Supplements of

Roles of marine biota in the formation of atmospheric bioaerosols, cloud condensation nuclei, and ice-nucleating particles over the North Pacific Ocean, Bering Sea, and Arctic Ocean

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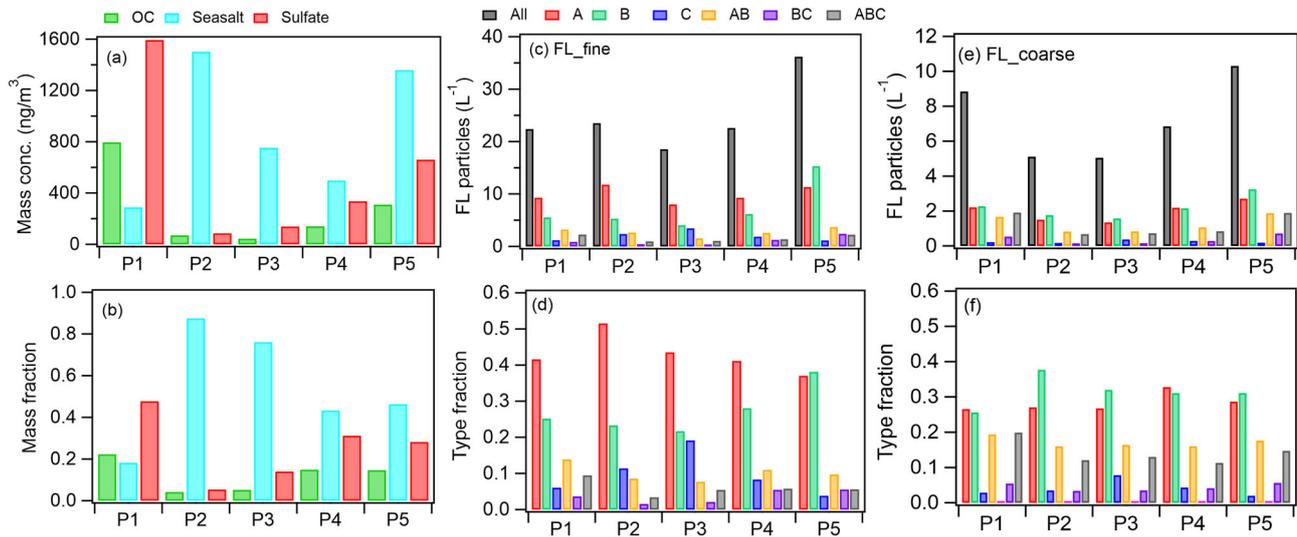*Correspondence to*: Kaori Kawana (kawanak@jamstec.go.jp)

Figure S1. (a) Mass concentration and (b) mass fraction of chemical components in PM$_{2.5}$ aerosol particles in each period. (c) Number concentrations and (d) fractions of types of fluorescent fine particles (1 < D$_p$ < 2.5 μm), and (e) and (f) those of fluorescent coarse particles (D$_p$ > 2.5 μm).
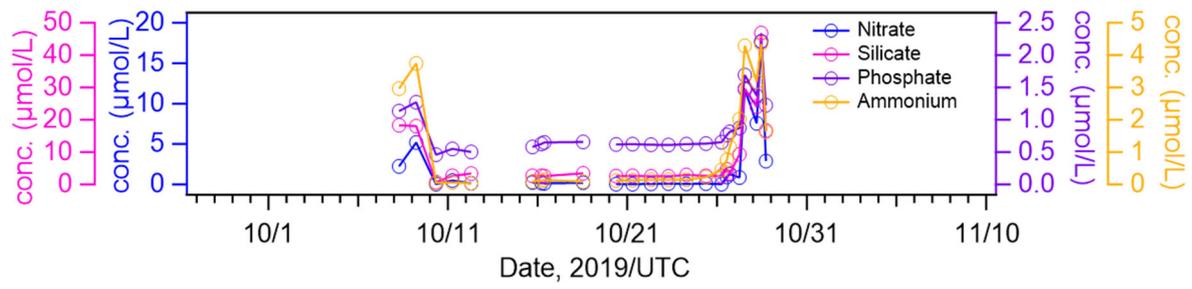
Figure S2. Time series of nutrient concentrations in seawater.

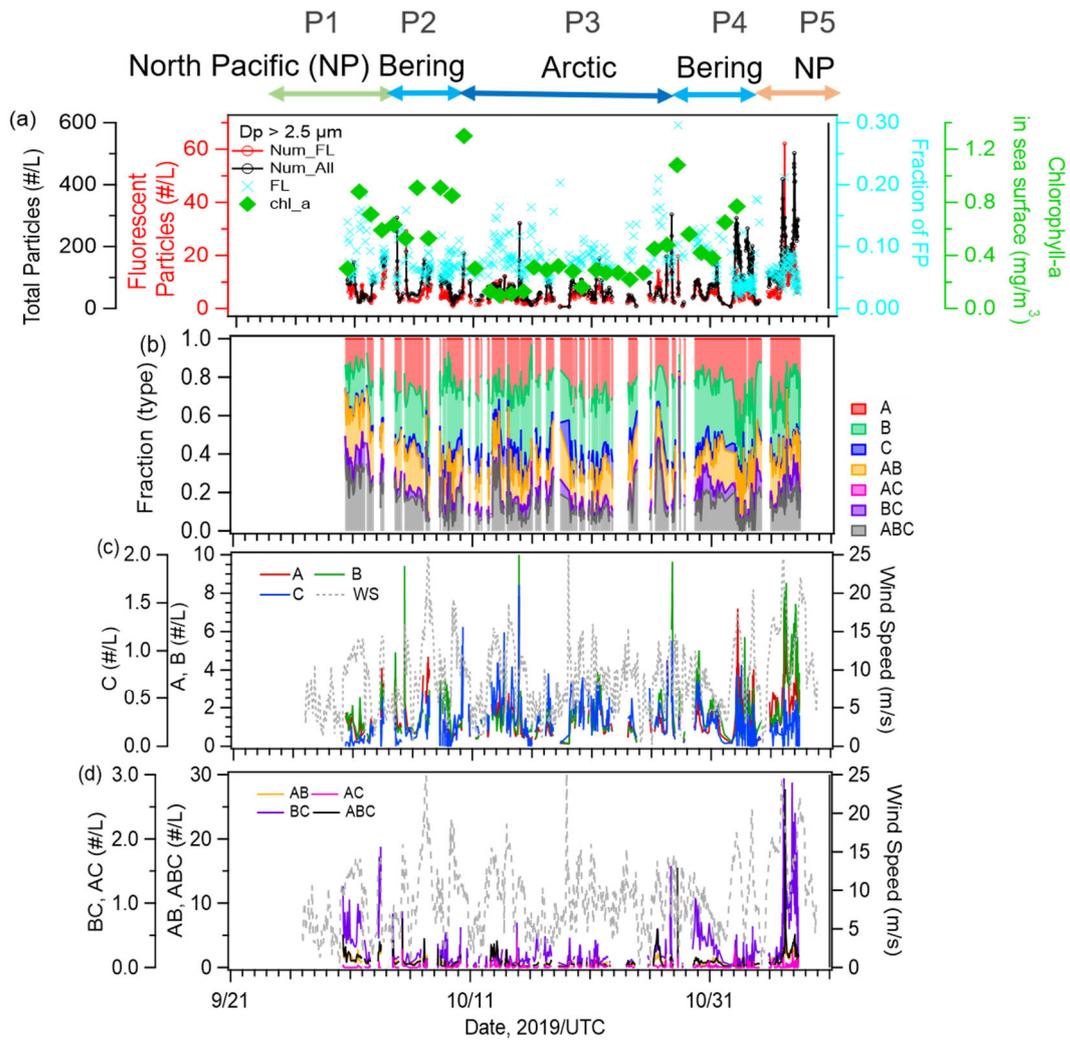**Figure S3.** (a)–(d) Same as Fig. 4 but for fluorescent particles with diameter of >2.5 µm.
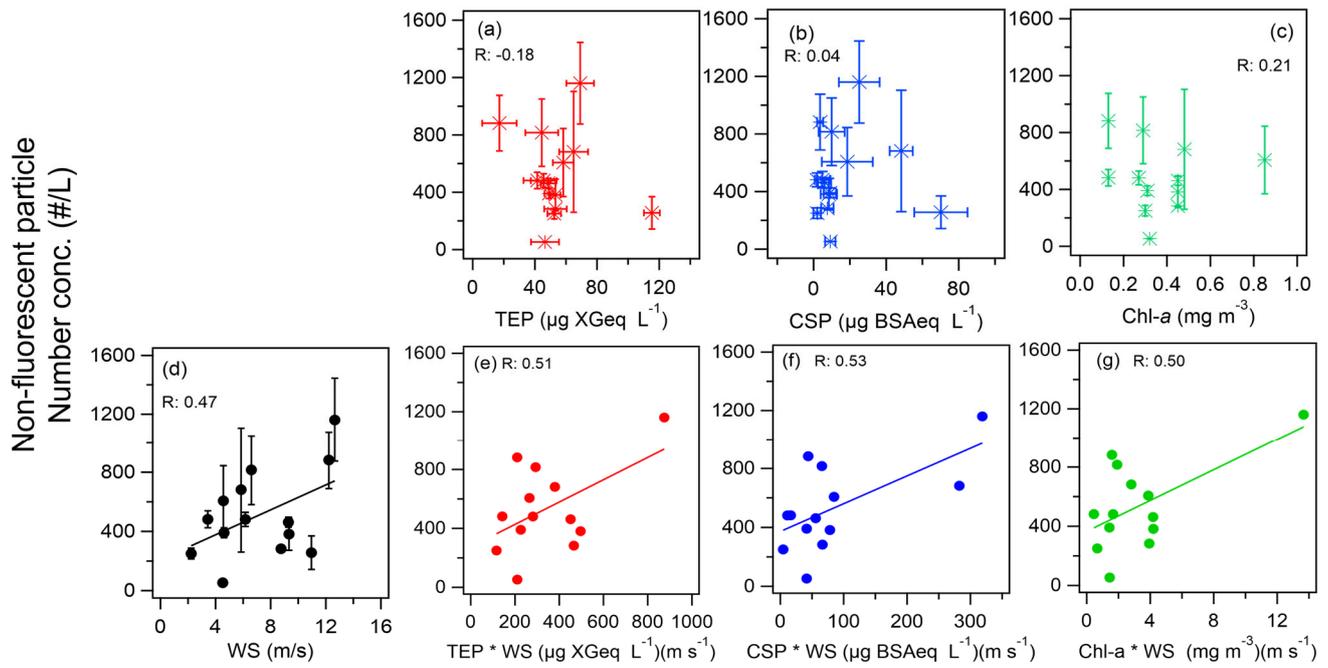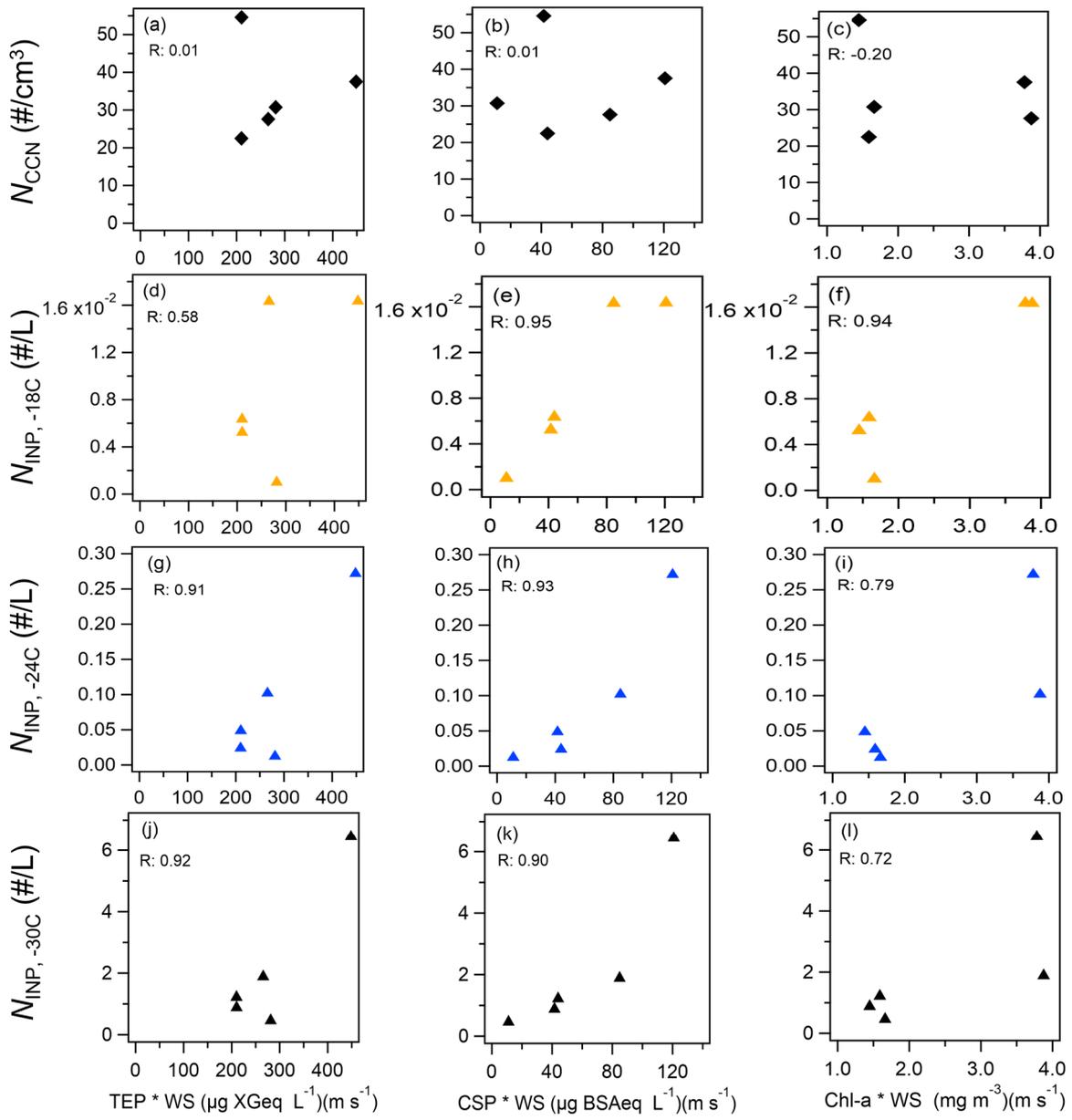
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Figure S4. Scatterplots of nonfluorescent particles and bioindicators as (a) TEPs, (b) CSPs, and (c) Chl-*a*, and scatterplots of nonfluorescent particles and (d) WS, and (e) TEPs, (f) CSPs, and (g) Chl-*a*, multiplied with WS. Colored lines represent the orthogonal regression lines. Error bars represent one standard deviation.

Figure S5. (a)–(l) Same as Fig. 8 but with exclusion of the highest data point.