

#### 4.3.4. Biomass indices and distribution of jellyfish

by Eriksen E., Falkenhaug T., Prokhorova T. and Dolgov A.

In August-September 2014, jellyfish, mostly the Lion's Mane jellyfish (*Cyanea capillata*), were found in the entire studied area of the Barents Sea. Jellyfish biomass increased from southwest to northeast and southeast (Figure 4.3.4.1). It seems that higher surface temperature and wider area of Atlantic Water had a positive influence on the jellyfish biomass and distribution in 2014. The highest catches were taken in the southern, eastern and central areas, and one third of the catches were more than 100 kg per haul, corresponding to about 50 tonnes per nautical mile.

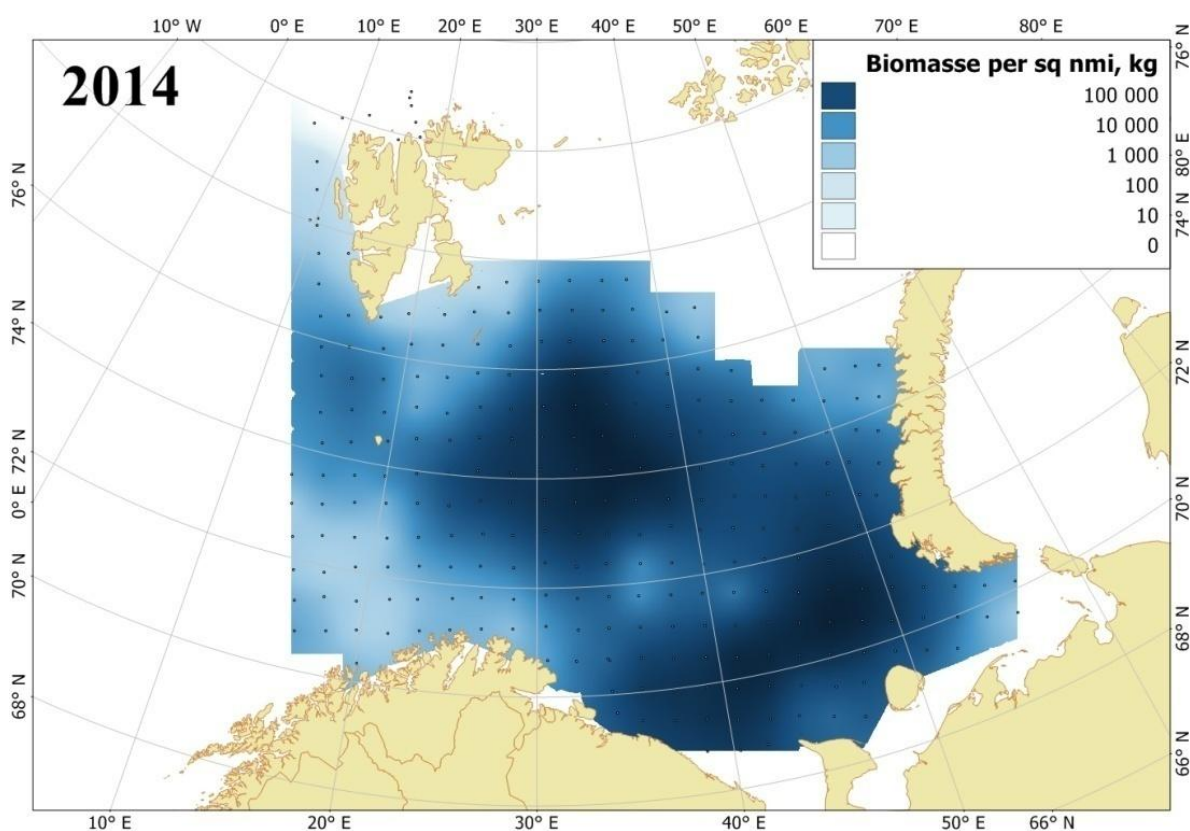


Figure 4.3.4.1. Distribution of jellyfish, August-September 2014.

The calculated jellyfish biomass, mostly *Cyanea capillata*, caught by pelagic trawls at 0-60 m depth was 4.8 million tonnes in the Barents Sea in August-September 2014 (Figure 4.3.4.2). This is close to the record high biomass of jellyfish of 4.9 million tonnes observed in 2001. No strong year classes of cod, haddock, capelin and herring occurred in 2001, and only strong year classes of cod was found in 2014.

*C. capillata* preys on zooplankton, fish eggs and fish larvae, and have a life span of approximately 1 year. The jellyfish utilize an unknown amount of plankton during the summer period, however in order to reach such high biomasses in a few months they most likely consume considerable amount of plankton. Therefore, a study on the role of jellyfish in the trophic webs of the Barents Sea is needed.

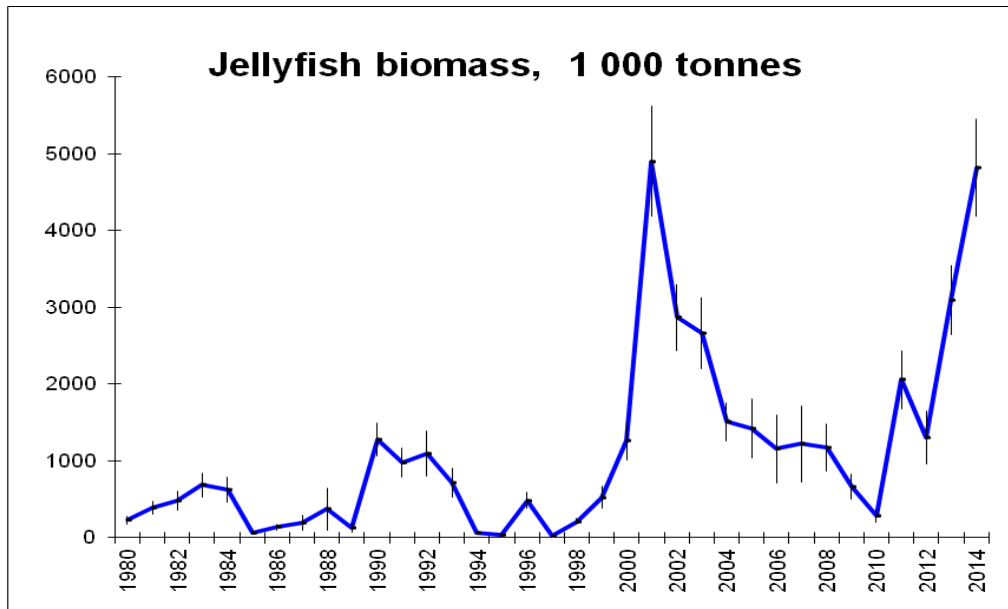


Figure 4.3.4.2. The estimated jellyfish biomass, mostly *Cyanea capillata*, in 1000 tonnes with 95% confidence interval for the period 1980-2014.

Single specimens of Blue stinging jellyfish *Cyanea lamarckii*, from the genus *Cyanea*, were found at three stations (70°42'N and 16°23'E, 74°42'N and 14°44'E, 77°58'N and 10°12'E) in deeper (more than 1000 m depth) western part of the surveyed area. To our knowledge this is the northernmost record of *C. lamarckii*. The species is considered to have a more southern distribution than *C. capillata*, and has previously been reported as far north as the Faeroes and Iceland and off the Norwegian coast at Harstad. *C. lamarckii* is not reproducing in the Barents Sea, and the presence of this warm-temperate species may be linked to the inflow of Atlantic water masses.

Single species of Helmet jelly *Periphylla periphylla*, from the genus *Periphylla*, were found in deeper (more than 1000 m depth) western part of the surveyed area.

Other species of gelatinous plankton, such as Moon's jellyfish *Aurelia aurita*, and species of the class Hydrozoa and the phylum Ctenophora, were recorded during the survey. This small and fragile gelatinous plankton may be easily destroyed by other organisms (such as larger fish or/and invertebrates) in the trawl cod end.