6.2 Benthos and shellfish community

Text by D. Zakharov
Figures by D. Zakharov and P. Krivosheya

6.2.1 Monitoring the Northern shrimp (*Pandalus borealis*)

During the survey in 2015 334 trawls were made. Northern shrimp was found in the catches of 245 trawls. The biomass of shrimp varied from several grams to 72.9 kg per nautical mile with an average catch of 7.4±0.6 kg/nml. The densest concentrations of the shrimp were registered in the central part of the Barents Sea and south-east of Spitsbergen (Fig. 6.2.1.1). In 2015, the calculated index (method of squares) of the Northern shrimp stock was 375.2 thousand tons, which is 18 % higher than 2014, and 7 % higher than the average index value of the stock. A decrease of the stock in 2014 was observed in the southern and western part of the sea, this result might be affected by the underestimation of shrimp due to difficult ice conditions in the Northern part of the Barents Sea in August-September 2014.

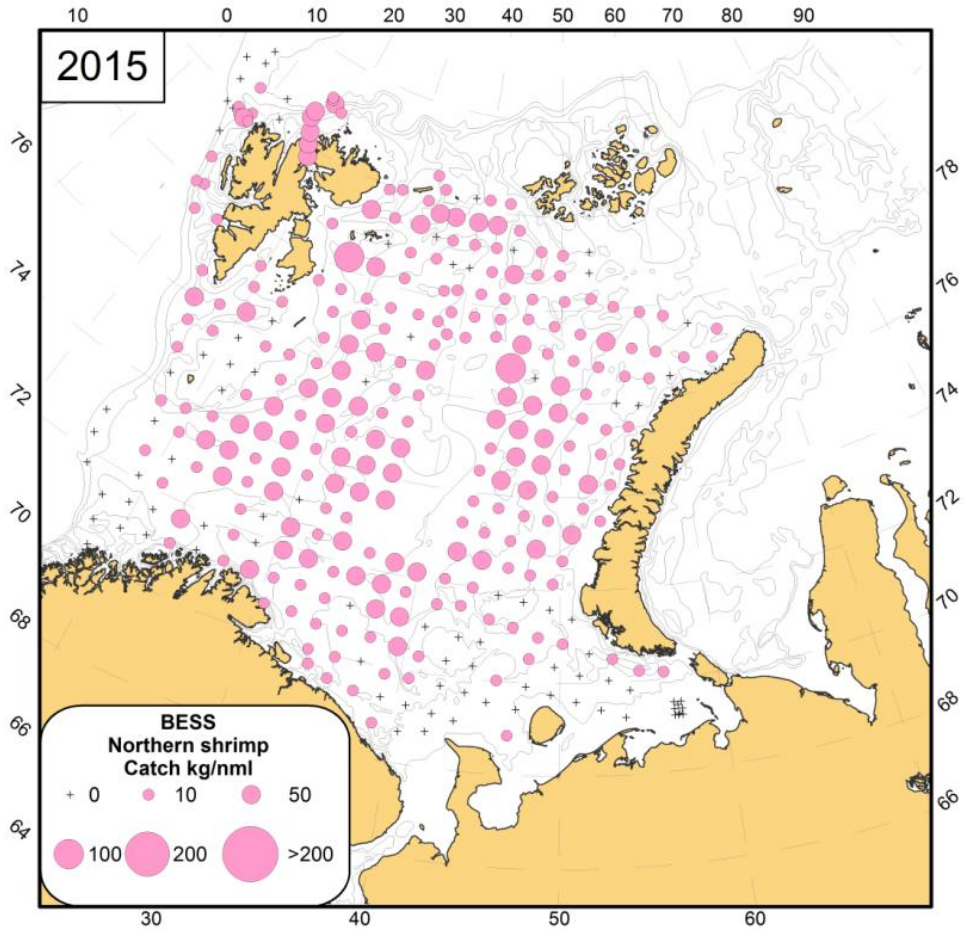

Figure 6.2.1.1 Distribution and the biomass (kg/nml) of the Northern shrimp in the BESS 2015

Biological analysis of the northern shrimp stock was conducted in 2015 by Russian scientists in the eastern part of the survey area. Likewise in the previous year the main bulk of the Barents Sea shrimp population was made up of individuals of smaller age groups – males with carapace length of 8-28 mm and females with carapace length of 16-34 mm (Fig. 6.2.1.2).

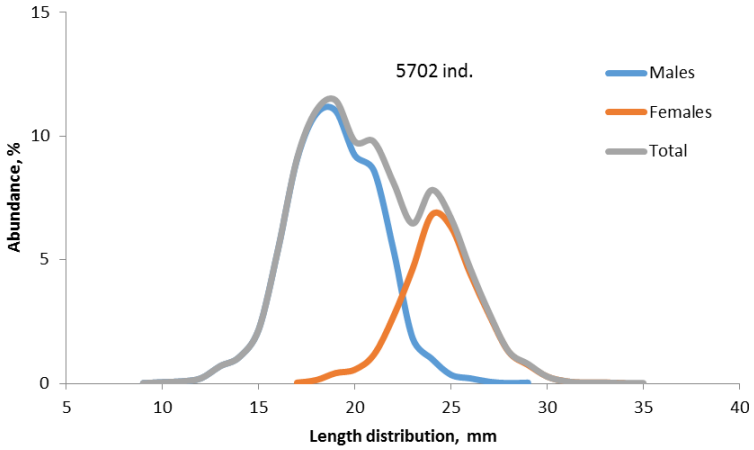

Figure 6.2.1.2 Size and sex structure of catches of the Northern shrimp in the eastern Barents Sea in 2015.

6.2.2 Monitoring of Red King crab (*Paralithodes camtschaticus*)

Text by N. Anisimova, L. Lindal Jørgensen
Figures by P. Krivosheya

The Red King crab were recorded in 14 of 335 trawl catches and were distributed in the southern part of the Barents Sea between 25 and 57° E (11 catches in REZ and 3 catches in NEZ) (fig. 6.2.2.1).

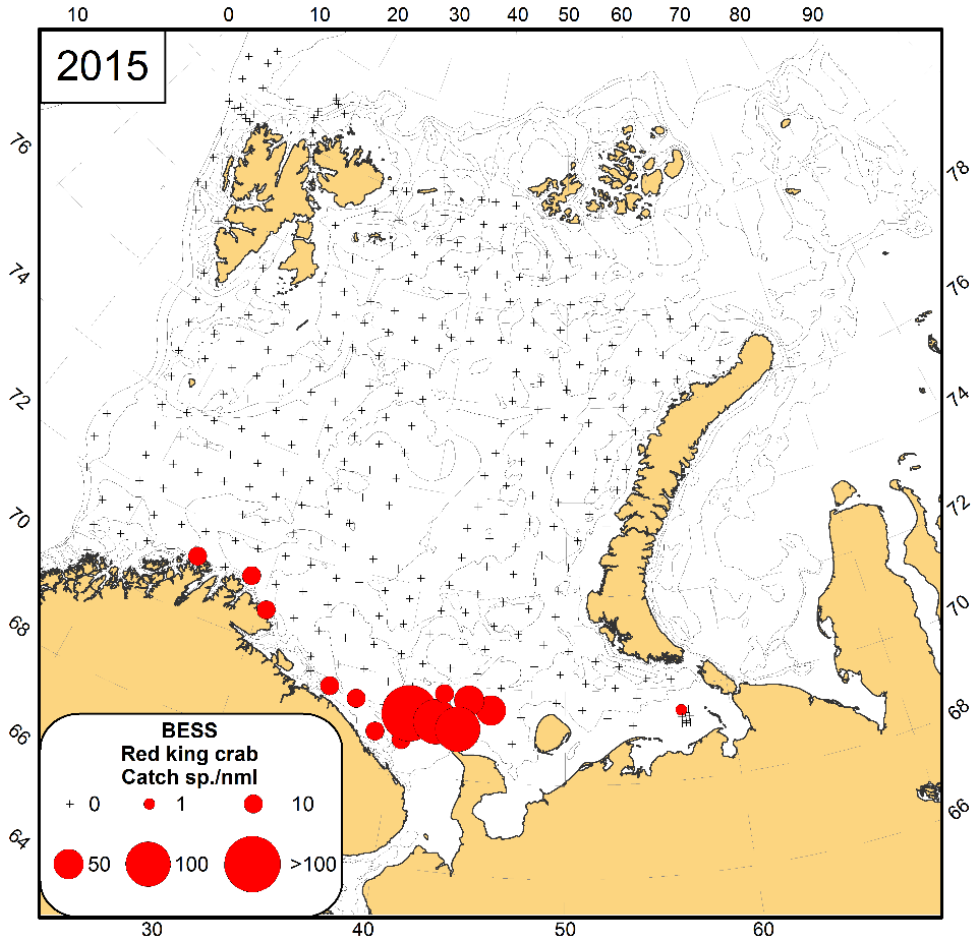

Figure 6.2.2.1. The distribution of number of individuals per nml of the Red King crab in the BESS 2015.

The biomass of Red King crab varied from 1.08 to 142.94 kg/haul (0.9-168.1 kg/nml). The average biomass is 36.92±12.64[1] kg/haul (44.42±15.22 kg/nml). The abundance of crab ranged from 1 to 95 ind./haul (0.57-111.76 ind./nml). The average abundance of crabs accounted for 18.21±7.78 ind./haul (21.96±9.39 ind./nml).

The densest concentration of crab was observed in the eastern part of the Murman Rise and in the Kanin Bank (Table 6.2.2.1). The most eastern catch of the Red King crab was recorded at 23 m depth in the Pechora Sea about 57° E (see fig. 6.2.2.1). It was mature female with a clutch on the pleopods, carapace width of 145 mm and weight of 1.505 kg.

[1] the average value is reported with standard error

The total catch of crab in 2015, compared with the previous year, increased by 1.5 times (table 6.2.2.1). Compared with last year average catch of crabs in the REZ this showed an increase from 19.0 to 27.6 ind./nml.

Table 6.2.2.1. The total catch of Red King crab during ecosystem surveys of 2004-2015.

Year	Total numbers, ind.	Total biomass, kg
2004	385	1293
2005	106	309
2006	1243	3350
2007	1521	3869
2008	127	93
2009	15	25
2010	12	25
2011	40	22
2012	126	308
2013	272	437
2014	168	403
2015	255	517

6.2.3 Monitoring of Snow crab (*Chionoecetes opilio*)

Text by N. Anisimova, L. Lindal Jørgensen
Figures by P. Krivosheya and N. Anisimova

In 2015 the Snow crab were recorded in 89 of 335 trawl catches and were distributed more wide to the west (till 30°11' E) that in previous years (till 36°28' E). The highest catches of crab were taken in the southern part of the Barents Sea in the region of South Novaya Zemlya Trough (fig. 6.2.3.1).

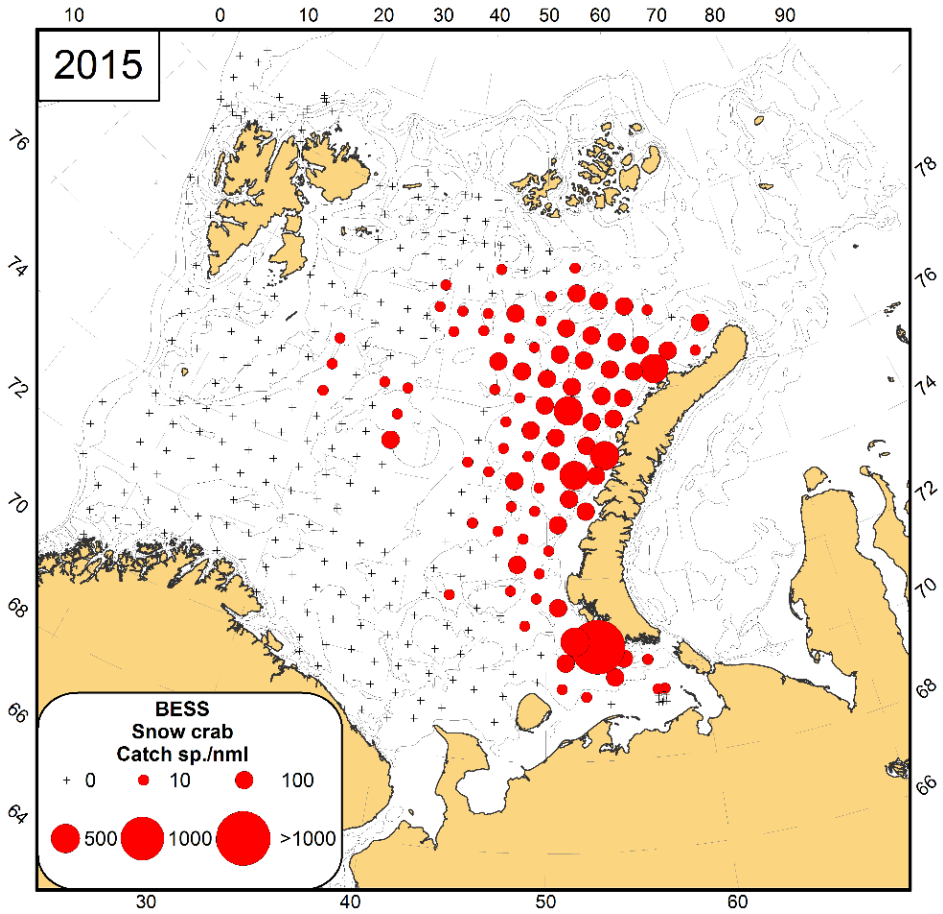

Figure 6.2.3.1 Distribution and numbers of the Snow crab per one nm in the Barents Sea during BESS 2015

The biomass of Snow crab in 2015 varied from 1 g to 29.84 kg/haul (0.001-35.53 kg/nml). The average biomass is 3.05±0.58 kg/haul (3.69±0.71 kg/nml). The abundance ranged from 1 to 1246 ind./haul (0.6-1483.3 ind./nml). The average abundance of crabs accounted for was 35.11±14.11 ind./haul (42.03±16.80 ind./nml).

Despite the fact that in 2015, the area of Snow crab distribution in the Barents Sea increased compared with the previous year, all quantitative parameters indicated a reduction of the Snow crab population to half of the size compared to previous years.

The most abundant group of Snow crab was the 2-3-year old juveniles with a mean carapace width of 20-40 mm (fig. 6.2.3.2)

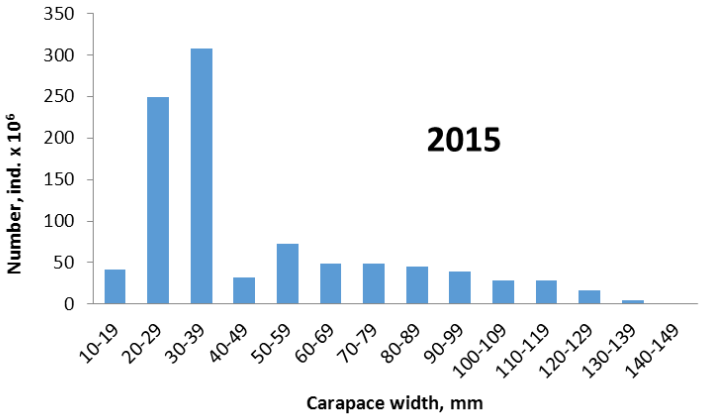

Figure 6.2.3.2 Size structure of the Snow crab population in the Barents Sea in 2015.

6.2.4 Monitoring of Scallop (*Chlamys islandica*)

Text by I. Manushin
Figures by P. Krivosheya and I. Manushin

In 2015 the scallop *Chlamys islandica* were recorded in 103 of 335 trawl catches. Survey showed a broad distribution of Scallops around the Barents Sea, but the most abundant catches were recorded in the south-eastern shallow banks, in the coastal water of the northern tip of Novaya Zemlya archipelago and in Spitsbergen Bank (fig. 6.2.4.1).

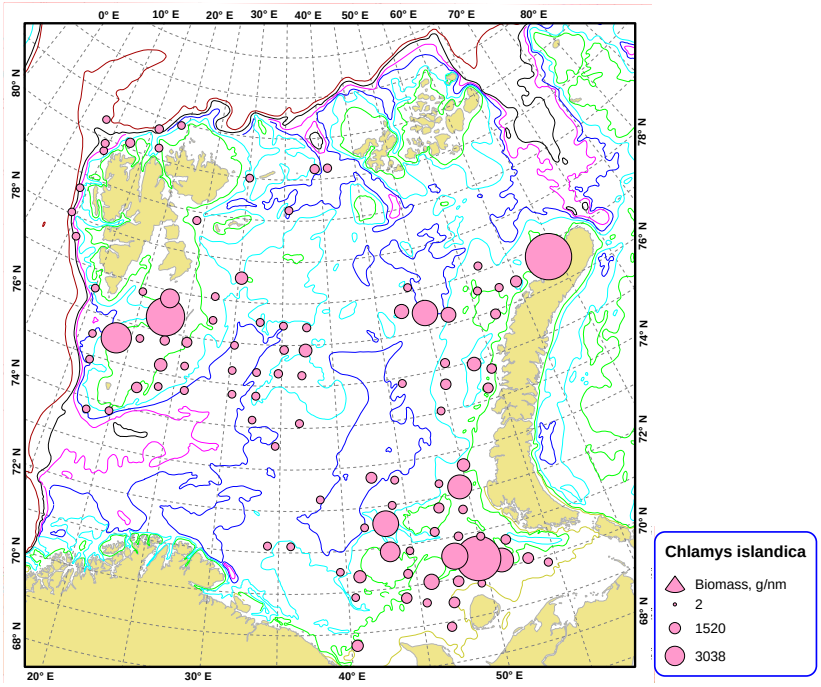

Figure 6.2.4.1 Distribution and biomass of the Scallops per one nm in the Barents Sea during the BESS 2015

The biomass of Scallops in 2015 varied from 1 g to 2.28 kg/haul (0.002-3.04 kg/nml). The average biomass is 209.8±42.4 g/haul (278.3±55.8 g/nml). The abundance ranged from 1 to 130 ind./haul (0.4-173.3 ind./nml). The average abundance of scallops accounted for 9.8±1.7 ind./haul (13.1±2.3 ind./nml).