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Supplement of

Dead zone or oasis in the open ocean? Zooplankton distribution and migration in low-oxygen modewater eddies

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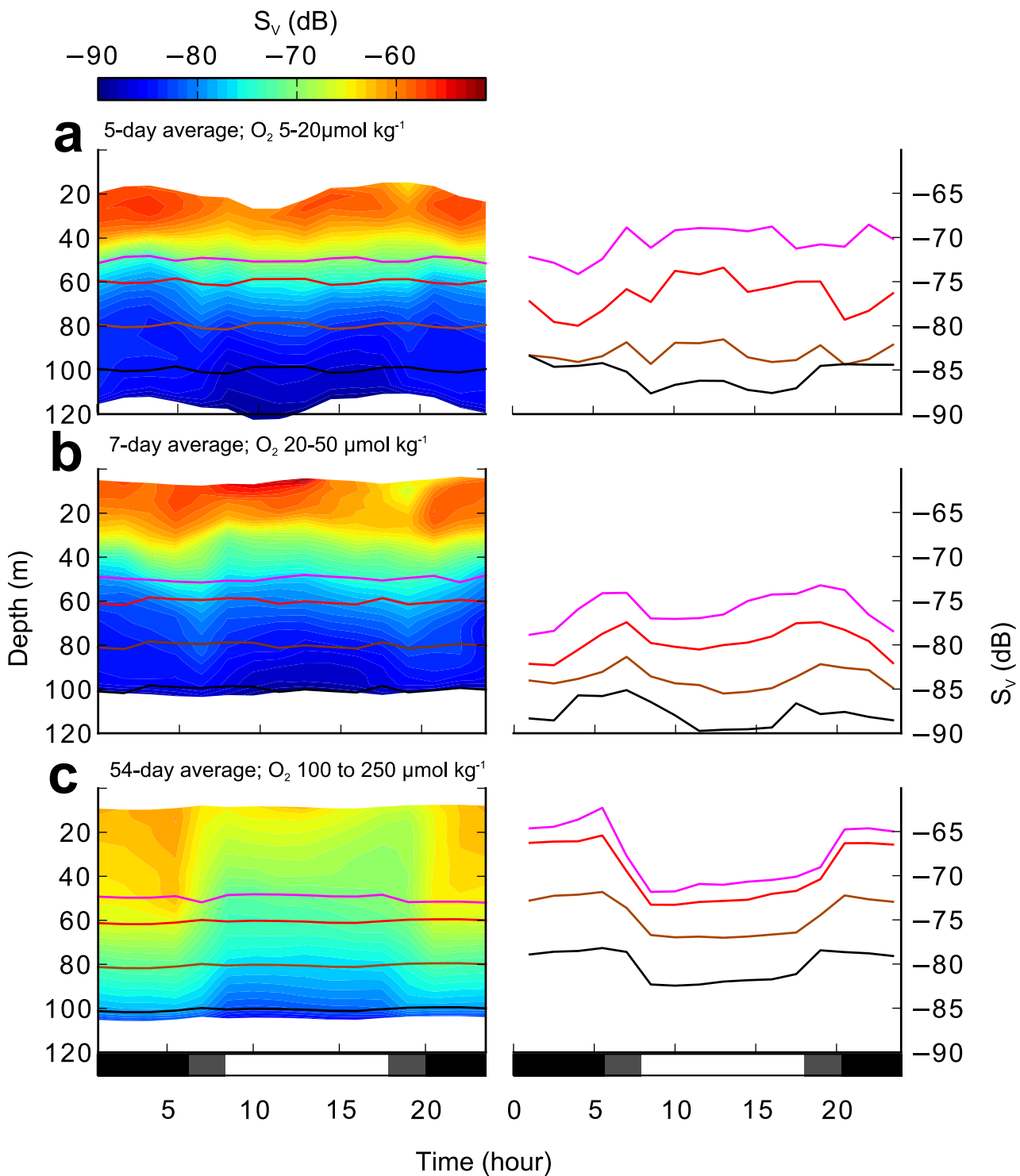


Figure S1: Daily cycles of moored ADCP mean volume backscatter S_v (dB) during transit of an ACME in 2010 (data from Jan 1 to Mar 14). Left: Depth-resolved contour plot of S_v over daytime; Data are averaged for days with a mean O_2 concentration (at the depth of the moored O_2 sensor, approximately 50 m) below $20 \mu\text{mol kg}^{-1}$ (row A, $n=5$), $20\text{--}50 \mu\text{mol kg}^{-1}$ (row B, $n=7$), and $100\text{--}250 \mu\text{mol kg}^{-1}$ (row C, $n=54$). right: S_v at four different depth levels of approximately 50, 60, 80, and 100m; exact mean depth dependent on position of ADCP indicated by corresponding colored lines in the contour plots (left column).

Table S1. Multinet-based abundance (ind m⁻³) for the five stations sampled during M105.

Day/Night	Station	Depth range	copepods							other crustaceans				gelatineous						other			protists		detritus					
			cop_calanoid_other	cop_eucalanid	cop_nauplii	cop_oithonid	cop_cyclopoid_harpacticoid_other	cop_macrosetella	cop_oncaeaaid	crust_euphausiid	crust_amphipod	crust_ostracod	crust_decapod	gel_filt_salp_like	gel_cam_ctenophore	gel_cam_medusa	gel_cam_chaetognath	gel_cam_siphonophore	gel_filt_app	gel_other	moll	fish	egg	polychaeta	pro_sarco_radiolaria_like	pro_sarco_foram_like	det_feces_like	det_darkparticle	det_aggregate	det_fiber
Day	Eddy Core	0-85	557.2	5.1	1.7	58.0	6.7	2.5	82.7	1.8	0.6	5.7	0.7	3.3	0.0	0.0	32.1	1.1	1.4	0.8	22.8	0.14	37.2	1.2	3.9	45.0	0.0	10.6	306.0	23.9
	Eddy Core	85-120	156.4	24.5	3.0	12.6	7.2	16.5	107.8	0.4	0.4	54.7	2.7	0.0	0.0	0.0	6.1	1.9	0.0	2.2	8.7	0.33	29.4	2.5	0.8	13.0	0.0	8.3	271.6	20.1
	Eddy Core	120-200	49.3	13.5	1.0	4.7	6.3	1.0	16.0	0.1	0.1	11.5	0.1	0.1	0.0	0.0	3.7	0.0	0.0	0.6	8.9	0.04	11.8	0.4	0.2	6.6	0.0	3.5	84.0	5.9
	Eddy Core	200-300	43.4	4.0	1.6	4.9	0.5	0.6	28.6	0.1	0.0	6.8	0.0	0.0	0.0	0.0	0.7	0.5	0.0	0.5	2.2	0.00	8.2	0.2	0.2	4.8	0.0	4.6	52.0	12.1
	Eddy Core	300-600	21.6	1.3	0.9	1.8	0.2	0.1	16.6	0.0	0.0	2.3	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.2	0.7	0.05	4.2	0.1	0.0	1.8	0.0	1.6	11.5	1.6
Night	Eddy Core	0-85	864.7	58.6	2.2	88.0	9.4	10.0	112.3	1.7	0.0	13.3	1.1	0.0	1.1	0.0	61.4	5.5	8.9	4.4	117.3	0.00	63.1	17.2	7.7	114.5	4.4	78.6	595.3	66.4
	Eddy Core	85-120	86.6	31.7	1.8	7.1	0.5	11.2	13.9	0.2	0.0	37.9	0.4	0.0	0.0	0.0	3.0	0.0	0.0	0.7	4.6	0.00	16.2	20.1	2.1	12.5	0.7	16.9	191.6	34.4
	Eddy Core	120-200	41.2	4.4	0.7	1.4	0.5	0.6	12.9	0.0	0.0	14.7	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.5	2.8	0.00	4.4	0.6	0.3	3.9	0.7	4.1	31.9	7.2
	Eddy Core	200-300	39.5	1.9	0.4	1.6	0.4	0.9	27.6	0.1	0.0	6.4	0.1	0.0	0.0	0.0	1.2	0.0	0.0	0.1	1.3	0.03	6.5	0.8	0.4	4.4	1.3	2.7	37.6	7.2
	Eddy Core	300-600	19.2	1.0	0.7	1.7	0.4	0.2	18.8	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	1.6	0.04	3.8	0.3	0.3	5.6	0.0	1.4	26.3	2.4
Day	Eddy Margin	0-85	171.9	3.7	3.2	3.5	1.2	0.0	33.3	1.0	0.3	3.2	2.2	0.3	0.0	0.0	20.1	3.3	53.9	4.2	2.9	0.14	17.4	0.3	0.0	4.7	1.1	3.2	113.7	5.7
	Eddy Margin	85-120	81.7	1.9	10.5	14.4	2.3	1.8	32.3	0.9	0.1	8.0	0.9	1.7	0.0	0.3	4.4	2.5	3.6	0.8	2.6	0.00	9.1	0.4	0.5	5.5	0.0	4.6	69.9	15.4
	Eddy Margin	120-200	59.3	6.1	3.6	8.6	1.7	0.8	34.9	0.5	0.1	20.7	0.3	0.0	0.0	0.0	2.9	1.8	0.2	1.3	2.1	0.00	12.8	0.7	0.0	2.5	0.0	2.6	39.8	7.9
	Eddy Margin	200-300	39.9	11.1	0.9	2.5	0.4	0.5	13.7	0.2	0.0	6.5	0.0	0.3	0.0	0.0	1.8	0.5	0.2	0.1	0.8	0.06	5.3	0.3	0.0	0.9	0.0	1.2	31.0	5.4
	Eddy Margin	300-600	24.5	3.3	1.2	2.0	0.1	0.1	18.8	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.1	0.3	0.07	5.0	0.3	0.0	1.2	0.0	0.8	25.1	3.9
Day	Outside Eddy	0-100	364.7	22.6	1.9	32.8	6.4	0.5	40.7	0.3	0.9	6.3	0.9	2.3	0.0	0.0	21.0	0.7	7.2	0.7	5.2	0.23	15.3	1.4	19.3	7.2	0.0	5.7	114.9	6.3
	Outside Eddy	100-200	36.2	2.5	1.4	7.1	1.0	0.5	39.9	0.3	0.0	8.7	0.9	0.0	0.0	0.0	2.5	0.4	11.0	0.7	2.2	0.06	5.4	1.0	0.0	4.5	0.5	4.9	125.8	3.4
	Outside Eddy	200-300	24.5	2.8	1.2	3.0	0.4	0.8	10.3	0.2	0.0	4.0	0.2	0.0	0.0	0.0	1.3	0.1	0.0	0.2	1.8	0.00	5.2	0.2	0.0	1.6	0.0	1.4	30.1	2.9
	Outside Eddy	300-600	20.3	3.6	1.1	1.0	0.2	0.1	19.1	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.4	0.2	0.03	5.0	0.4	0.0	0.3	0.0	1.0	23.3	1.6
	Outside Eddy	600-800	10.3	4.7	0.9	0.3	0.7	0.0	10.3	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.03	2.9	1.2	0.0	0.3	0.0	0.6	17.0	2.1
Night	Outside Eddy	0-100	512.5	25.5	3.0	46.6	10.8	0.9	74.8	3.4	1.1	6.9	0.5	3.4	0.0	0.0	31.4	3.4	2.3	0.9	19.0	0.23	38.3	1.6	2.8	30.8	0.0	6.7	129.2	59.7
	Outside Eddy	100-200	33.1	3.0	1.0	8.5	1.2	0.4	25.4	0.5	0.3	7.0	0.1	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.1	0.00	5.5	0.3	0.8	1.1	0.0	0.8	17.0	4.0
	Outside Eddy	200-300	15.5	4.7	0.6	1.7	0.6	0.7	7.5	0.3	0.0	3.3	0.1	0.0	0.0	0.0	1.3	0.1	0.0	0.0	0.3	0.00	3.6	0.2	0.0	0.9	0.0	1.1	8.7	2.2
	Outside Eddy	300-600	22.4	3.9	1.8	2.7	0.2	0.6	16.4	0.0	0.0	1.8	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.1	0.0	0.02	4.8	0.3	0.0	0.6	0.0	0.8	17.6	2.6
Outside Eddy	600-800	9.6	3.2	0.9	0.5	0.5	0.0	10.9	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.00	3.2	0.6	0.0	0.1	0.0	0.3	8.6	1.8	

Table S2. Multinet-based integrated abundance (ind m⁻², upper 600 m) for the five stations sampled during M105.

Day/Night	Station	Depth range	copepods								other crustaceans				gelatineous						other			protists		detritus				
			cop_calanoid_other	cop_eucalanid	cop_nauplii	cop_oithonid	cop_cyclopoid_harpacticoid_other	cop_macrosetella	cop_oncaeaid	crust_euphausiid	crust_amphipod	crust_ostracod	crust_decapod	gel_filt_salp_like	gel_carn_ctenophore	gel_carn_medusa	gel_carn_chaetognath	gel_carn_siphonophore	gel_filt_app	gel_other	moll	fish	egg	polychaeta	pro_sarco_radiolaria_like	pro_sarco_foram_like	det_feces_like	det_darkparticle	det_aggregate	det_fiber
Day	Eddy Core	0-600m	67582	3180	767	6771	1433	976	19940	194	76	4693	158	335	0	0	3393	210	118	290	3369	41	7204	280	408	5822	0	2402	50884	4916
Night	Eddy Core	0-600m	89537	6940	553	8521	1024	1427	19457	162	9	4563	115	0	94	0	5768	482	752	453	10954	14	8075	2374	890	12614	597	8279	71515	8851
Day	Eddy Margin	0-600m	33563	2986	1377	2339	401	220	13754	178	52	3530	256	109	3	18	2421	581	4740	518	680	38	4857	230	29	1240	94	987	25923	3350
Day	Outside Eddy	0-600m	48624	3876	773	4599	824	207	14823	90	102	2611	220	235	0	0	2669	148	1822	271	975	38	4086	396	1928	1431	47	1507	34073	1738
Night	Outside Eddy	0-600m	62826	4496	1007	6478	1320	381	15707	431	141	2261	83	344	0	0	3827	353	232	117	1957	29	6169	298	357	3445	0	1098	20784	7360