

Supplementary Table S1. Durbin-Watson coefficients (D-W) and significance (p) of autocorrelation of residuals of the linear regressions employed in this study. All variables were log-transformed. Significant values ($p < 0.05$) were shaded in grey.

Independent variable	Dependent variable	Durbin-Watson	p
UI ₁₅	bottom temperature	1.539	0.142
UI ₁₅	bottom nitrate	1.165	0.018
UI ₁₅	bottom phosphate	1.539	0.143
UI ₁₅	integrated Chla	1.967	0.510
UI ₁₅	$\delta^{15}\text{N}$ sediment trap	1.117	0.015
UI ₁₅	$\delta^{15}\text{N}$ seston	0.662	0.001
UI ₁₅	$\delta^{15}\text{N}$ plankton 200-500 μm	1.569	0.161
UI ₁₅	$\delta^{13}\text{C}$ plankton 200-500 μm	1.678	0.240
UI ₁₅	$\delta^{13}\text{C}$ plankton 500-1000 μm	1.734	0.286
UI ₁₅	$\delta^{13}\text{C}$ plankton 1000-2000 μm	1.790	0.338
UI ₁₅	$\delta^{13}\text{C}$ plankton >2000 μm	1.155	0.152
UI ₁₅	diatoms	1.818	0.381
diatoms	$\delta^{13}\text{C}$ plankton 200-500 μm	1.948	0.486
diatoms	$\delta^{13}\text{C}$ plankton 500-1000 μm	1.533	0.151
diatoms	$\delta^{13}\text{C}$ plankton 1000-2000 μm	1.431	0.099
diatoms	$\delta^{13}\text{C}$ plankton >2000 μm	1.689	0.257

Supplementary Table S2. Pearson correlation coefficients (r) and significance (p) between $\delta^{15}\text{N}$ or $\delta^{13}\text{C}$ and Upwelling index values averaged over 7, 15 or 30d (UI₇, UI₁₅ and UI₃₀, respectively) prior to sampling. All variables were log-transformed. Significant values (p<0.05) were shaded in grey.

		UI ₇		UI ₁₅		UI ₃₀	
		r	p	r	p	r	p
$\delta^{15}\text{N}$	seston	0.362	0.082	0.523	0.009	0.440	0.031
	sediment trap particles	0.546	0.007	0.513	0.012	0.532	0.009
	plankton 200-500µm	0.161	0.452	0.428	0.037	0.334	0.111
	plankton 500-1000µm	0.021	0.921	0.124	0.563	-0.009	0.968
	plankton 1000-2000µm	-0.025	0.907	0.061	0.777	-0.073	0.734
	plankton >2000µm	-0.069	0.748	0.266	0.209	0.267	0.207
$\delta^{13}\text{C}$	seston	-0.297	0.159	-0.321	0.127	-0.261	0.218
	sediment trap particles	-0.335	0.119	-0.027	0.904	-0.118	0.591
	plankton 200-500µm	0.352	0.092	0.490	0.015	0.550	0.005
	plankton 500-1000µm	0.463	0.023	0.511	0.011	0.513	0.010
	plankton 1000-2000µm	0.300	0.155	0.396	0.055	0.424	0.039
	plankton >2000µm	0.273	0.197	0.455	0.025	0.588	0.003