



Figure S1. Regional trends in sea ice extent and age.

Annual maximum first-year ice (FYI) and multiyear ice (MYI) extent for each Arctic region. Trend lines indicate a significant trend based on a Mann-Kendall Trend test with an accompanying Theil-Sen slope estimate, which does not always produce the same fit as an ordinary least squares regression, but is robust for nonparametric data.

Table S1. Statistics from multiple linear regressions with the squareroot of normalized habitat-days as the response variable and average ice thickness, snow depth, melt date, incident downwelling light, and daylength as the predictor variables. All predictors except melt date were averaged over January–July. The number of samples (number of years × number of regions for the pan-Arctic regression; number of years for the regional regressions), R^2 , and the percent of R^2 attributed to each variable, according to the Lindeman, Merenda, and Gold (lmg) approach, are reported. Lmg calculations were bootstrapped (1000 replicates) to create 95% confidence intervals (CIs).

Region	n	R^2	Ice thickness		Snow depth		Melt date		Incident light		Daylength	
			% R^2	CI	% R^2	CI	% R^2	CI	% R^2	CI	% R^2	CI
Pan-Arctic	306	0.92	21.7	18.9–24.6	28.1	25.0–31.2	22.4	18.6–26.6	16.0	13.1–19.0	3.4	2.3–5.3
Central ^a	34	0.83	58.8^b	40.0–72.3	11.6	2.1–29.4	9.1	2.0–19.5	n.s.	n.s.	N/A ^d	N/A
Chukchi	34	0.78	11.4	5.0–23.6	35.1	21.4–47.9	30.9	15.5–47.1	n.s.	n.s.	N/A	N/A
Beaufort	34	0.77	22.9	10.9–39.0	30.5	13.1–49.4	22.7	8.0–41.8	n.s.	n.s.	N/A	N/A
Baffin	34	0.73	n.s. ^c	n.s.	28.6	9.6–52.3	26.7	8.7–46.7	13.7	5.6–26.1	N/A	N/A
Nordic	34	0.71	n.s.	n.s.	20.9	7.9–35.2	41.1	20.4–57.8	n.s.	n.s.	N/A	N/A
Barents	34	0.50	n.s.	n.s.	n.s.	n.s.	11.9	1.3–29.1	19.5	3.5–44.1	N/A	N/A
Kara ^a	34	0.85	15.6	4.3–28.0	37.2	19.9–52.3	30.0	13.1–47.0	n.s.	n.s.	N/A	N/A
Laptev	34	0.87	n.s.	n.s.	37.3	20.8–52.2	39.3	21.0–54.0	n.s.	n.s.	N/A	N/A
Siberian ^a	34	0.90	14.3	7.3–24.4	32.0	21.4–41.5	42.1	29.1–55.1	1.2	0.5–5.9	N/A	N/A

^a Not all regional regressions met the assumption of normality (Central, Kara, and Siberian did not) but, for consistency, regressions were all fit the same way

^b Bold = most important predictor for that region (though not always statistically distinguishable from the second most important)

^c n.s. = not significant

^d N/A = not applicable; daylength was only included in the pan-Arctic regression because it changes between regions but not interannually within a region