

**RUSSIAN NATIONAL PROGRESS REPORT FOR THE 25<sup>th</sup> SC NAMMCO MEETING**  
**RESULTS OF MARINE MAMMALS RESEARCH IN THE NORTH ATLANTIC**  
**IN 2017-2018**

*(PREPARED ON BASE OF RESEARH BY THE N.M. KNIPOVICH POLAR RESEARCH  
 INSTITUTE OF MARINE FISHERIES AND OCEANOGRAPHY (PINRO) IS CARRIED OUT)*

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## **I INTRODUCTION**

Below presented proceeding prepared under requirements and structure by the NAMMCO Secretariat prepared for the 25<sup>th</sup> SC NAMMCO Meeting.

This Report is presented results of the Russian marine mammal research (Cetacean and Pinnipeds) in the North Atlantic that include following areas:

- NAFO and NEAFC Regulatory Areas (briefly NAFO and NEAFC),
- the Irminger Sea,
- waters which surround the Greenland eastern part (Eastern Greenland),
- the Norwegian and the Barents Seas.

Here will be presented results of marine mammal research that were carried out by PINRO only in 2017, and also information about research and surveys for 2018 are presented. Results for 2018 cannot be presented this proceeding, it is ongoing (current) research.

The main purpose this research is studying of Cetacean and Pinnipeds place and role in marine ecosystems and in the first their preying to fish species and other marine organisms in fisheries activities from one side, and from other side, estimation of climatic change and anthropogenic factors influence to marine mammals. During research carrying out in 2017 traditionally made following main work directions:

1. In open sea (marine research) collected data about marine mammal meetings (distribution and numbers) as part of marine ecosystem complex research including oceanographic data, acoustic sounding, making special trawling - expedition works (surveys and observations), so named dedicated research;
2. Marine mammals accounting (location and numbers) specially taught observers or PINRO specialists onboard fisheries vessels (F/V) – additional (extra) research (other studies).

Besides, various marine mammal research carry out in the Russia some Scientific-Research Institute (SRI) and Institution by National Academy of Science, SRI Ministry of Environmental Resources, and also make monitoring research by difference companies which work and exploit shelf of hydrocarbon raw materials in the Barents and Kara Seas.

## **II RESEARCH IN 2017**

### **a. Species/Stock studied**

#### Cetacean

##### a). Baleen whales:

- fin whale (*Balaenoptera physalus*),
- humpback whale (*Megaptera novaeangliae*),
- minke whale (*Balaenoptera acutorostrata*),
- bowhead whale (*Balaena mysticetus*);

##### b). Toothed whales:

- sperm whale (*Balaena mysticetus*),
- white-beaked dolphin (*Lagenorhynchus albirostris*),
- harbour porpoise (*Phocoena phocoena*),
- common dolphin (*Delphinus delphis*),
- pilot whale (*Globicephala melaena*),

- killer whale (*Orcinus orca*),
- northern bottlenose whale (*Hyperoodon ampullatus*).

#### Pinnipedia

- harp seal (*Phoca groenlandica*),
- harbor seal (*Phoca vitulina*).

#### **b. Field Work (e.g. sighting, tagging, scientific catches)**

Marine mammal sightings during International ecosystem survey in the northern seas (IES) were carried out from **24 May to 17 June**. This research onboard research vessel (R/V) “Fritjof Nansen” was made. PINRO research area was the Barents Sea southwestern part. Total length of transect when observations were made was more than 2 700 miles, and square was 2 150 miles<sup>2</sup>.

During **24 August – 17 October** marine mammal sightings in carrying out of annual joint Russian-Norwegian ecosystem survey (BESS) was made. This research onboard R/V “Vilnius” was carried out. PINRO research area was from the Kola Peninsula coast to Franz-Josef Land (FJL) Archipelago and between 33°E and coast of Novaya Zemlya Archipelago including the Pechora Sea. Total transect numbers was 259 and square where observations were carried out was 9 000 miles<sup>2</sup> in transect total length some less than 8 100 miles.

#### **c. Laboratory work**

No.

#### **d. Other studies**

This kind of activity carried out by PINRO specialists or special taught observers who are onboard F/V as observers, i.e. their main task was make ichthyology works. This reason marine mammal sightings carried out not some regular and not in transects. Nevertheless, these works for observers are obligatory and carry out them in all fisheries works onboard vessels where they are.

Same works carried out in following times that include total cruise duration:

**26 December 2016 – 14 March 2017** – onboard F/V “Oma”, NAFO (Flemish-Cap Bank southwestern slope, Division 3M; Grand Newfoundland Bank (GNB) southwestern slope, Division 3O) and NEAFC (Rocoll Hills area);

**17 March – 26 April** – onboard F/V “Zvezda Murmana”, NAFO (Flemish-Cap Bank southwestern slope, Division 3M and GNB northeastern slope, Division 3L);

**1 April – 4 May** – onboard F/V “Oma”, NEAFC (Rocoll Hills area);

**18 April – 14 June** and **15 June – 25 July** – accordingly onboard F/V “Alexey Anichkin” and F/V “Osveyskoe”, the Irminger Sea and Eastern Greenland;

**18 August – 17 September** – onboard “Melikart-2”, NAFO (GNB northeastern slope, Division 3L and GNB southwestern slope, Division 3N).

#### **e. Research results**

##### FIELD WORK (E.G. SIGHTING, TAGGING, SCIENTIFIC CATCHES)

During **IES** carrying out in area of PINRO research only Cetacean were recorded, it were as Baleen whales (fin whale and humpback whale) as Toothed whales (white-beaked dolphin). Cetacean total numbers was 183 individuals in 46 meetings. Scheme of observed Cetacean distribution in Figure 1 is presented.

**Fin whale** as single was recorded and one time as couple in the Kopytov and the Norwegian Trough Regions. In total 5 individuals (3% from total animals numbers) were met. Here aggregations of macroplankton and fry difference fishes were recorded. In comparison with 2015 and 2016 in 2017 fin whale numbers the same area was less. The main reason that was not observation carrying out all day.

**Humpback whale** as single and one time as couple, in total 6 individuals (3% from total animals numbers), in Rybachiya Bank and Kopytov Regions were recorded. Here humpback whale consumed macroplankton and fry difference fishes.

**White-beaked dolphin** as in previous years was most numerous species among all recorded marine mammal (77% from all meetings and 94% from total marine mammal numbers) in total white-

beaked dolphin was 172 individuals. This species as single as local groups to 15 individuals maximum was observed. All met animals on capelin aggregations were recorded.

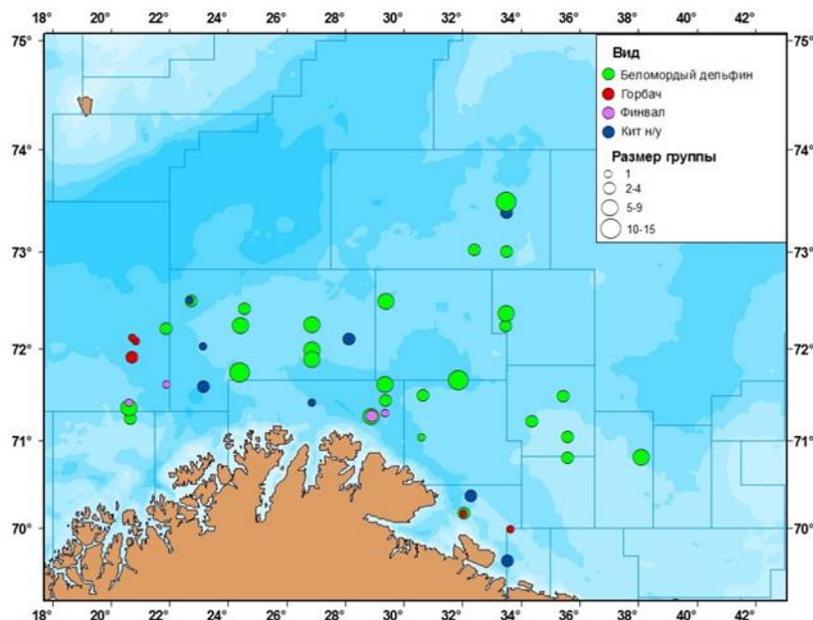


Figure 1 – Marine mammal distribution in IES carrying out of PINRO research area

During **BESS** carrying out in area of PINRO research 5 marine mammal species were recorded, all of them were Cetacean. It were as Baleen whales (minke whale, fin whale and humpback whale) as Toothed whales (white-beaked dolphin and harbour porpoise) in total numbers 258 individuals. Information about that in table and Figure 2 are presented below.

As can see from table and Figure 2 the most numerous among all recorded marine mammal was white-beaked dolphin. It is tradition for this area and time of year. The most meeting this Cetacean species closely capelin aggregations with difference density were observed, and it was in west and central parts of research area between 74°N and 79°N. The most large local groups this Cetacean (to 40 pieces in each) in the Persey Hills were recorded.

As can see from table and Figure 2 second Toothed whale species was harbour porpoise who was met 3 times (two times as couple and one time as single). Area of meetings this Cetacean were Central Trough and North-Kaninskaya Bank. Here harbour porpoise closely herring aggregations were recorded.

Among Baleen whales the most numbers recordings were for minke whale (look table and Figure 2). This species as single in wide research area was distributed. The most meeting numbers between Archipelagos FJL and Spitsbergen, and closely Admiraltejstvo Peninsula in Novaya Zemlya Archipelago were recorded. Here capelin and polar cod aggregations were observed. In the Barents Sea southern and southeastern parts minke whale rarely was met, and here this Cetacean closely herring and fry cod fish species aggregations were recorded.

Second in numbers of Baleen whales species observations was humpback whale (look table and Figure 2). This species one time as small local group (3 pieces) closely FJL Archipelago was observed, in other cases this Cetacean as single was recorded. In all humpback registration places mixed capelin and polar cod aggregations was observed, and in Central Trough also herring aggregations were met.

As can see from table and Figure 2 third of Baleen whales representative was fin whale who was recorded in area closely Kanin Nos Peninsula (the same place as for minke whale and harbour porpoise, in Persey Hills area (among white-beaked dolphin) and between Archipelagos FJL and

Spitsbergen (together with minke whale and humpback whale) i.e. accordingly herring, capelin and mixed capelin and polar cod aggregations.

Table – Marine mammal species and numbers which were recorded in PINRO research area during BESS

| Species              | Numbers |      | Meetings            |      |
|----------------------|---------|------|---------------------|------|
|                      | piece   | %    | numbers of meetings | %    |
| Minke whale          | 22      | 8.5  | 22                  | 30.5 |
| Fin whale            | 4       | 1.6  | 3                   | 4.2  |
| Humpback whale       | 7       | 2.7  | 4                   | 5.5  |
| White-beaked dolphin | 220     | 85.3 | 40                  | 55.6 |
| Harbour porpoise     | 5       | 1.9  | 3                   | 4.2  |
| Total                | 258     | 100  | 72                  | 100  |

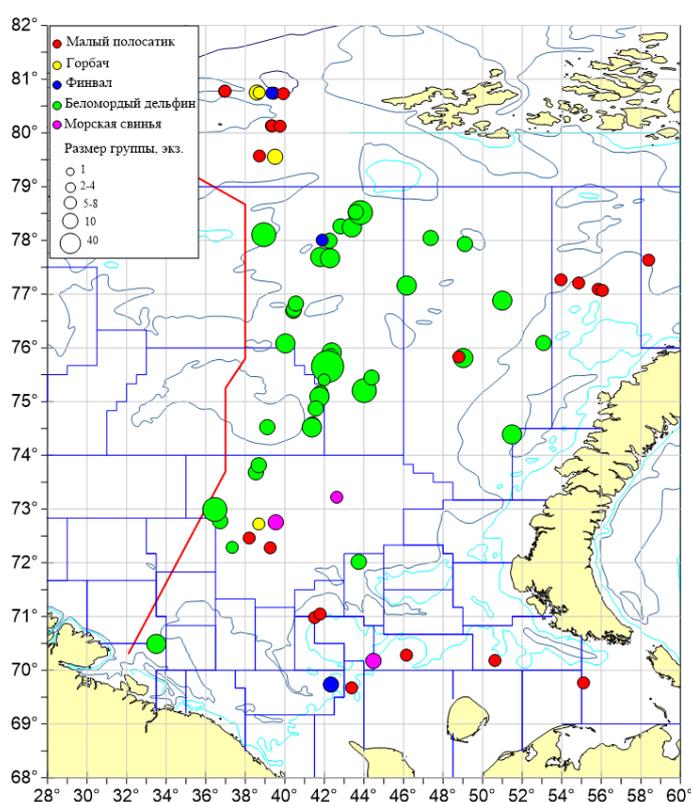


Figure 2 – Marine mammal distribution in BESS carrying out of PINRO research area

During BESS in PINRO research area the same as in two previous years traditional in summer-autumn harp seal density aggregations were not met, also polar bears was not observed. The main reason this situation was ice edge position which was far to north from many years (climatically).

#### OTHER STUDIES

During fisheries activity onboard *F/V "Oma" in 26 December 2016 – 14 March 2017* (NAFO, Divisions 3L, 3O and NEAFC, Rocoll Hills area) 48 marine mammal individuals in 9 meetings were recorded. Among them were 6 Cetacean species (sperm whale, white-beaked dolphin, bowhead whale, pilot whale, common dolphin and killer whale) and 1 – Pinnipeds (common seal).

a). In NAFO 24 marine mammals individuals were met, among them 23 pieces - Cetacean (sperm whale – 5 pieces, white-beaked dolphin – 10 pieces, bowhead whale – 1 piece, pilot whale – 7 pieces) and 1 piece – Pinnipeds (common seal – 1 piece);

b). In NEAFC 24 marine mammal individuals were recorded, all of them Cetacean (common dolphin – 22 pieces and killer whale – 2 pieces).

During fisheries activity onboard *F/V “Zvezda Murmana” in 17 March – 26 April* (NAFO, Divisions 3M and 3L) 78 marine mammal individuals in 14 meetings were recorded. Among them 3 species were Cetacean (sperm whale, pilot whale, white-beaked dolphin) and 1 – Pinnipeds (harp seal). The most numerous among all marine mammal was white-beaked dolphin, he met two times as local groups in 10 and 20 individuals in each, and both times in trawl lifting. Sperm whale and pilot whale total numbers accordingly was 11 individuals in 5 meetings and 10 in one meeting. Sperm whale as single as couple were observed. One local pilot whale group was recorded in trawl lifting. Above circumstances of white-beaked dolphin and pilot whale meetings allow to suppose that these both species consume fishes who fall out from trawl or/and try to snatch out fishes from trawl. This fact by observer was confirmed. Harp seal 6 times was met and his total numbers was 27 individuals. Harp seal as local small groups from 2 to 6 individuals in each was recorded.

During fisheries activity onboard *F/V “Oma” in 1 April – 4 May* (NEAFC, Rocoll Hills area) pilot whale one local group in total 25 individuals was recorded. This group in trawl lifting was observed. This circumstance once more confirms that this Cetacean species is active in area of fisheries activity where pilot whale consume fishes who fall out from trawl or/and try to snatch out fishes from trawl. During F/V transition via the Norwegian Sea in north part here one local group of common dolphin was met who had 20 individuals.

During fisheries activity onboard *F/V “Alexey Anichkin” and F/V “Osveyskoe”*, accordingly in *18 April – 14 June* and *15 June – 25 July* (the Irminger Sea and Eastern Greenland) marine mammal 102 individuals in 27 meetings were recorded, all of them was Cetacean (fin whale, pilot whale, northern bottlenose whale, sperm whale). Among these species pilot whale was the most numerous, and her numbers was 50 individuals in 9 meetings. All pilot whale in the Irminger Sea were recorded, here they migrated as groups in 3-6 individuals in each. Fin whale met as in the Irminger Sea as in Eastern Greenland. Here fin whale total numbers was accordingly 35 and 10 individuals and meetings were 7 and 4. Fin whale in both areas observed as separate as in local groups in 2-4 animals in each. Northern bottlenose whale and sperm whale in the Irminger Sea only were met. Their numbers here accordingly was 6 and one individuals. Northern bottlenose whale only single was observed.

During fisheries activity onboard *F/V “Melikart-2” in 18 August – 17 September* (NAFO, Divisions 3L and 3N) only 2 meetings of marine mammal were recorded in total numbers 13 individuals, all of them were Cetacean (white-beaked dolphin and sperm whale). In both detecting animals actively migrated as local groups, white-beaked dolphin as 10 individuals and sperm whale as 3 individuals.

### III ONGOING (CURRENT) RESEARCH

During 2018, before preparing this document marine mammal observations carried out in following works:

1. Field Work (e.g. sighting, tagging, scientific catches):

- February – March – Joint Russian-Norwegian multispecies trawl-acoustic survey on assessment of bottom fishes stock in the Barents Sea in area of PINRO research, R/V PINRO “Fritjof Nansen”;
- May – June - IES in area of PINRO research in the Barents Sea, R/V PINRO “Vilnius”;
- July – complex survey in the Barents Sea coastal zone, R/V PINRO “Professor Boyko”;
- August – October – BESS in area of PINRO research, R/V PINRO “Vilnius”;
- July – August – coastal zone expedition along the Kola Peninsula northern coast, sightings small boats and ground special equipped points;
- September – coastal zone expedition in the White Sea in local sections along Kola Peninsula southern coast, sightings small boats and ground special equipped points.

2. Marine mammals accounting (quantity and position) special touched observers or PINRO specialists onboard F/V – additional research (other research):

- March – June - NAFO, F/V “Zvezda Murmana”;
- April – September - the Irminger Sea, NAFO, F/V “Kolomenskoe”;
- April – October – the Irminger Sea, NAFO, F/V “Josif Shmelikin”;
- June – October – NAFO, F/V “Melikart-3”.

Results all above research will be presented in Russian NPR in next NAMMCO SC meeting in 2019.

#### **IV ADVICE GIVEN AND MANAGEMENT MEASURES TAKEN**

Studying and understanding situation with the White Sea/Barents Sea harp seal population stock for briefly – harp seal is paramount and principal direction the Russian and PINRO research in the North Atlantic area on marine mammal. This reason principal advices given and measures taken for this marine mammal species will be presented below.

As it is known that main advices and proposals on harp seal stock status assessment and management measures taken including TAC definition in WG ICES meetings on harp and hooded seal (WGHARP) is formed. Last WGHARP in Copenhagen (Denmark) during 26-30 September 2016 was held (WGHARP-2016). It was joint ICES/NAFO/NAMMCO meeting. Advices from WGHARP traditionally underlie for taking of final solution about measures regulatory by removal this Pinnipeds which establish in annual sessions of Joint Russian-Norwegian Fisheries Commission (JRNFC). This circumstance is caused that the White Sea/Barents Sea harp seal population stock exploits by Russia and Norway jointly.

In WGHARP-2016 taking into consideration results of PINRO research which were got in studying of pup production considerable Pinnipeds species, and also taking into account historical and modern data about biology these animals jointly with catch data, total stock abundance of the White Sea/Barents Sea harp seal population stock on modelling calculation was assessed in 1 408 200 individuals (95% C.I. 1 251 680-1 564 320).

This reason at present can make conclusion that considerable Pinnipeds stock has good status and stable level, it being known that his removal during about 40 years was lower TAC essentially, and beginning from 2009 this stock don't exploit on difference reasons practically.

Hence above circumstances and also that value of the White Sea/Barents Sea harp seal population stock numbers is in interval between  $N_{max}$  (maximum historical numbers of considerable Pinnipeds species) and  $N_{70}$  (70% of  $N_{max}$ ) in accord with principles of marine biological resources management and regulatory taking ICES which is harp seal current harp seal stock status allows to make his exploitation on base of ecosystem and social-economic principles approach. This reason in TAC assessment and definition is necessary to use modified population model and employ catch strategy which is based on precautionary approach. Under that in WGHARP-2016 modelled calculations for equilibrium catch level (defines as fixed for each year allowing define numbers of adult animals) were made. As alternative for that was used other approach also which base in catch on level of Potential Biological Removals (PBR). This circumstance was linked that harp seal stock in 2016 by WGHARP participants under taking criterions was characterized as “poor data”. This circumstance was caused that last harp seal reproductive rates available were based on data from 2006, i.e. more than 5 years. After carried out calculations and got data analyze was taken solution and prepared advice that the most acceptable is scenario which based on equilibrium catch level. It allows define TAC for the White Sea/Barents Sea harp seal population stock in numbers in 10 090 individuals of adult animals (age is more than 1 year, 1+). It ensures conservation of total stock numbers during the closest 15 years on level higher than  $N_{70}$ .

Following WGHARP-2016 advices PINRO specialists in last 48 JRNFC Session (October 2018) proposed for consideration and concordance following advices and management measures on taken (exploitation) for the White Sea/Barents Sea harp seal population stock:

1. Catch expediently to carry out on base of equilibrium removal level scenario which envisages total taken numbers in 10 090 individuals when adult animals only will be taken. It ensures conservation of total stock numbers during the closest 15 years on level higher than  $N_{70}$ . Norwegian quota for catch in the Barents Sea south-eastern part (so named "east ice") under historically established principle will be 7 000 animals difference age;
2. Time for harp seal catch expediently determine between 20 March – 1 June 2019;
3. Catch activity is need to carry out by maximum humane methods and technologies only by specially trained people;
4. Taken adult female during breeding period remains as ban.

## **V PUBLICATIONS AND DOCUMENTS**

All materials and publications PINRO specialists on results of marine mammal research in Russian were prepared in 2017. This reason to indicate its titles here are inexpedient. Exclusion can be below paper only which was prepared in English:

*Zabavnikov V.B. Russian National Progress Report on Results of Marine Mammals Research in the North Atlantic which was Carried Out in 2016 (Prepared on Base Results of PINRO Research)//Working Document for the 24th SC NAMMCO Meeting, Reykjavik, Iceland, 13-17 November 2017, 12 p.*

## **VI APPENDIX 1 – CATCH DATA**

### **a. Pinnipeds**

Russian commercial catch of Pinnipeds including the White Sea/Barents Sea harp seal population stock in 2017 and 2018 did not carry out.

In coastal zone of the White Sea and the Barents Sea catch of ringed seal and bearded seal by inhabitants for own necessity in 2017 and 2018 could be carried out. Numbers of removal animals this case was very small. Correct information about numbers of catch these animals now is absented.

### **b. Cetacean**

Russia does not carry out Cetacean catch in North Atlantic as commercial as scientific purposes. Nevertheless at present catch of white whale is quoted every year. Removal this Cetacean is very seldom, and it for scientific-research and cultural-enlightenment is made. Correct information about it for 2017 and 2018 now are absented.

## **VII APPENDIX 2 – BY-CATCH DATA**

### **a. Pinnipeds**

PINRO has not data now about Pinnipeds by-catch in fisheries and other kind of marine activities including stranding in 2017 and 2018.

### **b. Cetacean**

PINRO has not data now about Cetaceans by-catch in fisheries and other kind of marine activities including stranding in 2017 and 2018.