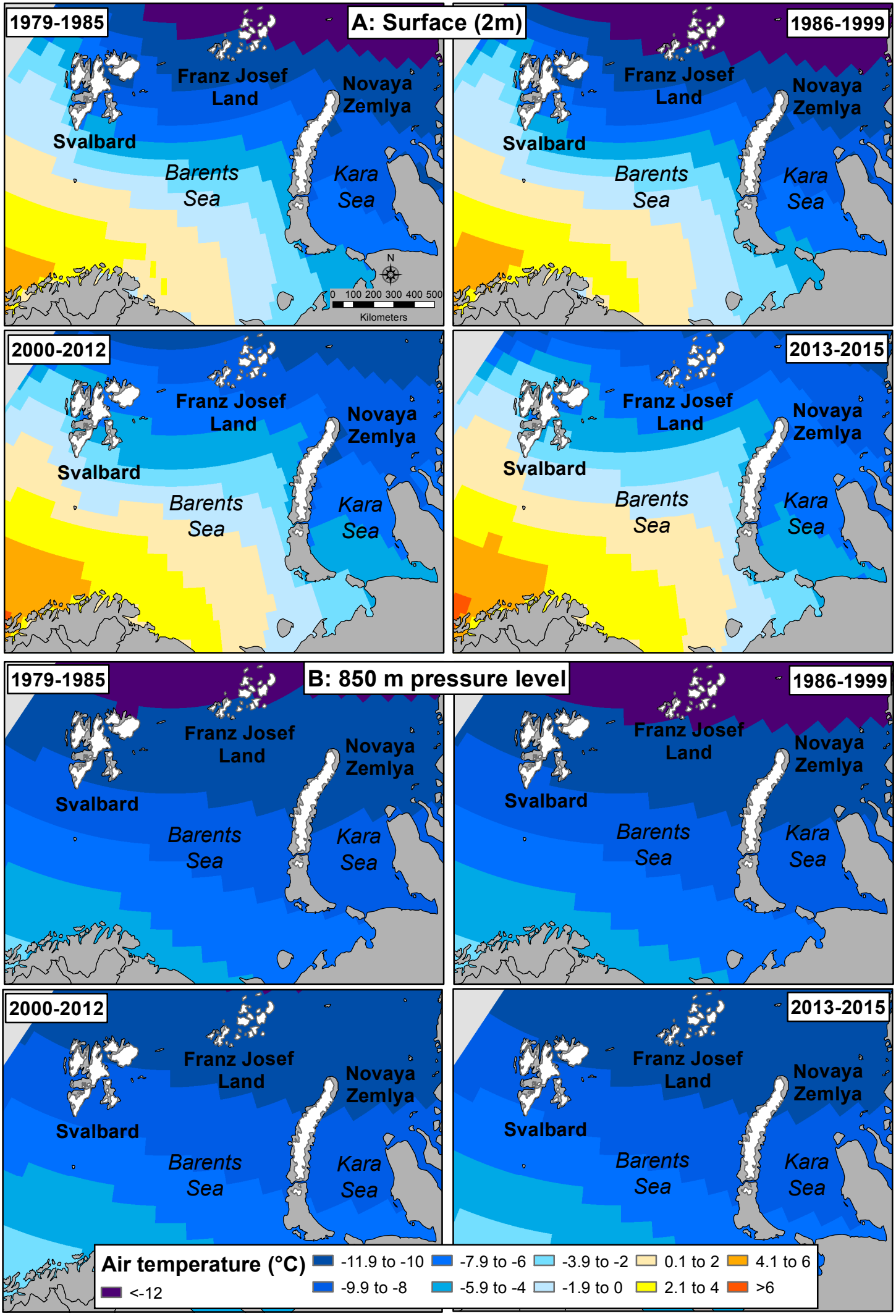
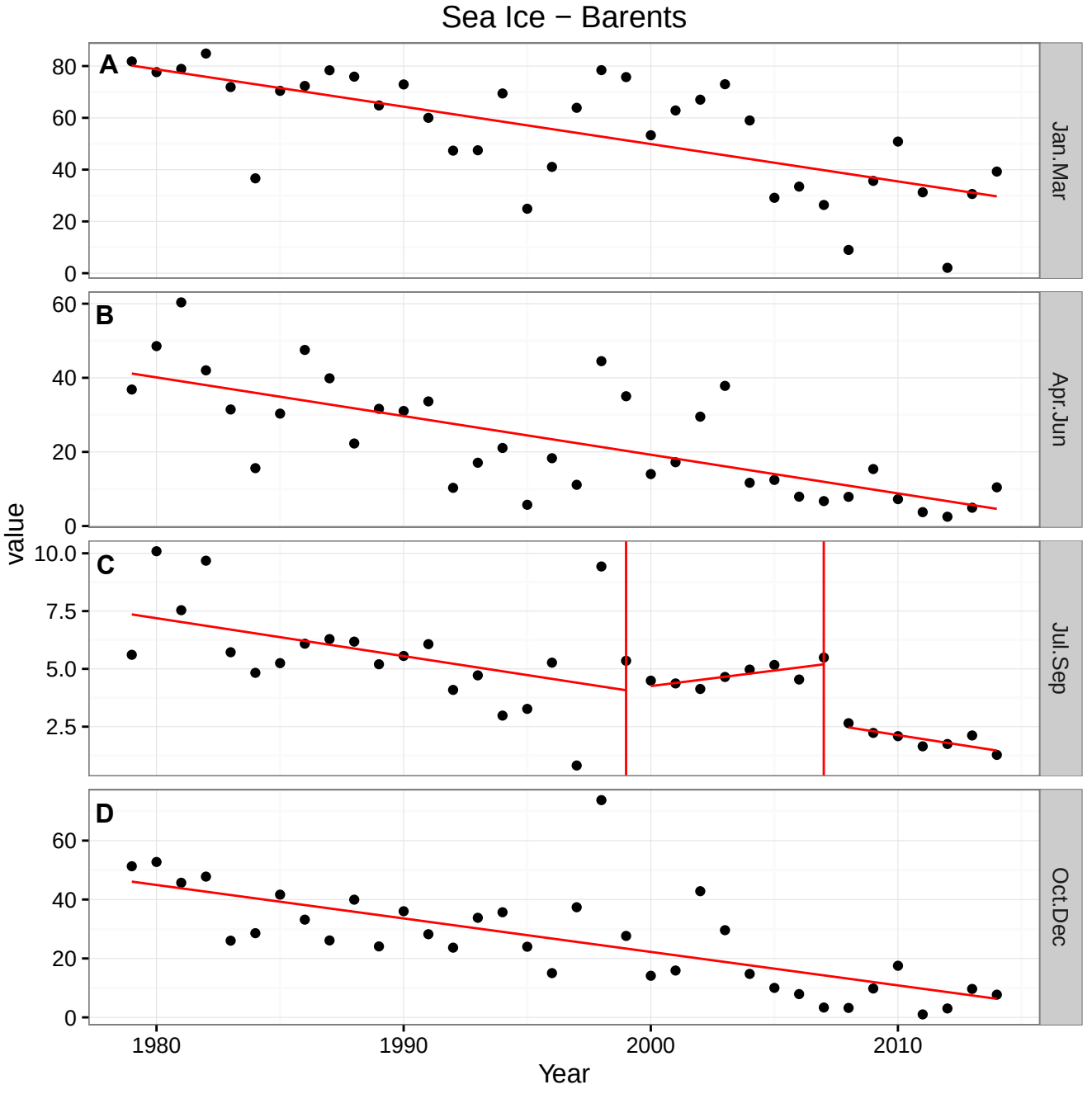
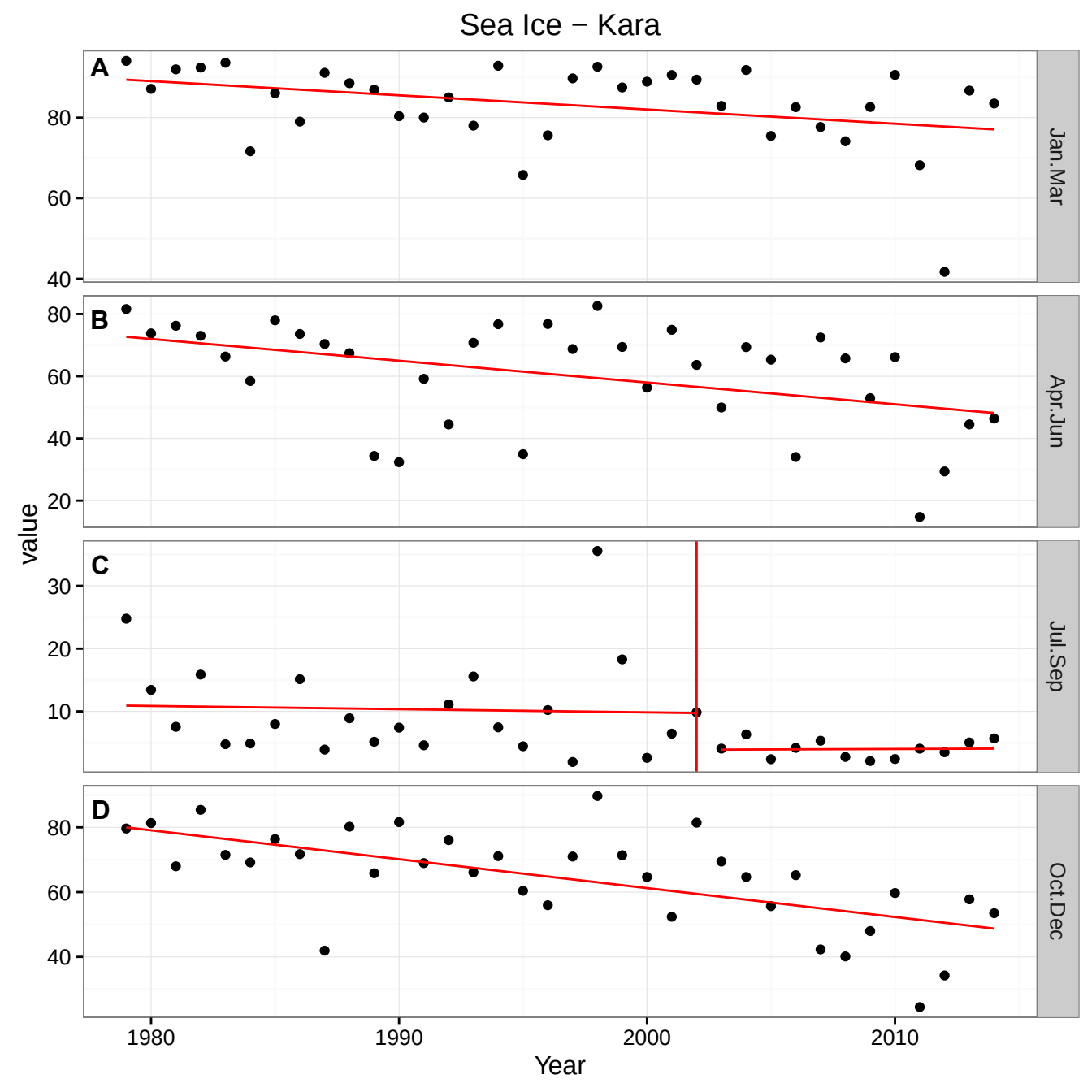

A: Surface (2m)
1979-1985
1986-1999
2000-2012
2013-2015
B: 850 m pressure level
1979-1985
1986-1999
2000-2012
2013-2015
Franz Josef Land
Novaya Zemlya
Svalbard
Barents Sea
Kara Sea
N
0 100 200 300 400 500
Kilometers
Air temperature (°C)
<-12
-11.9 to -10
-9.9 to -8
-7.9 to -6
-5.9 to -4
-3.9 to -2
-1.9 to 0
0.1 to 2
2.1 to 4
4.1 to 6
>6


Sea Ice − Barents
A
B
C
D
Jan.Mar
Apr.Jun
Jul.Sep
Oct.Dec
value
Year
1980
1990
2000
2010


Sea Ice − Kara
A
B
C
D
Jan.Mar
Apr.Jun
Jul.Sep
Oct.Dec
value
Year
1980
1990
2000
2010
40
60
80
20
30
10

Supplementary Figure 1. Air temperatures from ERA-Interim reanalysis data at A) the surface (2 m) and B) 850 m pressure level, for the following time intervals: 1979-1985, 1986-1999, 2000-2012 and 2013-2015.

Supplementary Figure 2. Changepoint analysis of mean seasonal sea ice concentrations, between 1979 and 2015, on the Barents Sea coast of Novaya Zemlya. Black dots indicate seasonal means for each year, for A) Jan-Mar; B) Apr-May; C) Jul-Sep and; D) Oct-Dec. Red diagonal lines show the regression line fitted to the data and vertical red lines mark significant break points in the data, identified by the changepoint analysis.

Supplementary Figure 3. Changepoint analysis of mean seasonal sea ice concentrations, between 1979 and 2015, on the Kara Sea coast of Novaya Zemlya. Black dots indicate seasonal means for each year, for A) Jan-Mar; B) Apr-May; C) Jul-Sep and; D) Oct-Dec. Red diagonal lines show the regression line fitted to the data and vertical red lines mark significant break points in the data, identified by the changepoint analysis.