

Supplementary Material

Deep-sea benthic ecosystem collapse and recovery after an intense Dense Shelf Water Cascading event

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Table S1. Pairwise comparisons illustrating differences in biopolymeric and bioavailable C sedimentary concentrations and values of the bioavailable fraction of biopolymeric C between the DSWC impacted sediments (April 2005) vs. all other sampling periods in the Cap de Creus canyon (ca. 1000 and ca.1800 m depth) and deep margin (>2100m depth). Grey lines indicate contrasts including DSWC. Bold numbers indicate significant contrasts ($\alpha=0.05$).

Canyon	Depth	Contrast	Biopolymeric C		Bioavailable C		Bioavailable fraction	
			t	P	t	P	t	P
Cap de Creus	~1000 m	May 2004, Apr 2005	4.576	0.011	2.123	0.099	1.052	0.357
		May 2004, Oct 2005	1.321	0.257	6.506	0.003	4.739	0.007
		May 2004, Aug 2006	1.019	0.367	1.590	0.188	0.624	0.549
		May 2004, Apr 2008	2.652	0.059	13.726	0.000	19.938	0.000
		May 2004, Apr 2009	1.566	0.201	15.998	0.000	18.009	0.000
		Apr 2005 , Oct 2005	4.656	0.008	13.531	0.000	9.349	0.001
		Apr 2005 , Aug 2006	0.253	0.815	0.931	0.413	0.680	0.531
		Apr 2005 , Apr 2008	3.037	0.034	24.276	0.000	26.927	0.000
		Apr 2005 , Apr 2009	0.655	0.542	20.539	0.000	20.799	0.000
		Oct 2005, Aug 2006	4.157	0.014	12.273	0.000	8.246	0.001
		Oct 2005, Apr 2008	9.738	0.001	9.553	0.001	20.035	0.000
		Oct 2005, Apr 2009	6.409	0.003	12.892	0.000	16.862	0.001
		Aug 2006, Apr 2008	3.129	0.033	22.699	0.000	25.905	0.000
		Aug 2006, Apr 2009	0.911	0.412	19.945	0.000	20.369	0.000
		Apr 2008, Apr 2009	3.391	0.026	7.023	0.001	3.963	0.012
		Cap de Creus	~1800 m	May 2004, Apr 2005	4.182	0.014	4.818	0.008
May 2004, Oct 2005	3.105			0.036	0.595	0.593	4.807	0.006
May 2004, Aug 2006	6.021			0.004	1.904	0.132	7.108	0.002
May 2004, Apr 2008	5.478			0.006	2.996	0.039	4.507	0.012
May 2004, Apr 2009	4.278			0.014	6.625	0.003	4.320	0.014
Apr 2005 , Oct 2005	2.524			0.067	9.427	0.001	6.849	0.004
Apr 2005 , Aug 2006	3.459			0.023	5.119	0.008	8.464	0.001
Apr 2005 , Apr 2008	2.271			0.083	3.693	0.022	6.143	0.003
Apr 2005 , Apr 2009	0.335			0.752	4.036	0.013	4.261	0.012
Oct 2005, Aug 2006	8.142			0.001	4.069	0.015	3.913	0.019
Oct 2005, Apr 2008	6.414			0.004	6.227	0.003	0.196	0.844
Oct 2005, Apr 2009	3.105			0.033	14.464	0.000	13.141	0.000
Aug 2006, Apr 2008	1.777			0.148	1.838	0.139	3.527	0.026
Aug 2006, Apr 2009	6.033			0.004	9.537	0.001	11.616	0.000
Apr 2008, Apr 2009	4.000	0.017	8.883	0.001	10.706	0.001		
Deep margin	>2100 m	May 2004, Apr 2005	2.753	0.069	7.819	0.002	5.649	0.005
		May 2004, Oct 2005	4.028	0.023	1.954	0.137	2.410	0.064
		May 2004, Aug 2006	4.574	0.011	0.273	0.808	3.742	0.016
		May 2004, Apr 2009	3.592	0.029	0.063	0.957	4.154	0.015
		Apr 2005 , Oct 2005	1.834	0.142	5.642	0.008	7.316	0.002
		Apr 2005 , Aug 2006	6.611	0.002	6.361	0.007	0.234	0.830
		Apr 2005 , Apr 2009	6.111	0.004	8.433	0.001	3.536	0.023
		Oct 2005, Aug 2006	6.946	0.006	1.258	0.265	4.792	0.008
		Oct 2005, Apr 2009	6.336	0.002	2.263	0.086	6.963	0.003
		Aug 2006, Apr 2009	2.567	0.068	0.337	0.763	2.327	0.070

Table S2. Pairwise comparisons illustrating differences in meiofaunal abundance and biomass between the DSWC impacted sediments (April 2005) vs. all other sampling periods in the Cap de Creus canyon (ca. 1000 and ca. 1800 m depth) and deep margin (>2100m depth). Grey lines indicate contrasts including DSWC. Bold numbers indicate significant contrasts ($\alpha=0.05$).

Canyon	Depth	Contrast	Abundance		Biomass	
			t	P	t	P
Cap de creus	~1000 m	April 2005, October 2005	13.744	0.000	2.788	0.044
		April 2005, August 2006	12.190	0.001	4.643	0.010
		April 2005, April 2008	8.142	0.002	1.670	0.178
		April 2005, April 2009	16.670	0.000	5.385	0.003
		October 2005, August 2006	0.101	0.920	0.920	0.412
		October 2005, April 2008	4.988	0.007	2.017	0.118
		October 2005, April 2009	2.515	0.065	0.802	0.478
		August 2006, April 2008	4.306	0.012	4.343	0.010
		August 2006, April 2009	2.166	0.103	0.336	0.752
		April 2008, April 2009	7.482	0.002	6.178	0.003
	~1800 m	April 2005, October 2005	2.693	0.058	3.910	0.015
		April 2005, August 2006	4.115	0.013	4.458	0.013
		April 2005, April 2008	2.565	0.061	1.903	0.132
		April 2005, April 2009	3.422	0.026	1.872	0.132
		October 2005, August 2006	2.510	0.068	0.459	0.666
		October 2005, April 2008	0.330	0.763	1.495	0.208
		October 2005, April 2009	1.656	0.175	0.526	0.631
		August 2006, April 2008	1.253	0.277	1.934	0.129
		August 2006, April 2009	0.368	0.731	0.847	0.450
		April 2008, April 2009	1.158	0.318	0.551	0.618
Deep margin	>2100 m	April 2005, October 2005	5.661	0.006	3.147	0.036
		April 2005, August 2006	4.744	0.008	6.068	0.005
		April 2005, April 2009	12.755	0.000	4.074	0.018
		October 2005, August 2006	0.031	0.977	0.001	1.000
		October 2005, April 2009	4.141	0.012	1.233	0.286
		August 2006, April 2009	3.232	0.032	1.522	0.197