

Supporting Information for “Spatial patterns in phytoplankton community composition and their influence on carbon export on the northwest Weddell Sea continental shelf”

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3. Table S1. Key phytoplankton accessory pigments and their likelihood to be present in phytoplankton groups. Adapted from Meyer et al. (2024).

	Fuco	Perid	19-But Fuco	19-Hex Fuco	Allo	Chl b	Zea
Diatoms							
Dinoflagellates							
Haptophytes							
Cryptophytes							
Prasinophytes							
Chlorophytes							
<i>Synechococcus</i>							

	Unique
	Always present
	Often present
	Rarely present
	Trace
	Not present

4. Figures S1 – S4

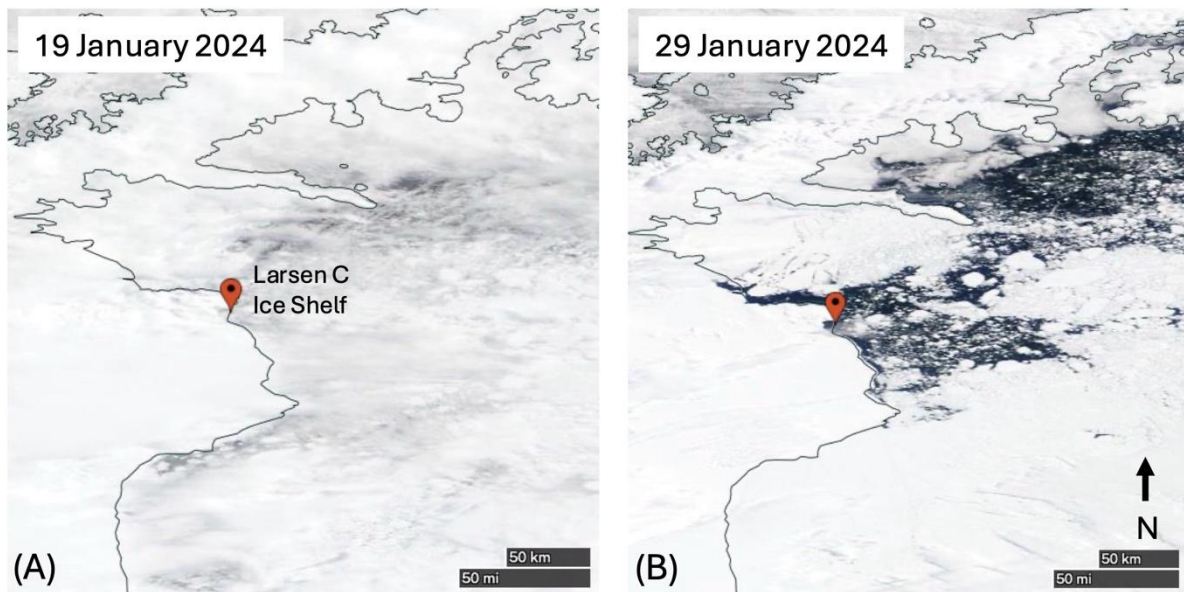


Figure S1. Sea ice change from 19 January to 29 January 2024 in the Larsen C sampling region (red flag). Data from NASA Worldview (accessed 17 March 2026).

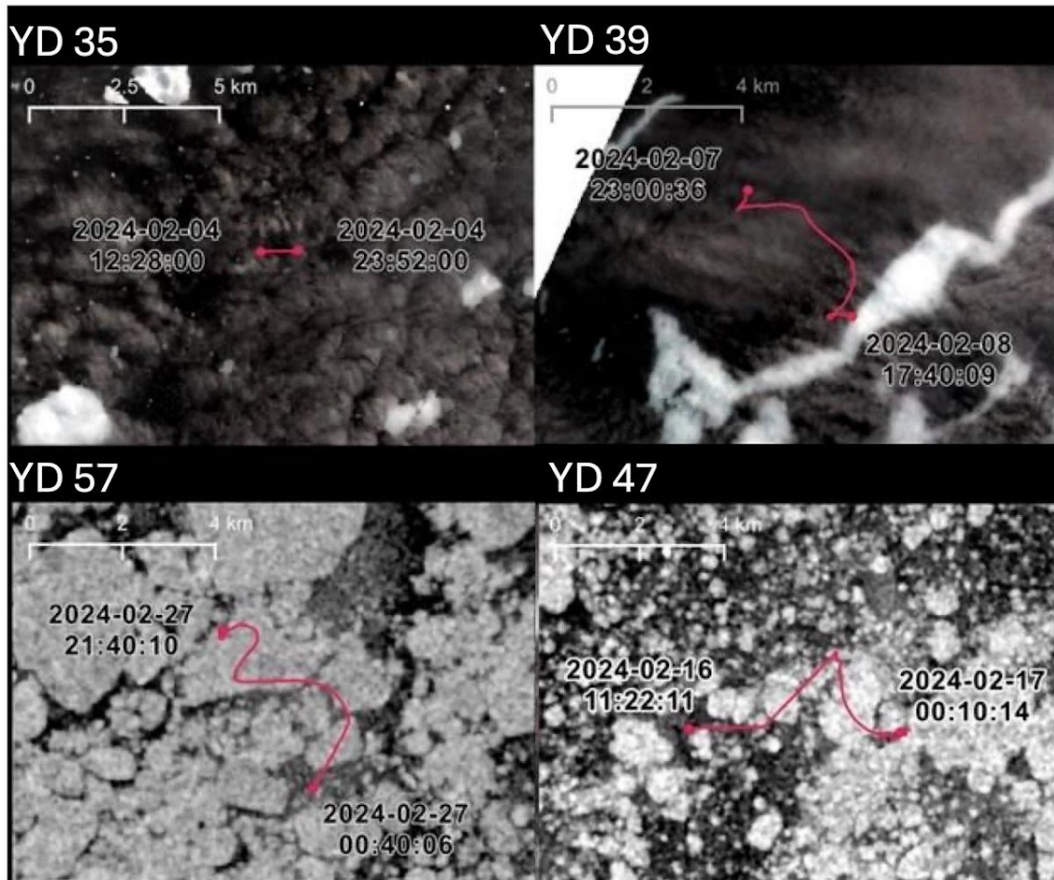


Figure S2. Paths (in pink) of the drifting sediment traps by yearday (YD) of trap recovery. Adapted from Atherden et al. (submitted).

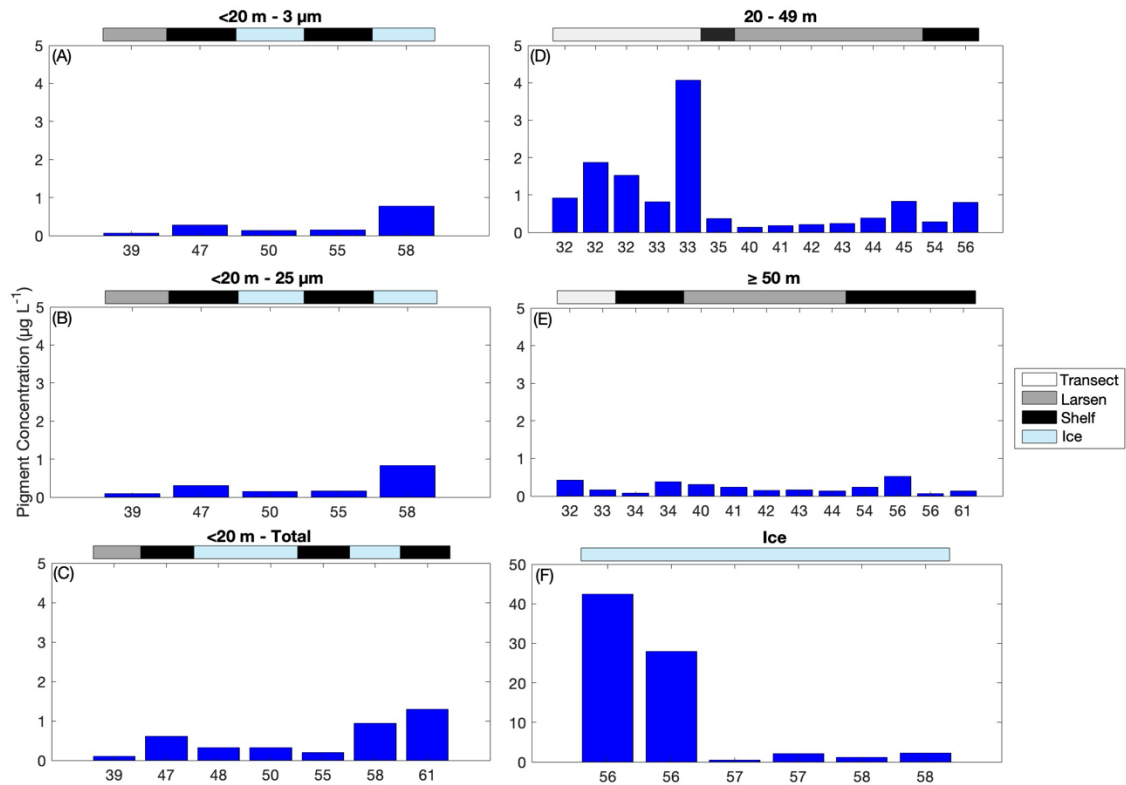


Figure S3. Total accessory pigment concentrations ($\mu\text{g L}^{-1}$; C, D) from HPLC analysis for all samples by depth and Yearday. Samples collected from <20 m were size fractionated, producing 3 (A), 25 (B), and total (C) concentrations. All other samples (D-F) were whole seawater (total) samples. Sea ice samples are shown separately to accommodate higher overall concentrations.

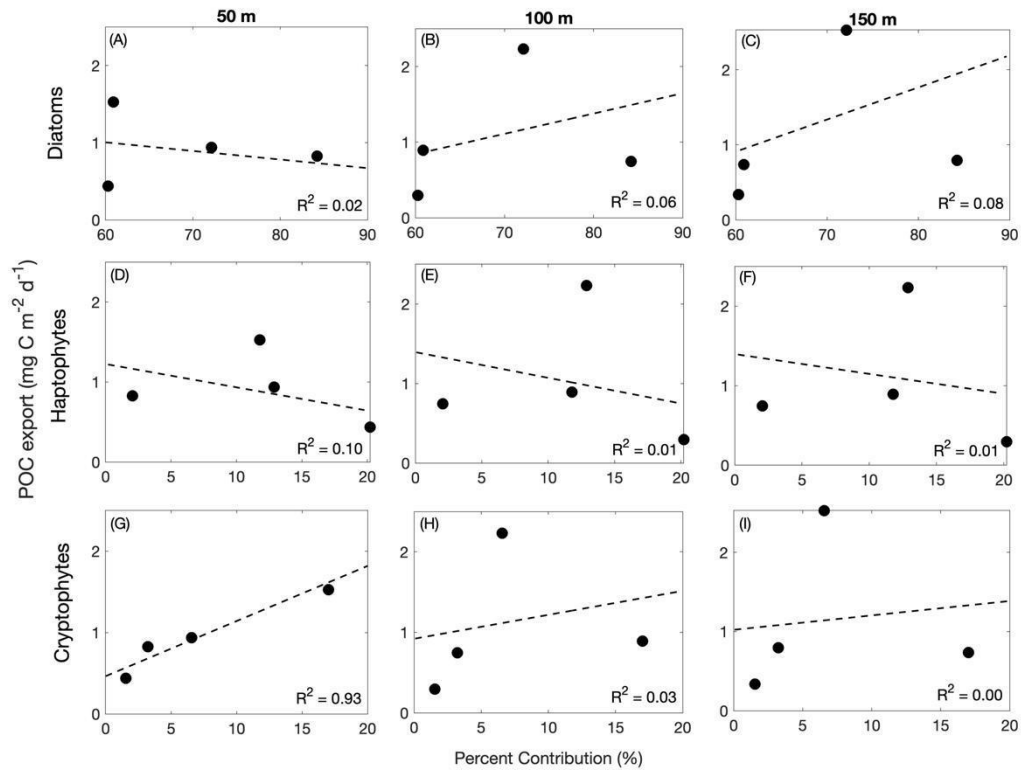


Figure S4. POC export ($\text{mg C m}^{-2} \text{d}^{-1}$) versus the percent contribution (%) of diatoms (A-C), haptophytes (D-F), and cryptophytes (G-I) at 50 (A, D, G), 100 (B, E, H), and 150 m (C, F, I). Percent contributions are assessed via the *phytclass* function (Hayward et al., 2023). R^2 values are indicated.