Decadal and spatially complete global surface chlorophyll-a data record from satellite and BGC-Argo observations

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Supporting Information

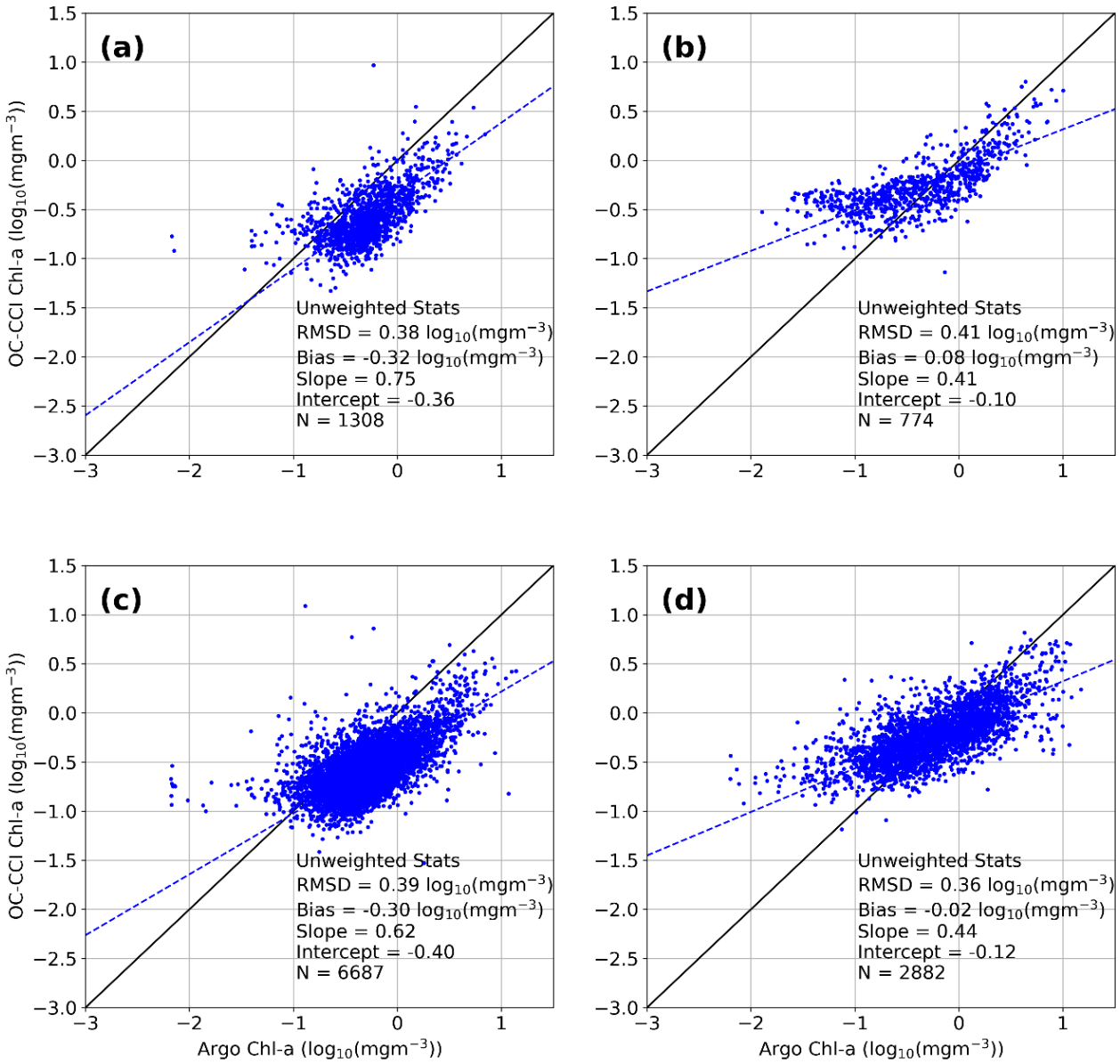

Figure S1: (a) Comparison between daily matched Ocean Colour Climate Change Initiative (OC-CCI; 4km) and BGC-Argo chlorophyll-a (chl-a) within the Southern Hemisphere. Solid line is 1:1, and dashed blue line indicates a Type-II linear regression. In text statistic acronyms are root mean square difference (RMSD) and number of samples (N). (b) same as (a), but for the Northern Hemisphere. (c) same as (a), but using monthly 0.25° composites of OC-CCI chl-a and BGC-Argo observations averaged to the same grid for the Southern Hemisphere. (d) same as (c), but for the Northern Hemisphere.

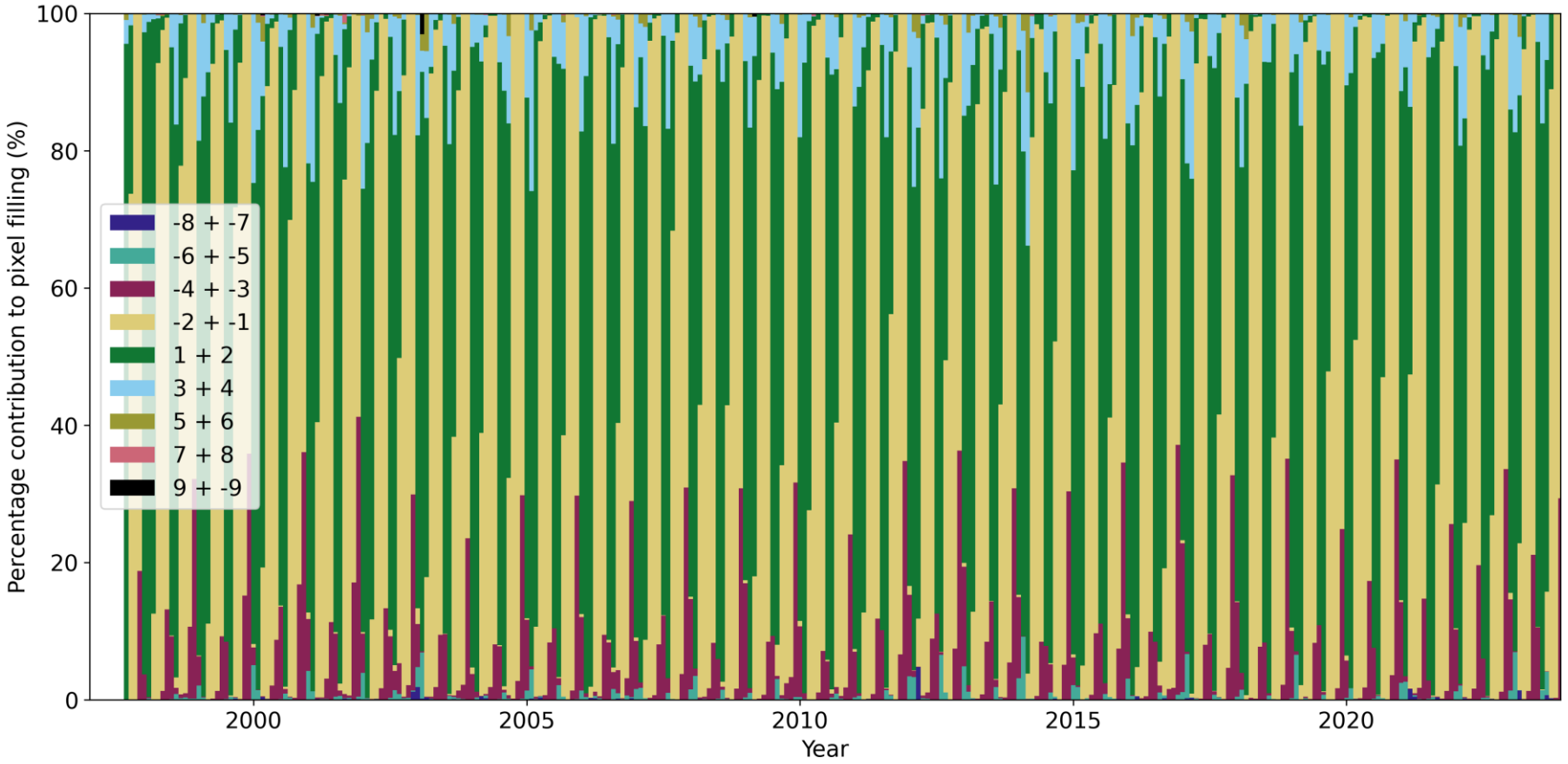

Figure S2: The monthly percentage contributions of the BGC-Argo relationships month lags applied to gap fill the Ocean Colour Climate Change Initiative (OC-CCI) data between 1997 and 2023. Positive values in the legend indicate that the forward relationship was applied and negative values that the backward relationship was applied. The time lags are grouped as shown in the legend, e.g., the '1+2' (green) bars indicate the forward relationship for 1- or 2-month time lags were applied.

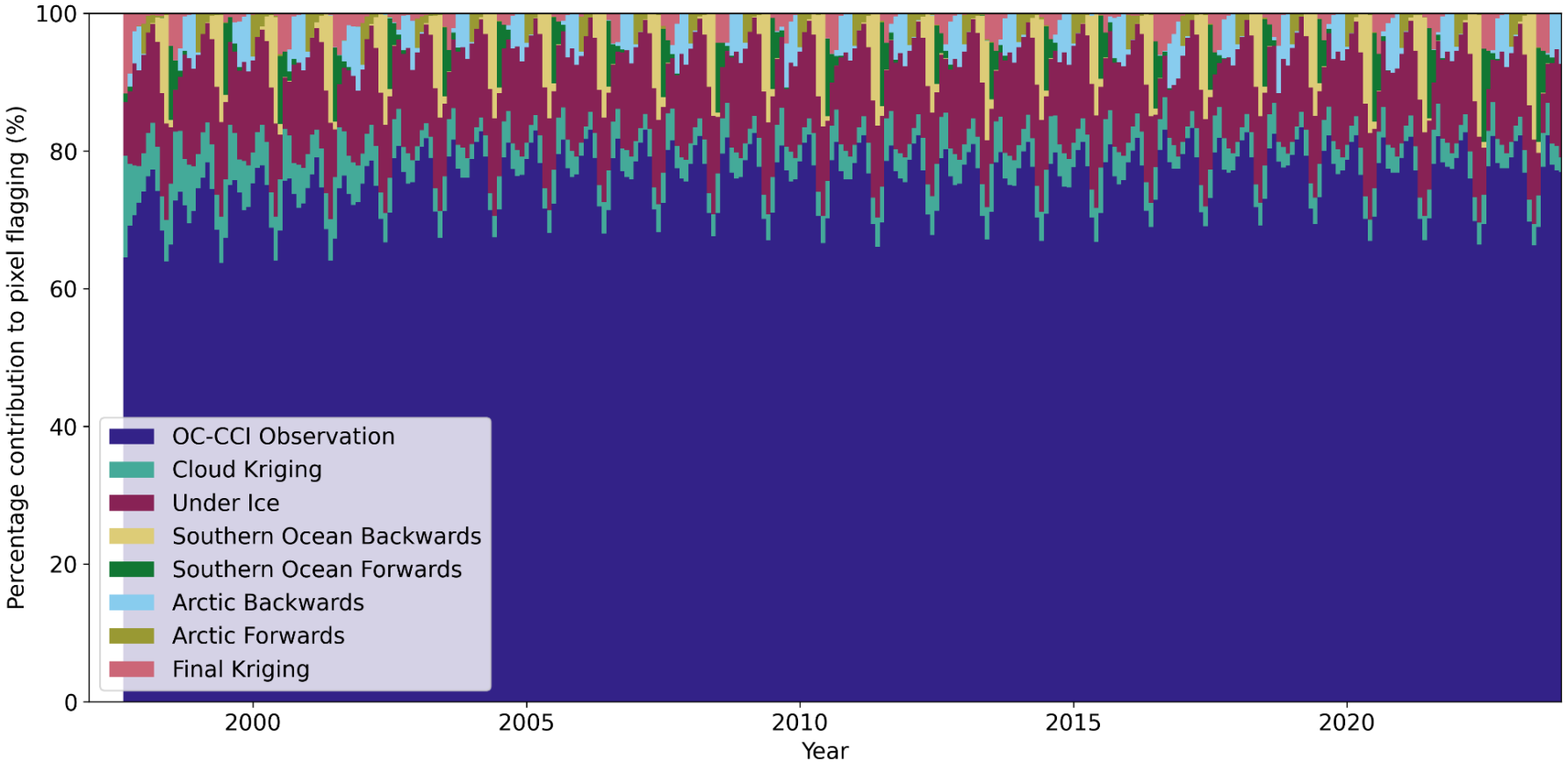

Figure S3: The monthly percentage contribution of pixels flagged by each gap filling approach between 1997 and 2023. We note that these are number of pixels and not their areas, therefore the 'under ice' gap filling has a relatively high pixel number, but a small area coverage