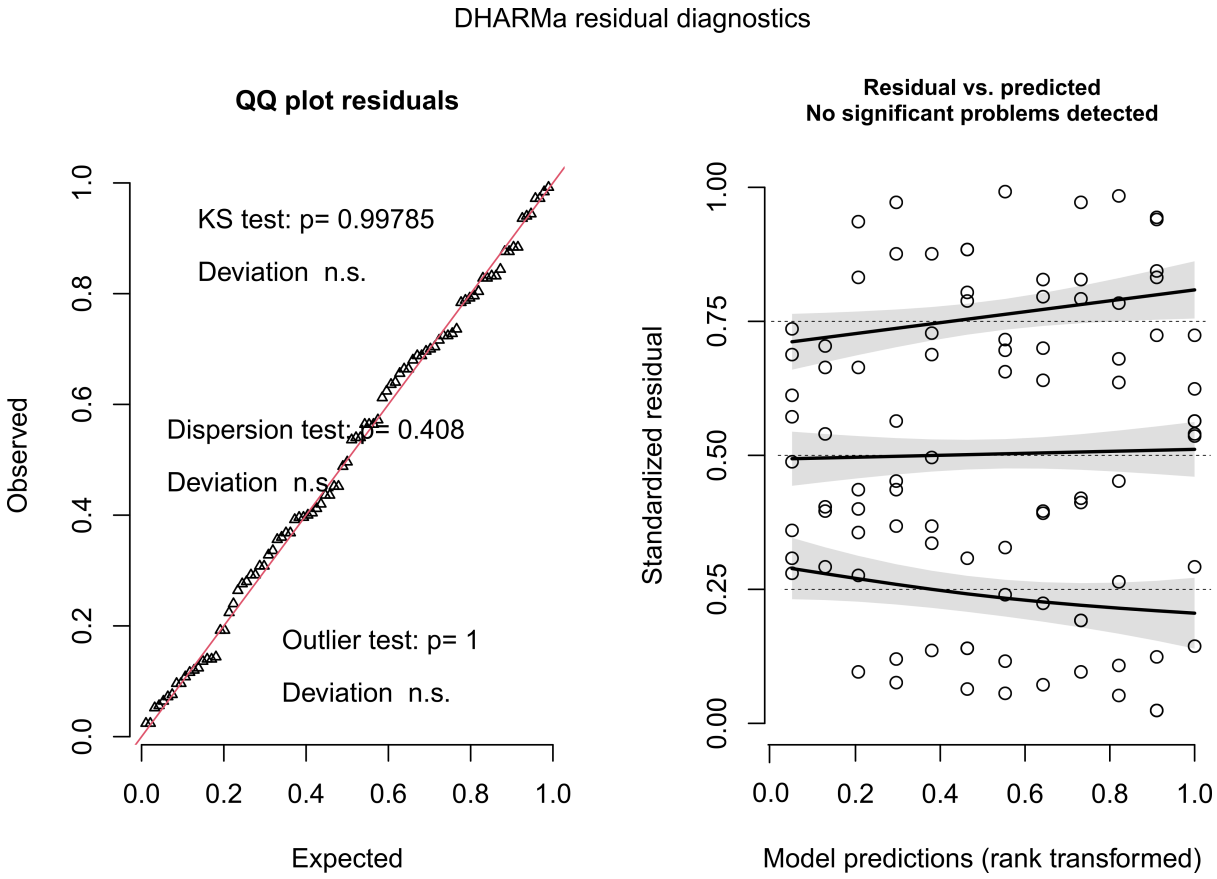

Fig. S1. Diagnostic plots for testing model assumptions for the Shannon's index of diversity analysis. Assumption checks were done using simulated residuals.

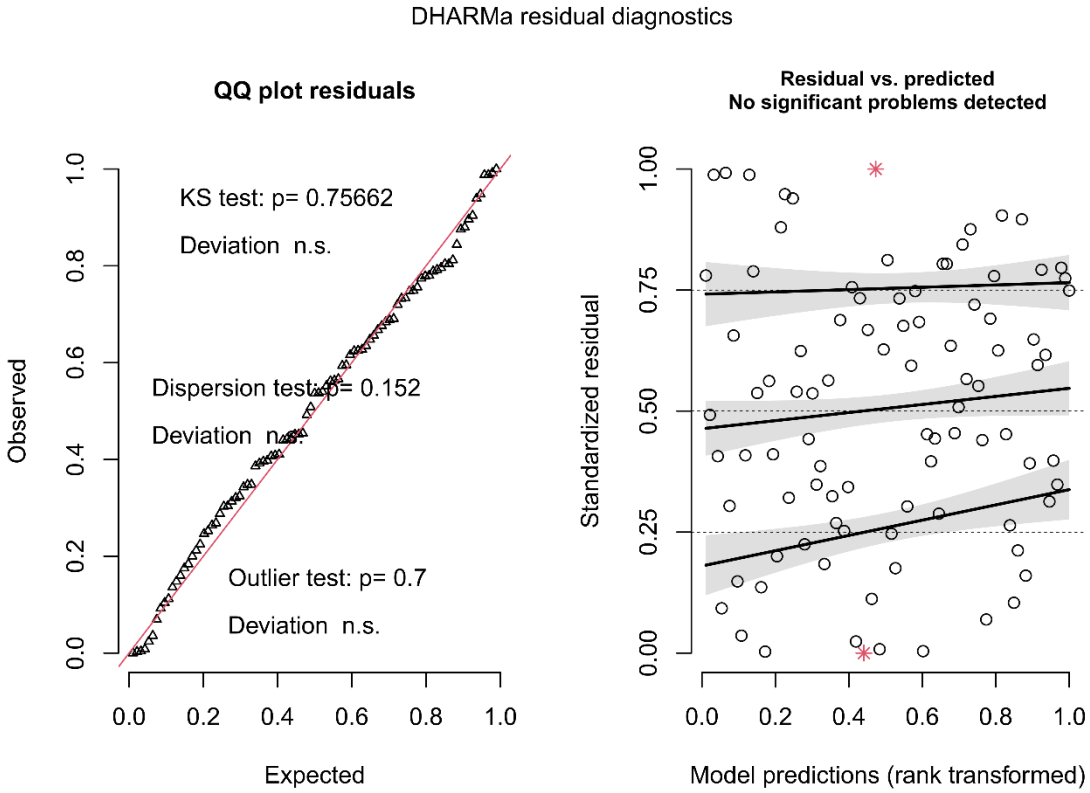

Fig. S2. Diagnostic plots for testing model assumptions for the Total Abundance GLM analysis. Assumption checks were done using simulated residuals. Red asterisks show individual outlier points.

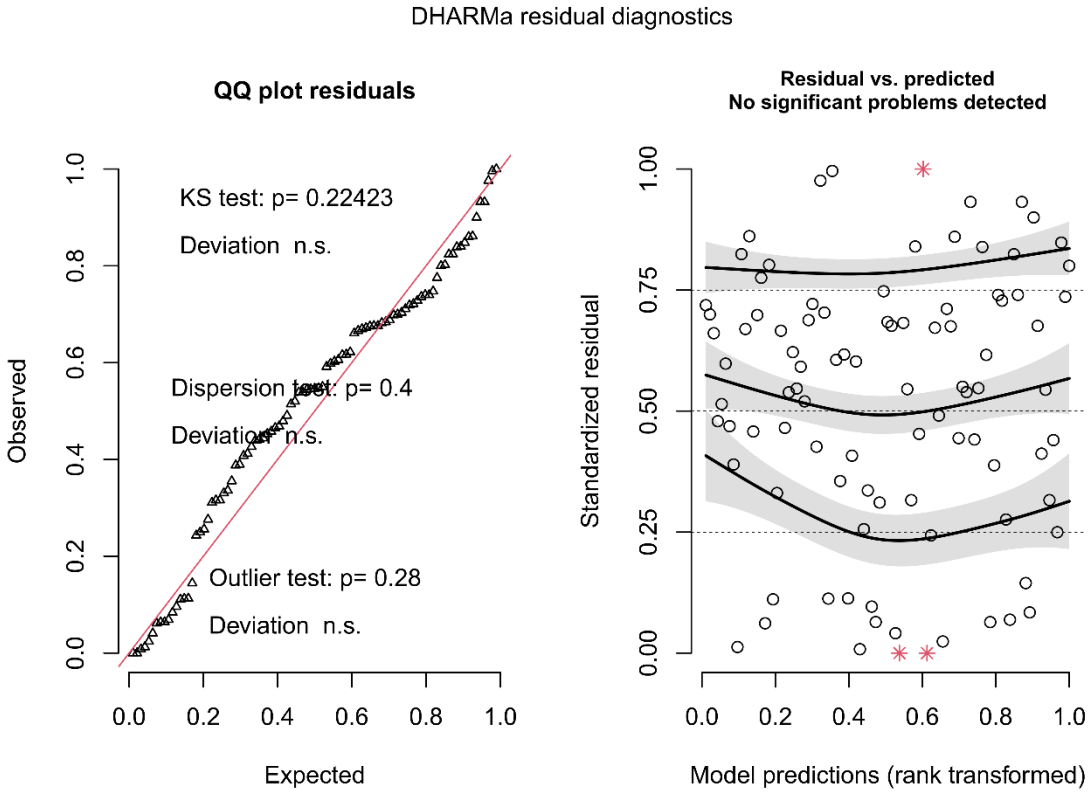

Fig. S3. Diagnostic plots for testing model assumptions for the Myctophid Abundance GLM analysis. Assumption checks were done using simulated residuals. Red asterisks show individual outlier points.

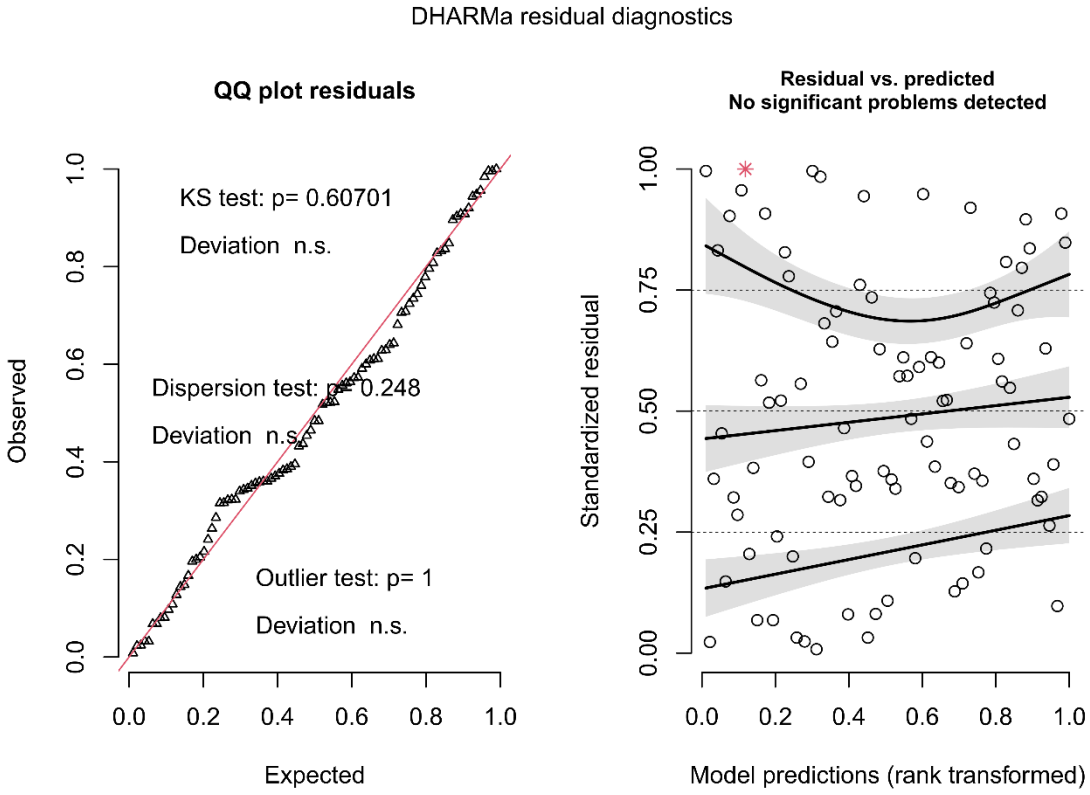

Fig. S4. Diagnostic plots for testing model assumptions for the 'Other Abundance' GLM analysis. Assumption checks were done using simulated residuals. Red asterisk shows individual outlier point.

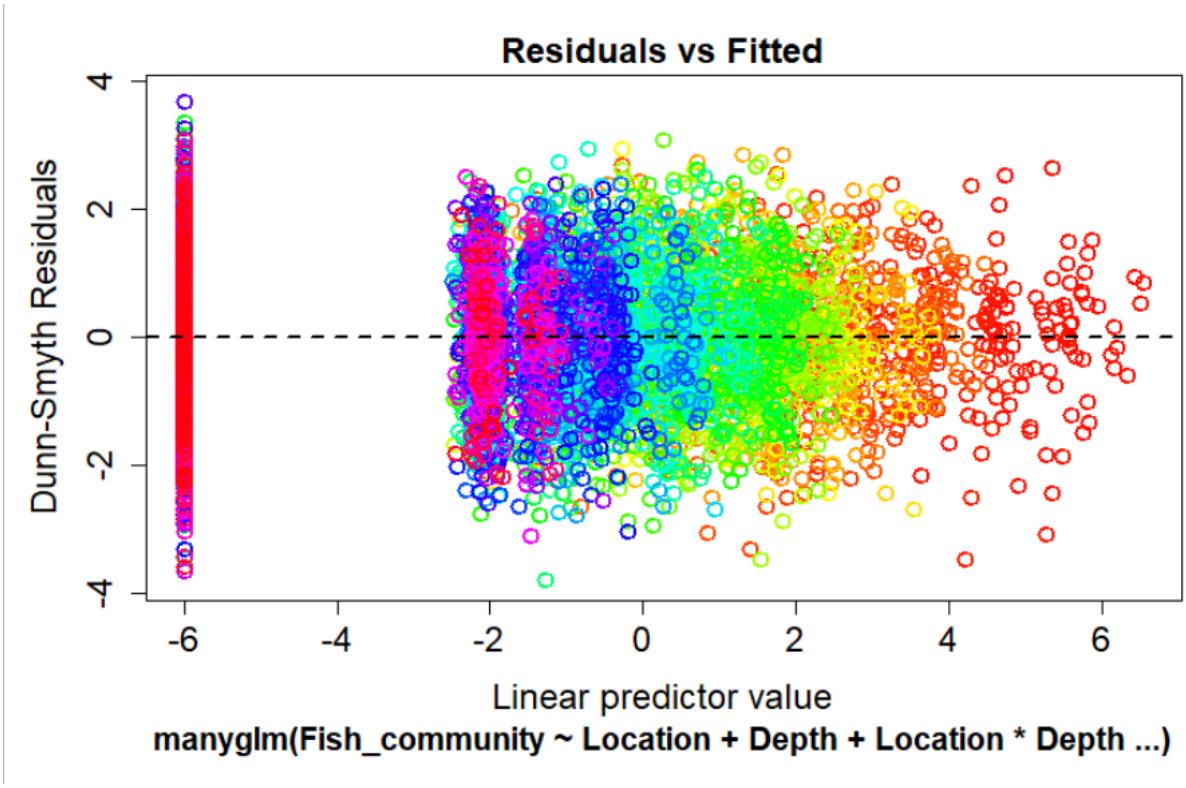

Fig. S5. Diagnostic plot for the multivariate GLM analysis. Residual vs Fitted plot constructed using the 'plot.manyglm' function.

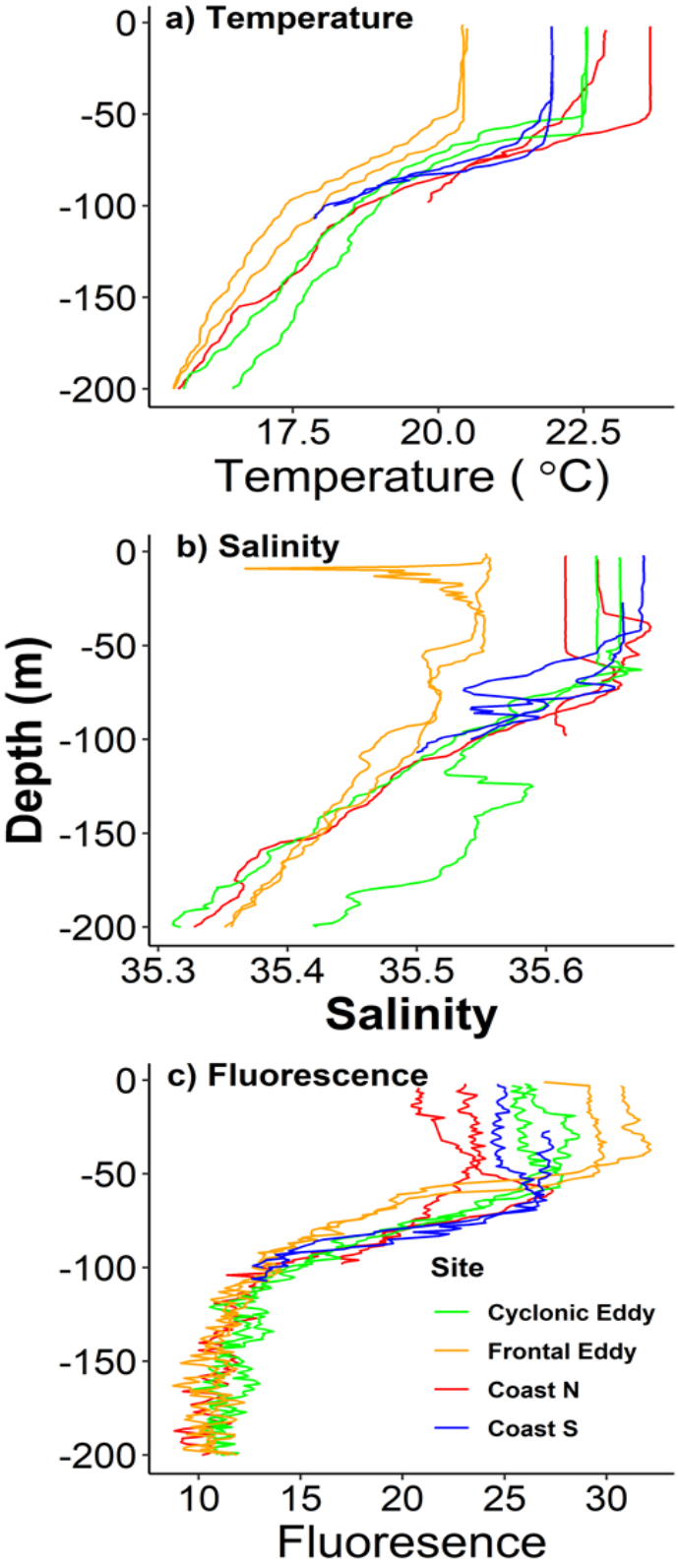

Fig. S6. Vertical profiles of a) temperature; b) salinity and c) and fluorescence in the 4 locations. Multiple lines represent the replicate CTD deployments.

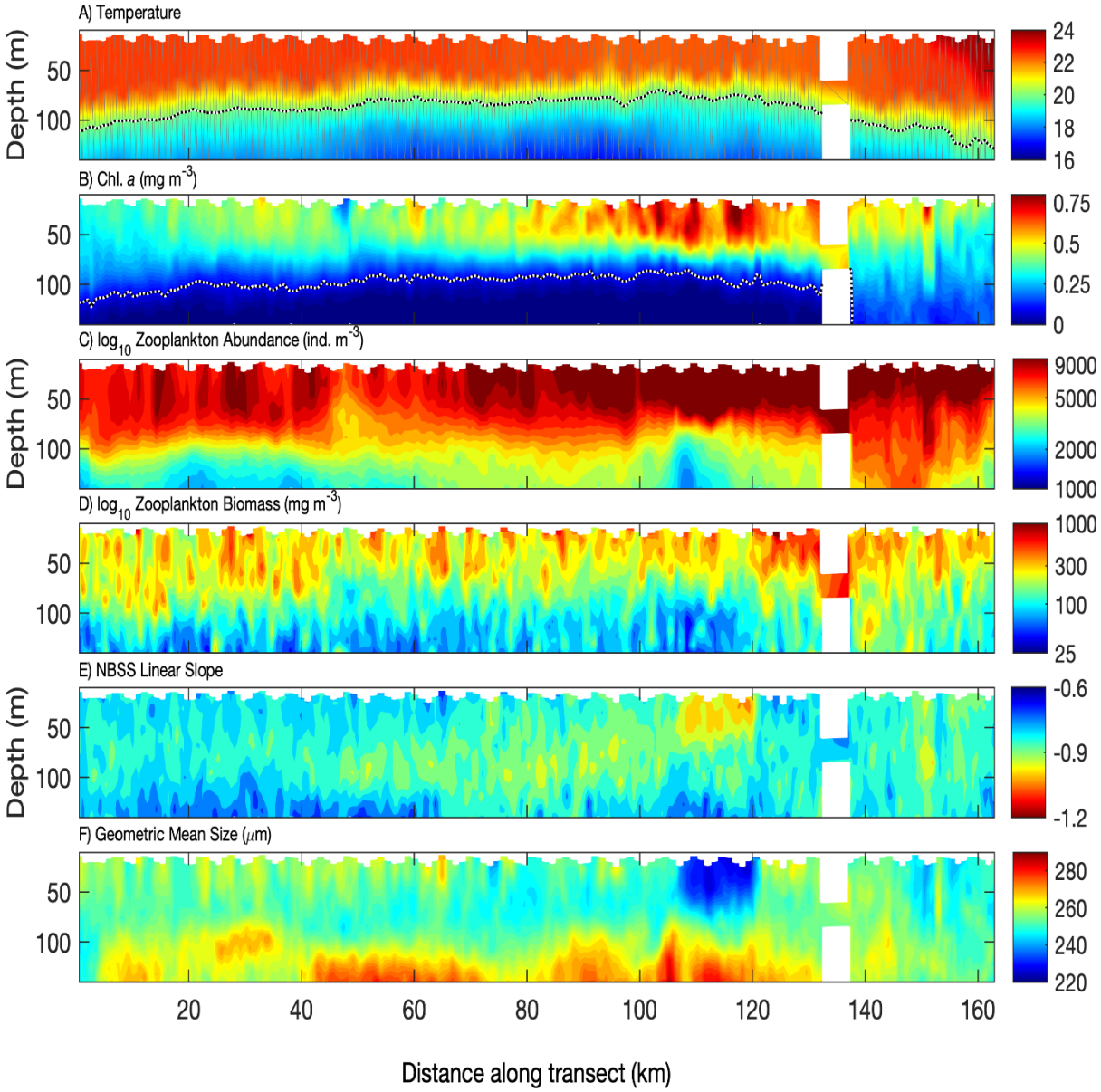

Fig. S7. Triaxus-LOPC profiles of the northern cyclonic eddy (transect illustrated in Fig. 1B), of A) temperature (°C); B) Chlorophyll-a (mg m^{-3}) with contours of density; C) log10 zooplankton abundance ind. m^{-3}; D) zooplankton biomass mg m^{-3}); E) NBSS slope; F) geometric mean size (µm)

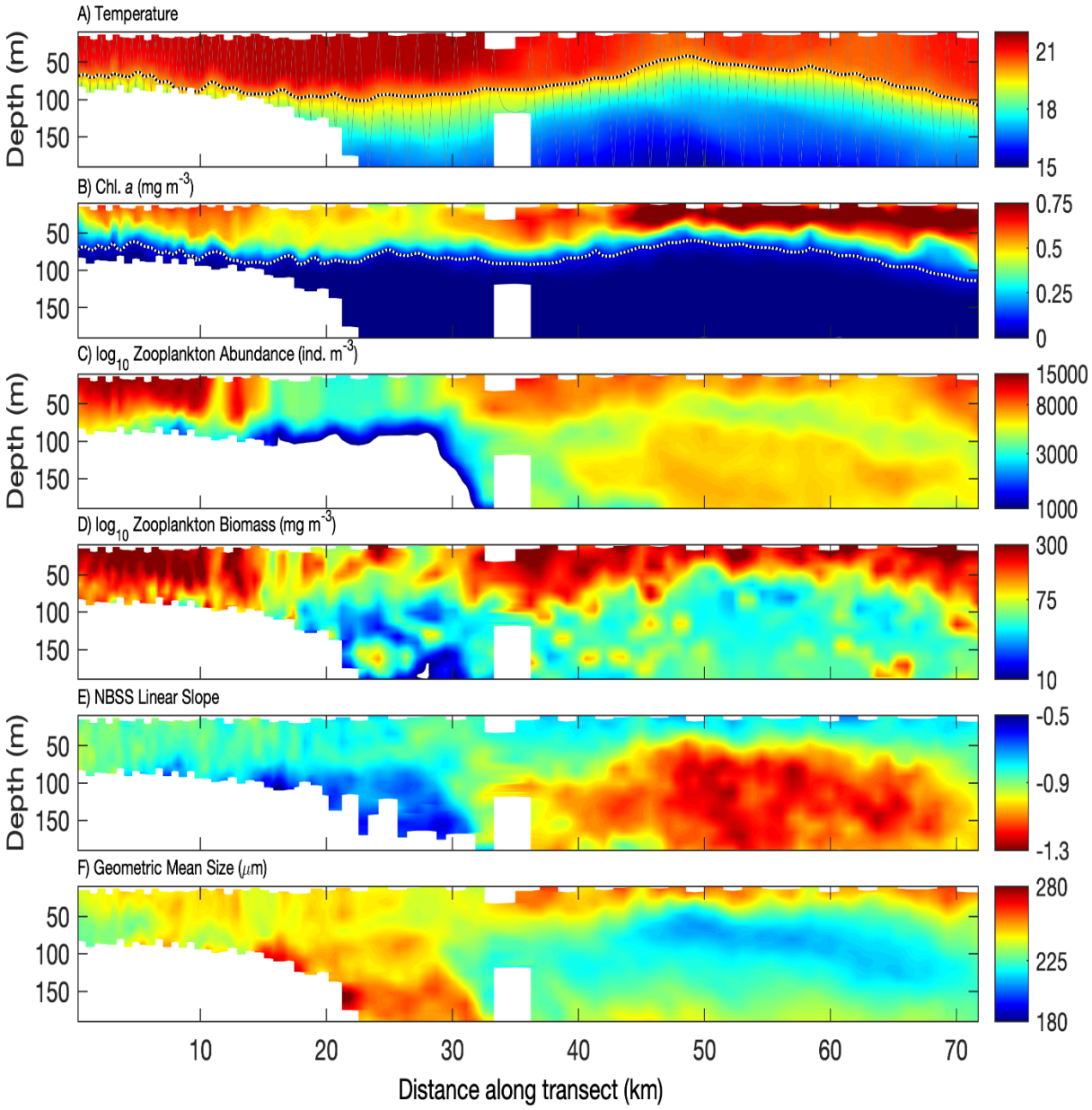

Fig. S8. Triaxus-LOPC profiles, from the shelf and into the Frontal eddy (transect illustrated in Fig. 1C) showing A) temperature (°C); B) Chlorophyll-a (mg m^{-3}) with contours of density; C) log10 zooplankton abundance ind. m^{-3}; D) zooplankton biomass mg m^{-3}); E) NBSS slope; F) geometric mean size (µm)

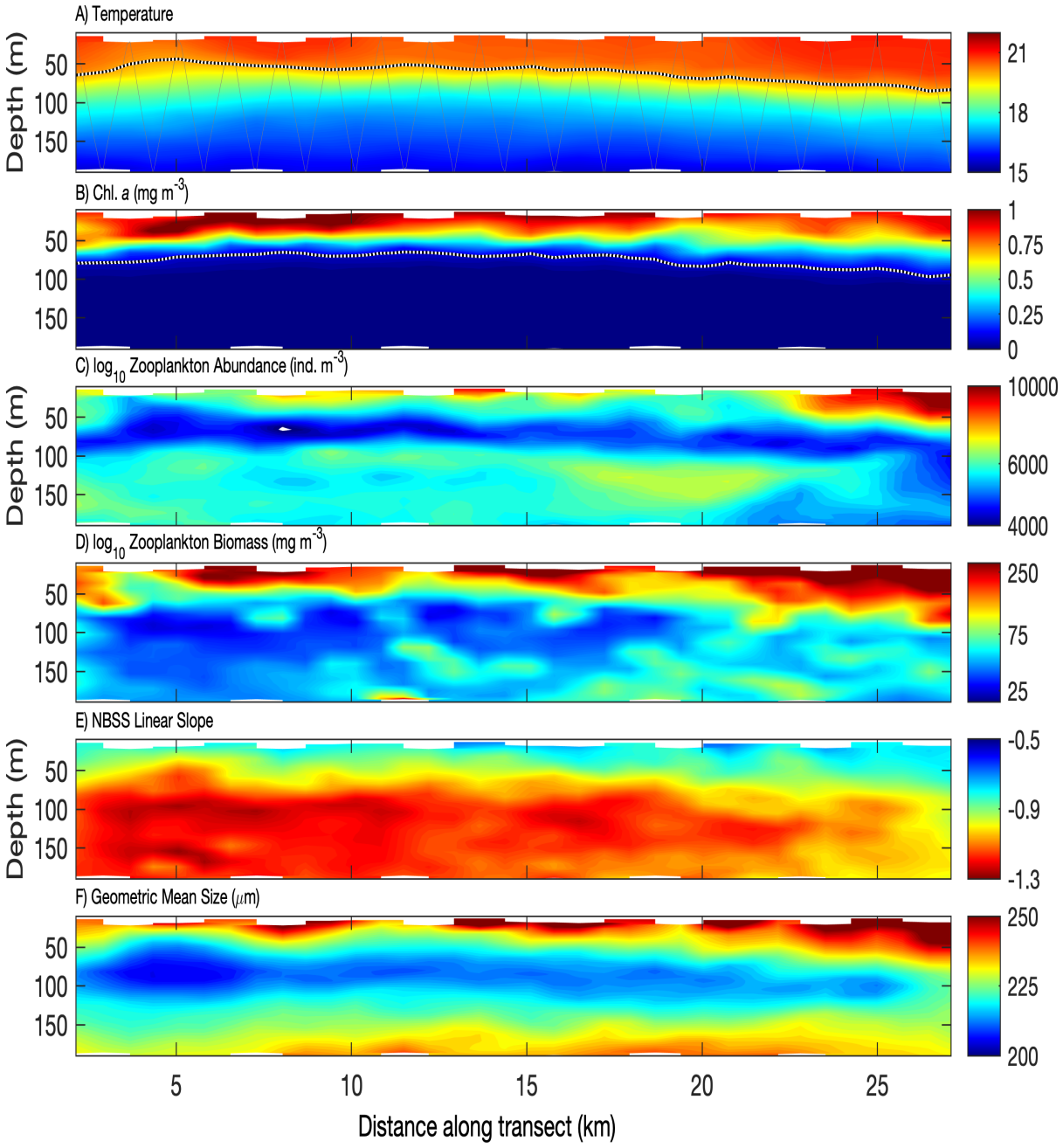

Fig. S9. Triaxus-LOPC profiles, from centre to southern edge of Frontal eddy (transect illustrated in Fig. 1C) of A) temperature (°C); B) Chlorophyll-a (mg m^{-3}) with contours of density; C) log10 zooplankton abundance ind. m^{-3}; D) zooplankton biomass mg m^{-3}); E) NBSS slope; F) geometric mean size (µm)

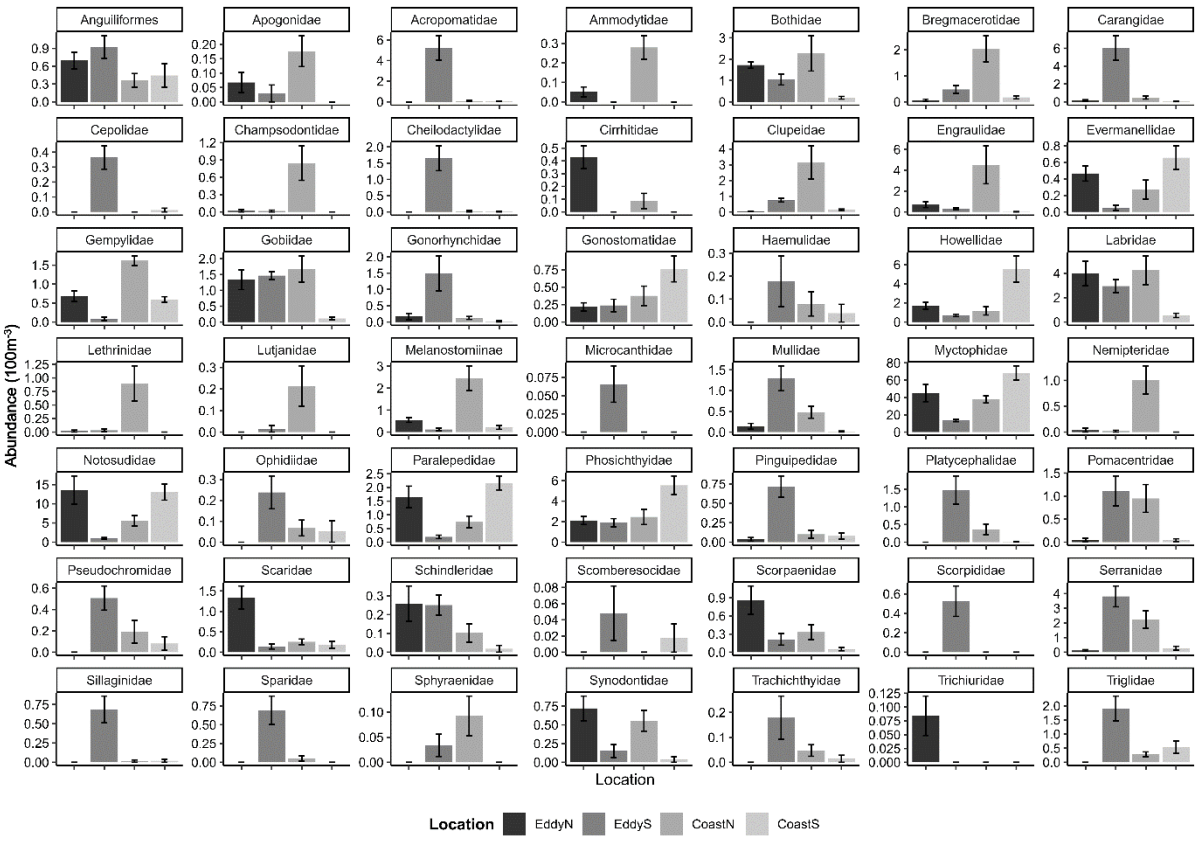

Fig. S10. Mean abundance (ind. 100 m^{-3}) and SE for each location (only using 25m depth samples). Only shows families for which there was a significant effect.

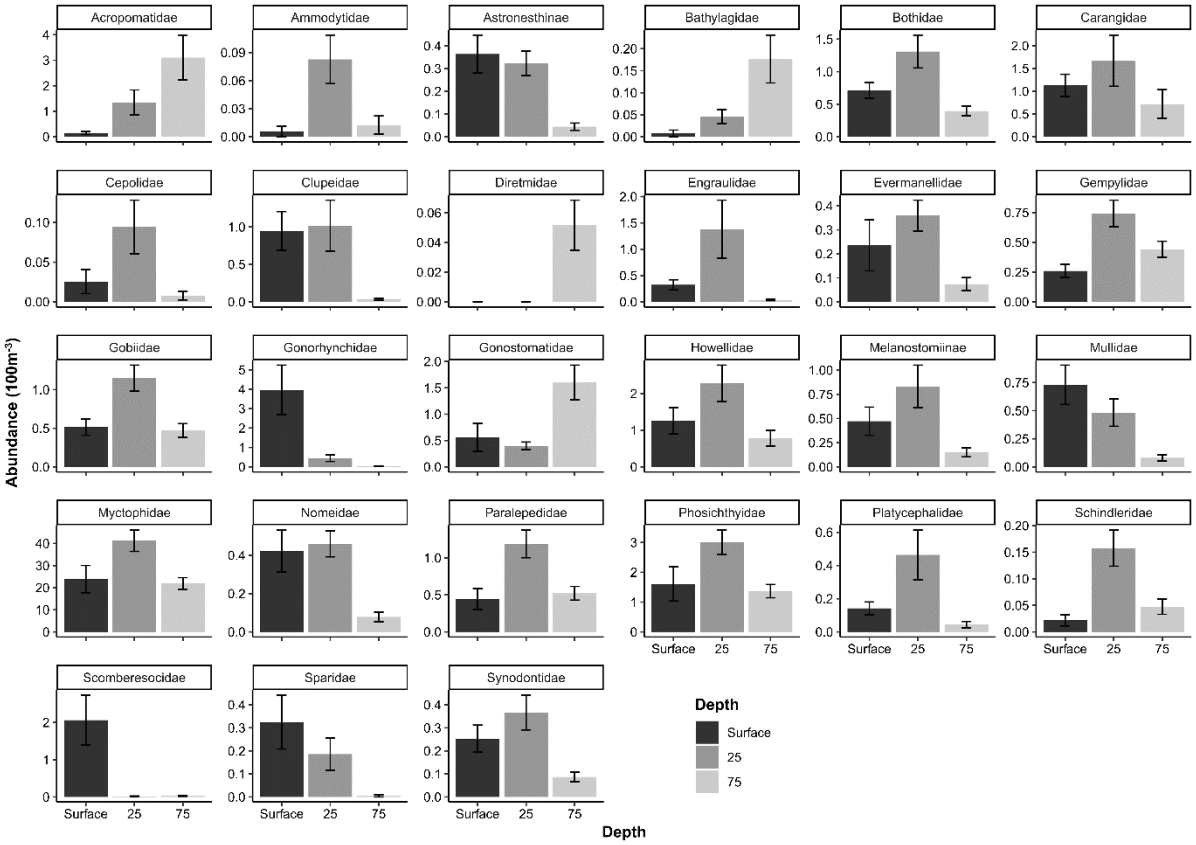

Fig. S11. Mean abundance (ind. 100 m^{-3}) and SE for each Depth (averaged over all locations). Only shows families for which there was a significant effect.

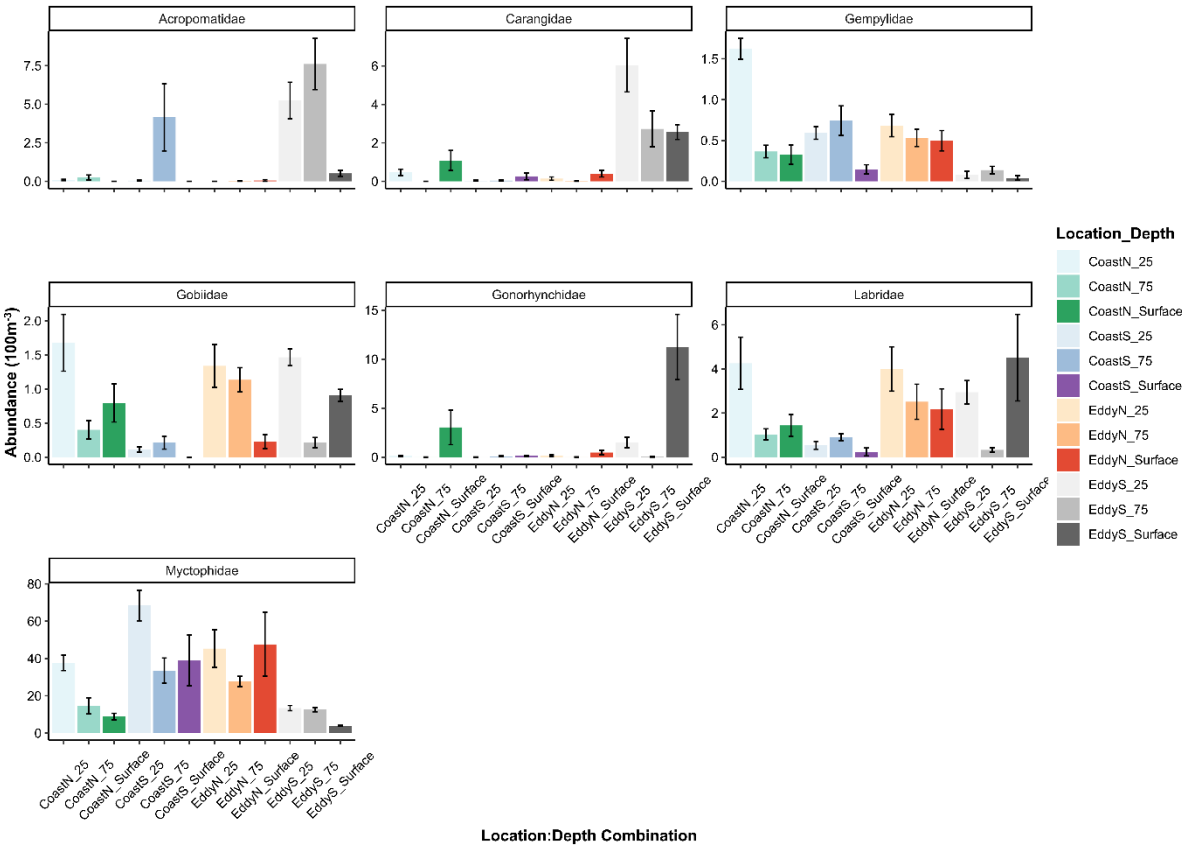

Figure S12. Mean abundance (ind. 100 m^{-3}) and SE for each Location by Depth interaction. Only shows families for which there was a significant effect.

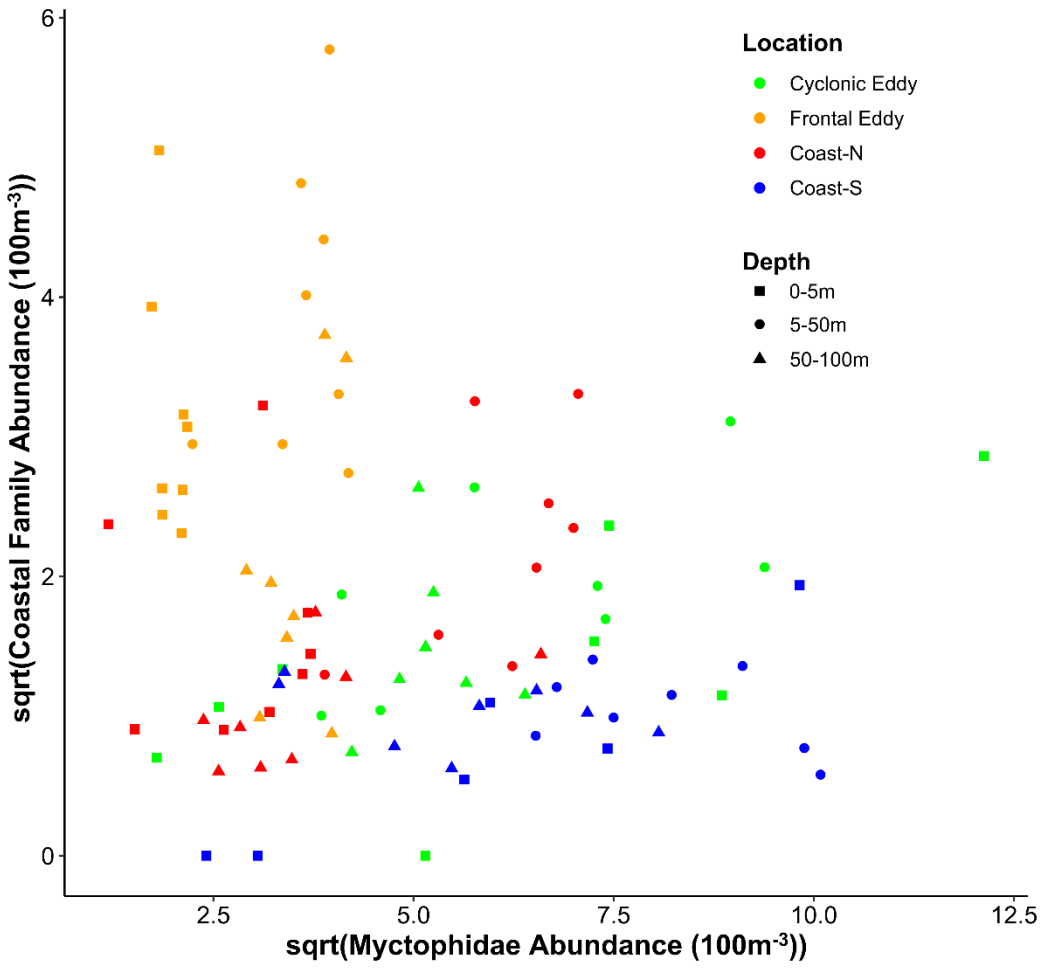

Figure S13. Larval Entrainment Index shown as a scatterplot of the net level raw data abundance ($100m^{-3}$) of 9 coastal taxa (Sparidae, Sillaginidae, Carangidae, Microcanthidae, Cheilodactylidae, Labridae, Triglidae, Platycephalidae and Scorpididae), plotted on the abundance of larval lanternfish (Myctophidae), the most abundant oceanic taxa in this study. Data are square-root transformed. Data points towards the upper left reveal significant entrainment of coastal larvae. Data points are colour coded by the 4 locations, and labelled with the three tow-depth strata (0-5 m, 5-50 m, 50-100 m).

Table S1. Mean larval fish concentrations (individuals 100 m-3) at the three sampling depths (surface (0-5 m), 25 m (5-50 m), 100 m (50-100 m)), from southern frontal eddy, northern cyclonic eddy, and the two coastal stations. (Continues over page)

	Coast-N			Eddy-N			Eddy-S			Coast-S		
	Surface	25 m	75 m	Surface	25 m	75 m	Surface	25 m	75 m	Surface	25 m	75 m
Acanthuridae	0.03	0.1	0	0	0.07	0.05	0	0.03	0	0	0	0
Acropomatidae	0	0.09	0.25	0.06	0	0.02	0.52	5.24	7.61	0	0.05	4.16
Ammodytidae	0.02	0.28	0.01	0	0.05	0.04	0	0	0	0	0	0
Anguilliformes	0.03	0.36	0.18	0.28	0.7	0.23	0.42	0.92	0.8	0.78	0.44	0.4
Apogonidae	0.05	0.18	0.03	0	0.07	0.02	0	0.03	0.02	0	0	0
Astronesthinae	0.11	0.05	0.05	0.6	0.38	0	0.39	0.47	0	0.34	0.39	0.12
Aulopidae	0.09	0.25	0.13	0.06	0.03	0.06	0	0.07	0.07	0.06	0.01	0.02
Bathylagidae	0	0.1	0.12	0.03	0.03	0.3	0	0.03	0.12	0	0.02	0.18
Berycidae	0	0.03	0	0	0	0	0	0.02	0.02	0	0	0
Blenniidae	0.08	0.02	0.02	0	0	0	0.02	0.03	0	0.02	0	0
Bothidae	0.75	2.27	0.23	0.98	1.72	0.8	0.75	1.05	0.23	0.25	0.19	0.37
Bramidae	0.04	0.1	0	0.09	0.15	0.02	0	0.03	0	0.11	0.04	0.05
Bregmacerotidae	0.28	2.04	1.49	0.17	0.07	0.29	0.09	0.48	0.11	0.12	0.17	0.58
Bythitidae	0	0.02	0.02	0	0	0	0	0	0	0	0	0
Callanthidae	0	0	0	0	0	0	0	0.02	0	0	0	0
Callionymidae	0.45	0.65	0.61	0.19	0.24	0.88	0.41	0.81	0.39	0.03	0.28	0.56
Caproidae	0.11	0.13	0.02	0	0.03	0.02	0	0.02	0	0	0	0
Carangidae	0.97	0.44	0	0.4	0.14	0.02	2.56	6.02	2.73	0.26	0.04	0.04
Carapidae	0	0.09	0	0	0.02	0	0	0.09	0.02	0.05	0.02	0
Centrolophidae	0.02	0	0	0	0	0	0	0	0	0	0	0
Cepolidae	0	0	0	0	0	0.02	0.1	0.36	0.02	0	0.01	0
Chaetodontidae	0.11	0.27	0.02	0.05	0.12	0	0	0	0.02	0.06	0.04	0
Champsodontidae	0.03	0.85	0.51	0.03	0.02	0.18	0.02	0.02	0	0	0	0.08
Cheilodactylidae	0	0.02	0	0.03	0	0	0.97	1.65	1.27	0	0.01	0
Chiasmodontidae	0	0	0	0	0	0	0.02	0	0	0	0	0.02
Paraulopidae	0	0.08	0	0	0	0	0	0	0	0	0	0
Cirrhitidae	0.08	0.09	0	0.03	0.43	0.19	0	0	0	0	0	0
Clupeidae	2.69	3.16	0.04	0.09	0.03	0.02	0.62	0.75	0.03	0.2	0.13	0.03

Coryphaenidae	0.11	0.08	0		0.15	0	0		0.04	0	0		0	0.02	0
Creediidae	0	0.02	0		0	0.02	0		0	0	0		0	0	0
Cynoglossidae	0.03	0.1	0.06		0.09	0.09	0.11		0.18	0.27	0		0	0	0.08
Dactylopteridae	0	0	0		0.11	0	0		0	0	0		0	0	0
Diretmidae	0	0	0		0	0	0.08		0	0	0.05		0	0	0.08
Engraulidae	0.81	4.53	0.07		0.14	0.7	0.04		0.22	0.29	0.03		0.05	0.01	0
Evermanellidae	0	0.27	0.01		0.58	0.47	0.08		0	0.05	0.02		0.41	0.66	0.19
Exocoetidae	0.03	0	0		0	0	0		0.04	0	0		0.03	0	0
Gempylidae	0.33	1.62	0.36		0.5	0.68	0.53		0.04	0.08	0.14		0.15	0.59	0.74
Gobiidae	0.8	1.68	0.4		0.23	1.34	1.14		0.91	1.47	0.21		0	0.11	0.21
Gonorhynchidae	3.05	0.12	0.02		0.47	0.17	0.02		11.2	1.49	0.04		0.14	0.02	0.1
Gonostomatidae	0.05	0.38	0.71		1.36	0.22	3.94		0.23	0.24	0.56		0.62	0.76	1.48
Haemulidae	0	0.08	0.42		0	0	0		0.15	0.18	0.19		0	0.04	0
Hemirhamphidae	0.02	0	0		0	0	0		0	0	0		0	0	0
Holocentridae	0	0.04	0		0	0	0		0	0	0		0	0	0
Hoplichthyidae	0	0	0.02		0	0	0		0	0	0		0	0	0
Howellidae	0.25	1.17	0.09		1.31	1.7	0.9		0.34	0.69	0.15		3.74	5.54	1.98
Idiacanthidae	0	0	0		0.03	0	0.08		0	0.02	0.02		0	0.03	0.03
Labridae	1.44	4.26	1.03		2.18	4	2.51		4.51	2.95	0.33		0.24	0.54	0.91
Leiognathidae	0.06	0.02	0		0	0	0		0	0	0		0	0	0
Lethrinidae	0.74	0.9	0.66		0.06	0.02	0.02		0	0.03	0		0	0	0
Lophiiformes	0	0.14	0.08		0.05	0.07	0.34		0.04	0.11	0.11		0.03	0.05	0.16
Lutjanidae	0.06	0.21	0.08		0	0	0.04		0	0.01	0		0	0	0
Macrorhamposidae	0.03	0.05	0		0.03	0	0.02		0.1	0.1	0.02		0.03	0.04	0
Malacanthidae	0	0.18	0.01		0.03	0.08	0.02		0	0	0.02		0	0.02	0
Melamphaidae	0	0.02	0.01		0.03	0.05	0.04		0	0.02	0.08		0	0.08	0.17
Melanostomiinae	1.19	2.45	0.36		0.4	0.54	0.1		0.03	0.12	0.03		0.21	0.21	0.1
Microcanthidae	0	0	0		0	0	0		0.3	0.07	0.03		0	0	0
Microdesmidae	0.02	0.02	0		0	0	0		0	0	0		0	0	0
Molidae	0	0	0		0	0	0		0	0	0		0.05	0	0
Monacanthidae	0.05	0.1	0		0	0	0.02		0	0.01	0		0	0	0
Moridae	0	0	0.02		0	0	0		0	0.05	0		0	0	0.03
Mugilidae	0.09	0.04	0		0.16	0.05	0.04		0	0.03	0.06		0.12	0	0

Mullidae	1.27	0.48	0.02	0.39	0.14	0.06	1.07	1.3	0.21	0	0.01	0.03
Myctophidae	8.87	37.7	14.6	47.6	45.3	27.7	3.92	13.4	12.6	38.99	68.4	33.52
Nemipteridae	0.31	1.01	0.24	0.03	0.04	0.02	0	0.02	0	0	0	0
Nomeidae	0.67	0.69	0.09	0.36	0.41	0.02	0.08	0.23	0.05	0.62	0.51	0.15
Notosudidae	1.02	5.59	1.07	16.5	13.6	6.35	0.66	0.97	1.27	7.08	13.07	8.9
Ophidiidae	0	0.07	0	0	0	0	0.16	0.24	0.03	0.15	0.05	0
Paralepedidae	0.19	0.74	0.22	0.85	1.66	0.67	0.04	0.19	0.18	0.77	2.17	1.03
Paralicthyidae	0	0	0	0	0	0	0	0.03	0.02	0.06	0	0
Paraulopidae	0	0.08	0	0	0	0	0	0	0	0	0	0
Percophidae	0.02	0	0	0	0	0.04	0	0	0	0.02	0	0
Phosichthyidae	0.34	2.46	0.51	1.29	2.11	2.06	0.28	1.89	0.92	5.49	5.54	2.07
Pinguipedidae	0	0.1	0.21	0	0.04	0.1	0.36	0.72	0.19	0.03	0.08	0.07
Platycephalidae	0.19	0.36	0.1	0	0	0	0.32	1.48	0.05	0.02	0.01	0.02
Pomacanthidae	0.03	0	0.03	0	0.03	0.02	0	0	0	0	0	0
Pomacentridae	1	0.95	0.11	0	0.05	0.04	0.25	1.11	0.21	0.11	0.04	0.09
Pomatomidae	0.09	0	0.01	0	0	0	0.03	0.03	0.05	0	0	0
Priacanthidae	0	0.02	0	0	0.02	0	0	0	0	0	0	0
Pseudochromidae	0.03	0.19	0.03	0.06	0	0	0.29	0.51	0.09	0.15	0.08	0.02
Samaridae	0	0	0.03	0	0.02	0	0.02	0.02	0.02	0	0.03	0
Scaridae	0.36	0.25	0.17	1.54	1.34	0.61	0	0.14	0	0	0.19	0.19
Schindleridae	0.02	0.1	0.07	0	0.26	0.09	0.06	0.25	0.03	0	0.02	0
Scomberesocidae	0	0	0.02	1	0	0	5.73	0.05	0.08	1.34	0.02	0.02
Scombridae	0.06	0	0	0	0	0	0	0	0	0	0	0
Scopelachidae	0	0.12	0.03	0	0	0.02	0	0	0.04	0	0	0
Scorpaenidae	0.27	0.33	0.09	0.86	0.86	0.58	0.02	0.21	0.01	0	0.05	0.21
Scorpididae	0	0	0	0	0	0	0.06	0.53	0.21	0	0	0
Serranidae	2.07	2.24	0.8	0.14	0.12	0.1	1.04	3.81	0.95	1.12	0.27	0.25
Sillaginidae	0.11	0.02	0	0	0	0	0.45	0.69	0.07	0	0.02	0.02
Sparidae	0.1	0.05	0	0	0	0	1.08	0.69	0.02	0.05	0	0
Sphyraenidae	0.2	0.09	0	0	0	0	0	0.03	0	0	0	0.02
Sternoptychidae	0	0	0	0	0	0	0	0	0.04	0	0	0
Stomiinae	0	0.03	0	0	0.02	0.02	0	0	0	0.06	0.02	0.03
Syngnathidae	0	0	0	0	0	0	0	0	0	0.06	0	0

Synodontidae	0.48	0.55	0.15	0.24	0.72	0.18	0.14	0.15	0	0.11	0.04	0.03
Tetraodontidae	0	0.31	0.03	0.09	0.09	0.02	0.02	0.03	0.02	0.03	0.03	0.02
Trachichthyidae	0.02	0.05	0.04	0	0	0	0.09	0.18	0.2	0	0.01	0.05
Trachipteridae	0	0.02	0	0	0	0.02	0.03	0	0	0	0	0
Trichiuridae	0	0	0	0	0.08	0.24	0.02	0	0.02	0	0	0
Triglidae	0.26	0.28	0.09	0	0	0	0.41	1.91	0.51	0.4	0.54	0.09
Uranoscopidae	0	0.02	0	0	0	0	0	0	0	0	0	0
Zeidae	0.03	0.02	0.03	0	0	0.02	0	0	0	0	0	0
Damaged/unknown	0.79	1.99	1.37	0.92	0.41	1.12	1.11	1.19	1.36	3.94	0.71	4.96
Total no. of abundance	3393	8694	2833	8290	8177	5329	4303	5841	3493	6872	10246	6464
Total no. of families	68	78	60	50	55	60	55	71	61	46	55	49