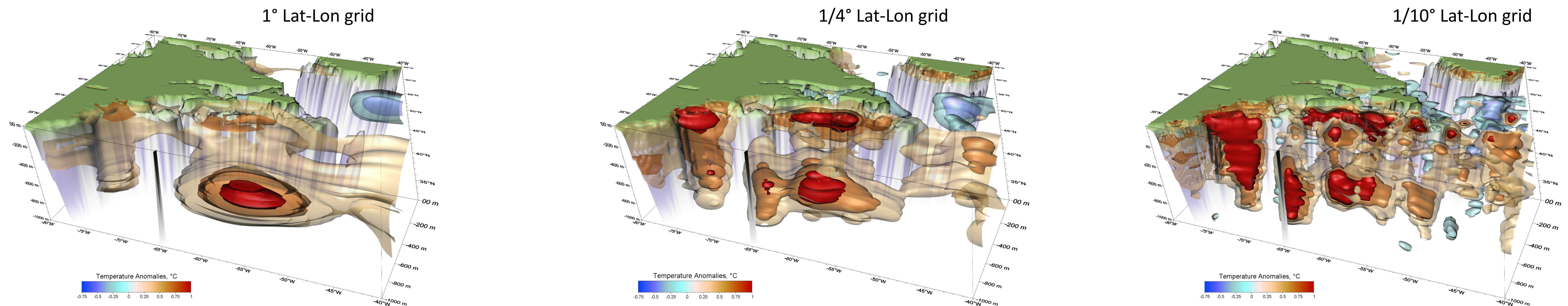


The Northwest Atlantic (NWA) basin is one of few regions in the World Ocean where the density of observations collected over the past 60 years is sufficient for reliable data mapping with spatial resolutions finer than one-degree. In the NWA, spatial

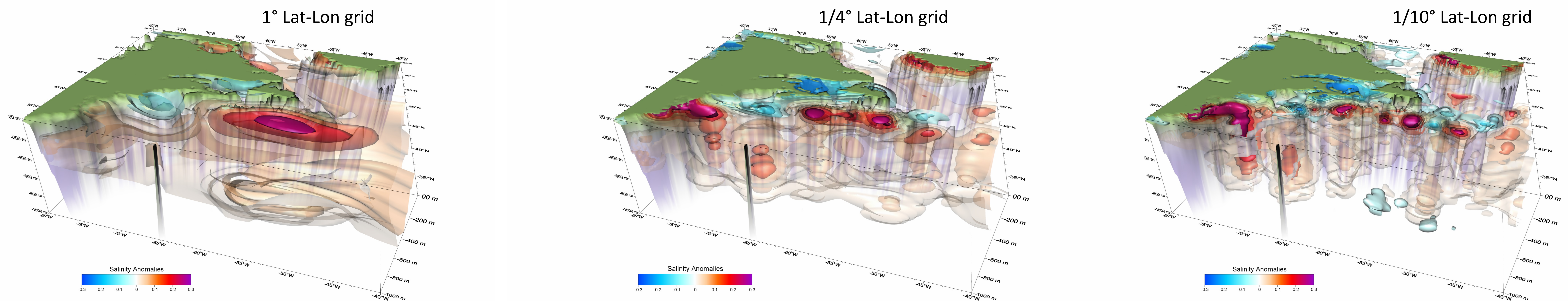
resolution of gridded temperature and salinity fields are comparable to those used in eddy-resolving numerical models of ocean circulation. Using the new high-resolution NWA Regional Climatology, built on grids of one-degree, quarter-degree and one-tenth-

degree latitude-longitude resolution fields, decadal variability and trends of temperature and salinity over ~60 years in the NWA were analyzed. Two ~30-year ocean climates of 1955–1984 and 1985–2012 were compared to evaluate the oceanic climate shift in this

region. The 30-year climate shift is detected in the Gulf Stream area as prominent warm areas located at different depths. Salinity anomalies are found close to the surface and also connected with the Gulf Stream and its extensions.



**Figure 1.** Multidecadal temperature shift (1985-2012 – 1955-1984) on one-, quarter-, and tenth-degree grids built from the Northwest Atlantic Regional Climatology



**Figure 2.** Multidecadal salinity shift (1985-2012 – 1955-1984) on one-, quarter-, and tenth-degree grids built from the Northwest Atlantic Regional Climatology

**References and Relevant links (URL)**

- Seidov, D., O.K. Baranova, T. Boyer, S.L. Cross, A.V. Mishonov, and A.R. Parsons (2016). *Northwest Atlantic Regional Ocean Climatology*. NOAA Atlas NESDIS 80, Tech. Ed.: A.V. Mishonov. Silver Spring, MD, 56 pp.; doi:10.7289/V5/ATLAS-NESDIS-80. ([http://docs.lib.noaa.gov/noaa\\_documents/NESDIS/NODC/NOAA\\_Atlas\\_NESDIS/NOAA\\_Atlas\\_NESDIS\\_80.pdf](http://docs.lib.noaa.gov/noaa_documents/NESDIS/NODC/NOAA_Atlas_NESDIS/NOAA_Atlas_NESDIS_80.pdf))
- Seidov, D., O.K. Baranova, D.R. Johnson, T.P. Boyer, A.V. Mishonov and A.R. Parsons (2016), *Northwest Atlantic Regional Climatology*. Regional Climatology Team, NOAA/NESDIS/NCEI ([www.nodc.noaa.gov/OC5/regional\\_climate/nwa-climate](http://www.nodc.noaa.gov/OC5/regional_climate/nwa-climate)), dataset doi:10.7289/V5RF5S2Q.
- Seidov, D., AV Mishonov, J Reagan, and R Parsons (2017), Multidecadal variability and climate shift in the North Atlantic Ocean, *Geophysical Research Letters*, 44, doi: [doi:10.1002/2017GL073644](https://doi.org/10.1002/2017GL073644)