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ICES Report on Ocean Climate 2021

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5.2.5 Labrador Basin

I. Yashayaev and B. Cisewski

In the Labrador Sea, the 1 000–1 800 m depth layer average temperature and salinity decreased between the beginning of the 1970s and the early 1990s by about 0.9°C and 0.09, respectively. In 2011, less than two decades after reaching this record minimum, temperatures were as high as in 1970, when the previous maximum was observed, and salinity was at its highest since 1971. These increasing trends were interrupted in winter 2012 by strong convection, resulting in cooling of the deep intermediate layer (1 000–1 800 m). Its temperature continued to decrease during the five subsequent years (2013–2017), stabilized over the next three years (2018–2020), and started to increase again in 2021. A freshening trend accompanied the recent cooling of the deep intermediate layer, but ended a year earlier than the decrease in temperature in 2016. Subsequently, the 1 000–1 800 m depth layer average salinity increased slightly between 2016 and 2017/2018, decreased in 2019/2020, and stabilized, remaining nearly unchanged in 2021 (Figure 5.11).

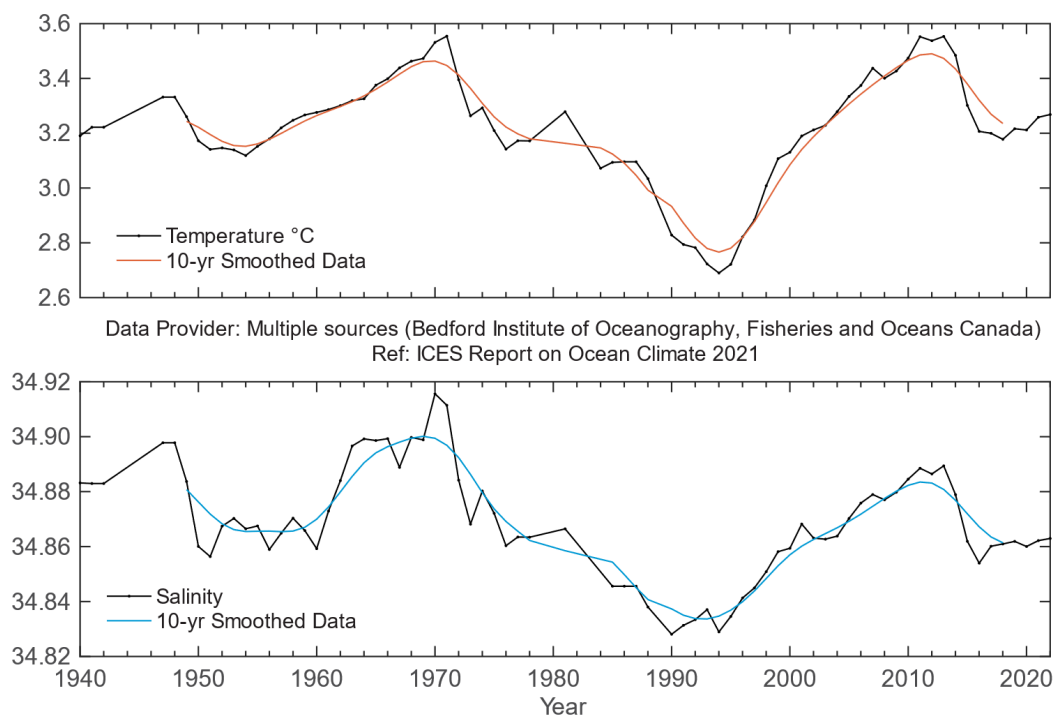


Figure 5.11. Labrador Sea. Temperature (upper panel) and salinity (lower panel) anomalies in the deep intermediate layer of the Labrador Sea (averaged over 1 000–1 800 m). Time-series are constructed as described in Figure 4.8.

5.2.6 West Iberian margin

C. González-Pola, R. Somavilla, and R. Graña

The entire water column down to 1 000 m (the depth corresponding to the core of MW) has been sampled at the outer slope stations in Santander (Figure 4.38) on a monthly basis since the early 1990s (González-Pola *et al.*, 2005). Warming for two decades, from the mid-1990s until the mid-2010s, is evident at most layers, specifically those corresponding to the ENACW (300–600 m; Figure 5.12) and upper MW (600–1 000 m; Figure 5.13).