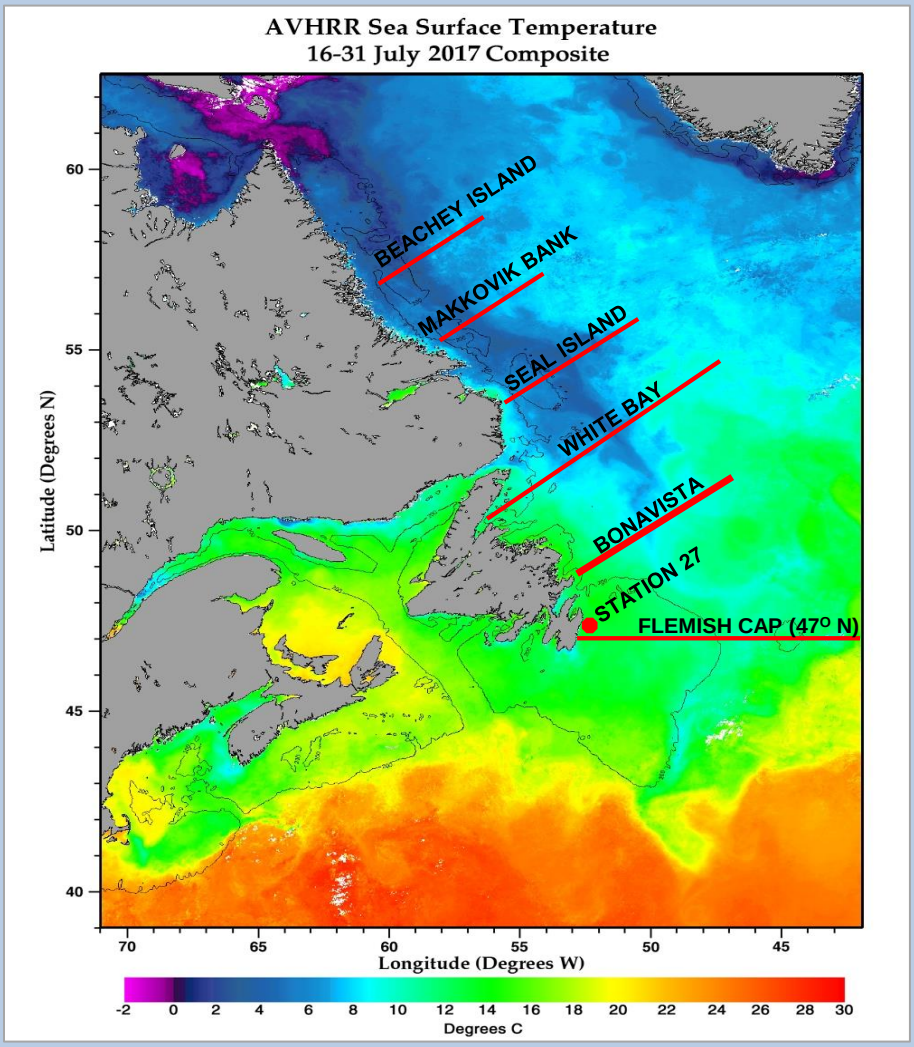
The 2017 Ocean Climate Status Summary for NAFO S. A. 2

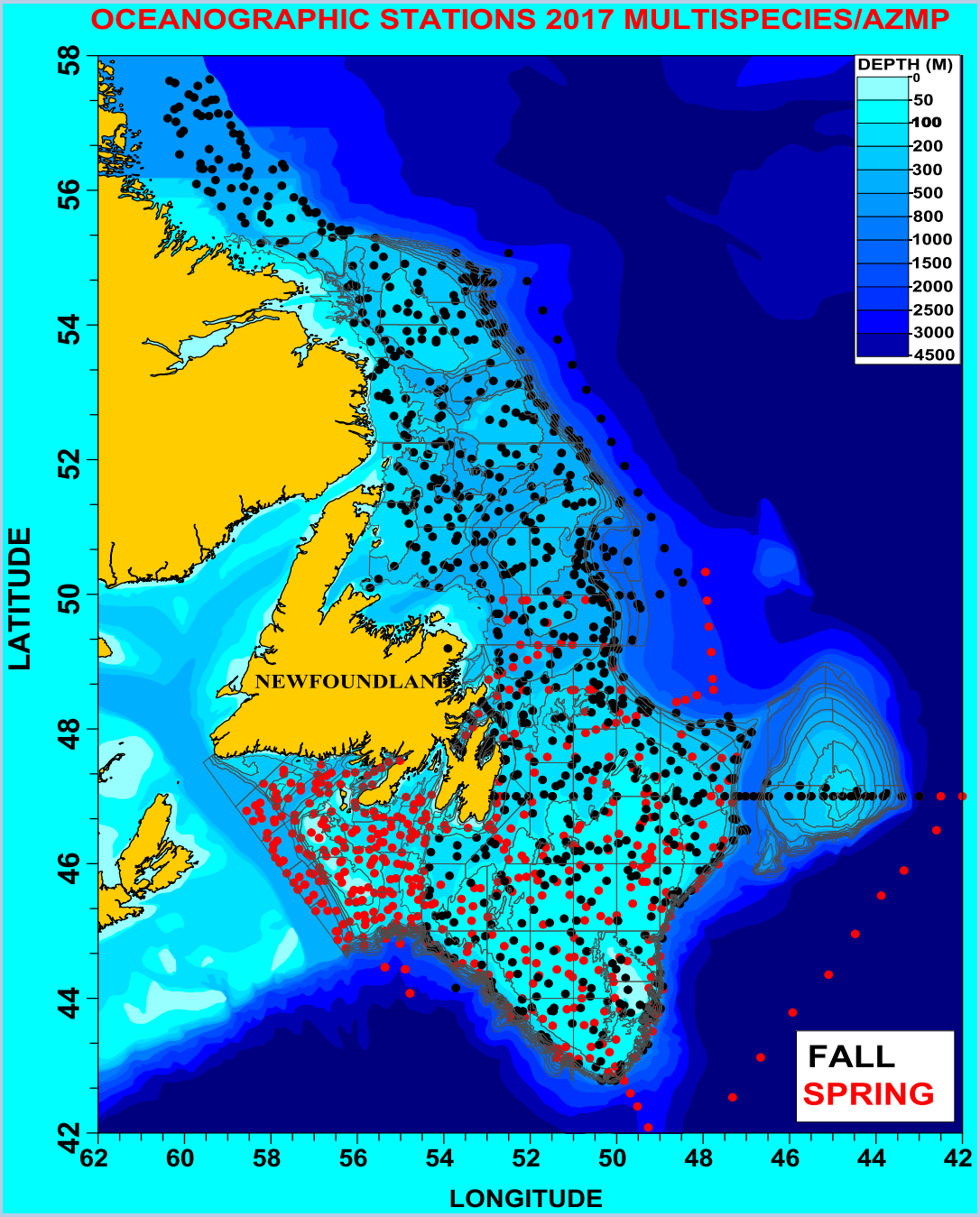
Labrador and Newfoundland Region

Red lines represent Standard Sections sampled during the summer of 2017 together with the Sea-Surface-Temperature (SST) during July 16-31, 2017 (SST map courtesy of the Marine Ecosystem Section, Bedford Institute of Oceanography , BIO).

The Location of the AZMP fixed monitoring site Station 27 is also shown as the red dot.

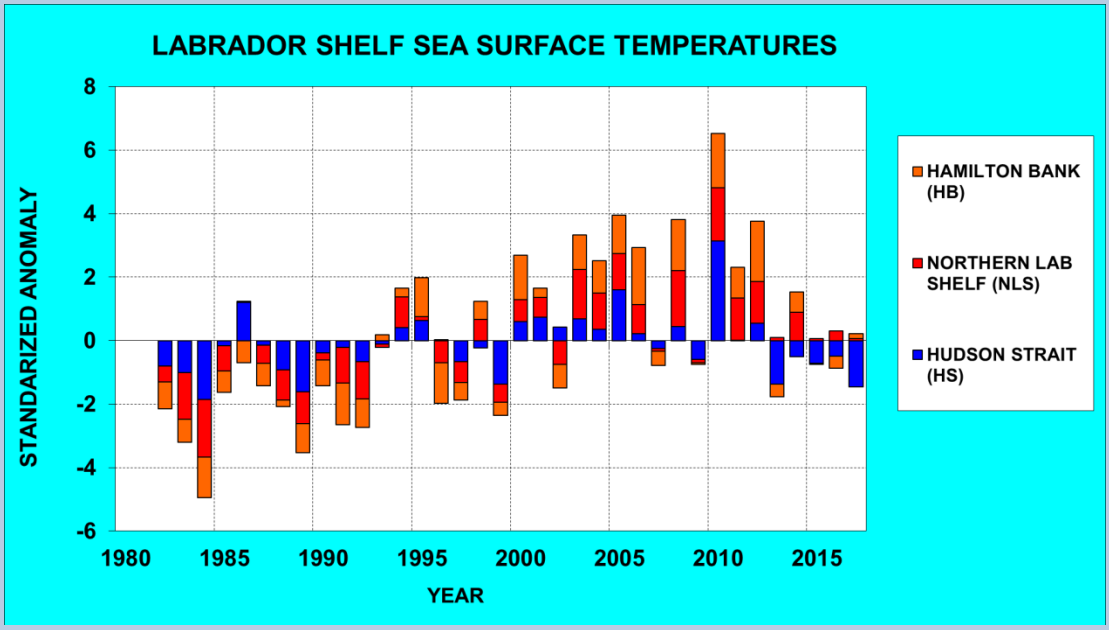


Map showing the positions of CTD/XBT profiles obtained from seasonal AZMP surveys and from spring (red dots) and fall (black dots) multi-species assessment surveys during 2017 on the NL Shelf.



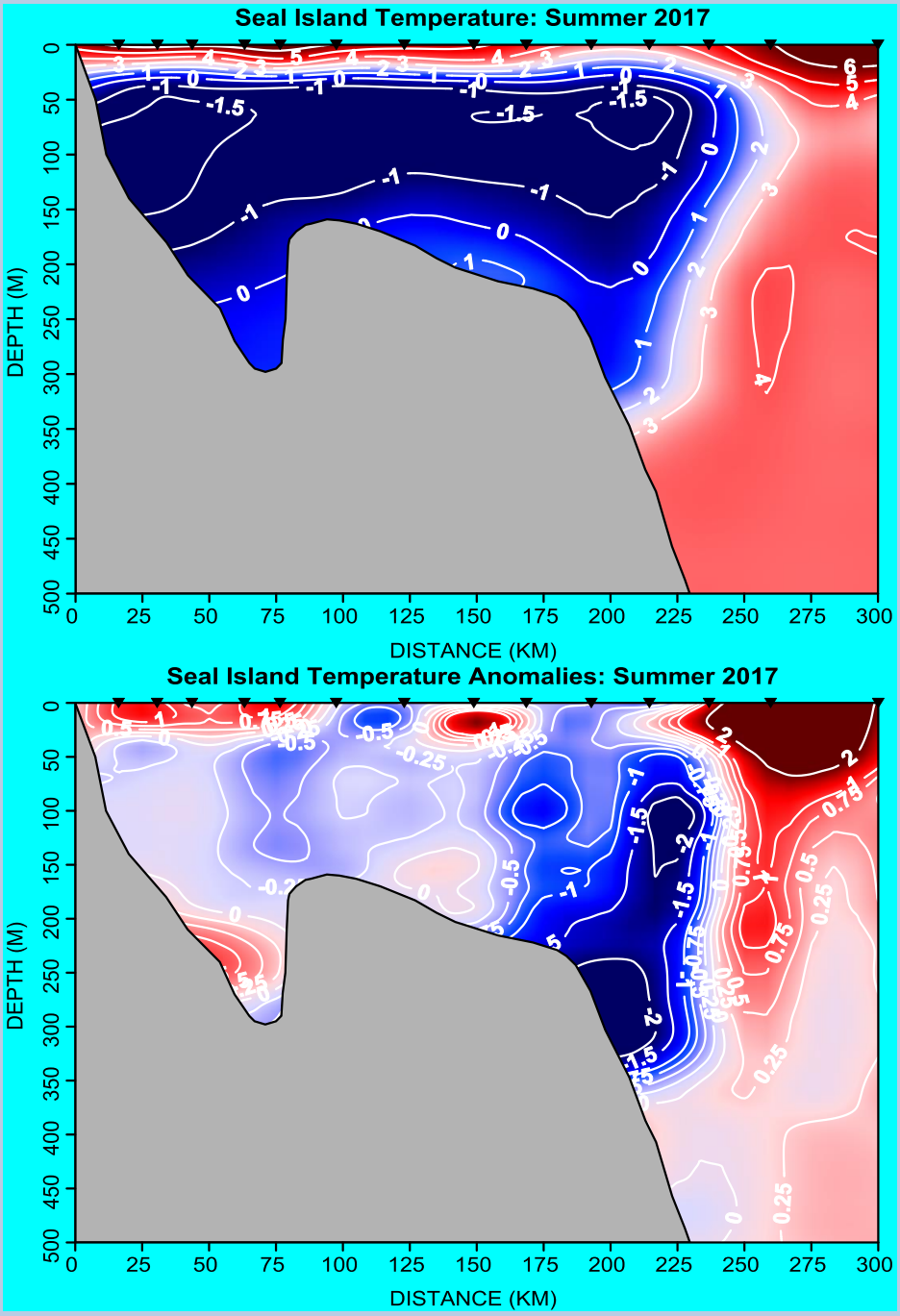
SEA-SURFACE TEMPERATURE TRENDS

SST anomalies on the Labrador Shelf showing a recent decreasing trend. In 2017 SST values were colder than normal in Hudson Strait and near-normal elsewhere.



Sea surface temperature data provided by the Marine Ecosystem Section at the Bedford Institute of Oceanography.

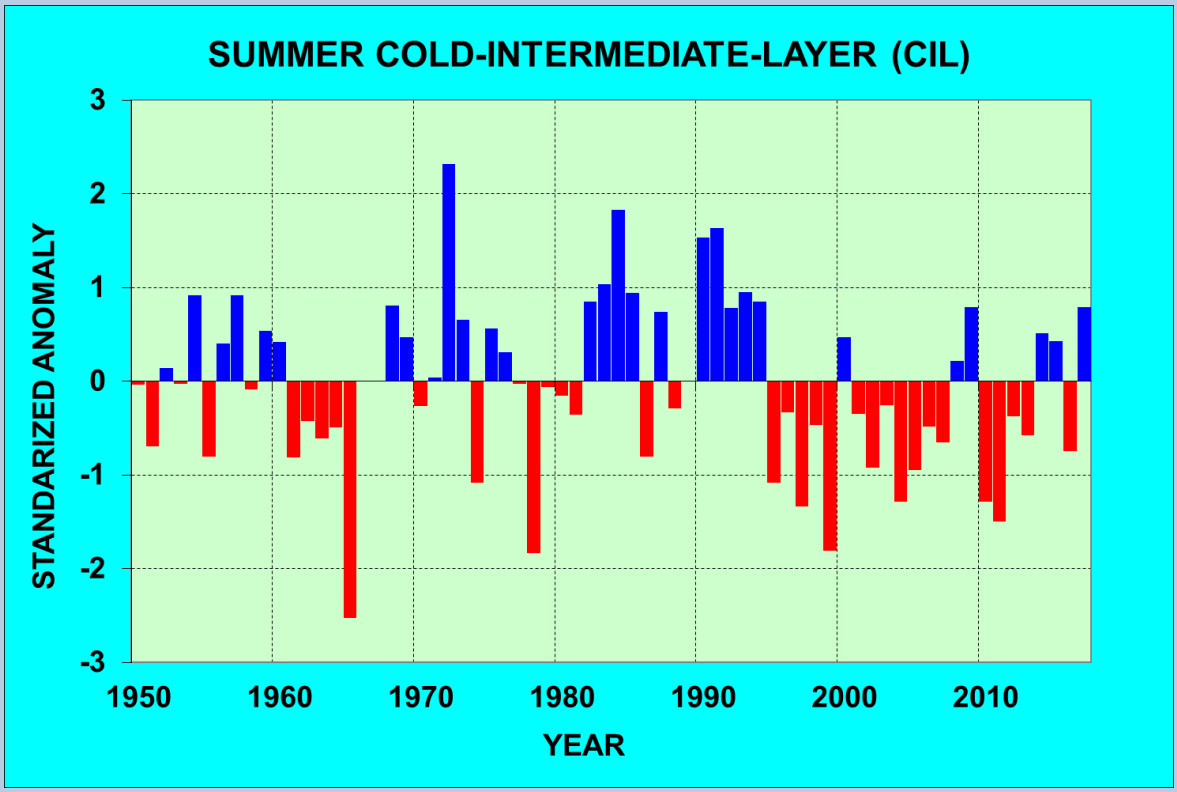
A vertical cross-section of the temperature structure off Southern Labrador during the summer of 2017, showing the extent of Cold Intermediate Layer (CIL <0°C) waters across the shelf.



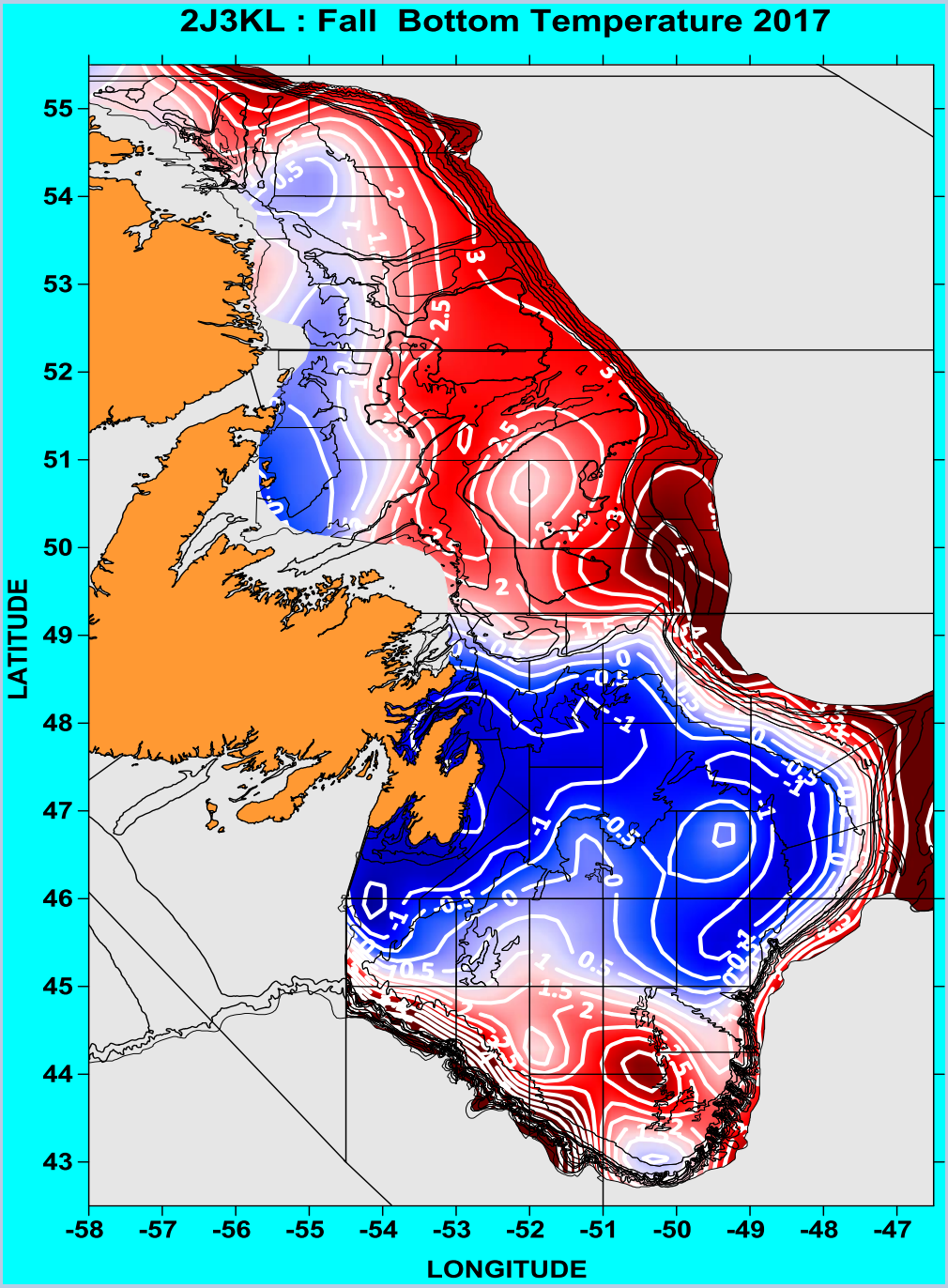
Data collected on DFO's AZMP summer survey during 2017.

LONG TERM TRENDS IN THE COLD-INTERMEDIATE WATER MASS OFF SOUTHERN LABRADOR

The summer CIL (water <0°C) cross sectional area in Sub-area 2 off Southern Labrador (2J) during 2017 was above normal, indicating generally colder than normal conditions over the shelf regions.

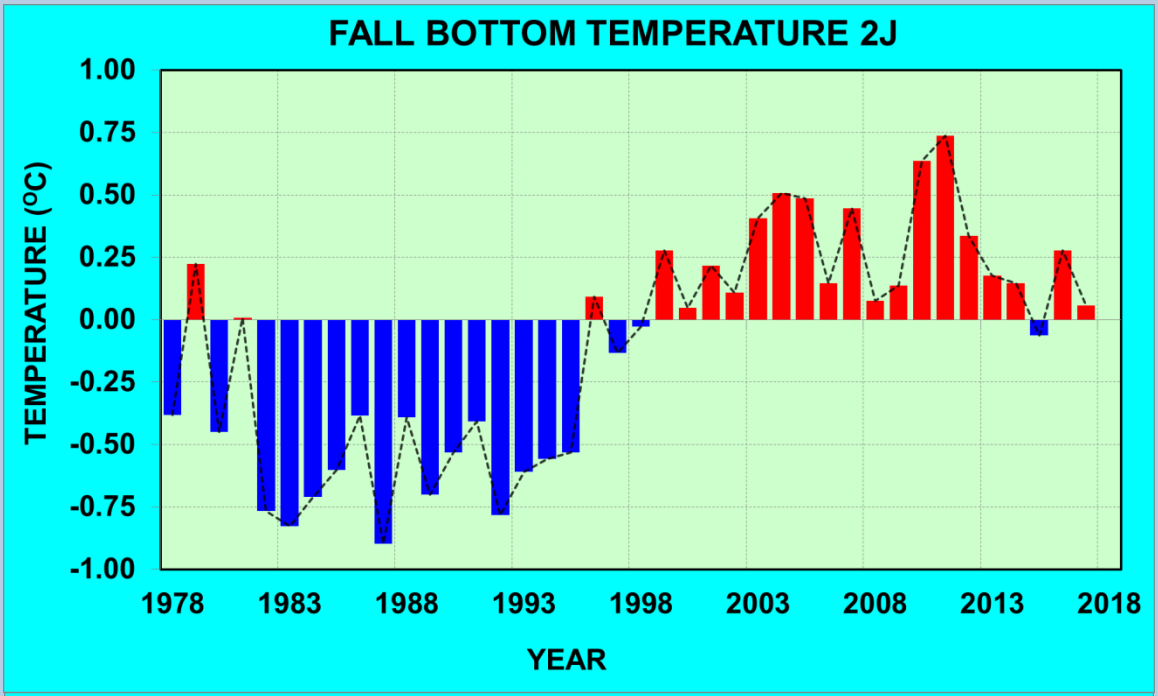


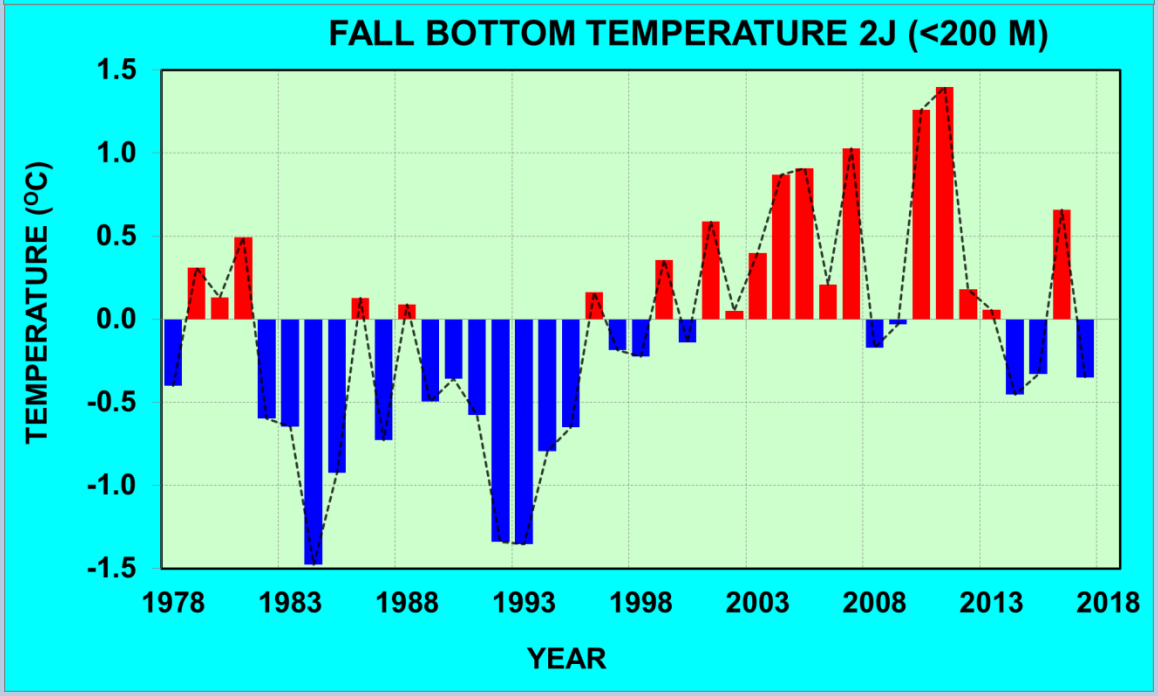
Near bottom temperatures from southern Labrador to the southeast Grand Bank during the fall of 2017.



LONG TERM BOTTOM TEMPERATURE TRENDS

Time series of the spatially averaged fall Bottom Temperature in NAFO Div. 2J showing the record high values in 2011 and the significant decrease in recent years. Note the negative anomaly in water depths <200 m.





Highlights for 2017

- ***Annual sea surface temperatures (SST) were mostly below or near-normal from Hudson Strait (-1.5 SD lowest observed), to Hamilton Bank on the southern Labrador Shelf.***

- ***The summer area of CIL (<0°C) water off southern Labrador was 33.2 km^2 or +0.8 SD different from normal, indicating a colder than normal water column on the shelf.***

- ***The spatially averaged fall bottom temperature in 2J was about normal at 2.6°C (+0.1 SD above normal). However in water depths <200 m bottom temperatures were colder than normal.***

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Reference:

E. Colbourne, J. Holden, S. Snook, S. Lewis, F. Cyr, D. Senciall, W. Bailey and J. Higdon. 2018. Physical Oceanographic Environment on the Newfoundland and Labrador Shelf in NAFO Subareas 2 and 3 during 2017. NAFO SCR. Doc. 2018/009. Serial No. N6793.

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