ray (<i>Gymnura altavela</i>)	831	11,385.97	278	7.87
	Bullnose ray (<i>Myliobatis freminvillii</i>)	5,965	10,326.29	682	19.31
	Bluntnose stingray (<i>Dasyatis say</i>)	1,432	9,966.85	269	7.62
	Roughtail stingray (<i>Dasyatis centroura</i>)	234	2,787.00	152	4.30
	Smooth butterfly ray (<i>Gymnura micrura</i>)	941	1,949.05	269	7.62
	Atlantic torpedo (<i>Torpedo nobiliana</i>)	32	645.15	27	0.76
	Southern stingray (<i>Dasyatis americana</i>)	92	641.66	34	0.96
	Atlantic stingray (<i>Dasyatis sabina</i>)	200	223.93	98	2.77
<i>Other Shark</i>		<i>1,243</i>	<i>15,755.84</i>	<i>524</i>	<i>14.8</i>
	Thresher shark (<i>Alopias vulpinus</i>)	138	6,742.34	128	3.6
	Sand tiger shark (<i>Carcharias taurus</i>)	92	3,606.40	75	2.1
	Atlantic angel shark (<i>Squatina dumeril</i>)	304	2,904.73	191	5.4
	Sandbar shark (<i>Carcharhinus plumbeus</i>)	604	1,767.21	234	6.6
	White shark (<i>Carcharodon carcharias</i>)	7	339.10	6	0.2
	Atlantic sharpnose shark (<i>Rhizoprionodon terraenovae</i>)	84	337.17	39	1.1
	Dusky shark (<i>Carcharhinus obscurus</i>)	6	34.66	6	0.2
	Spinner shark (<i>Carcharhinus brevipinna</i>)	4	16.29	4	0.1
	Scalloped hammerhead shark (<i>Sphyrna lewini</i>)	2	5.56	2	0.1
	Smooth hammerhead shark (<i>Sphyrna zygaena</i>)	1	1.81	1	<0.1
	Bonnethead shark (<i>Sphyrna tiburo</i>)	1	0.57	1	<0.1

Table S2. Model selection statistics associated with the evaluation of candidate response variable distributions for the conditional component of the delta-generalized additive models (delta-GAMs) fitted to catch-per-unit-effort (CPUE) data on nine ecomorphotypes (EMTs) collected by the Northeast Area Monitoring and Assessment Program (NEAMAP) Nearshore Bottom Trawl Survey, 2008 – 2019. Results are given for the five most supported distributions when fitting a model with all candidate covariates (i.e., full model). Bold denotes the distribution selected for each EMT. Distribution abbreviations are: BCPEo, Box-Cox Power Exponential; BCTo, Box-Cox t; GA, Gamma; GB2, Generalized Beta Type-2; GG, Generalized Gamma; GIG, Generalized Inverse Gaussian; IG, Inverse Gaussian; LOGNO, Log Normal; LOGNO2, Log Normal 2; PARETO2, Pareto 2; PARETO2o, Pareto 2 Original; WEI, Weibull; WEI3, Weibull Type 3.

Distribution	-2log(L)	df for Model Fit	AIC	ΔAIC
Demersal Fish				
GB2	59012.6	53.7	59120.0	0.0
BCTo	59021.1	53.8	59128.6	8.6
GG	59056.6	52.6	59161.7	41.7
Pareto2o	59059.4	53.0	59165.3	45.3
Pareto2	59060.9	52.4	59165.6	45.6
Pelagic Fish				
GB2	50094.8	55.9	50206.6	0.0
BCTo	50106.8	55.8	50218.4	11.8
GG	50129.4	53.4	50236.3	29.7
WEI3	50256.5	50.2	50357.0	150.4
WEI	50256.5	50.2	50357.0	150.4
Flatfish				
BCTo	34360.5	59.2	34478.9	0.0
GG	34369.2	58.6	34486.3	7.5
GA	34437.4	56.4	34550.3	71.4
WEI3	34487.6	56.0	34599.6	120.7
WEI	34487.6	56.0	34599.6	120.7

Cephalopod				
BCTo	39568.0	60.8	39689.5	0.0
GG	39571.1	59.3	39689.7	0.2
GB2	39570.0	61.3	39692.6	3.1
LOGNO2	39604.6	58.0	39720.5	31.0
LOGNO	39604.6	58.0	39720.5	31.0
Benthic Arthropod				
GB2	34564.3	55.4	34675.1	0.0
BCTo	34568.0	54.2	34676.4	1.3
GG	34644.4	54.4	34753.1	78.0
WEI	34647.3	53.4	34754.0	78.9
WEI3	34647.3	53.4	34754.0	78.9
Skate				
GB2	57760.8	61.3	57883.5	0.0
BCTo	57782.1	55.3	57892.7	9.2
BCPEo	57857.7	62.6	57982.8	99.3
GG	57894.2	53.4	58001.0	117.5
LOGNO	57993.4	59.3	58112.0	228.5
Dogfish				
BCTo	36682.9	50.4	36783.6	0.0
GB2	36683.6	50.1	36783.8	0.2
GG	36720.7	50.4	36821.6	38.0
LOGNO2	36732.4	49.0	36830.5	46.9
LOGNO	36732.4	49.0	36830.5	46.9
Ray				
BCTo	13119.0	24.1	13167.2	0.0
GB2	13119.3	24.2	13167.6	0.4
GG	13121.9	23.0	13167.9	0.7
LOGNO	13126.1	22.3	13170.7	3.5
LOGNO2	13126.1	22.3	13170.7	3.5

Other Shark				
GIG	6702.0	22.7	6747.4	0.0
GG	6704.9	23.1	6751.1	3.7
IG	6707.5	21.9	6751.2	3.8
BCTo	6705.2	24.2	6753.5	6.1
GB2	6707.3	24.2	6755.8	8.4

Table S3. Model selection statistics associated with delta-generalized additive models (delta-GAMs) fitted to presence/absence (i.e., binomial) and conditional catch-per-unit-effort (CPUE) data on nine ecomorphotypes (EMTs) collected by the Northeast Area Monitoring and Assessment Program (NEAMAP) Nearshore Bottom Trawl Survey, 2008-2019. Bold represents model parameterizations chosen for inference.

Model	-2log(L)	<i>df</i> for Model Fit	AIC	ΔAIC
Demersal Fish				
Conditional				
M1	59012.6	53.7	59120.0	0.0
M2	59052.8	52.1	59156.9	36.9
M3	59125.4	48.6	59222.5	102.5
M4	59168.6	46.6	59261.7	141.7
Pelagic Fish				
Binomial				
M1	940.2	28.3	996.9	0.0
M2	944.2	27.7	999.6	2.7
M3	954.0	25.0	1004.1	7.2
M4	958.7	24.2	1007.1	10.2
Conditional				
M1	50094.8	55.9	50206.6	1.6
M2	50094.9	55.0	50205.0	0.0
M3	50236.0	46.8	50329.7	124.7
M4	50237.5	45.9	50329.4	124.4
Flatfish				
Binomial				
M1	1927.8	37.5	2002.8	0.0
M2	1942.9	34.8	2012.5	9.7
M3	1941.4	31.6	2004.5	1.7
M4	1956.9	29.1	2015.0	12.2
Conditional				

M1	34360.5	59.2	34478.9	0.0
M2	34385.4	57.1	34499.6	20.7
M3	34451.3	52.6	34556.4	77.5
M4	34472.9	50.2	34573.2	94.3
Cephalopod				
Binomial				
M1	2042.5	42.1	2126.7	0.9
M2	2043.5	41.1	2125.8	0.0
M3	2127.6	41.0	2209.6	83.8
M4	2134.0	37.9	2209.8	84.1
Conditional				
M1	39568.0	60.8	39689.5	0.0
M2	39581.8	55.0	39691.8	2.3
M3	39952.7	51.1	40055.0	365.5
M4	39966.8	47.0	40060.8	371.3
Benthic Arthropod				
Binomial				
M1	3472.1	45.3	3562.7	0.0
M2	3512.7	42.6	3597.8	35.1
M3	3607.5	37.2	3681.9	119.2
M4	3645.2	34.9	3715.0	152.3
Conditional				
M1	34564.3	55.4	34675.1	0.0
M2	34589.6	53.3	34696.2	21.1
M3	34598.6	52.8	34704.0	28.9
M4	34625.6	50.5	34726.6	51.5
Skate				
Conditional				
M1	57761.7	61.2	57884.1	0.0
M2	57794.9	60.2	57915.2	31.1

M3	57816.4	52.7	57921.9	37.8
M4	57852.4	51.6	57955.7	71.6
Dogfish				
Binomial				
M1	3331.5	39.7	3410.8	0.0
M2	3335.0	38.6	3412.2	1.4
M3	3364.3	38.5	3441.3	30.5
M4	3366.1	37.5	3441.0	30.2
Conditional				
M1	36682.9	50.4	36783.6	0.0
M2	36695.4	45.2	36785.7	2.1
M3	36690.9	49.0	36788.8	5.2
M4	36703.8	43.8	36791.4	7.8
Ray				
Binomial				
M5	1437.0	28.8	1494.7	0.2
M6	1438.8	27.8	1494.5	0.0
M7	1465.7	26.7	1519.2	24.7
M8	1469.6	25.7	1521.0	26.5
Conditional				
M5	13117.0	25.0	13167.0	1.6
M6	13117.3	24.0	13165.4	0.0
M7	13130.5	26.7	13183.9	18.5
M8	13131.2	25.8	13182.8	17.4
Other Shark				
Binomial				
M5	1396.5	25.9	1448.4	1.9
M6	1396.6	24.9	1446.5	0.0
M7	1406.1	21.3	1448.8	2.3
M8	1406.2	20.4	1446.9	0.4

		Conditional		
M5	6695.8	25.3	6746.4	2.0
M6	6696.4	24.2	6744.9	0.5
M7	6695.6	25.0	6745.6	1.2
M8	6696.5	23.9	6744.4	0.0

Table S4. Model structure, fit statistics, and model selection statistics for the dynamic factor analysis (DFA) models fitted to predicted annual catch-per-unit-effort (CPUE) data from delta-generalized additive models (delta-GAMs) for nine ecomorphotypes (EMTs) collected by the Northeast Area Monitoring and Assessment Program (NEAMAP) Nearshore Bottom Trawl Survey, 2008 – 2019. Models are limited to those with $\Delta\text{AICc} < 10$ and bold identifies the model chosen for inference.

Covariates	Lag	r	-2log(L)	AICc	ΔAICc	Mean Fit
SSTWI	0	3	241.3	307.3	0.0	0.227
NAO	0	3	241.7	307.7	0.4	0.221
SSTA	0	3	248.8	314.8	7.5	0.242

Table S5. Estimated coefficients, standard errors, and 95% confidence intervals associated with the winter mean sea surface temperature (SSTWI) covariate in the dynamic factor analysis (DFA) selected for inference. This DFA was fitted to predicted annual catch-per-unit-effort (CPUE) data on nine ecomorphotypes (EMTs) collected by the Northeast Area Monitoring and Assessment Program (NEAMAP) Nearshore Bottom Trawl Survey, 2008 – 2019.

EMT	Coefficient	SE	95% CI
Demersal fish	0.78	0.21	(0.37, 1.20)
Pelagic Fish	0.50	0.22	(0.07, 0.94)
Flatfish	-0.19	0.15	(-0.49, 0.11)
Cephalopod	0.33	0.26	(-0.18, 0.83)
Benthic Arthropod	-0.05	0.27	(-0.57, 0.48)
Skate	0.28	0.15	(-0.01, 0.56)
Dogfish	0.16	0.27	(-0.37, 0.69)
Ray	0.35	0.21	(-0.06, 0.76)
Other Shark	0.14	0.30	(-0.45, 0.73)