

21 April 2023

Faroe Marine Research Institute,
P.O.Box 3051, FO-110 Tórshavn
Faroe Islands,

Ms. B. Benediktsdóttir
Executive Secretary
Northwest Atlantic Fisheries Organization (NAFO)
Summit Place
1601 Lower Water Street
Suite 401
Halifax, Nova Scotia
Canada B3J 3P6

Dear Ms. Brynhildur Benediktsdóttir:

Faroe Islands have been participating in the Flemish Cap (NAFO 3M) cod fishery for many years and do have a 22.35% share of the cod quota.

Faroe Islands initiated a scientific survey with longlines on Flemish Cap in 2021. The goal was primarily to provide information about the stock status of the cod stock on Flemish Cap along with other fish species commonly caught in longline fishing, such as Atlantic halibut.

As you already know the Faroese longline survey catch of cod in 2021 became very much higher than expected. This led to the introduction of an upper survey catch limit of 15 tons for Atlantic cod and 10 tons for shrimp. Considering the extremely high catch per unit effort of 1 kg per hook, it is practically impossible to cover the survey stations on Flemish Cap while at the same time keeping the catch of cod below 15 tons.

In consequence of the above, the scientific procedures were intertwined with the commercial fishery in 2022. The same procedure will also apply for commercial fisheries in 2023. A longliner (Stapin, Table 1) will set approximately 4 thousand hooks per set on mostly the same stations as in 2021 and applying the same sampling procedures. This means that the catch of cod on these longline sets will be taken from the quota that is allocated to this vessel. Yet, the number of stations will be less than in 2021 and expectedly 52 (Table 2, Figure 1). The vessel will set additional longline sets in connection with the commercial fishery that are not part of the survey.

Over the years it is expected that a longline abundance at age index will be developed that can be used as extra information in the stock assessment of cod on Flemish Cap.

On behalf of Faroe Marine Research Institute



Petur Steingrund, Dr. Philos, fisheries scientist.

Table 1. Information about the vessel.

Name	Stapin
LOA	42 m
Beam	9 m
Draft	4.5 m
Vessel Tonnage	703 t
Radio Call Sign	OW2065
Port of Registration	Toftir, Faroe Islands
Flag State	Faroe Islands
Internal Reference Number	FO-017158
External Registration Number	N/A
Vessel IMO Number	8820315
Port register number	FD 32
Vessel Gear	Longline
Inmarsat C	231140000
E-mail	brugvfd32@kambur.fo

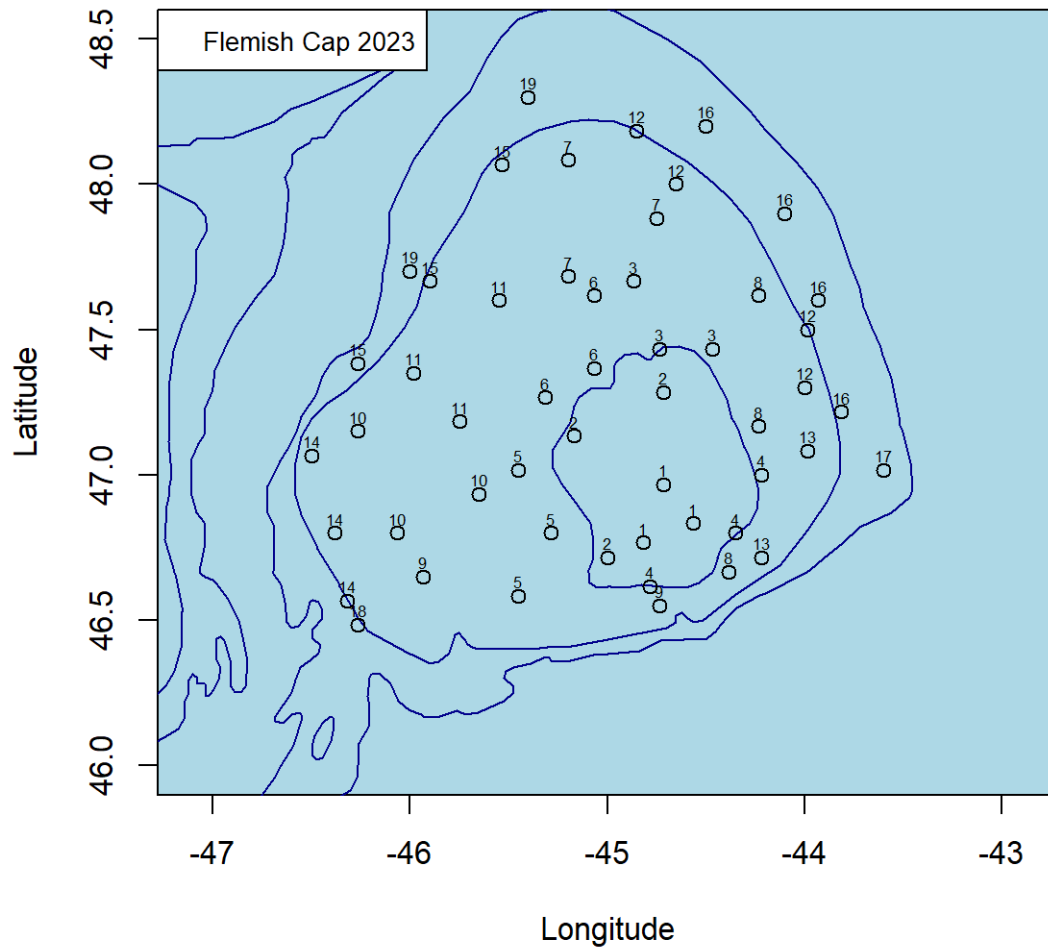


Figure 1. Map of the 52 longline sets of the Faroese vessel “Stapin” in May-June 2023. The number above each location refers to the stratum.

Table 2. Information about the 52 longline sets.

Stratum	START_LAT	START_LON	END_LAT	END_LON
1	4646	4449	4641	4452
1	4650	4434	4654	4428
1	4658	4443	4704	4443
2	4708	4510	4712	4514
2	4717	4443	4723	4443
2	4643	4500		
3	4726	4444	4731	4444
3	4740	4452	4745	4452
3	4726	4428		
4	4637	4447	4632	4445
4	4700	4413		
4	4648	4421		
5	4635	4527	4636	4519
5	4648	4517	4651	4523
5	4701	4527	4706	4530
6	4737	4504	4740	4511
6	4716	4519	4718	4511
6	4722	4504	4721	4506
7	4805	4512	4759	4513
7	4741	4512	4746	4511
7	4753	4445	4748	4445
8	4640	4423	4643	4416
8	4710	4414	4713	4407
8	4737	4414	4734	4409
9	4639	4556	4635	4600
9	4633	4444	4628	4441
10	4709	4616	4710	4607
10	4648	4604	4648	4556
10	4656	4539	4654	4532
11	4736	4533	4736	4525
11	4721	4559	4724	4604
11	4711	4545	4716	4542
12	4730	4359	4730	4406
12	4800	4439	4755	4442
12	4811	4451	4807	4455
12	4718	4400		
13	4643	4413	4638	4417
13	4705	4359	4709	4404
14	4648	4623	4645	4616
14	4634	4619	4637	4613
14	4704	4630		
15	4740	4554	4740	4546
15	4723	4616	4721	4623
15	4804	4532		
16	4713	4349	4707	4348
16	4736	4356	4730	4353
16	4812	4430		
16	4754	4406		
17	4701	4336		
18	4629	4616	4633	4622
19	4742	4600	4742	4552
19	4818	4524		

Protocol of the Faroes longline survey of Flemish Cap (Div. 3M)

The aim of the survey is to investigate the cod (*Gadus morhua*) stock employing longline gear and compile a time series which can potentially be incorporated to the analytical assessment. The survey was initiated in 2021 on board the longline vessel Klakkur (1737 GRT). In 2022 the survey was carried out by the longliner Eivind (65 GRT).

Methodology

The objective of the survey encompasses the study of abundance, biomass and composition structure of cod. This objective involves the following actions:

- A random stratified survey covering the shallow area (< 700 m) of Flemish Cap. The number of sets varying from 50 to 100 with fishing operations taking place around the clock
- Biological sampling in each set, including length, weight and otolith for the target species
- Temperature recording device employed in every set.

The stratification scheme follows the Flemish Cap design by NAFO (Doubleday 1981). Due to operational limitations only strata 1-19 are sampled. On average three units will be chosen within each stratum. The number of units sampled in both strata XII and XVI are four whereas in strata IX, XIII and XIX will be two. Only one unit is to be sample in stratum XIII. The selected units are to be spread geographically so that sets are not located in adjacent areas. Within each selected unit one set is to be taken with the location chosen randomly.

Figure 1 and Table 2 display both the schematic description and geographical area of the Flemish Cap survey carried out by RV Vizconde de Eza and the Faroe longline survey. Storage and compilation of data are carried out at Faroe Marine research institute (FAMRI, www.hav.fo).

Thus, the number of stations covered by the survey is around 52, see Table 3 and Figure 2. The survey will be carried out annually in June-July, however the 2023 survey will take place in May. The characteristics of the gear type and the negligible impact on the sea floor (low footprint) allows for the investigation of fishing grounds unsuitable for trawling (sponge and coral areas).

The specifications of the type of gear are as follows:

Table 1. Gear type specifications of the longline Faroe survey in NAFO 3M.

Gear Type		Longline
Total Length		Ca 3.0 Nm
Hooks:	Number	Ca. 4000
	Average spacing (m)	1.5
	Hook type	EZ
	Hook size	12
Buoys	Marked yes/no	YES
Anchors	Number	2
Main line material		50/50 pol/ter
Bait line material		ter

Table 2. Stratification of the 3M Flemish Cap survey and Faroe longline survey.

NAFO 3M survey					Faroe 3M survey
Stratum	Depth interval (fathoms)	Area (sq miles)	Possible hauls	Selected hauls	Selected sets
1	70-80	342	100	4	3
2	81-100	838	250	10	3
3	101-140	628	180	7	3
4	"	348	100	4	3
5	"	703	200	8	3
6	"	496	150	6	3
7	141-200	822	240	9	3
8	"	646	190	7	3
9	"	314	90	3	2
10	"	951	280	11	3
11	"	806	240	9	3
12	201-300	670	200	8	4
13	"	249	70	3	2
14	"	602	170	7	3
15	"	666	200	8	3
16	301-400	634	190	7	4
17	"	216	60	2	1
18	"	210	60	2	1
19	"	414	120	5	2
20	401-500	525	160	6	0
24	"	253	80	3	0
28	"	530	160	6	0
33	"	98	30	2	0
21	501-600	517	160	6	0
25	"	226	70	3	0
29	"	488	150	6	0
32	"	238	70	2	0
34	"	486	150	5	0
22	601-700	533	160	6	0
30	"	1134	350	11	0
23	701-800	284	90	3	0
31	"	203	60	2	0
Total (strata1-34)		16070	4780	181	52

Table 3. Geographical locations of the 52 longline sets.

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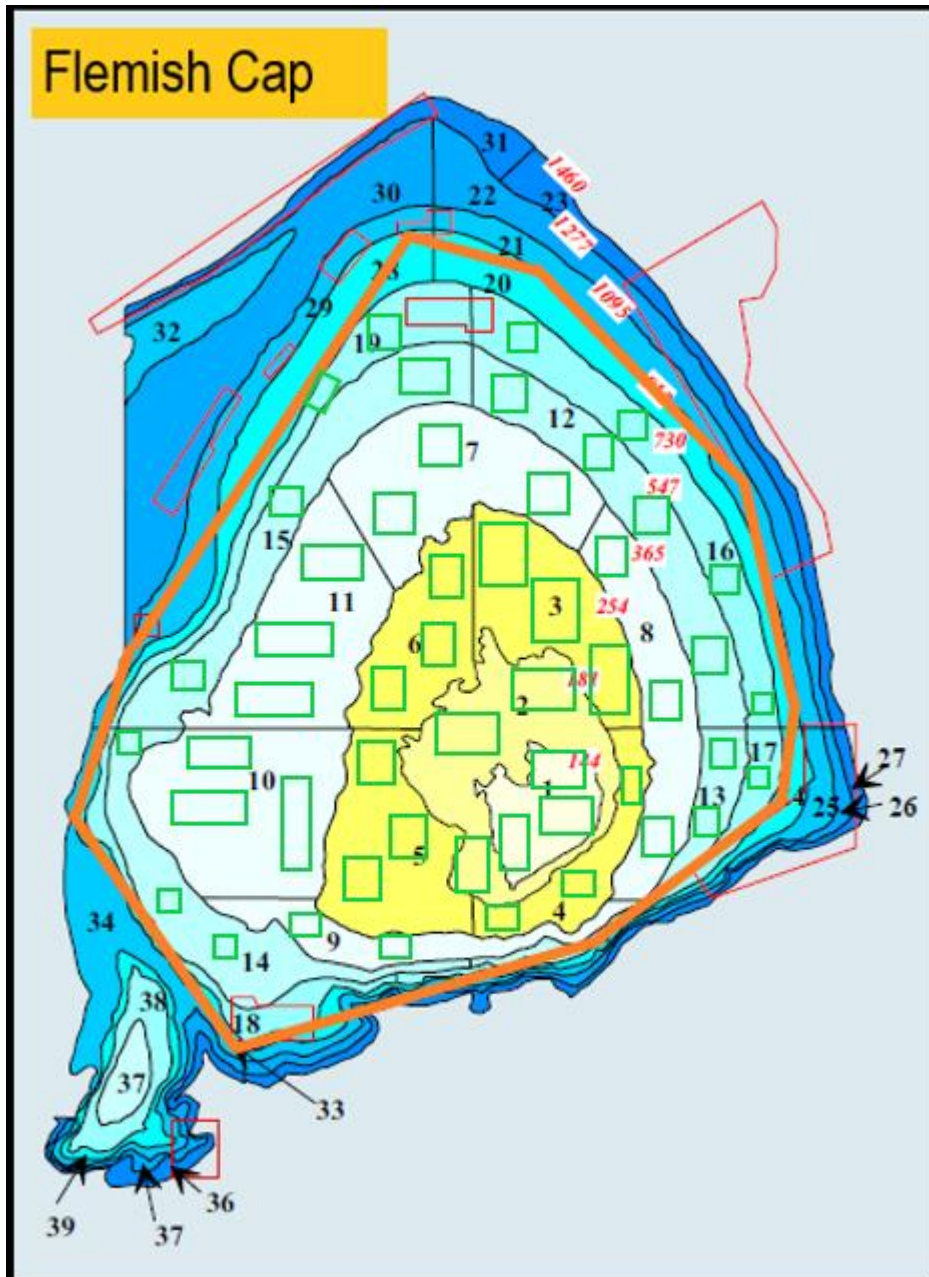


Figure 1. Stratification of the 3M Flemish Cap survey. Orange region shows area covered by the Faroe longline survey. Green areas define the limits of the locations of survey sets.

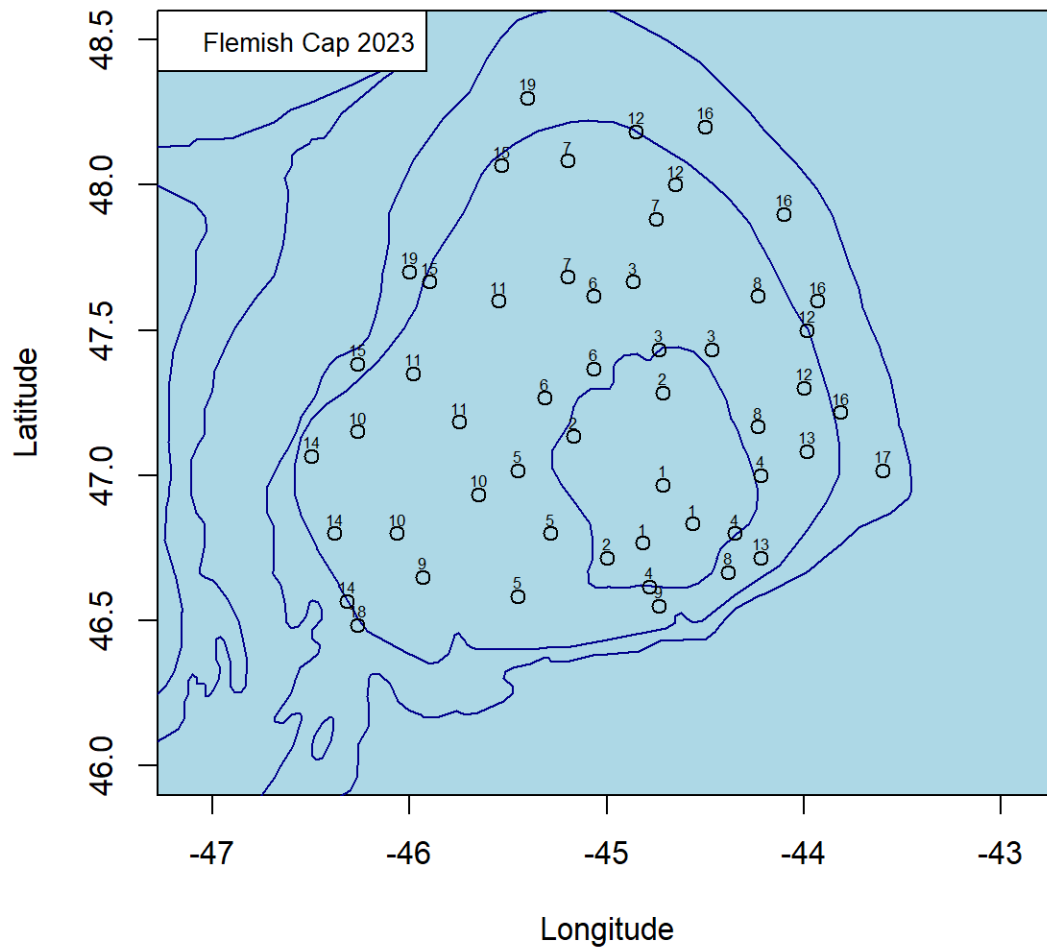


Figure 2. Map of the 52 longline sets of the Faroese vessel “Stapin” in May-June 2023. The number above each location refers to the stratum.

References

Doubleday, W.G. 1981. Manual on groundfish surveys in the Northwest Atlantic. NAFO Sci. Council Studies, No 2, 56 pp.