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**SCIENTIFIC COUNCIL MEETING - JUNE 2024****Russian Research Report for 2023****by K. Fomin and M. Pochtar**

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**Abbreviations**

EEZ	-	exclusive economic zone (200 miles)
N/S-1	-	non-serial fishing trawler, main engine power below 2000 HP
N/S-2	-	non-serial fishing trawler, main engine power above 2000 HP
VME	-	vulnerable marine ecosystem

**SUBAREAS 1+2****A. Status of Fisheries***Greenland halibut (Reinhardtius hippoglossoides)*

In 2023, Greenland halibut fishery was not conducted since there was no bilateral Greenland-Russian consultations held on fishing quotas allocation for Russian vessels to operate in the Greenland EEZ.

*Other fish species*

There was no directed fishery for other fish species, primarily for the reason stated above.

**B. Dedicated Research**

In 2023, biological data on Greenland halibut from Divs. 1ACD was not collected.

**SUBAREA 3****A. Status of Fisheries***Greenland halibut*

Directed fishery for Greenland halibut took place from March to November at depths of 720-1300 m. Trawl fishery was carried out by 3 Russian vessels. Catch rates for N/S-1 ranged from 3.3 to 10.4 t, averaging 8.4 t per day of fishing. Catch rates for N/S-2 ranged from 8.2 to 21.8, averaging 18.4 t per day of fishing. In total, the annual yield of Greenland halibut taken by Russian fishing vessels in the directed fishery was 1428.3 tons (Table 1). The by-catch was comprised of roughhead grenadier and roundnose grenadier, as well as polar shark (Table 2).



### *Atlantic cod*

On the Flemish Cap Bank, the directed fishery for Atlantic cod was sporadically conducted in April and November-December at depths of 180-460 m onboard one N/S-1 vessel with the average daily catch rate of 14.9 tons. The yield of cod taken by Russian fishing vessels in the directed fishery was 327.5 t. Besides, 48.6 t of cod were taken as a by-catch in the redfish fishery. The total Russian yield of cod was 376.1 t (Table 1).

### *Atlantic redfish on the Flemish Cap Bank (Division 3M)*

In 2023, directed fishery for redfish on the Flemish Cap Bank was conducted by one vessel at depths of 280-470 m with a catch rate of 16.4 t per day of fishing. According to preliminary data, the yield taken by Russian fishing vessels in the directed redfish fishery was 213.3 t. The by-catch included cod, long rough dab, and Atlantic halibut (Table 4). In addition, 69.5 t of redfish were obtained in the cod fishing. According to preliminary data of the Polar Branch, the total Russian yield of redfishes on the Flemish Cap Bank in 2023 was 282.8 t (Table 1).

### *Atlantic redfish in division 3O*

In 2023, one N/S-1 vessel operated in the south-western part of the Grand Bank of Newfoundland from February to March at depths of 210-290 m with a catch rate of 8.4 t per day of fishing. Russian vessels caught 25.2 t of redfish in directed fishery, with additional 1.4 t taken in witch flounder fishery and 4.3 t taken in other species fishery. The total yield taken by Russian fishing vessels in the redfish fishery was 30.9 t with a national quota of 6500 t (Table 1). The significant deviation of the actual catch from the estimated one is entailed by the lack of fishing efforts.

### *Atlantic redfish in Divisions 3LN*

In 2023, Russian directed fishery was conducted from January to March onboard an N/S-1 vessel at depths of 190-540 m and onboard three N/S-1 and N/S-2 vessels at depths of 100-570 m. The redfish catch rate using bottom trawl averaged 22.2 t per day of fishing. The highest catch rate of redfish for vessels of the N/S-1 type was observed in September amounting to 26.8 t per day of fishing.

According to preliminary Russian data, Russian vessels caught 3170.5 t of redfish in the directed fishery. In addition, by-catch of redfish was obtained in the fishing of other fish species (0.9 t).

The total Russian yield of 3LN redfishes amounted to 3171.4 t (Table 1). By-catch was comprised of 181.2 t of other species, including 46.1 t of Atlantic halibut (Table 3).

### *Yellowtail flounder*

The Russian directed fishery for yellowtail flounder was conducted in July at depths of 40-70 m. The average daily catch rate was 5.4 t. Another fishing operation was carried out in March at the depth of 400 m with a catch rate of 3.8 t per day of fishing. Over the year, Russian fishing vessels caught 20.1 t of the species in the directed fishery. By-catch included 1.7 t of skates, 0.3 t of cod, 1.4 t of American plaice and 0.3 t of Atlantic halibut.

### *Witch flounder*

In 2023, the Russian directed fishery for witch flounder was conducted in February-March at depths of 280-440 m. The average daily catch rate was 2.6 t.

Over the year, Russian fishing vessels caught 5.2 t of the species in the directed fishery. Another 1.4 t were taken as by-catch in the redfish fishery and 4.9 t in the fishery for other species. According to preliminary data, the total catch was 11.5 t (Table 1).

### *Other species*

Directed fishery for other species was not conducted.

## **B. Dedicated Research**

No surveys to assess the stocks of target species were carried out. Biological data were collected by NAFO observers onboard the Russian fishing vessels.

### *Greenland halibut*

In Div. 3L, male specimens of Greenland halibut of 24-64 cm occurred, with an average of 47.4 cm. Specimens of 48-50 cm prevailed (Table 5). The length of females varied from 28 to 100 cm, with an average of 53.1 cm, most species were 52-54 cm long.

In Div. 3M, the length of male specimens of Greenland halibut varied from 32 to 62 cm, predominantly 48-50 cm, with an average of 47.9 cm. The length of females varied from 34 to 96 cm, with an average of 55.2 cm, most species were 52-54 cm long.

In general, the length of Greenland halibut in Divs. 3LMN was 24-100 cm, with an average of 47.5 cm for males and 53.6 cm for females. The sex ratio (males to females) in the catches was 1:2.1 (Table 5). The halibut age varied from 2 to 21 years. Most of the specimens taken were 6-8 years old (Table 6).

### *Acadian redfish (*Sebastes fasciatus*)*

In Div. 3L, specimens with a length of 17-39 cm were caught, with an average of 28.7 cm for females and 27.3 cm for males. Most specimens were 29-30 cm long.

In Div. 3M, redfish with a length of 23-39 cm were caught. An average length of males and females was 29.7 cm and 31.8 cm, respectively.

In Div. 3N, redfish males of 15-36 cm (primarily 24-25 cm) and redfish females of 15-39 cm (primarily 27-29 cm) were caught. The average length of males and females was 25.2 cm and 27.2 cm, respectively.

In Div. 3O, the length of redfish ranged within 15-31 cm, with an average of 22.4 cm and 23.7 cm for males and females, respectively (Table 7).

In 2023, the age of redfish caught in Divs. 3LN ranged within 3-15 years and most of the caught individuals were 9-10 years old (Table 8).

### *Golden redfish*

In Div. 3L, there were some female individuals caught as by-catch, with an average length of 60 cm.

In Div. 3M, the species occurred more often in catches and varied in length between 27-67 cm, with an average length of 40.8 cm and 46.2 cm for males and females, respectively.

In Div. 3N, there were only few individuals caught as by-catch as well, with an average length of 42.6 cm and 42.0 cm for females and males, respectively (Table 9).

### *Beaked redfish*

In Div. 3L, beaked redfish males 17-42 cm long and females 16-43 cm long were caught, with an average length of 28.7 cm and 30.7 cm, respectively.

In Div. 3M, males length varied from 23 to 44 cm, with an average of 31.9 cm. Females varied in length between 24-45 cm with a single exception of a 61-cm long individual that had its impact on the average length which was estimated as 34.3 cm.

In Div. 3N, redfish varied in length between 15-42 cm, with an average of 28.3 cm and 30.4 cm for males and females, respectively (Table 10).

#### *Roughhead grenadier*

In Div. 3L, individuals with 25-91 cm of length were caught, with an average of 50.5 cm.

In Div. 3M, individuals were 34-82 cm long, with an average of 50.5 cm.

In Div. 3N, roughhead grenadier were 25-76 cm long, with an average of 46.0 cm (Table 11).

#### *Roundnose grenadier*

In Div. 3L, individuals in catches were 8-17 cm long in both sexes, with an average of 11.2 cm for males and 12.3 cm for females.

In Div. 3M, males of roundnose grenadier were 9-18 cm long, with an average of 12.3 cm. Females were 9-19 cm long, with an average of 14.2 cm (Table 12).

It is worth noting that in measuring roughhead grenadier the total length was used while for roundnose grenadier the anal fin measurement was used.

#### *Blue wolffish*

Few individuals occurred in catches.

In Div. 3L, fish varied between 37-112 cm in length, with an average of 76.4 cm.

In Div. 3N, length varied between 55-106 cm, with an average of 70.2 cm (Table 13).

#### *Spotted wolffish*

In Div. 3L, 6 individuals of 40-111 cm were caught, with an average of 63.5 cm.

In Div. 3M, fish 43-88 cm long were taken as by-catch, with an average of 72.8 cm.

In Div. 3N, fish were 43-91 cm long, with an average of 66.7 cm (Table 14).

#### *Atlantic wolffish*

In Div. 3L, fish 37-70 cm long were taken as by-catch, with an average of 58.1 cm.

In Div. 3M, fish were 43-73 cm long, with an average of 59.9 cm.

In Div. 3N, length varied between 22-79 cm, with an average of 52.4 cm.

In Div. 3O, one specimen of 76 cm was taken (Table 15).

#### *Atlantic halibut*

In Div. 3L, some specimens of 65-151 cm were taken as by-catch, with an average of 100.0 cm.

In Div. 3M, 4 specimens of 77-109 cm occurred.

In Div. 3N, the species occurred more frequently and length varied between 57-145 cm, with an average of 88.6 cm.

In Div. 3O, fish were 35-87 cm long, with an average of 61.3 cm (Table 16).

#### *Yellowtail flounder*

The species more frequently occurred in Div. 3N and varied between 21-47 cm in length (primarily, 35-37 cm), with an average of 33.6 cm.

In Div. 3O, 3 specimens of 44-45 cm were taken (Table 17).

#### *Witch flounder*

2 specimens of 39 cm were taken in Div. 3L and one of 37 cm was taken in Div. 3M.

In Div. 3N, fish were 33-55 cm long, with an average of 44.5 cm.

In Div. 3O, some specimens of 25-53 cm were taken as by-catch, with an average of 43.8 cm (Table 18).

#### *American plaice*

A few individuals have been found in numerous catches.

In Div. 3L, fish were 33-55 cm long, with an average of 43.0 cm.

In Div. 3M, fish were 35-61 cm long and individuals of 53-55 cm most frequently occurred. An average length was 39.2 cm.

In Div. 3O, specimens were 21-53 cm long, with an average of 36.5 cm (Table 19).

#### *Blue antimora*

In Div. 3L, fish were mainly 27-59 cm long, with an average of 42.8 cm.

In Div. 3M, specimens of 27-61 cm were taken as by-catch, with an average of 43.7 cm (Table 20).

#### *Black dogfish*

Black dogfishes were taken individually as by-catch. In Div. 3L, the specimens measured 42-75 cm in length, with an average of 63.7 cm.

In Div. 3M, black dogfish measured 54-77 cm in length, with an average of 63.0 cm.

In Div. 3N, specimens were 42-77 cm long, with an average of 64.3 cm (Table 21).

#### *Greenland shark (*Somniosus microcephalus*)*

In 2023, Greenland shark occurred individually. In Div. 3L, there were two specimens of 300 cm in length. In Div. 3M, there was one specimen of 350 cm.

*White hake*

In Div. 3L, white hake were 27-57 cm long (primarily, 41-43 cm) and taken in by-catch. An average length was 40.8 cm.

In Div. 3M, white hake measured 31-51 cm in length, with an average of 41.4 cm.

In Div. 3N, white hake were individually taken as by-catch and measured 37-67 cm in length, with an average of 58.5 cm.

In Div. 3O, white hake were 27-69 cm long, with 33-35 cm as most frequent. One specimen measured 81 cm in length. An average length was 38.9 cm (Table 22).

*Greater eelpout*

In Div. 3L, length of fish varied between 29-53 cm, with an average of 44.7 cm.

In Div. 3N, specimens of 31-55 cm occurred in catches, with an average of 43.3 cm (Table 23).

*Nezumia*

There was a distinctive fish length distribution across divisions observed. In Div. 3L, fish in catches measured 26-41 cm in length, with an average of 31.9 cm.

In Div. 3M, length also ranged 26-41 cm, with an average of 32.8 cm.

In Div. 3N, nezumia length composition was different and varied between 5-26 cm, primarily 6-7 cm, with an average of 7.6 cm (Table 24).

*Starry skate*

In Div. 3L, skates were 34-85 cm long, with an average of 67.2 cm.

In Div. 3M, skates measured 37-73 cm in length, with an average of 54.1 cm.

In Div. 3N, length varied from 52 to 85 cm, with an average of 74.1 cm (Table 25).

*Arctic skate*

In Div. 3L, four specimens of 46, 60, 61, and 74 cm occurred individually. In Div. 3M, one specimen of 70 cm was taken.

*Spinytail skate*

In Div. 3L, skates of 37-142 cm were taken, with an average of 76.3 cm.

In Div. 3M, skates measured 43-145 cm in length, with an average of 89.9 cm.

In Divs. 3NO, two individuals of 73 cm and 130 cm were taken (Table 26).

*Atlantic cod*

In Div. 3L, fish of 40-76 cm, as well as one specimen of 94 cm, were obtained as by-catch, with an average of 55.1 cm.

In Div. 3M, cod measured 34-124 cm in length, primarily 55-58 cm, with an average of 61.1 cm.

In Div. 3N, cod length varied between 28-97 cm, with an average of 54.1 cm.

In Div. 3O, cod were mainly 34-73 cm long, with an average of 48.1 cm (Table 27).

#### *VME indicator species*

There were several catches of sponges and corals recorded during the observers' activities onboard fishing vessels. In none of those catches the VME mass exceeded the established threshold value (Table 28).

#### *Marine mammals*

As of the observations from aboard fishing vessels, in the period from April to November there were occurrences recorded, namely: white-beaked dolphin (*Lagenorhynchus albirostris*), sperm whale (*Physeter microcephalus*), killer whale (*Orcinus orca*), northern bottlenose whale (*Hyperoodon ampullatus*), harp seal (*Phoca groenlandica*) as presented in Table 29. The total number of marine mammal records (occurrences) is 28 (Table 30).

No discards were observed in the main species fisheries.

**Table 1.** Preliminary catches taken by Russian trawlers in NAFO SA 1-3 in 2023.

Species	Division	Catch, t
Greenland halibut	1A	0
	1B	0
	1C	0
	1D	0
	<b>1ABCD</b>	<b>0</b>
Greenland halibut	3L	1192.5
	3M	235.8
	3N	0
	3O	0
	<b>3LMNO</b>	<b>1428.3</b>
American plaice	3L	0.2
	3M	4.2
	3N	30.6
	3O	1.3
	<b>3MNO</b>	<b>36.3</b>
Yellowtail flounder	3L	0
	3N	20.1
	3O	0
	<b>3LNO</b>	<b>20.1</b>
Witch flounder	3N	2.0
	3O	9.5
	<b>3NO</b>	<b>11.5</b>
Roughhead grenadier	3L	1.9
	3N	0.6
	<b>3LN</b>	<b>2.5</b>
Roundnose grenadier	3L	6.3
	3M	6.7
	<b>3LM</b>	<b>13.0</b>
Redfish spp.	3L	466.9
	3M	282.8
	3N	2704.5
	3O	30.9
	<b>3LMNO</b>	<b>3485.1</b>
Skate	3L	9.0
	3M	0.4
	3N	22.2
	3O	3.4
	<b>3LMNO</b>	<b>35.0</b>
White hake	3N	0
	3O	1.7
	<b>3NO</b>	<b>1.7</b>
Atlantic cod	3L	13.4
	3M	376.1
	3N	55.8
	3O	1.4
	<b>3LMNO</b>	<b>446.7</b>
Atlantic halibut	3L	2.6
	3M	9.7
	3N	44.7
	3O	2.4
	<b>3LMNO</b>	<b>59.3</b>



**Table 2.** Bycatch in directed Greenland halibut fishery by Russian vessels in NAFO Divs. 3LMNO in 2023

Species	Catch, t
Roundnose grenadier	13.025
Roughhead grenadier	1.946
Polar shark	1.050

**Table 3.** Bycatch in directed redfish fishery by Russian vessels in NAFO Divs. 3LMNO in 2023.

Species	Catch, t
Divisions 3LN	
Witch flounder	1.318
American plaice	29.301
Atlantic cod	68.774
Atlantic halibut	46.138
Atlantic wolffish	2.315
Spotted wolffish	0.955
Blue wolffish	2.495
Skate	29.288
Roughhead grenadier	0.644
Division 3M	
Atlantic cod	48.613
Atlantic halibut	4.635
American plaice	0.193
Division 3O	
Witch flounder	0.050
Skate	1.0
White hake	0.200
American plaice	0.585
Hake	6.650
Atlantic halibut	0.812
Atlantic cod	0.972
Total	
Witch flounder	1.368
Skate	30.288
White hake	0.200
American plaice	30.079
Atlantic cod	118.359
Atlantic halibut	51.585
Roughhead grenadier	0.644
Hake	6.650
Atlantic wolffish	2.315
Spotted wolffish	0.955
Blue wolffish	2.495

**Table 4.** Bycatch in directed Atlantic cod fishery by Russian vessels in NAFO Div. 3M in 2023

Species	Catch, t
Skate	0.380
Haddock	0.300
American plaice	4.029
Atlantic halibut	5.040
Redfishes	69.496

**Table 5.** Greenland halibut (*Reinhardtius hippoglossoides*) length composition (ind.) in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

Length, cm	3L			3M			3N			3LMN		
	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total
24		1	1					1	1		1	1
26		3	3								3	3
28	3	3	6							3	3	6
30	8	13	21							8	13	21
32	15	23	38		2	2				15	25	40
34	38	57	95	8	10	18				46	67	113
36	68	102	170	9	19	28				77	121	198
38	131	167	298	17	25	42	1	1	2	149	193	342
40	243	325	568	30	45	75	1		1	274	370	644
42	493	483	976	52	78	130	4	2	6	549	563	1112
44	724	631	1355	90	129	219		2	2	814	762	1576
46	936	866	1802	145	240	385	3		3	1084	1106	2190
48	1216	1099	2315	233	451	684		1	1	1449	1551	3000
50	1385	1180	2565	382	381	763	1		1	1768	1561	3329
52	1552	884	2436	699	229	928				2251	1113	3364
54	1628	530	2158	817	130	947				2445	660	3105
56	1392	287	1679	458	47	505				1850	334	2184
58	1130	127	1257	245	17	262				1375	144	1519
60	821	48	869	163	10	173				984	58	1042
62	626	16	642	150	3	153				776	19	795
64	506	4	510	165		165				671	4	675
66	342		342	131		131				473		473
68	232		232	104		104				336		336
70	141		141	72		72				213		213
72	104		104	48		48				152		152
74	69		69	49		49				118		118
76	51		51	34		34				85		85
78	40		40	28		28				68		68
80	28		28	21		21				49		49
82	24		24	11		11				35		35
84	10		10	11		11				21		21
86	9		9	10		10				19		19
88	2		2	8		8				10		10
90	1		1	1		1				2		2
92	1		1	4		4				5		5
94	2		2	1		1				3		3
96				2		2				2		2
98	1		1							1		1
100	1		1							1		1
<b>Total</b>	13973	6849	20822	4198	1816	6014	10	6	16	18181	8671	26852
<b>Mean length, cm</b>	53.1	47.4	51.2	55.2	47.9	53.0	42.9	42.5	42.8	53.6	47.5	51.6

**Table 6.** Age-length composition of Greenland halibut (*Reinhardtius hippoglossoides*) in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

Length, cm	Age																				Total
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
23	1																				1
25		2	1																		3
27		1																			1
29		5	1																		6
31		3	9																		12
33			19	5																	24
35			12	22	1								1								36
37			3	23	5																31
39				15	14																29
41				6	27	2															35
43				2	37	6															45
45				2	17	21	1														41
47					5	17	17														39
49						12	25	3													40
51						9	24	10	1												44
53						1	16	13	1												31
55							2	17	7												26
57								11	27	5	1										44
59									11	16											27
61									3	17	7										27
63										4	14	2									20
65										3	14	1									18
67											2	9									11
69											1	5	3								9
71												5	5	1							11
73													5	2	1						8
75													2	3		1					6
77														1	4	4					9
79															1	2	1				4
81																3	1				4
83																1	1	2			4
85																			1		1
87																					1
99																					1
<b>Total</b>	1	11	45	75	106	68	85	54	50	45	39	22	16	7	6	11	3	2	1	2	649
<b>Mean length, cm</b>	23.0	29.1	33.6	37.7	42.6	47.4	50.5	54.4	57.7	60.6	64.2	68.4	69.9	74.7	77.2	79.4	81.3	83.5	86.0	94.0	50.7
<b>Mean weight, g</b>	86.0	186.9	294.3	422.6	618.0	873.4	1071.2	1359.6	1619.7	1896.7	2356.9	2888.4	3405.6	4095.0	4721.7	5101.8	6100.0	6877.5	7740.0	10230.0	1365.3

**Table 7.** Length composition (ind.) of *S. fasciatus* in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

Length, cm	3L			3M			3N			3O			3LMNO		
	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total
15							1	1	2		1	1	1	2	3
16							1	3	4		2	2	1	5	6
17		2	2				3	7	10				3	9	12
18	3	9	12				16	29	45				19	38	57
19	10	14	24				49	86	135	2	5	7	61	105	166
20	36	33	69				224	259	483	7	8	15	267	300	567
21	71	66	137				243	338	581	9	15	24	323	419	742
22	68	83	151				575	632	1207	7	6	13	650	721	1371
23	36	50	86	1	2	3	662	1402	2064	13	15	28	712	1469	2181
24	31	76	107	1	6	7	760	2810	3570	5	9	14	797	2901	3698
25	53	138	191	3	10	13	878	3001	3879	4	3	7	938	3152	4090
26	91	195	286	10	11	21	986	1845	2831	3	7	10	1090	2058	3148
27	121	242	363	24	17	41	1561	1420	2981	8		8	1714	1679	3393
28	159	275	434	21	43	64	1652	912	2564	2	1	3	1834	1231	3065
29	217	288	505	27	64	91	1529	646	2175	1	1	2	1774	999	2773
30	234	243	477	24	71	95	1126	361	1487	3	1	4	1387	676	2063
31	214	123	337	38	59	97	709	143	852	1		1	962	325	1287
32	134	82	216	44	30	74	463	57	520				641	169	810
33	94	30	124	40	13	53	230	25	255				364	68	432
34	54	6	60	30	9	39	121	6	127				205	21	226
35	30	5	35	21	3	24	42		42				93	8	101
36	20	1	21	24	1	25	20	1	21				64	3	67
37	9		9	11	1	12	8		8				28	1	29
38	2		2	5	1	6			0				7	1	8
39	5		5	7		7	1		1				13		13
<b>Total</b>	<b>1692</b>	<b>1961</b>	<b>3653</b>	<b>331</b>	<b>341</b>	<b>672</b>	<b>11860</b>	<b>13984</b>	<b>25844</b>	<b>65</b>	<b>74</b>	<b>139</b>	<b>13948</b>	<b>16360</b>	<b>30308</b>
<b>Mean length, cm</b>	<b>28.7</b>	<b>27.3</b>	<b>27.9</b>	<b>31.8</b>	<b>29.7</b>	<b>30.7</b>	<b>27.2</b>	<b>25.2</b>	<b>26,11</b>	<b>23.7</b>	<b>22.4</b>	<b>23.0</b>	<b>27.4</b>	<b>25.5</b>	<b>26.4</b>

**Table 8.** Age-length composition of *S. fasciatus* in the Russian trawl catches in NAFO Divs. 3LN in 2023.

Length, cm	Age										Total
	3	6	7	8	9	10	11	12	13	15	
15	1										1
19		1									1
20		5	4	2							11
21			2								2
22		1	5	6	1						13
23			1	18	11						30
24				19	16	1					36
25				10	44	14	2				70
26				3	20	34	5				62
27					3	16	13				32
28						7	8	8			23
28						2	11	9	4		26
30							3	4	4		11
31								2	4		6
32									2		2
33									1		1
34										1	1
<b>Total</b>	<b>1</b>	<b>7</b>	<b>12</b>	<b>58</b>	<b>95</b>	<b>74</b>	<b>42</b>	<b>23</b>	<b>15</b>	<b>1</b>	<b>328</b>
<b>Mean length, cm</b>	<b>15.0</b>	<b>20.1</b>	<b>21.3</b>	<b>23.6</b>	<b>24.8</b>	<b>26.3</b>	<b>27.7</b>	<b>29.0</b>	<b>30.5</b>	<b>34.0</b>	<b>25.6</b>
<b>Mean weight, g</b>	<b>52.0</b>	<b>116.6</b>	<b>132.2</b>	<b>169.4</b>	<b>197.7</b>	<b>222.7</b>	<b>261.9</b>	<b>301.6</b>	<b>359.6</b>	<b>516.0</b>	<b>217.6</b>

**Table9.** Length composition (ind.) of *S.norvegicus* in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

Length, cm	3L	3M			3N			3LMN		
	Females	Females	Males	Total	Females	Males	Total	Females	Males	Total
27			1	1					1	1
28			1	1	1		1	1	1	2
29		1		1				1		1
30			2	2					2	2
31		1		1				1		1
32		4	4	8				4	4	8
33		5	4	9				5	4	9
34		6	7	13		1	1	6	8	14
35		10	9	19				10	9	19
36		13	15	28				13	15	28
37		6	11	17		1	1	6	12	18
38		17	8	25				17	8	25
39		7	20	27	1		1	8	20	28
40		10	25	35		1	1	10	26	36
41		14	40	54				14	40	54
42		11	47	58	1	1	2	12	48	60
43		12	43	55				12	43	55
44		14	36	50	1	1	2	15	37	52
45		13	13	26				13	13	26
46		22	11	33				22	11	33
47		31	5	36				31	5	36
48		25		25				25		25
49		36		36				36		36
50		34		34				34		34
51		22		22				22		22
52		21		21				21		21
53	1	23		24				24		24
54		16		16				16		16
55		8		8		1	1	8	1	9
56		4		4				4		4
58		2		2				2		2
59		1		1				1		1
60	1			1	1		1	2		2
61		1		1				1		1
62										
63										
64										
65										
66										
67	1			1			0	1		1
<b>Total</b>	<b>3</b>	<b>390</b>	<b>302</b>	<b>695</b>	<b>5</b>	<b>6</b>	<b>11</b>	<b>398</b>	<b>308</b>	<b>706</b>
<b>Mean length, cm</b>	<b>60.0</b>	<b>46.2</b>	<b>40.8</b>	<b>43.9</b>	<b>42.6</b>	<b>42.0</b>	<b>42.3</b>	<b>46.2</b>	<b>40.9</b>	<b>43.9</b>

**Table 10.** Length composition (ind.) of *S.mentella* in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

Length, cm	3L			3M			3N			3LMN		
	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total
15							1		1	1		1
16	1		1					2	2	1	2	3
17		1	1				2		2	2	1	3
18	1	3	4				2	2	4	3	5	8
19	16	16	32				7	6	13	23	22	45
20	34	34	68				20	17	37	54	51	105
21	76	74	150				34	33	67	110	107	217
22	37	41	78				22	10	32	59	51	110
23	9	7	16		1	1	1	1	2	10	9	19
24	1	4	5	1	7	8		1	1	2	12	14
25	8	12	20	3	6	9		4	4	11	22	33
26	9	33	42	7	12	19	2	34	36	18	79	97
27	20	51	71	8	21	29	15	97	112	43	169	212
28	53	79	132	22	39	61	62	150	212	137	268	405
29	91	104	195	41	49	90	130	185	315	262	338	600
30	119	120	239	54	56	110	200	137	337	373	313	686
31	130	87	217	60	66	126	198	63	261	388	216	604
32	143	81	224	53	72	125	166	25	191	362	178	540
33	156	42	198	58	64	122	105	10	115	319	116	435
34	109	37	146	56	57	113	53	6	59	218	100	318
35	79	28	107	32	37	69	30		30	141	65	206
36	68	20	88	17	27	44	42	6	48	127	53	180
37	46	14	60	45	14	59	5	1	6	96	29	125
38	25	14	39	47	11	58	2	2	4	74	27	101
39	11	3	14	39	6	45	2	1	3	52	10	62
40	6		6	33	4	37	5		5	44	4	48
41	1	1	2	26	4	30	2		2	29	5	34
42	2	1	3	12	4	16		1	1	14	6	20
43	1		1	8	1	9				9	1	10
44				5	1	6				5	1	6
45				2		2				2		2
61				1		1				1		1
<b>Total</b>	<b>1252</b>	<b>907</b>	<b>2159</b>	<b>630</b>	<b>559</b>	<b>1189</b>	<b>1108</b>	<b>794</b>	<b>1902</b>	<b>2990</b>	<b>2260</b>	<b>5250</b>
<b>Mean length, cm</b>	<b>30.7</b>	<b>28.7</b>	<b>29.9</b>	<b>34.3</b>	<b>31.9</b>	<b>33.2</b>	<b>30.4</b>	<b>28.3</b>	<b>29.5</b>	<b>31.4</b>	<b>29.3</b>	<b>30.5</b>

**Table 11.** Length composition (ind.) of roughhead grenadier (*Macrourus berglax*) in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3LMN</b>
<b>25</b>	1		1	2
<b>28</b>	1			1
<b>31</b>	6		1	7
<b>34</b>	27	1	9	37
<b>37</b>	54	3	28	85
<b>40</b>	168	15	49	232
<b>43</b>	251	39	76	366
<b>46</b>	236	54	47	337
<b>49</b>	209	68	43	320
<b>52</b>	133	44	15	192
<b>55</b>	74	29	14	117
<b>58</b>	58	14	11	83
<b>61</b>	72	6	5	83
<b>64</b>	52	3		55
<b>67</b>	48	3	1	52
<b>70</b>	39	1	1	41
<b>73</b>	17			17
<b>76</b>	11	1	1	13
<b>79</b>	6	1		7
<b>82</b>	2	1		3
<b>85</b>				
<b>88</b>				
<b>91</b>	1			1
<b>Total</b>	<b>1466</b>	<b>283</b>	<b>302</b>	<b>2051</b>
<b>Mean length, cm</b>	<b>50.5</b>	<b>50.5</b>	<b>46.0</b>	<b>49.9</b>



**Table 12.** Length composition (ind.) of roundnose grenadier (*Coryphaenoides rupestris*) in the Russian trawl catches in NAFO Divs. 3LM in 2023.

Length, cm	3L			3M			3LM		
	Females	Males	Total	Females	Males	Total	Females	Males	Total
8	2	1	3				2	1	3
9	9	22	31	1	7	8	10	29	39
10	19	30	49	1	14	15	20	44	64
11	22	25	47	1	12	13	23	37	60
12	19	17	36	7	12	19	26	29	55
13	31	21	52	16	28	44	47	49	96
14	22	6	28	20	12	32	42	18	60
15	8		8	7	7	14	15	7	22
16	2	4	6	12	2	14	14	6	20
17	6	1	7	5		5	11	1	12
18				2	1	3	2	1	3
19				1		1	1		1
<b>Total</b>	<b>140</b>	<b>127</b>	<b>267</b>	<b>73</b>	<b>95</b>	<b>168</b>	<b>213</b>	<b>222</b>	<b>435</b>
<b>Mean length, cm</b>	<b>12.3</b>	<b>11.2</b>	<b>11.8</b>	<b>14.2</b>	<b>12.3</b>	<b>13.1</b>	<b>13.0</b>	<b>11.7</b>	<b>12.3</b>

**Table 13.** Length composition (ind.) of blue wolffish (*Anarhichas latifrons*) in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3LMN</b>
37	2	1		3
40		2		2
43	1	3		4
46	5	3		8
49	10			10
52	9			9
55	12	2	4	18
58	12	4	3	19
61	22	4		26
64	9			9
67	13	4	1	18
70	18	4	1	23
73	8	5	1	14
76	7	1	1	9
79	7	1	2	10
82	3	5		8
85	6	4		10
88	6	2		8
91	7	5		12
94	2	5	1	8
97	5	3		8
100	1	1		2
103	1	1		2
106	2	1	1	4
109	2	1		3
112	1	1		2
115		1		1
<b>Total</b>	<b>171</b>	<b>64</b>	<b>15</b>	<b>250</b>
<b>Mean length, cm</b>	<b>69.5</b>	<b>76.4</b>	<b>70.2</b>	<b>71.3</b>

**Table 14.** Length composition (ind.) of spotted wolffish (*Anarhichas minor*) in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3LMN</b>
40	1			1
43		1	1	2
46		1	1	2
49	2		4	6
52	1		2	3
55				
58		5	1	6
61		4	5	9
64		12	1	13
67		9	4	13
70		12	2	14
73		7	2	9
76	1	12	2	15
79		10	3	13
82		5	1	6
85		6	2	8
88		4		4
91			1	1
94				
97				
100				
103				
106				
<b>109-111</b>	<b>1</b>			<b>1</b>
<b>Total</b>	<b>6</b>	<b>88</b>	<b>32</b>	<b>126</b>
<b>Mean length, cm</b>	<b>63.5</b>	<b>72.8</b>	<b>66.7</b>	<b>70.8</b>

**Table 15.** Length composition (ind.) of Atlantic wolffish (*Anarhichas lupus*) in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3O</b>	<b>3LMNO</b>
<b>22</b>			1		1
<b>25</b>					
<b>28</b>			1		1
<b>31</b>			3		3
<b>34</b>			5		5
<b>37</b>	1		3		4
<b>40</b>			5		5
<b>43</b>	1	2	4		7
<b>46</b>	2	1	8		11
<b>49</b>	3	6	21		30
<b>52</b>	3	4	39		46
<b>55</b>	2	3	25		30
<b>58</b>	3	7	6		16
<b>61</b>	4	13	6		23
<b>64</b>	4	13	5		22
<b>67</b>	3	2	4		9
<b>70</b>	2	1	2		5
<b>73</b>		2			2
<b>76</b>			1	1	2
<b>79</b>			1		1
<b>Total</b>	<b>28</b>	<b>54</b>	<b>140</b>	<b>1</b>	<b>223</b>
<b>Mean length, cm</b>	<b>58.1</b>	<b>59.9</b>	<b>52.4</b>	<b>77.0</b>	<b>55.0</b>

**Table 16.** Length composition (ind.) of Atlantic halibut (*Hippoglossus hippoglossus*) in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

Length, cm	3L	3M	3N	3O	3LMNO
35				1	1
37					
39					
41				3	3
43					
45					
47					
49					
51				2	2
53					
55				1	1
57			1	1	2
59			2	1	3
61				1	1
63			1	1	2
65	1		2		3
67				1	1
69			2		2
71			2	1	3
73			1	1	2
75			3		3
77	1	1	2	1	4
79	1		2	1	4
81	2		3		5
83			1		1
85			1	1	2
87			2	1	3
89	2				2
91	1				1
93	1		2		3
95	2	1	4		6
97	3		2		5
101		1	1		1
103			1		1
105					
107	1				1
109		1	2		2
111	2				2
113			1		1
115	2		2		4
117			1		1
119			1		1
121	1				1
123					
125					
127			1		1
129					
131	1				1
145			1		1
151	1				1
<b>Total</b>	<b>22</b>	<b>4</b>	<b>44</b>	<b>18</b>	<b>84</b>
<b>Mean length, cm</b>	<b>100.0</b>	<b>96.0</b>	<b>88.6</b>	<b>61.3</b>	<b>85.7</b>

**Table 17.** Length composition (ind.) of yellowtail flounder (*Limanda ferruginea*) in the Russian trawl catches in NAFO Divs. 3NO in 2023.

Length, cm	3N	3O	3NO
21	1		1
22	7		7
23	10		10
24	14		14
25	13		13
26	23		23
27	28		28
28	35		35
29	41		41
30	53		53
31	71		71
32	76		76
33	49		49
34	79		79
35	107		107
36	87		87
37	102		102
38	59		59
39	42		42
40	31		31
41	11		11
42	10		10
43	5		5
44	3	2	5
45	2	1	3
46			
47	1	0	1
<b>Total</b>	<b>960</b>	<b>3</b>	<b>963</b>
<b>Mean length, cm</b>	<b>33.6</b>	<b>44.3</b>	<b>33.6</b>

**Table 18.** Length composition (ind.) of witch flounder (*Glyptocephalus cynoglossus*) in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

Length, cm	3L	3M	3N	3O	3LMNO
25				1	1
27				1	1
29					
31					
33			1	1	2
35			1		1
37		1	2		2
39	2		9	2	11
41			2	3	5
43			7	1	8
45				1	1
47			3	3	6
49			4	2	6
51			6	1	7
53			1	3	4
55			1		1
<b>Total</b>	<b>2</b>	<b>1</b>	<b>37</b>	<b>19</b>	<b>56</b>
<b>Mean length, cm</b>	<b>39.5</b>	<b>37.5</b>	<b>44.5</b>	<b>43.8</b>	<b>44.3</b>

**Table 19.** Length composition (ind.) of American plaice (*Hippoglossoides platessoides*) in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3O</b>	<b>3LMNO</b>
19			2		2
21			4	1	5
23			7	5	12
25			2		2
27			12	5	17
29			14		14
31			18		18
33	3		19	7	29
35	2	1	25	4	32
37	2	3	24	6	35
39		2	14	4	20
41	3	6	18	1	28
43	2	20	17		39
45	3	31	25	2	61
47	1	48	25	2	76
49	4	36	20	3	63
51	1	44	6	2	53
53		54	7	1	62
55	1	49	2		52
57		21			21
59		9			9
61		3			3
<b>Total</b>	<b>22</b>	<b>327</b>	<b>261</b>	<b>43</b>	<b>653</b>
<b>Mean length, cm</b>	<b>43.0</b>	<b>50.8</b>	<b>39.2</b>	<b>36.5</b>	<b>45.0</b>

**Table 20.** Length composition (ind.) of blue antimora (*Antimora rostrata*) in the Russian trawl catches in NAFO Divs. 3LM in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3LM</b>
<b>27</b>	1	2	3
<b>29</b>	1	2	3
<b>31</b>	4	1	5
<b>33</b>	5	2	7
<b>35</b>	23	3	26
<b>37</b>	22	7	29
<b>39</b>	59	14	73
<b>41</b>	44	17	61
<b>43</b>	36	12	48
<b>45</b>	24	13	37
<b>47</b>	29	7	36
<b>49</b>	12	8	20
<b>51</b>	9	7	16
<b>53</b>	5	3	8
<b>55</b>	5	5	10
<b>57</b>	8		8
<b>59</b>	3		3
<b>61</b>		1	1
<b>Total</b>	<b>290</b>	<b>104</b>	<b>394</b>
<b>Mean length, cm</b>	<b>42.8</b>	<b>43.7</b>	<b>43.1</b>



**Table 21.** Length composition (ind.) of black dogfish (*Centroscyllium fabricii*) in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

Length, cm	3L	3M	3N	3LMN
42	2		1	2
46	1		1	1
48	1		1	1
49	1		1	1
51	1		1	1
54		1		1
55		1		1
56		4	2	4
57	2	2	3	5
58		2	2	2
59		3	2	3
60	1			1
61	2	2	1	4
62	5	2	3	7
63	2	1	2	3
64	3	1	1	4
65	2	2	1	4
66	2	1	2	3
67	2	1	2	3
68	7	2	7	9
69	3	1	3	4
70	3		2	3
71	1	1	2	2
72	1	1	1	2
73	1		1	1
74	1		1	1
75	2		2	2
76		1	1	1
77		2	2	2
<b>Total</b>	46	31	48	78
<b>Mean length, cm</b>	63.7	63.0	64.3	63.4

**Table 22.** Length composition (ind.) of white hake (*Urophycis tenuis*) in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3O</b>	<b>3LMNO</b>
27	3			7	10
29	5			11	16
31	12	2		26	40
33	26	5		42	73
35	36	10		35	81
37	53	12	1	21	87
39	81	13	1	13	108
41	115	20		11	146
43	94	13		5	112
45	69	22		6	97
47	25	8	1	3	37
49	4	1		8	13
51		1	1	7	9
53				5	5
55				4	4
57	1		4	4	9
59			7	3	10
61			5	1	6
63			3	1	4
65			1	1	2
67			2		2
69				2	2
71					
73					
75					
77					
79					
81				1	1
<b>Total</b>	<b>524</b>	<b>107</b>	<b>26</b>	<b>217</b>	<b>874</b>
<b>Mean length, cm</b>	<b>40.8</b>	<b>41.4</b>	<b>58.5</b>	<b>38.9</b>	<b>40.9</b>

**Table 23.** Length composition (ind.) of greater eelpout (*Lycodes esmarki*) in the Russian trawl catches in NAFO Divs. 3LN in 2023.

Length, cm	3L	3N	3LN
29	1		1
31		3	3
33		6	6
35	1	5	6
37	1	4	5
39	2	5	7
41	2	8	10
43	2	4	6
45	2	4	6
47	3	4	7
49	4	5	9
51	2	5	7
53	1	3	4
55		5	5
<b>Total</b>	<b>21</b>	<b>61</b>	<b>82</b>
<b>Mean length, cm</b>	<b>44.7</b>	<b>43.3</b>	<b>43.7</b>

**Table 24.** Length composition (ind.) of nezumia (*Nezumia bairdii*) in the Russian trawl catches in NAFO Divs. 3LMN in 2023.

Length, cm	3L	3M	3N	3LMN
5			7	7
6			14	14
7			16	16
8			11	11
9			6	6
24			1	1
25				
26	6	2	1	9
27	18	10		28
28	20	18		38
29	23	16		39
30	41	25		66
31	56	36		92
32	49	27		76
33	54	34		88
34	38	24		62
35	25	36		61
36	19	25		44
37	10	22		32
38	4	14		18
39	3	2		5
40		1		1
41	1	1		2
<b>Total</b>	<b>367</b>	<b>293</b>	<b>56</b>	<b>716</b>
<b>Mean length, cm</b>	<b>31.9</b>	<b>32.8</b>	<b>7.6</b>	<b>30.4</b>

**Table 25.** Length composition (ind.) of starry skate (*Raja radiata*) in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3O</b>	<b>3LMNO</b>
<b>31</b>			2		2
<b>34</b>	1		4		5
<b>37</b>		1	2		3
<b>40</b>		6	2		8
<b>43</b>	2	7	3		12
<b>46</b>		15	4		19
<b>49</b>	2	12	12		26
<b>52</b>	2	12	10	1	25
<b>55</b>	1	31	6		38
<b>58</b>	2	13	12		27
<b>61</b>	4	8	6		18
<b>64</b>	6	3	14		23
<b>67</b>	8	4	17	2	31
<b>70</b>	8	1	16	10	35
<b>73</b>	7	2	22	7	38
<b>76</b>	6		12	3	21
<b>79</b>	2		10	3	15
<b>82</b>	1		6	3	10
<b>85</b>	1		1	1	3
<b>Total</b>	<b>53</b>	<b>115</b>	<b>161</b>	<b>30</b>	<b>359</b>
<b>Mean length, cm</b>	<b>67.2</b>	<b>54.1</b>	<b>64.4</b>	<b>74.1</b>	<b>62.3</b>

**Table 26.** Length composition (ind.) of spinytail skate (*Raja spinicauda*) in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3O</b>	<b>3LMNO</b>
37	1				1
40	2				2
43		1			1
46		1			1
49	1				1
52	1	1			2
55		1			1
61	1	1			2
64	1	3			4
67	2				2
70	3	7			10
73	1	2	1		4
76		1			1
79					
82		1			1
85	1	1			2
88					
91	2	1			3
94	3				3
97		1			1
100					
103					
106					
109					
112					
115		1			1
121		1			1
124					
127		2			2
130	1	1		1	3
133					
136		1			1
139		1			1
142	1				1
145		3			3
<b>Total</b>	<b>21</b>	<b>32</b>	<b>1</b>	<b>1</b>	<b>55</b>
<b>Mean length, cm</b>	<b>76.3</b>	<b>89.9</b>	<b>74.00</b>	<b>131.00</b>	<b>85.18</b>

**Table 27.** Length composition (ind.) of Atlantic cod (*Gadus morhua*) in the Russian trawl catches in NAFO Divs. 3LMNO in 2023.

<b>Length, cm</b>	<b>3L</b>	<b>3M</b>	<b>3N</b>	<b>3O</b>	<b>3LMNO</b>
28			1		1
31			3		3
34		19	3	1	23
37		148	17	1	166
40	3	262	62	9	336
43	9	316	107	11	443
46	40	366	109	25	540
49	46	413	106	6	571
52	37	627	97	5	766
55	26	779	96	4	905
58	31	820	63	2	916
61	38	697	58	2	795
64	9	459	27	1	496
67	3	440	25		468
70	2	318	20		340
73	5	358	17	1	381
76	4	290	13		307
79		199	8		207
82		146	12		158
85		97	8		105
88		54	2		56
91		54	2		56
94	1	30	2		33
97		29	1		30
100		16			16
103		17			17
106		11			11
109		8			8
112		7			7
115		2			2
118					
121		2			2
124		1			1
<b>Total</b>	<b>254</b>	<b>6985</b>	<b>859</b>	<b>68</b>	<b>8166</b>
<b>Mean length, cm</b>	<b>55.1</b>	<b>61.1</b>	<b>54.1</b>	<b>48.1</b>	<b>60.1</b>

**Table 28.** Occurrences of VME indicator species in the NAFO Regulatory Area in 2023.

Trawl coordinates				Trawl depth, m	Species name	Number	Length, cm	Weight, kg
Start		Finish						
N	W	N	W					
48.83	45.13	48.64	45.59	1230-1124	<i>Anthoptilum</i> spp.	5	20-30	65
48.46	46.06	48.30	46.48	1016-910	<i>Acanella arbuscula</i>	1	15	10
48.32	46.50	48.19	46.97	1055-1080	<i>Funiculina quadrangularis</i>	5	3-5	13
					<i>Anthoptilum</i> spp.	2	13	20
48.17	47.05	48.31	46.54	970-1050	<i>Acanella</i> sp.	1	5	5
					<i>Keratoisis ornata</i>	1	15	20
48.31	46.55	48.18	47.04	1000-1090	<i>Funiculina quadrangularis</i>	7	3-5	18
48.14	47.60	48.14	47.13	950-960	<i>Cladorhiza</i> spp	3-5	6-7	250
48.13	47.19	48.31	46.54	920-800	<i>Geodia</i> spp.	2	6-12	120
48.16	47.61	48.16	47.10	1195-1150	<i>Anthoptilum</i> spp.	5-9	5-10	25
48.14	47.63	48.14	47.12	930-1030	<i>Funiculina quadrangularis</i>	4-10	5-10	17
				1020-1110	<i>Polymastia hemisphaerica</i>	3-5	3-5	80
48.14	47.18	48.14	47.68	940-970	<i>Anthoptilum</i> spp.	4-7	5-10	15
					<i>Eeuplectella</i> spp	1	12	22
48.14	47.19	48.14	47.69	925-900	<i>Vasella pourtalesi</i>	3-5	5-7	210
48.15	47.19	48.13	47.69	930-850	<i>Duva florida</i>	3	5-7	35
48.51	45.96	48.68	45.53	1020-1030	<i>Anthoptilum</i> spp.	4-7	5-10	15
48.17	47.04	48.32	46.52	1040-1030	<i>Acanella</i> sp.	1	15	10
48.14	47.18	48.13	47.65	930-880	<i>Duva florida</i>	1	6	10
					<i>Funiculina quadrangularis</i>	7	3-5	18
43.80	49.06	43.78	49.08	268-339	<i>Axinellidae</i>	1	8	22
					<i>Duva florida</i>	1	7	35
43.93	49.08	43.78	49.07	295-320	<i>Duva florida</i>	2	4	40
43.80	49.06	43.81	49.06	284-268	<i>Duva florida</i>	4	5-8	122
					<i>Polymastia</i> spp.	1	4	25
43.80	49.06	43.95	49.09	270-335	<i>Polymastia</i> spp.	3	4-5	72
43.93	49.08	44.00	49.12	287-400	<i>Duva florida</i>	2	4-6	54
					<i>Polymastia</i> spp.	2	4	37
43.80	49.06	43.82	49.06	267-255	<i>Chonelasma</i> sp.	2	5-10	60
43.84	49.06	43.96	49.11	250-225	<i>Axinellidae</i>	1	9	31
					<i>Polymastia</i> spp.	1	6	35
					<i>Duva florida</i>	4	3-9	96
					<i>Chonelasma</i> sp.	1	8	28
44.49	49.02	44.51	49.03	308-317	<i>Duva florida</i>	3	3-5	58
					<i>Polymastia</i> spp.	1	6	40
44.50	49.03	44.56	49.04	317-430	<i>Anthoptilum grandiflorum</i>	19	19-35	296
					<i>Pennatula</i>	5	9-12	67
46.24	46.80	46.90	46.76	1226-1178	<i>Anthoptilum grandiflorum</i>	24	12-40	312
46.26	46.79	46.71	46.76	1226-1075	<i>Anthoptilum grandiflorum</i>	6	30-35	95
					<i>Polymastia</i> spp.	2	5	53
46.28	46.76	46.50	46.75	1220-1200	<i>Anthoptilum grandiflorum</i>	6	30-35	95
46.31	47.40	49.42	47.32	317-315	<i>Polymastia</i> spp.	2	5	53

Trawl coordinates				Trawl depth, m	Species name	Number	Length, cm	Weight, kg
Start		Finish						
N	W	N	W					
46.36	47.36	46.33	47.39	310-317	<i>Polymastia spp.</i>	3	5-6	72
					<i>Vazella pourtalesi</i>	1	5	31
44.62	49.04	44.76	49.06	245-320	<i>Duva florida</i>	2	5-6	62
					<i>Polymastia spp.</i>	2	4-6	55
					<i>Vazella pourtalesi</i>	3	6-10	106
44.63	49.03	44.60	49.03	310-460	<i>Duva florida</i>	3	5-6	71
					<i>Polymastia spp.</i>	2	4-6	45
43.80	49.06	43.81	49.06	272-260	<i>Vazella pourtalesi</i>	1	12	78
					<i>Stylocordyla borealis</i>	1	7	15
43.81	49.06	43.78	49.07	275-360	<i>Duva florida</i>	2	5	62
					<i>Polymastia spp.</i>	1	5	25
					<i>Vazella pourtalesi</i>	2	7-10	90
43.80	49.06	43.93	49.09	272-290	<i>Duva florida</i>	5	4-7	85
					<i>Quasillina brevis</i>	1	4	10
46.57	45.80	46.70	45.73	358-262	<i>Polymastia spp.</i>	1	4	40
46.60	45.80	46.58	45.76	340-320	<i>Halipteris finmarchica</i>	1	80	90
					<i>Axinellidae</i>	4	5-8	75
					<i>Quasillina brevis</i>	2	4	25
46.79	46.79	46.21	46.84	1175-1237	<i>Anthoptilum grandiflorum</i>	5	20-36	105
					<i>Polymastia spp.</i>	1	4	37
46.25	46.79	46.81	46.78	1229-1178	<i>Anthoptilum grandiflorum</i>	12	22-35	125
					<i>Pennatula</i>	3	8-12	48
46.79	46.77	46.29	46.74	1155-1205	<i>Anthoptilum grandiflorum</i>	6	25-50	140
46.79	46.77	46.26	46.79	1174-1220	<i>Anthoptilum grandiflorum</i>	4	28-40	125
46.69	46.77	46.50	46.73	1100-1136	<i>Anthoptilum grandiflorum</i>	5	20-42	155
48.00	45.86	47.93	45.91	783-768	<i>Funiculina quadrangularis</i>	4	23-59	42
					<i>Pennatula</i>	3	11-12	38
46.68	45.71	46.49	45.58	255-345	<i>Pennatula</i>	2	5-7	35
					<i>Halipteris finmarchica</i>	1	85	95
46.46	45.58	46.60	45.29	402-228	<i>Halipteris finmarchica</i>	1	14	20
					<i>Anthoptilum grandiflorum</i>	1	35	42
					<i>Polymastia spp.</i>	2	4	57
					<i>Phakellia spp.</i>	1	8	28
46.55	45.12	46.46	45.56	266-402	<i>Phakellia spp.</i>	4	4-7	48
46.45	45.53	46.47	45.53	423-390	<i>Halipteris finmarchica</i>	1	48	57
46.47	45.70	46.50	45.70	403-351	<i>Duva florida</i>	5	4-7	92
46.58	45.80	46.47	45.65	350-373	<i>Duva florida</i>	1	7	34
					<i>Phakellia spp.</i>	2	4-7	46
46.46	45.57	46.65	45.81	406-322	<i>Phakellia spp.</i>	3	4-6	47
					<i>Radiella hemisphaerica</i>	4	3-4	95
					<i>Polymastia spp.</i>	2	4	64
46.56	45.77	46.65	45.85	352-330	<i>Polymastia spp.</i>	2	5	72



Trawl coordinates				Trawl depth, m	Species name	Number	Length, cm	Weight, kg
Start		Finish						
N	W	N	W					
46.47	45.56	46.67	45.83	376-316	<i>Halipterus finmarchica</i>	3	28-54	123
43.70	49.10	43.75	49.20	235-250	<i>Polymastia</i> spp.	2	4-6	32
					<i>Phakellia</i> spp.	1	7	15
42.88	50.00	42.80	50.22	215-220	<i>Geodia</i> spp.	1	5	32
					<i>Polymastia</i> spp.	2	3-4	35
42.87	50.55	42.87	50.30	220-250	<i>Geodia</i> spp.	1	5	30
43.31	49.50	43.31	49.46	220-220	<i>Phakellia</i> spp.	1	13	30
					<i>Geodia</i> spp.	4	3-4	80
					<i>Duva florida</i>	1	6	15
43.78	49.05	43.71	49.12	300-250	<i>Geodia</i> spp.	1	2	10
43.88	49.04	43.99	49.08	300-330	Spicule clumps	1	5x7	25
					<i>Sycon</i> sp.	2	1x2,5	15
43.26	49.53	43.27	49.55	255-270	<i>Stryphnus ponderosus</i>	1	11	40
					<i>Thenea</i> spp.	1	7	20
43.18	49.51	43.17	49.50	300-330	<i>Duva florida</i>	1	6	15
					<i>Biemna varianta</i>	1	4x7	15
					<i>Geodia</i> spp.	1	5	20
					<i>Radiella hemisphaerica</i>	2	2	30
43.11	49.62	43.13	49.58	220-270	<i>Duva florida</i>	7	3-7	70
					<i>Phakellia</i> spp.	3	5-15	70
48.15	47.62	48.13	47.13	1053 - 1040	<i>Anthoptilum</i> spp.	2	17-22	40
48.18	46.67	48.17	47.17	1070	<i>Anthoptilum</i> spp.	1	20	25
48.18	47.00	48.30	47.50	1063 - 1134	<i>Anthoptilum</i> spp.	1	40	35
48.12	47.10	48.12	47.67	800 - 863	<i>Pennatula</i> spp.	1	10	30
48.13	47.10	48.15	46.65	945 - 1025	<i>Anthoptilum</i> spp.	1	27	40
43.02	49.70	43.03	49.73	335-274	<i>Pennatula</i> spp.	1	20	50
					<i>Polymastia</i> spp.	2	5	70
42.78	50.27	42.85	50.35	295-245	<i>Geodia</i> spp.	1	5	30
46.38	47.35	46.35	47.40	300-292	<i>Polymastia</i> spp.	1	7	70
					<i>Geodia</i> spp.	1	6	55
43.43	51.58	43.35	51.33	130	<i>Geodia</i> sp.	3	5-6	140
43.28	51.32	43.37	51.47	140	<i>Geodia</i> sp.	2	4-6	80
43.33	51.38	43.40	51.47	115	<i>Geodia</i> sp.	2	5-7	80
43.63	50.12	43.87	49.70	150	<i>Geodia</i> sp.	5	6-7	200
43.85	49.07	44.00	49.12	225	Alcyonacea	1	12	50

**Table 29.** Marine mammals recording in the NAFO Regulatory Area in 2023.

Date	Latitude (N)	Longitude (W)	Species	Number	Note
12.04-30.04 daily	-	-	Sperm whale ( <i>Physeter macrocephalus</i> )	5-7	Northeastern slope of the Grand Bank of Newfoundland, when hauling in any weather conditions and at any time of the day
12.04-30.04 daily	-	-	Harp seal ( <i>Phoca groenlandica</i> )	4-6	Northeastern slope of the Grand Bank of Newfoundland, when hauling in day time in sunny and calm weather conditions
18.04	48.14	47.67	White-beaked dolphin ( <i>Lagenorhynchus albirostris</i> )	10+	When hauling in sunny and calm weather conditions
19.04	48.15	47.11	White-beaked dolphin ( <i>Lagenorhynchus albirostris</i> )	10+	When hauling in sunny and calm weather conditions
19.07	47.77	46.70	Sperm whale ( <i>Physeter macrocephalus</i> )	2	Picking up fish during trawl hauling
19.07	47.75	46.68	Killer whale ( <i>Orcinus orca</i> )	1	Crossed the course of the vessel at a distance of 100 m
20.07	48.62	45.70	Sperm whale ( <i>Physeter macrocephalus</i> )	3	Picking up fish during trawl hauling
21.07	48.62	45.70	Sperm whale ( <i>Physeter macrocephalus</i> )	2	Picking up fish during trawl hauling
22.07	48.60	45.73	Sperm whale ( <i>Physeter macrocephalus</i> )	2	Picking up fish during trawl hauling
23.07	48.62	45.72	Sperm whale ( <i>Physeter macrocephalus</i> )	2	Picking up fish during trawl hauling
01.08	48.60	45.77	Sperm whale ( <i>Physeter macrocephalus</i> )	2	Picking up fish during trawl hauling
02.08	48.60	45.72	Sperm whale ( <i>Physeter macrocephalus</i> )	2	Picking up fish during trawl hauling
03.08	48.60	45.82	Sperm whale ( <i>Physeter macrocephalus</i> )	2	Picking up fish during trawl hauling
04.08	48.62	45.65	Sperm whale ( <i>Physeter macrocephalus</i> )	2	Picking up fish during trawl hauling
21.08	45.60	48.31	Northern bottlenose whale ( <i>Hyperoodon ampullatus</i> )	6-7	
13.09	43.78	49.05	Dolphin	30-40	
18.06 - 16.08 daily	48.15-48.25	45.08-47.13	Sperm whale ( <i>Physeter macrocephalus</i> )	2-5 до 11	
30.08	43.28	49.43	Dolphin	50	
13.09	42.80	50.12	Sperm whale	1	
15.09	43.92	49.08	Dolphin	20	
15.10	46.69	46.78	Sperm whale ( <i>Physeter macrocephalus</i> )	2	During towing, they followed our vessel and a neighbouring one at a large distance.
15.10	46.80	46.76	Sperm whale ( <i>Physeter macrocephalus</i> )	2	One specimen accompanied the vessel for two hours and the other one followed in the wake of the vessel for one hour.
16.10	46.63	46.72	Sperm whale ( <i>Physeter macrocephalus</i> )	2	During towing, one individual was going in parallel to the vessel while performing a few long dives. The other individual joined the first one during hauling.

Date	Latitude (N)	Longitude (W)	Species	Number	Note
23.10	46.46	46.77	Sperm whale ( <i>Physeter macrocephalus</i> )	2	During towing, they were going in parallel – one was going along the vessel and the other one was going at a distance while performing a few long dives.
07.11	46.25	46.80	Sperm whale ( <i>Physeter macrocephalus</i> )	1	During towing, it was going along the vessel and during hauling it was going under the trawl.
09.11	46.37	46.74	Sperm whale ( <i>Physeter macrocephalus</i> )	2	During towing, one specimen follows close to the vessel going from one side to another. The other one came an hour before the trawl hauling.
13.11	46.27	46.76	Sperm whale ( <i>Physeter macrocephalus</i> )	1	During trawl hauling, it came close to the vessel and went under the trawl for a few times.
17.11	48.55	45.87	Sperm whale ( <i>Physeter macrocephalus</i> )	1-3	During towing, two individuals were going along the vessel and the third one was going at some distance.
17.11	48.44	46.45	Sperm whale ( <i>Physeter macrocephalus</i> )	2	After trawl hauling, two whales were following the vessel at a distance for some time and then came closer.
18.11	48.34	45.61	Sperm whale ( <i>Physeter macrocephalus</i> )	1	It was going after the vessel at some distance for little time during towing.
19.11	48.05	45.80	Sperm whale ( <i>Physeter macrocephalus</i> )	1-3	During towing, one specimen was going next to the vessel and two more came during trawl hauling. They made a few dives under the trawl.
20.11	48.16	45.68	Sperm whale ( <i>Physeter macrocephalus</i> )	1-2	They were going along the vessel during towing while performing long dives. By the twilight one individual was seen.

**Table 30.** Total number of individuals and occurrences of marine mammals in the NAFO RA in 2023.

Species	Number	Occurrences*	% of the total number
Killer whale	1	1	0.6
Sperm whale	41	22	23.6
Northern bottlenose whale	7	1	4.0
White-beaked dolphin	20	2	11.5
Dolphins without species	105	3	60.3
Total	174	28	100

\* Only those occurrences are recorded that have precise coordinates.