Supplementary Information

Figure S1. Variation in the proportion of perennial sea ice (sea ice age larger than 1 yr, 5 yr, 7 yr) in (a) BSISO, (b) BSI_S (blue) and BSI_S (black) from 1984 to 2015. The proportion was calculated as the percentage of grids with sea ice age larger than a certain threshold.

Figure S2. Distributions of the standard deviation of September-October sea ice concentration after the removal of the linear trend during (a) 1980–1997 and (b) 1998–2015.
Figure S3. The CC between the BSISO and September-October SKT during (a) 1980–1997 and (b) 1998–2015 after detrending. The black dots indicate CCs exceeding the 95% confidence level (t test). The linear trend was removed.