4.3.3. Biomass indices and distribution of krill and amphipods

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In 2016, the krill and amphipods taken by standard pelagic trawl were identified to species level at 88% of all stations. Some part of the southern Barents Sea was not covered and west, north and northeast of Svalbard/Spitsbergen, covered by “H. Hanssen” one month later than the main area (more information see in “1. Background”). For krill and amphipods, we chose to include the “H. Hanssen” data in the estimation despite the non-synoptical coverage. This is because this area is included as a standard, and further since these groups perform dial vertical migrations, and therefore are assumed to be less affected by horizontal transport by upper currents than fish larvae.

**Euphausiids**

In 2016, krill were widely distributed in the Barents Sea (Figure 4.3.3.1). The biomass values expressed in the report are in g wet wt. m⁻². In 2013, the highest catches were mostly distributed in the central area, in 2014, in the western area, in 2015, in the south and southeast of Svalbard/Spitsbergen, while in 2016, widely. The night catches in 2016, (mean 13.48 gram per m²), were higher than long term mean (7.49 gram per m²) and slightly lower than in 2015 (14.22 gram per m²).
The number of the night stations in 2016 was approximately half of the day stations during the survey (Table 4.3.3.1). During the night, most of krill migrate to upper water layer for feeding, and therefore it is more available for the trawl. Higher catches (more than 50 grams per m$^2$) were observed in the western, central and east of Svalbard/Spitsbergen areas.

Based on the euphausiid species identification in 2016, *Meganyctiphanes norvegica* and *Thysanoessa inermis* were widely observed in the Barents Sea, while *Thysanoessa longicaudata* were mostly observed in the western and *Thysanoessa raschii* in the eastern areas (Figure 4.3.3.2).
In 2016, the total biomass of krill was estimated as 12.7 million tonnes wet wt. It is much lower than in 2015 and higher than long term mean (8.8 million tonnes) and rather high even after the heavy feeding summer season.
Amphipods (mainly Hyperiids)

In 2016, amphipods were found in the northern Barents Sea (Figure 4.3.3.3). In 2012 and 2013 no amphipods were observed in pelagic catches, while in 2014 some restricted catches were taken north for Svalbard/Spitsbergen and in 2015 several high catches were taken east of Svalbard/Spitsbergen.

![Amphipods distribution](image)

In 2016, the highest catches were taken north and east of Svalbard/Spitsbergen, and were mostly represented by the Arctic *Themisto libellula* (Figures 4.3.3.3 and 4.3.3.4). In 2016, the mean catches taken during the day were higher than night catches, and were 2.1 and 0.6 gram per m². In 2016, the estimated biomass of amphipods was 615 thousand tonnes for the covered area, that was slightly higher than in 2015. In addition to Themisto sp, low catches of *Hyperia galba*, which is biologically associated with jellyfish, were found in the northern part of the central area, where jellyfish were abundant (Figure 4.3.3.4). Other hyperiids (from genus *Hiperia* and *Hyperoche*) also occurred and dominated in some catches, but their abundance was very low.
Figure 4.3.3.4. Proportions of amphipod species, based on trawl stations both day and night, covering the upper water layers (0-60 m) in the Barents Sea in August-September 2016. For abundances see Figure 4.3.3.3.