5.2.4. Zooplankton - non target

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5.2.4.1. Krill biomass indices

The aim is to map the spatial distribution and estimate the minimum biomass index of large krill in the Barents Sea.

Krill data is obtained as by-catch from the 0-group stations, and taken by "Harstad trawl", which is not standard plankton equipment. Trawl specifications are described in the Appendix 1, and trawling procedure is described above in section 4 and Appendix 1.

The krill biomass estimates should be regards as minimum estimates as a) trawl catchability is unknown, b) and catches presented krill larger than 1.5 cm, and c) catches restricted to upper layers. The night catches are more representatives the krill biomass over the entire water column due to krill diurnal migration. The computation of biomass indices is described by Eriksen and Dalpadado, 2010.

For each trawl haul, the wet weight per square meter calculates as follows:

$$Bi = \frac{c}{v} * d \qquad (1)$$

Where *Bi* is biomass in gm^{-2}, *c* is catch in wet weight (g), *d* is depth interval (m) and *v* is volume of water filtered (m^3). The volume of water filtered calculates by towed distance (a) in meter by the effective opening (area) of the trawl (b) in m^2 (equation 2).

$$v=a*b \qquad (2)$$

Results presented as spatial densities (per each station), which available on the "FishExChange" database and the relative biomass indices, which available on "Sjømil" database. The results are reported to The Research Council of Norway, Barentswatch portal and used for internal map production.

5.2.4.2. Jellyfish biomass indices

The aim is to map the spatial distribution and estimate the relative biomass index of jellyfish medusae within the Phylum Cnidaria (mostly *Cyanea capillata*) in the Barents Sea.

Jellyfish data is obtained as by-catch from the 0-group stations, and taken by "Harstad trawl". Trawl specifications are described in the Appendix 1, and trawling procedure is described above in section 4 and Appendix 1.

The computation of biomass indices using the stratified sample mean method of swept area estimates is described by Eriksen et al. 2012.

The biomass (g/m^2), b_s, at each station, s, was estimated by the equation

$$b_s = \frac{w_s}{wsp * (td_s / dl_s)} \qquad (1)$$

where w_s is the catch (g) at station s, wsp is the effective wingspread of the trawl (20 m), td_s (m) the total distance trawled at station s, and dl_s is the number of depth layers at station s. For each of the strata the total biomass, B, was calculated by

$$B = \sum_{i=1}^{N} A_i \bar{y}_i \qquad (2)$$

where N is the number of strata, A_i is the area covered in the i-th stratum, and $\bar{y}_i$ is the average biomass in stratum i given by

$$\bar{y}_i = \frac{1}{n_i} \sum_{s=1}^{n_i} b_s \qquad (3)$$

where n_i is the number of stations in stratum i, and b_s is biomass (g/m^2), at each station, s.

Results presented as spatial densities (per each station), which are available on the "FishExChange" database and the relative biomass index, which is available on "Sjømil" database. The results are reported to The Research Council of Norway, Barentswatch portal, NCEAS (National Centre for Ecological Analysis and Synthesis) and used for internal map production.