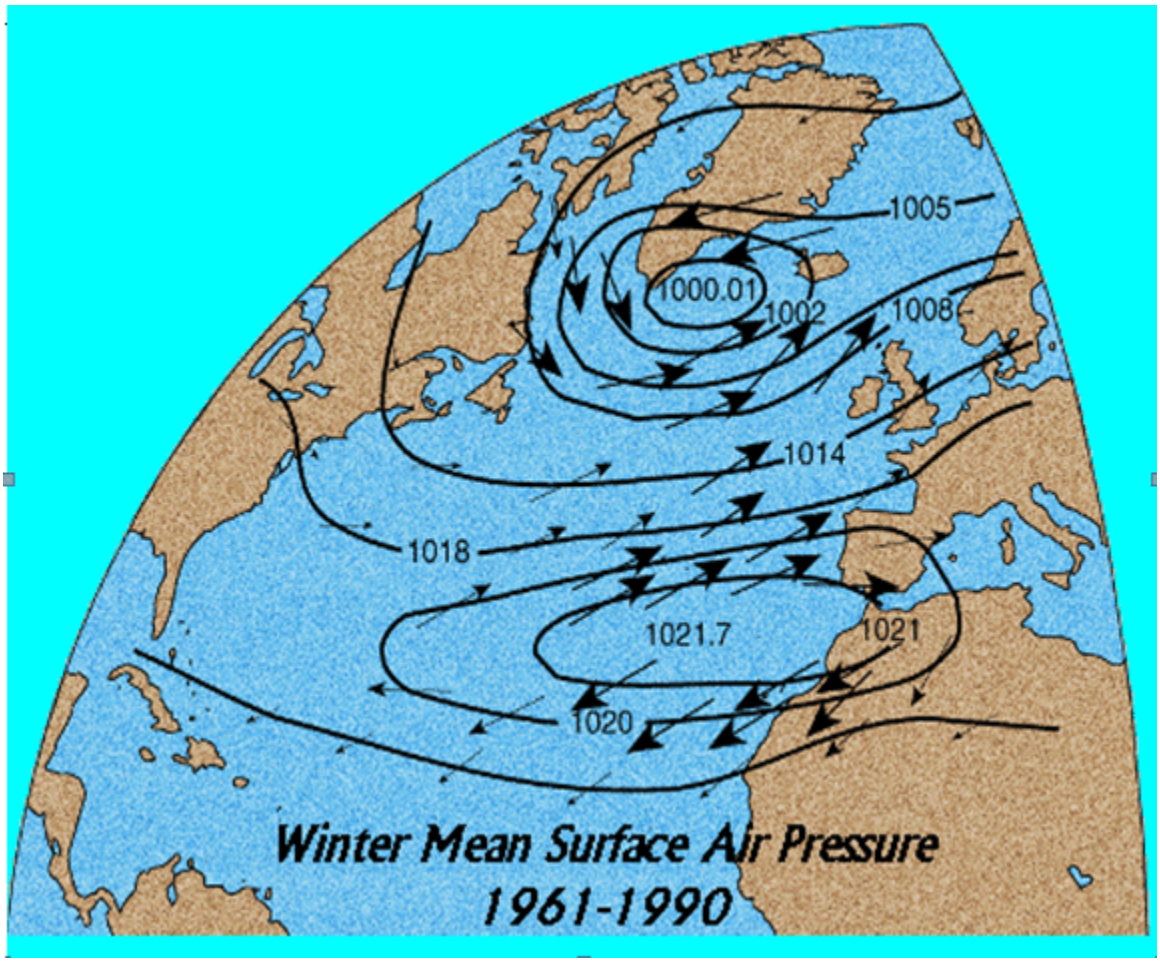
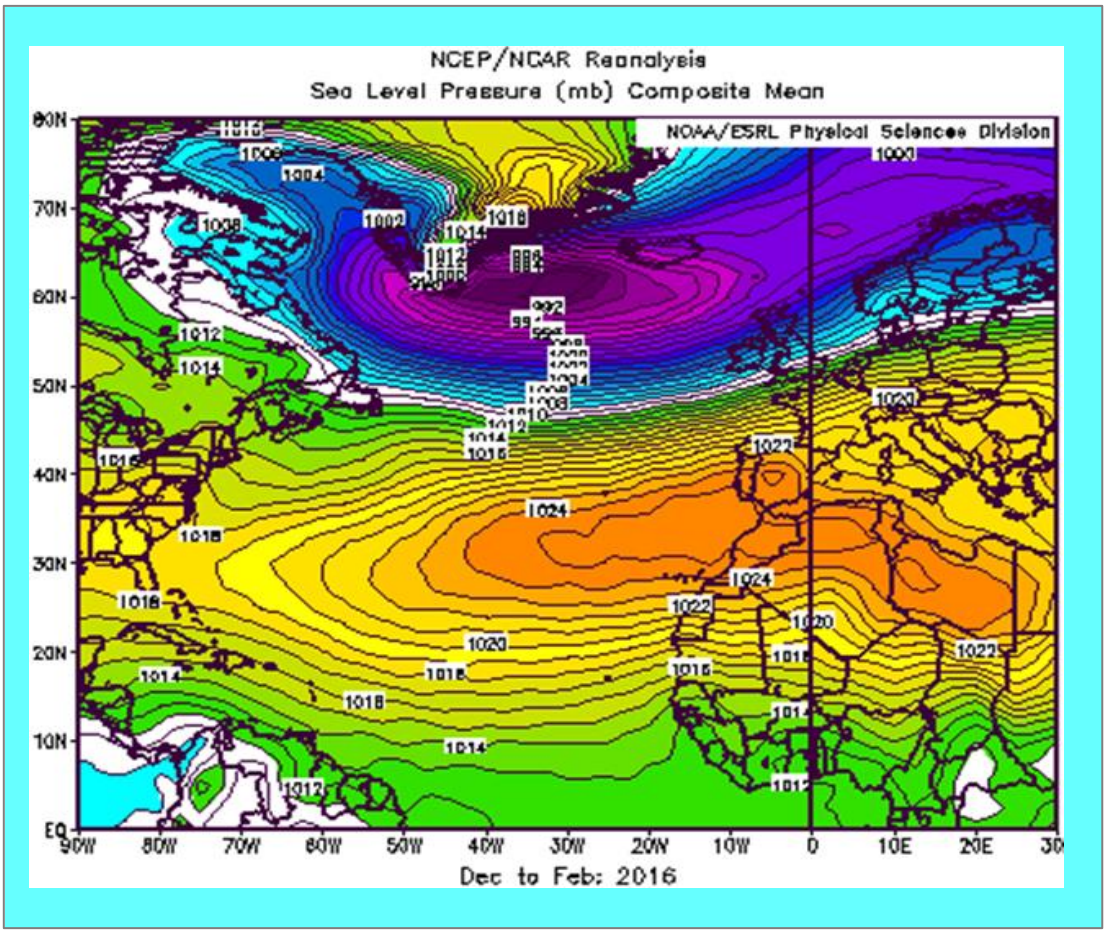
General Climate Indicators of the Region: NAO, SST, Air Temperature, and Ice cover

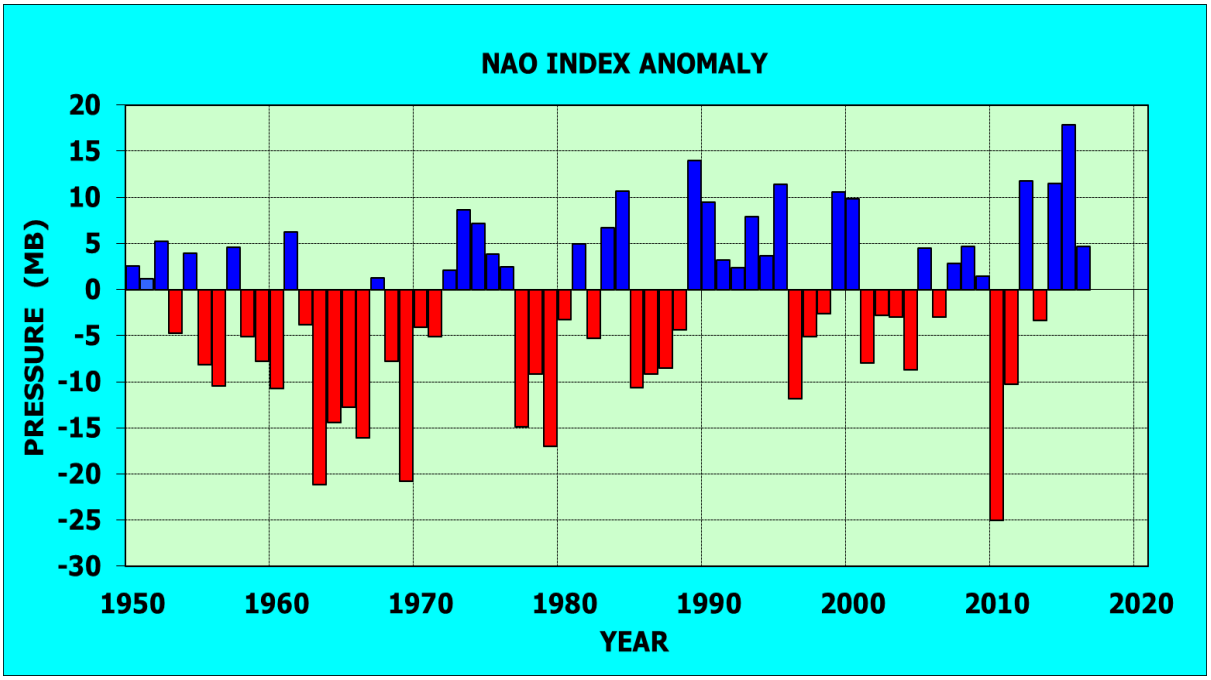
Oceanographic conditions in NAFO waters are to a large degree determined by the strength of the winter atmospheric circulation over the Northwest Atlantic, measured by the NAO Index.



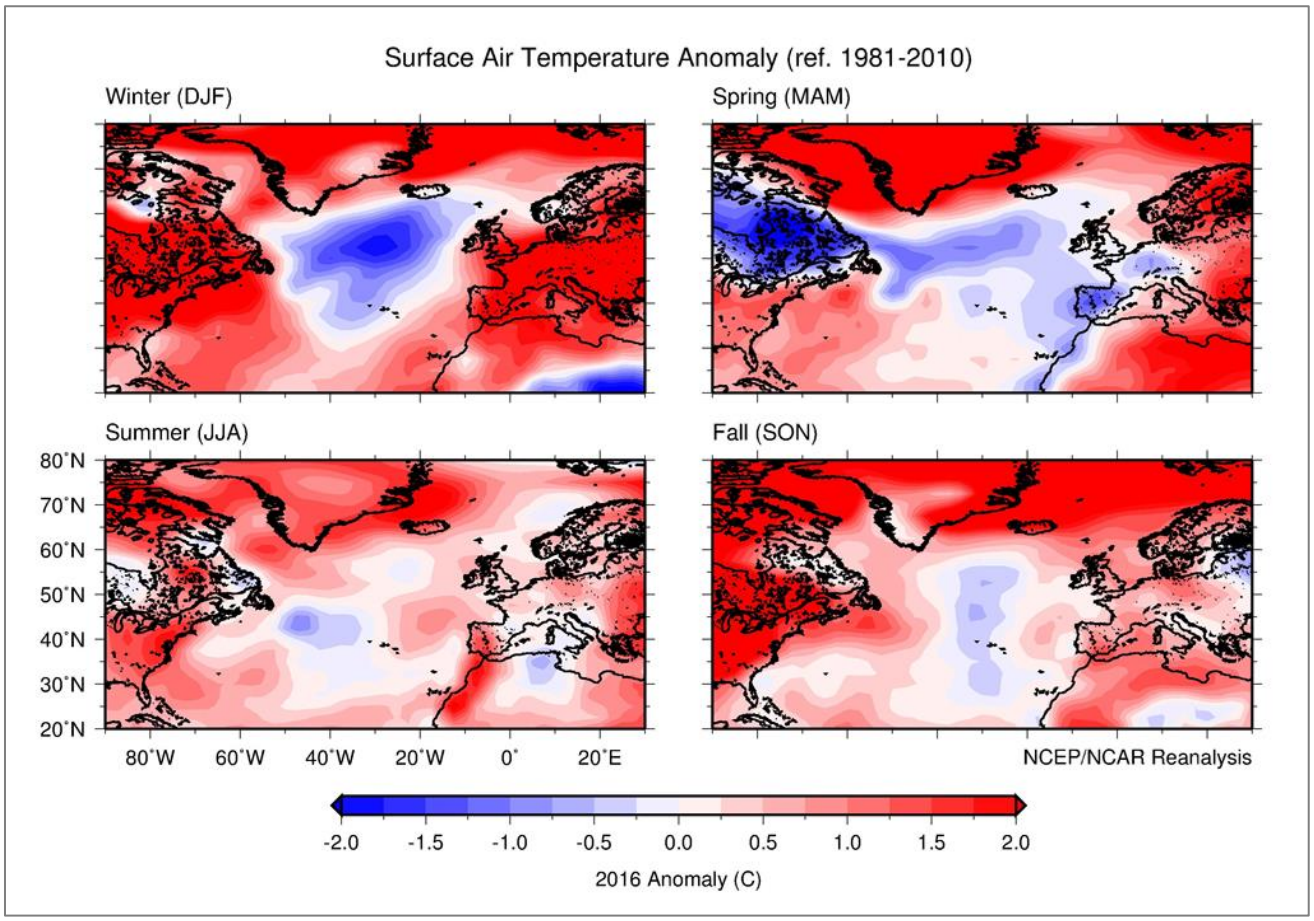
Winter sea level atmospheric pressure was below normal across the northern areas while the Azores High was above normal. This resulted in a positive NAO index during 2016.



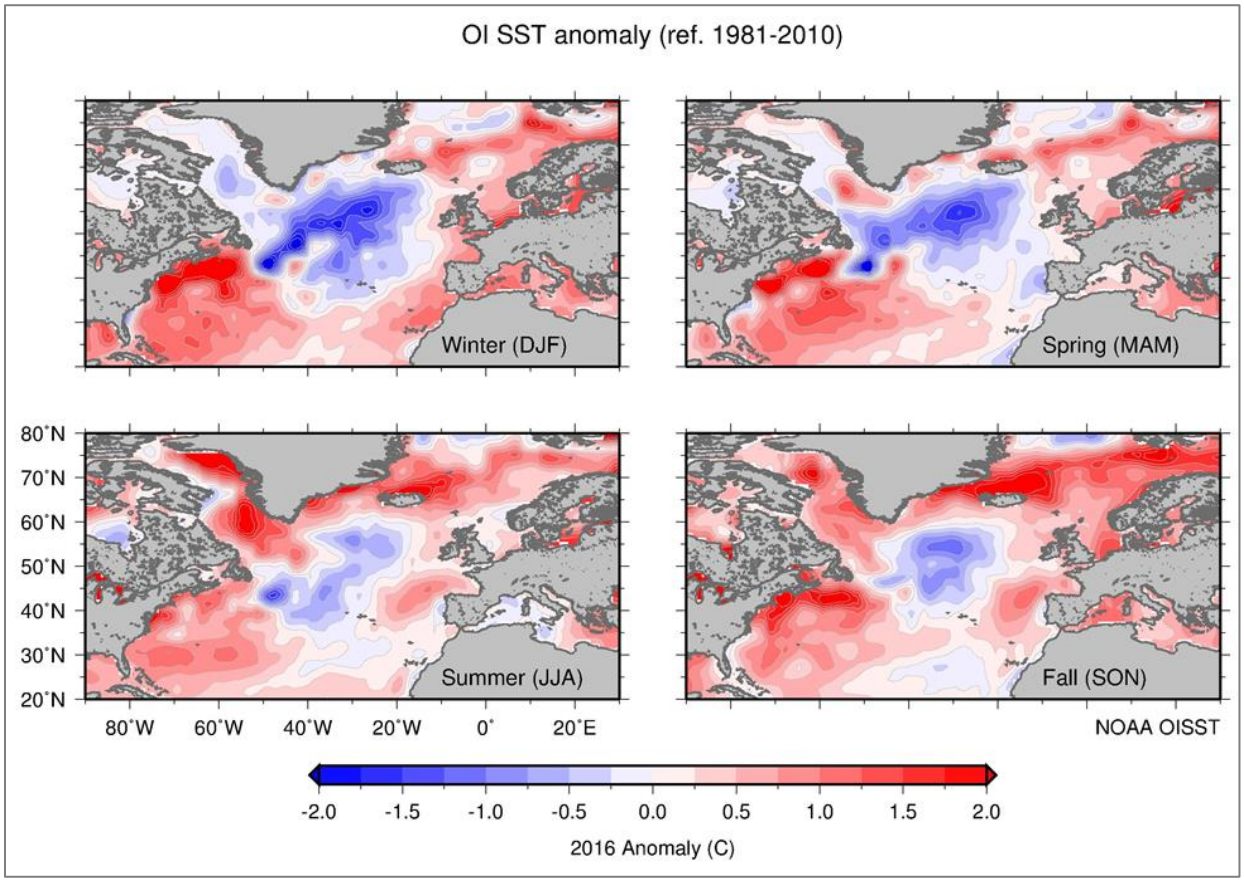
The North Atlantic Oscillation index (Rogers Dec.-Feb.), returned to a strong positive state during 2014 and increased further in 2015 to a 120 year record high. In 2016 it decreased to 0.5 standard deviation above normal and combined with spatial shifting of the SLP fields, the outflow of arctic air masses to the NAFO Area during the winter decreased over the previous year.



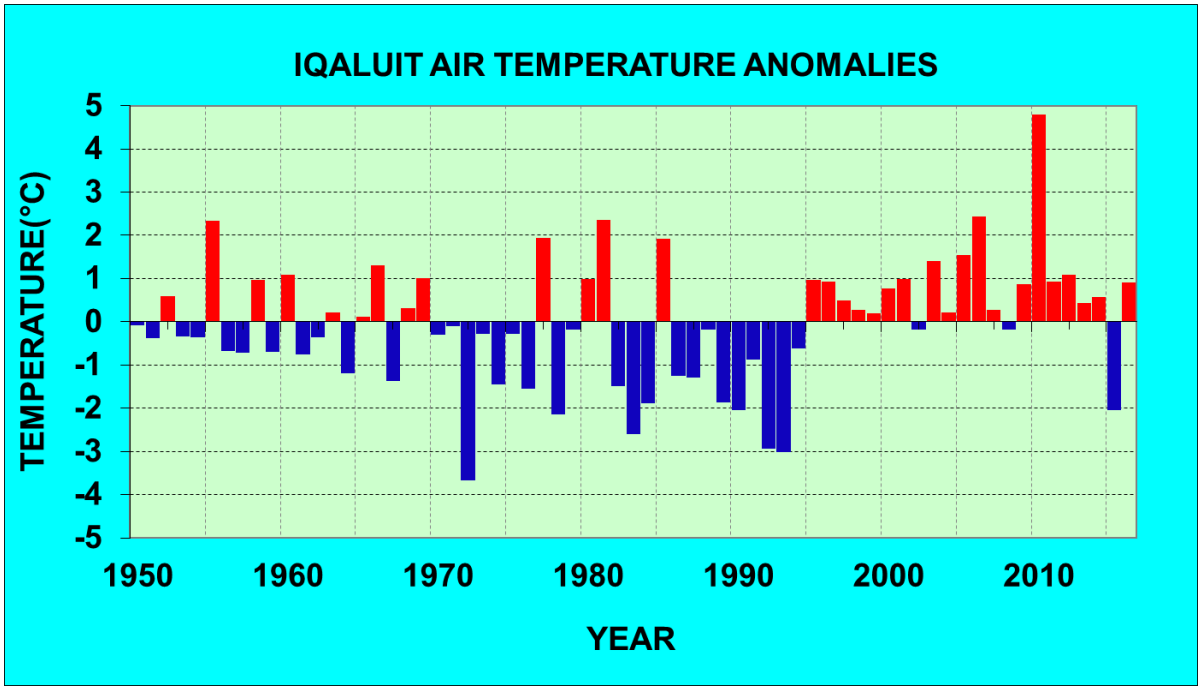
Seasonal air temperatures were above normal over much of the NAFO Convention Area in 2016 except for the central offshore areas.



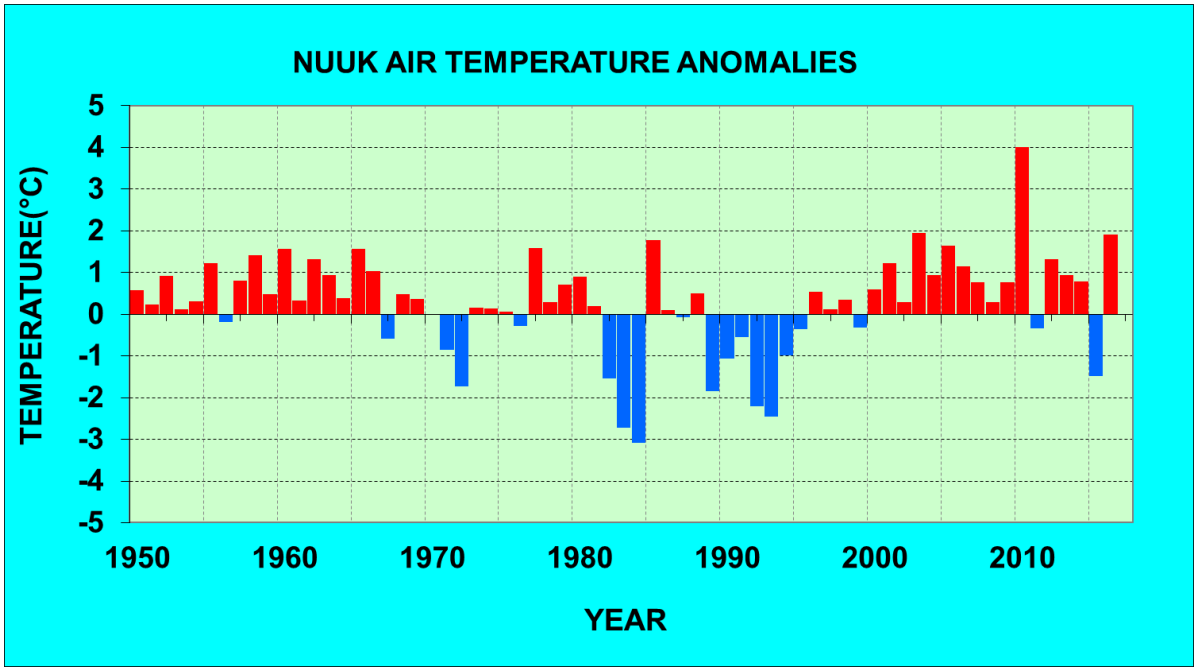
Seasonal sea surface temperatures in 2016 varied by season but were mostly above normal, particularly in southern regions and throughout the convention area during summer and fall. The most significant negative SST anomaly occurred in the offshore areas including the Flemish Cap region.



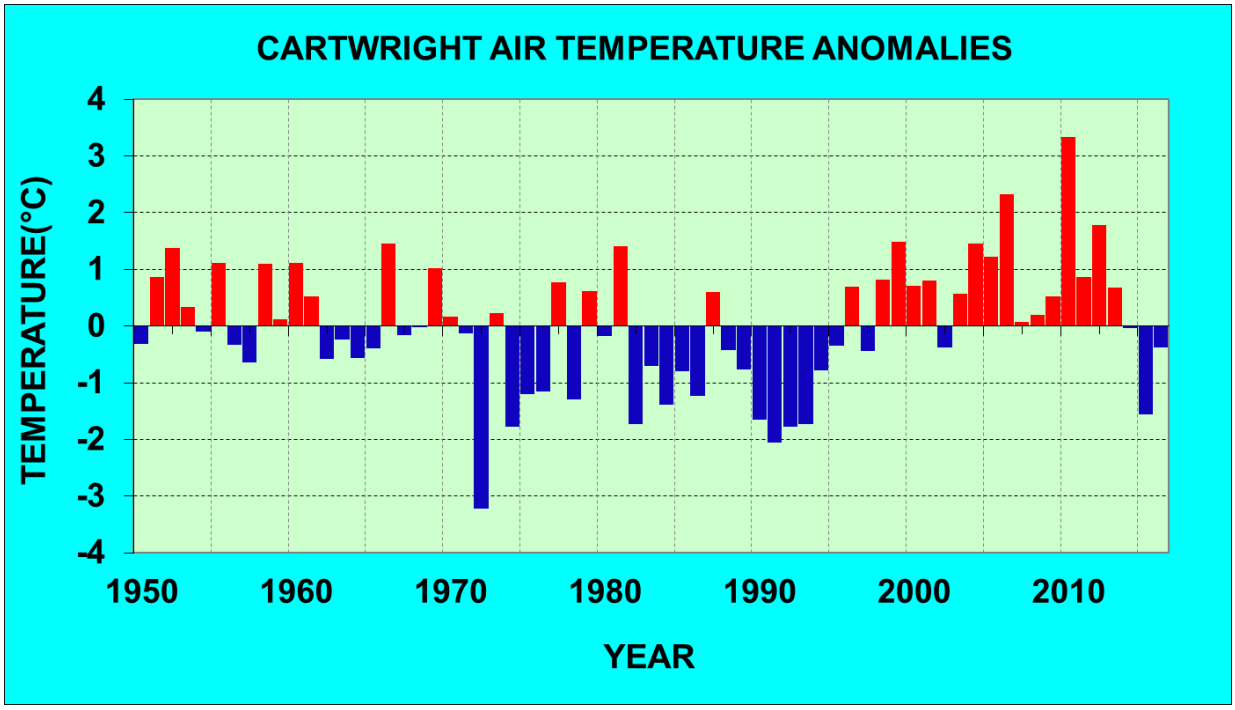
Annual mean air temperature anomalies in NAFO Sub-Area 0 (Iqaluit) increased from 2.2°C below normal in 2015 to almost 1°C above normal in 2016.



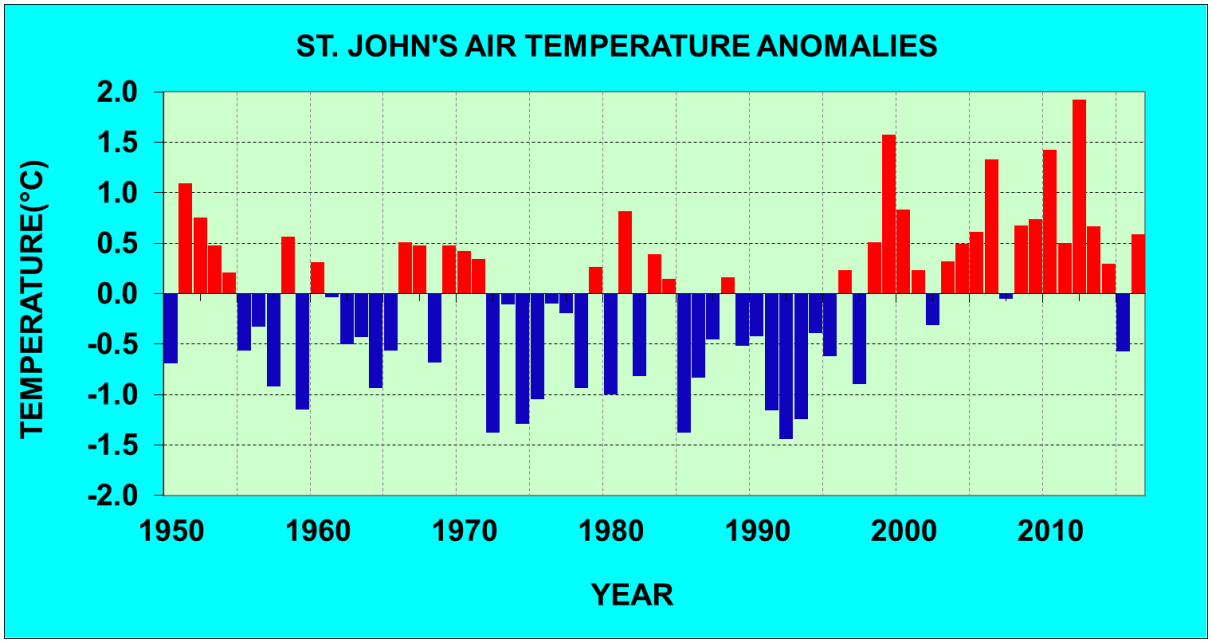
Annual mean air temperature anomalies in NAFO Sub-Area 1 (Nuuk) increased significantly from 1.5°C below normal in 2015 to near 2°C above normal in 2016, the 3rd highest in the series.



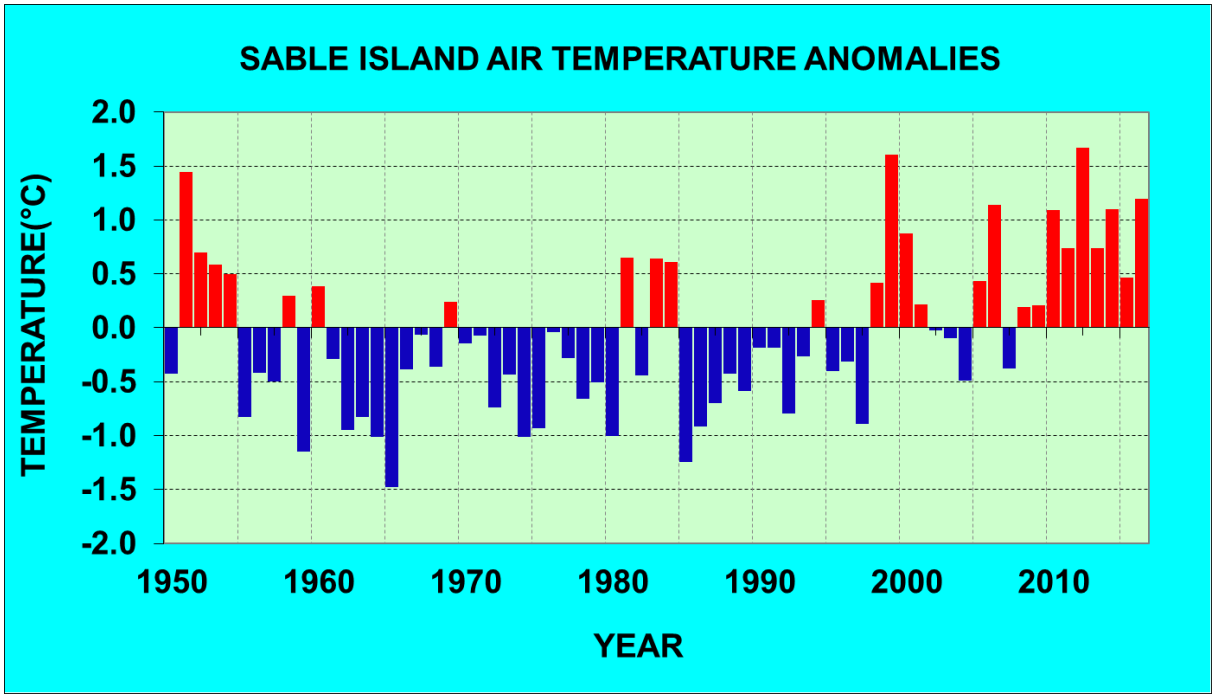
Annual mean air temperature anomalies in NAFO Sub-Area 2 on the Labrador Coast (Cartwright) increased from 1.5°C below normal in 2015, to just under 0.5°C below normal in 2016.



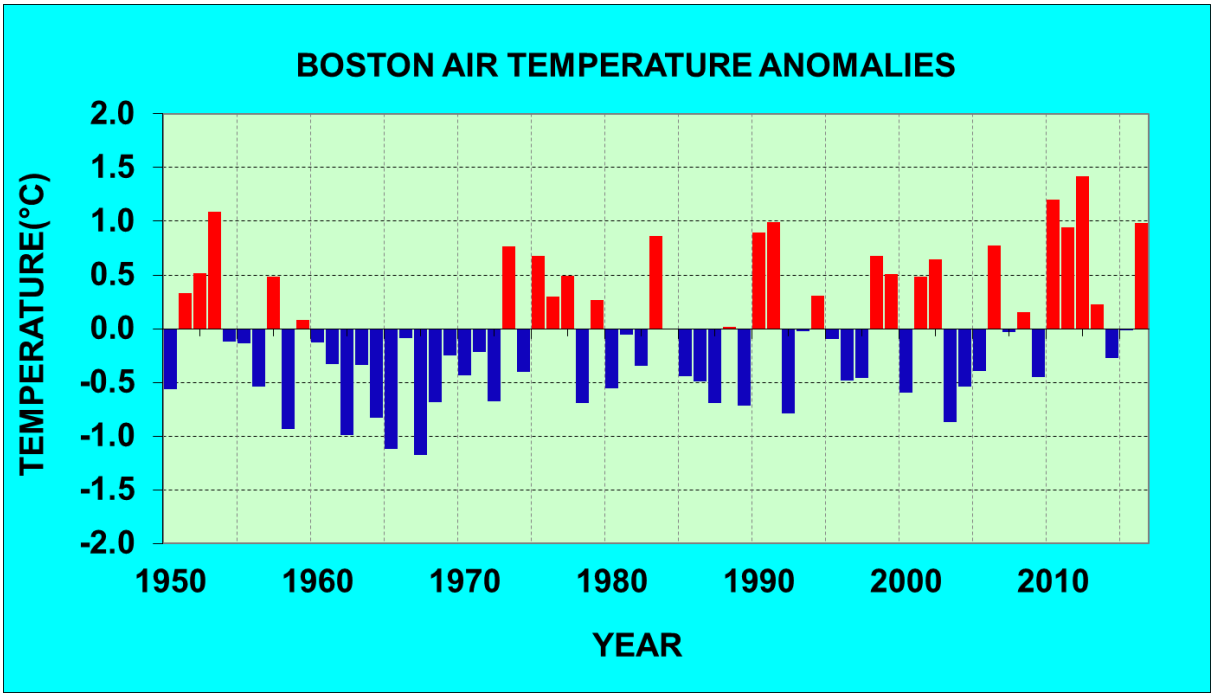
Annual mean air temperature anomalies in NAFO Sub-Area 3 on the Newfoundland coast (St. John's) were at a record high near 2°C above the long-term mean in 2012 but decreased to 0.6°C below the long-term mean in 2015. In 2016, air temperatures recovered to about 0.6°C above normal.



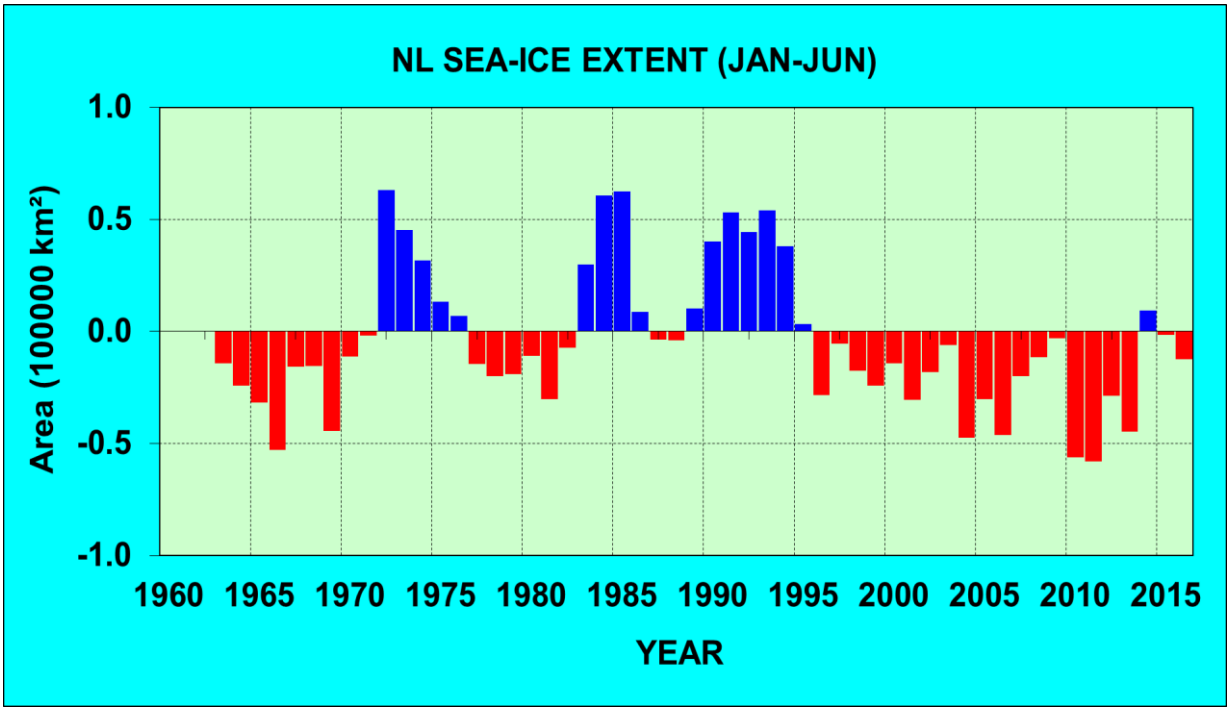
Annual mean air temperatures in NAFO Sub-Area 4 (Sable Island) were at a record high of 1.7°C above normal in 2012 and have remained above normal by about 1.2°C in 2016.



Annual mean air temperatures in NAFO Sub-Area 5 on the northeast USA coast (Boston) were 1.4°C above normal in 2012, a record high, decreased to near-normal values in 2013-2015, but increased again in 2016 to near 1°C above normal.



Sea ice extent during 2014 on the Newfoundland and Labrador Shelf was slightly above the long term mean, the first time since 1995. In 2016, it decreased again too below normal conditions (Data courtesy of I. Peterson, BIO).



In 2016 there were 687 icebergs detected south of 48°N on the Northern Grand Bank, a decrease over the 1165 observed in 2015.

The highest number of icebergs normally occurs in May (over 200). In 2016, March was the only month with more than normal at 182, compared to the 1981-2010 average of 118.

(Data courtesy of the International Ice Patrol, US Coast Guard).