5.1.1 Hydrography

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The objective of the oceanographic component of the ecosystem survey is to measure and record the water temperature and salinity by depth at each station and along six transects (Figure 5.1.1.1.). The CTD casts are from the bottom to the surface, though in deep water (i.e. off the continental shelf) the CTD is lowered to 1000 m depth.

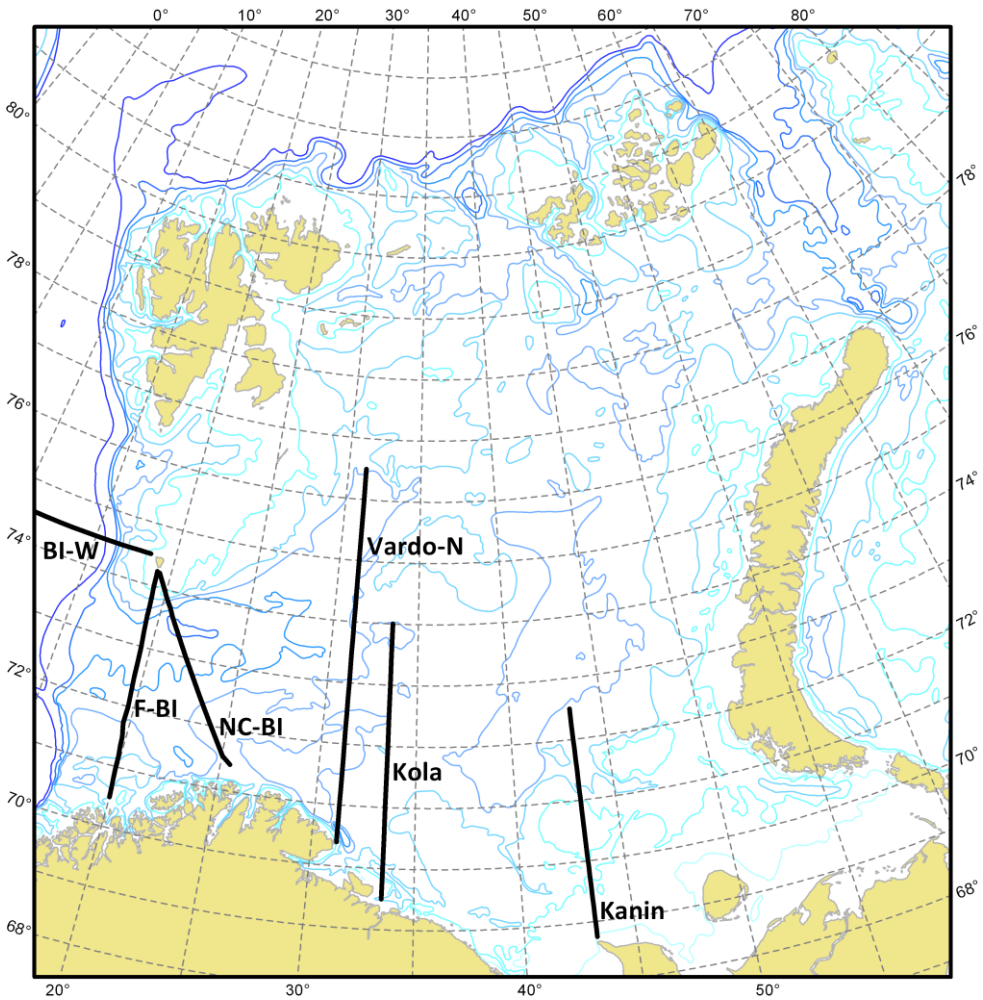

Figure 5.1.1.1. The six ecosystem transects; Fugløya–Bear Island (F-BI), Vardø–North (Vardo-N), Bear Island–West (BI-W), North Cape–Bear Island (NC-BI), Kola, and Kanin.

The transects are:

Fugløya-Bear Island Transect (Norway). This transect monitors the inflow of coastal and Atlantic water into the Barents Sea and the outflow of colder water south of Bear Island.

Measurements have been taken every August since 1964. Since 1977 the transect has been monitored six times a year.

Vardø-North Transect (Norway).This transect monitors the flow of Coastal and Atlantic Water in the Barents Sea and the flow of Arctic Water in the north. In particular, it monitors both branches of the Atlantic current after it splits in the Barents Sea; the branch flowing easterly, and the branch flowing northeast in the Hopen Trench. The transect has been surveyed every August since 1953, and since 1977 this transect has been surveyed four times a year. From 2012 the sampling has been reduced to two times each year, and the transect in August has been extended northwards to ensure sufficient coverage of the Arctic Water masses in the northern Barents Sea.

Bear Island – West Transect (Norway and Russia). This transect covers the northward flow of Atlantic Water on the shelf break west of Bear Island and is monitored by the IMR and PINRO . Because this section usually is sampled also in spring, it is sufficient to lower the CTD probe to only 1500 m depth during the Ecosystem survey.

North Cape–Bear Island Transect (Russia). This transect is near the Fugløya–Bear Island transect and, therefore covers more or less the same currents. The transect has been monitored since 1929.

Kola Transect (Russia). This transect covers the Coastal Current and the flow eastward of Atlantic Water in the Murman Current. The monitoring of the transect has been conducted since 1900.

Kanin Transect (Russia). The transect covers the flow of Atlantic Water in the eastern Barents Sea. The monitoring of this transect has been conducted since 1936.

It should be noted that not all the transects may be sampled every year. The hydrographic measurements (temperature and salinity) are available in the Barents Sea Temperature Atlas, and in the "FishExChance" database. The yearly data are also summarized in time series that are available in the "Sjømil" database. The data are used in reports done by; the Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands, the Arctic Fisheries Working Group (ICES (AFWG)), the Working Group for Regional Ecosystem Description (WGRED), the Working Group on Oceanic Hydrography (WGOH), and the ICES Report on Ocean Climate.