Barents Sea-mesozooplankton biomass 1990-2022

1.Two transects: Fugløya-Bjørnøya (FB) and Vardø Nord (VN), covered several times per year (see Fig. 1)

2. Large-scale survey (Norway + Russia) mostly in autumn (August to early October). Note that data provided here are only from the Norwegian sector surveys (see Fig. 2)

- WP2 ring net 0.56 m diameter (mouth opening area = 0.25m^2), 180 µm mesh size
- Sampling generally from near the bottom to surface, and in some cases additionally from 100 m to surface or other depths (hence, please check the sampling depths (lower and upper) contra the bottom depth at all times)
- Vertical hauls (0.5 ms^{-1} while descending as well as heaving)
- Biomass fraction 180-1000 µm
- Biomass fraction 1000-2000 µm
- Biomass fraction >2000 µm
- Total biomass provided (sum of all 3 fractions – described below)
- Biomass expressed as g m^{-2} dry weight
- Volume = mouth-area of WP2 * sampled depth-range (assuming 100% filtering efficiency). No flowmeter attached

WP2 net sampling - text below from Dalpadado et al. 2020; for more details of the net and sampling see respectively Anon (1968) and Harris et al. (2000)

The WP2 used by IMR is a simple standard net (0.56 m opening diameter, mesh size 180 µm), which was towed vertically from near the bottom to the surface. The net was rinsed, and the sample was collected in the cod-end and treated according to the standard IMR procedure. The total sample content was transferred to a Motoda plankton splitter and divided into two halves: one for biomass determination and the other for taxonomic analysis and species enumeration. The biomass sample was screened successively through three meshes: 2 mm, 1 mm, and 180 µm. The content on each screen was briefly rinsed with freshwater to remove salt and transferred to a pre-weighed aluminum tray. The samples were dried at 60 °C for >24 h and then frozen at −20 °C. In the laboratory on shore, the samples were once more dried at 60 °C before weighed. The sum of the three fractions = total biomass

References

1.Anon. 1968. Smaller mesozooplankton. Report of Working Party No. 2. Pp. 153-159 in: Tranter, D.J. (ed.) Zooplankton sampling. (Monographs on oceanographic zooplankton methodology 2.). UNESCO, Paris. 174 pp.
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2. Dalpadado, P., Arrigo, K.R., van Dijken, G.L., Skjoldal, H.R., Bagøien, E., Dolgov, A.V., Prokopchuk, I.P., Sperfeld E., 2020. Climate effects on temporal and spatial dynamics of phytoplankton and zooplankton in the Barents Sea. Prog. Oceanogr. 185:1-20. https://doi.org/10.1016/j.pocean.2020.102320

3. Harris, R., Wiebe, P., Lenz, J., Skjoldal, H. R., & Huntley, M. (Eds.). (2000). ICES zooplankton methodology manual. Elsevier.

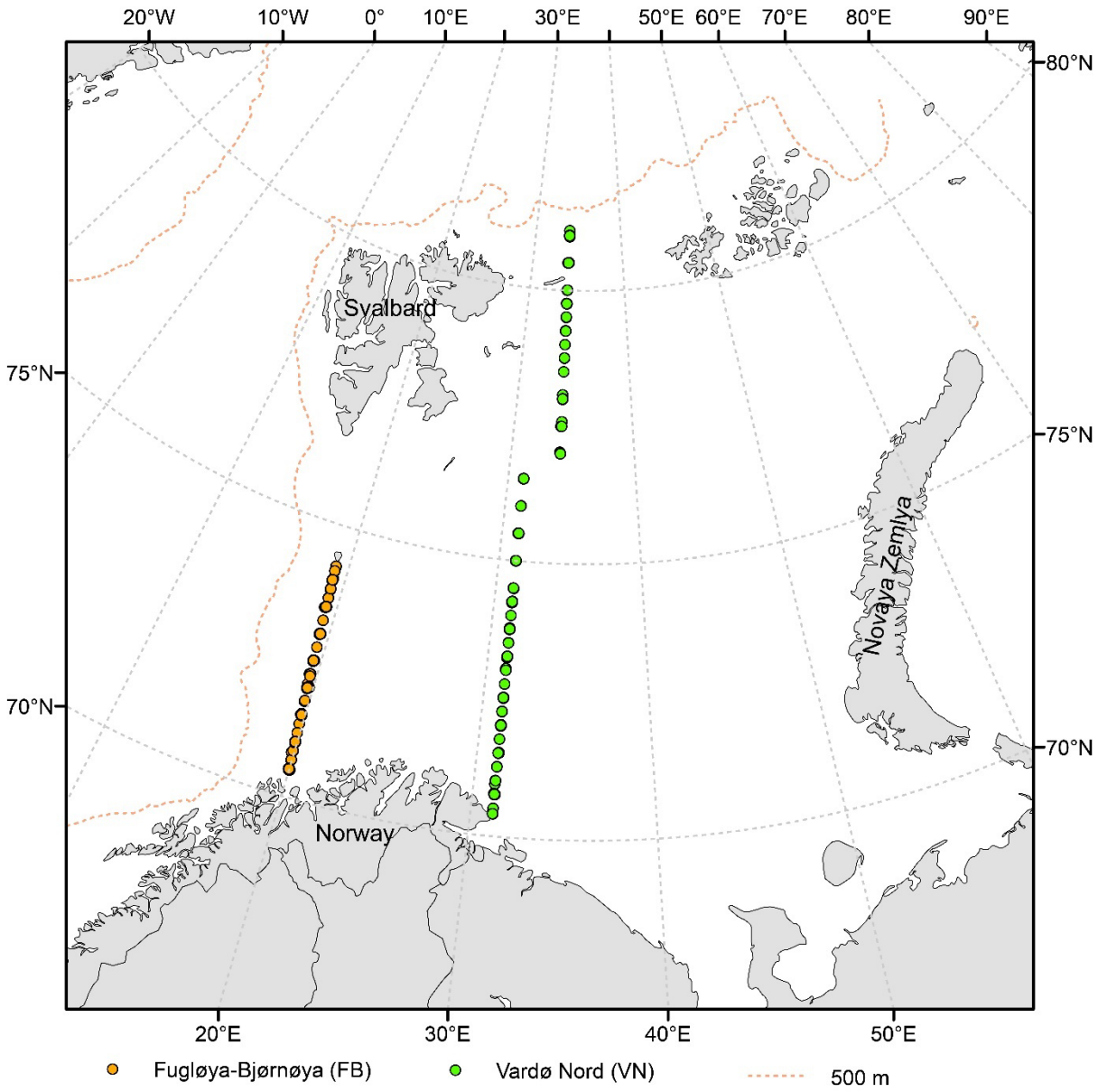

Figure 1. Transects in the Barents Sea, Fugløya-Bjørnøya (FB) and Vardø Nord (VN)

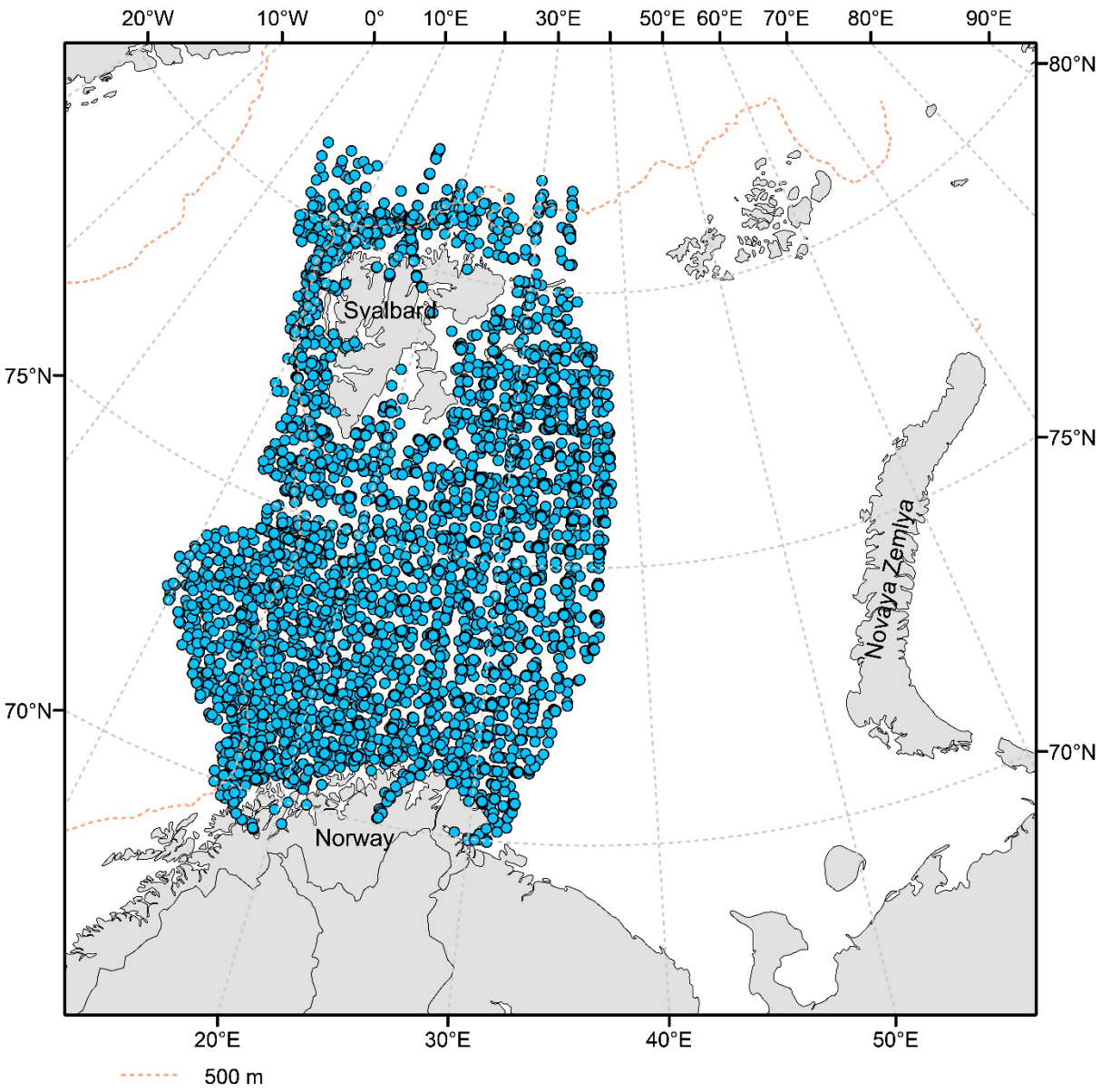

Figure 2. Large scale survey mostly in autumn (August to early October) – Norwegian sector only