

SUPPLEMENTARY INFORMATION

DATA COLLECTION

Supplementary Table S1. Studies sampled from the Web of

Science See attached .xls document – Supplemental_Table S1.

DATA ANALYSIS

Supplementary Table S2

Two-way ANOVA comparison of publications investigating the impact of climate change on phytoplankton from different ecosystems (marine, fresh- and brackish water) from 2012 -2022

Source of Variation	SS	df	MS	F	P-value
Ecosystem	5695.364	3	1898.455	48.48056	2.18E-13
Year	766.2273	10	76.62273	0.389277	0.942269
Ecosystem x Year	800.1364	30	26.67121	2.872863	0.012282

Supplementary Table S3.**Supplementary Table S3A**

Bayesian model selection testing the impact of the interaction between climate region (CR) and sampling year (Yr) on the number of publications (NP) on phytoplankton from different ecosystem. The mode with the lowest AIC offers the best fit to the data.

Ecosystem	Model*	AIC	Chisq	Ratio	p-value
Marine	NP ~ Yr + CR + Yr x CR	273.6	58.7314	1.0324	0.0357
	NP ~ Yr + CR	274.5	41.9921	1.0241	0.4277
Brackishwater	NP ~ Yr + CR + Yr x CR	255.1	62.9321	1.1091	0.0226
	NP ~ Yr + CR	286.5	46.1423	1.62911	0.5232
Freshwater	NP ~ Yr + CR + Yr x CR	301.6	73.4923	1.1315	0.0403
	NP ~ Yr + CR	460.2	44.3273	1.4624	0.4973

* Model excludes *error term*; hence only the mean of NP at each value of the specified conditions (Yr and CR) were simulated.

Supplementary Table S3B. Parameter coefficient estimates from the Bayesian model on the number of publications by ecosystem. For each parameter, MCSE is the Monte Carlo standard error, N_eff is a measure of effective sample size, and Rhat is the potential scale reduction factor on split chains (at convergence, Rhat = 1). The mean_ppd is the sample average posterior predictive distribution of the outcome variable.

	Fit Diagnostics					
	Mean	SD	90% CI	MCSE	N_eff	Rhat
Marine Ecosystem						
Intercept	-173.9	66.8	-89.6	1.4	2238	1.0
Year	0.1	0.0	0.1	0.0	2240	1.0
Climate Region	0.5	0.1	0.6	0.0	2540	1.0
Year x Climate Region				0.0	2524	1.0
Reciprocal_dispersion	3.4	1.0	4.7	0.0	2616	1.0
Mean_PPD	11.0	1.7	13.2	0.0	2941	1.0
Brackishwater System						
Intercept	-112.7	148.5	79.4	2.3	4257	1.0
Year	0.1	0.1	0.1	0.0	4256	1.0
Climate Region	0.2	0.3	0.2	0.0	4251	1.0
Year x Climate Region						
Reciprocal_dispersion	0.7	0.3	1	0.0	3232	1.0
Mean_PPD	1.6	0.6	2.3	0.0	3022	1.0
Freshwater Systems						
Intercept	-219.0	125.7	-56.0	1.9	4211	1.0
Year	0.1	0.1	0.2	0.0	4213	1.0
Climate Region	0.5	0.2	0.8	0.0	4521	1.0
Year x Climate Region						
Reciprocal_dispersion	0.9	0.2	1.2	0.0	3613	1.0
Mean_PPD	5.1	1.8	7.3	0.0	3198	1