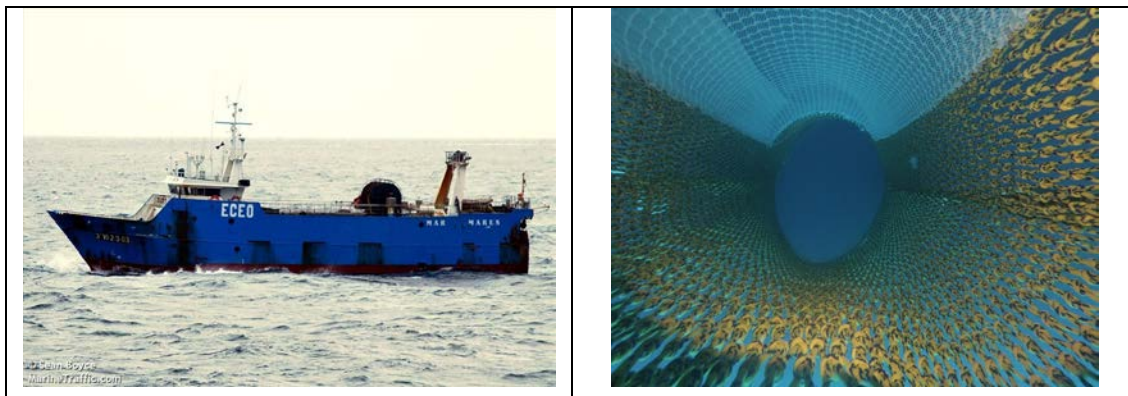




SELAR 2017 MARMARES & SELAR 2018 MARMARES Bottom Trawl Selectivity Cruises

Cruise Report

for:

Foreign and Commonwealth Office. Maritime Policy Unit

Sukarrieta, 2018 December 20th

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Index

1. OBJECTIVES	4
2. MATERIAL AND METHODS.....	5
2.1 Selectivity cruises	5
2.2 Selectivity device.....	6
3. RESULTS	9
3.1 Selectivity cruise.....	9
3.2 Selectivity of the device	14
ACKNOWLEDGEMENTS	17

1.

OBJECTIVES

The overall objective of the selectivity trials of this project, was the minimization of discards in the trawl, with special attention to the species subject to a TAC in relation to the new EU regulation on discard reduction.

With that objective a selective device designed specifically for this fishery was tested in several hauls in two different cruises. During those experimental hauls, the selective properties of the device were analyzed. In addition, behavior of different species in the nearby area of the tested selective device and other parts of the trawl was analyzed.

2.

Material and methods

2.1 Selectivity cruises

The selectivity cruises were carried out onboard the Spanish bottom trawler F/V “Mar Mares”. (table 1) during September 2017 and May 2018, with a total of 4 fishing trips (Table 2). The fish landings took place in the Scottish port of Lochinver. The cruises were performed in the ICES division 6a, this is, between 59°00′N and 57° 00′N in latitude and between 07° 38′W and 09° 00′W in longitude and out of the designed cod fishing exclusion areas.

Table1. F/V Mar Mares main characteristics

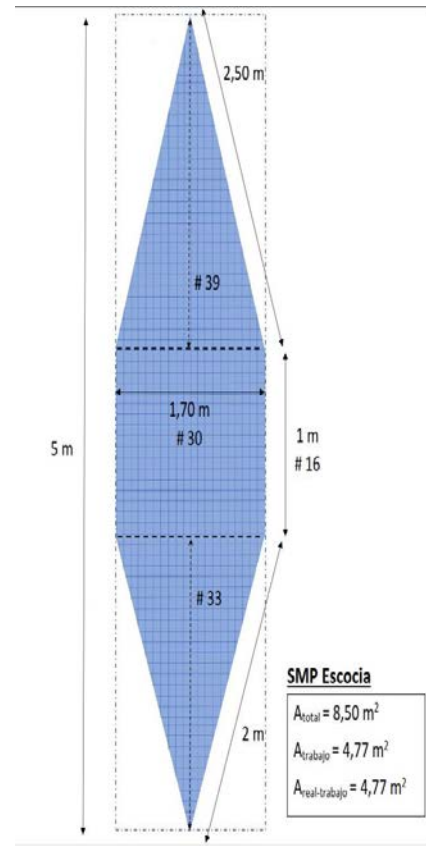
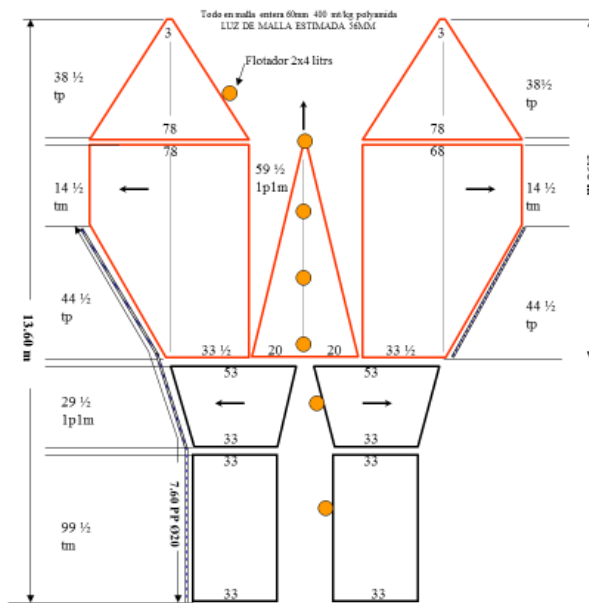
Name	MAR MARES
Nationality	Spanish
Total length	38.5 m
Draft maximum	4,2 m
Gross Tonnage	409.1 GT
Horse Power	964 HP
Call Signal	E.C.E.O.

Table2. Fishing trips characteristics

Departure Harbour	Departure Date	Arrival Harbour	Arrival Date	Days at seas	Selectivity hauls	ICES Division
Lochinver (Scotland)	08/09/2017	Lochinver (Scotland)	15/09/2017	7	5	6a
	15/09/2017		22/09/2017	5	10	6a
	04/05/2018		10/05/2018	6	4	6a
	11/05/2018		17/05/2018	6	11	6a

2.2 Selectivity device

The selectivity device tested, consists on a 6 meter cylindrical piece inserted between the extension piece (the trawl section before the codend) and the codend. This cylindrical piece was manufactured in 120 mm square mesh in the upper panel (all the upper panel) and 120 mm diamond mesh size in the lower panel (Figure 1). In addition, a 60 mm cover was fitted on the upper panel to collect all the fish scaping through the square mesh in order to measure, quantify and characterize the escapement. The design of the cover determined that not all the square mesh upper panel could be covered. The area covered by the cover, which was the free area for the escapement, was estimated in 4.77 m². The area of the upper panel not covered was blinded with a 60 mm netting to avoid bias in the results. In the same way, the codend was blinded with a 60 mm inner net, the objective of this inner was to have the full control of all the sizes of fish arriving to the codend. The selective properties of the square mesh panel (SMP) were analyzed by size sampling of the individuals collected in the two different compartments.



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Source: Larsen & Isaksen 1993

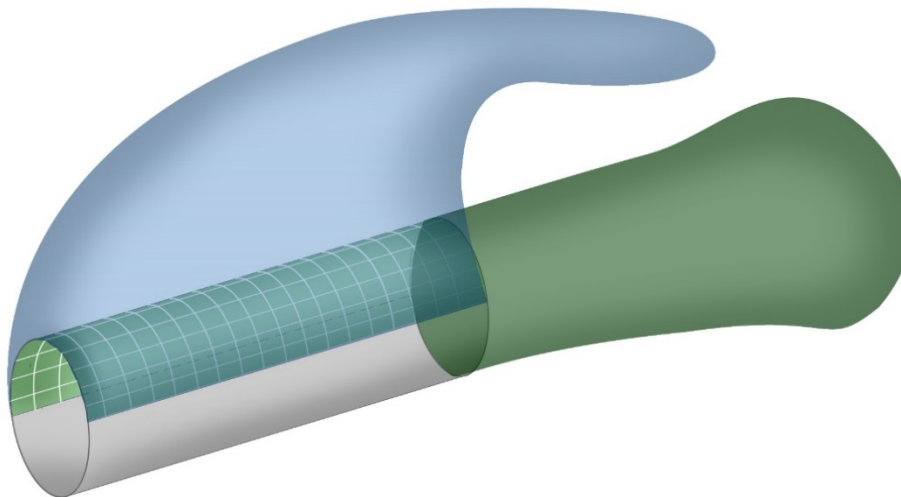


Figure 1. Design plan of the SMP cover (Top left). Scheme of the free surface of the SMP (Top right). Scheme of the whole selection device with cover in the extension piece and blinded codend (Down).

Underwater cameras were attached in different parts of the trawl to study the behavior of the fish inside the net, and in more detail in relation with the selective device (Figure 2).



Figure 2. Underwater footage frame of the selection device.

3.

Results

3.1 Selectivity cruise

During the first cruise (2 fishing trips) in September 2017 from a total of 56 hauls (table 3,4), 15 were used for selectivity experiments. In the second cruise (2 fishing trips) 58 hauls were carried out (table 5,6), 16 of them for selectivity experiments and a useless haul because of the gear was broken. Plotted tracks for both fishing trips can be observed in figure 3.

Table 3. Hauls description in the first trip (September 2017). Highlighted in yellow the hauls for selectivity experiments.

Date	Haul Nº	H.start	Lat. Start	Long. Start	H. end	Lat. End	Long. End	depth (Fm)	Speed (Kn)
16-sep-17	1	7:45	58° 33,2	08° 13,8	11:45	58° 26,3	08° 33,4	160	3,1
16-sep-17	2	12:30	58° 25,3	08° 34,6	16:30	58° 18,1	08° 55,2	161	3,1
16-sep-17	3	17:10	58° 17,5	08° 56,4	21:10	58° 07,9	09° 12,5	148	3,1
17-sep-17	4	21:55	58° 6,9	09° 14,1	0:55	57° 58,7	09° 23,3	158	3,1
17-sep-17	5	1:45	57° 59,0	09° 24,0	5:15	58° 08,9	09° 14,6	163	3,1
17-sep-17	6	6:50	58° 09,3	09° 09,9	10:50	57° 58,0	09° 21,3	142	3,1
17-sep-17	7	11:30	57° 58,5	09° 19,3	15:55	58° 10,8	09° 06,0	144	3,1
17-sep-17	8	16:40	58° 11,8	09° 04,7	20:40	58° 19,8	08° 46,9	148	3,1
18-sep-17	9	21:25	58° 19,6	08° 48,1	0:55	58° 13,7	09° 06,2	156	3,1
18-sep-17	10	1:50	58° 13,5	09° 06,0	5:20	58° 19,8	08° 48,9	157	3,1
18-sep-17	11	7:00	58° 20,3	08° 46,8	11:05	58° 12,3	09° 07,2	159	3,1
18-sep-17	12	12:15	58° 12,5	09° 06,5	16:05	58° 19,9	08° 47,3	149	3,1
18-sep-17	13	16:50	58° 19,4	08° 48,0	20:45	58° 11,4	09° 06,1	149	3,1
19-sep-17	14	21:40	58° 13,6	09° 05,4	1:10	58° 19,9	08° 48,4	153	3,1
19-sep-17	15	2:00	58° 19,2	08° 50,2	5:30	58° 12,7	09° 06,4	157	3,1
19-sep-17	16	6:55	58° 11,3	09° 05,5	11:00	58° 20,0	08° 46,0	147	3,1
19-sep-17	17	11:45	58° 19,6	08° 46,8	15:55	58° 10,8	09° 06,2	145	3,1
19-sep-17	18	16:40	58° 10,6	09° 07,5	20:45	58° 00,0	09° 20,9	149	3,1
20-sep-17	19	21:35	57° 59,5	09° 21,7	1:05	57° 49,1	09° 27,4	152	3,1
20-sep-17	20	2:00	57° 50,0	09° 28,2	5:30	58° 00,7	09° 23,5	166	3,1
20-sep-17	21	7:00	58° 01,3	09° 19,5	11:15	57° 48,4	09° 27,1	155	3,1

20-sep-17	22	12:00	57° 48,4	09° 27,4	16:00	58° 00,7	09° 21,0	151	3,1
20-sep-17	23	16:40	57° 59,9	09° 20,7	20:40	57° 17,7	09° 27,1	151	3,1
21-sep-17	24	21:25	57° 48,7	09° 27,8	0:55	58° 00,0	09° 22,2	154	3,1
21-sep-17	25	1:45	58° 01,0	09° 21,0	5:30	58° 10,8	09° 08,8	154	3,1
21-sep-17	26	7:00	58° 12,6	09° 06,5	11:00	58° 20,4	08° 46,3	151	3,1
21-sep-17	27	11:50	58° 20,1	08° 46,4	15:45	58° 12,4	09° 04,5	149	3,1
21-sep-17	28	16:30	58° 13,4	09° 03,4	19:00	58° 19,3	08° 52,1	161	3,1

Table 4. Hauls description in the second trip (September 2017). Highlighted in yellow the hauls for selectivity experiments.

Date	Haul Nº	H. start	Lat. Start	Long. Start	H. end	Lat. End	Long. End	depth (Fm)	Speed (kn)
09-sep-17	1	7:25	58° 29,5	8° 19,7	11:25	58° 22,6	8° 40,1	149	3,1
09-sep-17	2	12:15	58° 22,2	8° 41,8	16:15	58° 15,0	9° 01,8	157	3,1
09-sep-17	3	17:00	58° 13,9	9° 02,5	21:00	58° 04,1	9° 16,4	145	3,1
09-sep-17	4	21:40	58° 03,0	9° 17,0	1:40	57° 51,6	9° 26,6	154	3,1
10-sep-17	5	2:30	57° 53,2	9° 27,5	5:00	58° 00,6	9° 22,0	156	3,1
10-sep-17	6	6:45	58° 03,3	9° 16,5	10:55	57° 51,5	9° 26,0	152	3,1
10-sep-17	7	11:40	57° 52,3	9° 26,3	15:40	58° 03,9	9° 16,4	144	3,1
10-sep-17	8	16:20	58° 03,1	9° 16,8	20:30	57° 51,5	9° 26,2	153	3,1
11-sep-17	9	21:15	57° 52,2	9° 26,6	1:15	58° 03,9	9° 16,6	145	3,1
11-sep-17	10	2:05	58° 04,2	9° 15,4	6:15	58° 14,8	9° 04,4	166	3,1
11-sep-17	11	8:05	58° 03,8	9° 16,9	12:10	57° 52,3	9° 26,9	158	3,1
11-sep-17	12	12:55	57° 52,6	9° 25,1	17:00	58° 04,0	9° 15,8	141	3,1
11-sep-17	13	17:45	58° 02,9	9° 16,5	21:35	57° 51,0	9° 25,7	147	3,1
12-sep-17	14	22:30	57° 52,6	9° 26,5	2:20	58° 04,2	9° 16,6	146	3,1
12-sep-17	15	3:15	58° 03,5	9° 16,6	5:45	57° 55,8	9° 23,7	147	3,1
12-sep-17	16	7:15	57° 52,5	9° 27,0	11:20	58° 04,3	9° 16,8	149	3,1
12-sep-17	17	12:00	58° 03,7	9° 17,5	16:05	57° 52,1	9° 27,3	162	3,1
12-sep-17	18	16:45	57° 52,6	9° 27,4	20:45	58° 04,1	9° 17,3	148	3,1
13-sep-17	19	21:25	58° 03,6	9° 18,0	1:25	57° 52,0	9° 27,8	164	3,1
13-sep-17	20	2:05	57° 53,0	9° 26,0	4:05	57° 58,7	9° 21,6	146	3,1
13-sep-17	21	4:50	57° 59,6	9° 21,2	6:50	58° 04,6	9° 15,9	144	3,1
13-sep-17	22	7:30	58° 03,5	9° 17,4	11:30	57° 52,1	91 27,1	159	3,1
13-sep-17	23	12:15	57° 52,6	9° 26,7	16:10	58° 04,2	9° 16,4	145	3,1
13-sep-17	24	16:50	58° 03,5	9° 17,1	20:45	57° 52,0	9° 26,8	157	3,1
14-sep-17	25	21:30	57° 52,7	9° 26,1	1:30	58° 04,2	9° 15,6	145	3,1
14-sep-17	26	2:25	58° 03,0	9° 17,3	4:55	57° 55,9	9° 24,1	151	3,1
14-sep-17	27	6:30	57° 52,6	9° 27,8	10:50	58° 05,0	9° 16,7	150	3,1
14-sep-17	28	11:40	58° 09,9	9° 15,1	16:50	58° 18,4	8° 55,0	162	3,1

Table 5. Hauls description in the third trip (May 2018). Highlighted in yellow the hauls for selectivity experiments.

Date	Haul Nº	H start	Lat. Start	Long. Start	H. end	Lat. End	Long. End	depth (ft)	speed (kn)
05-may-18	1	8:30	58° 33,4	08° 13,0	12:15	58° 27,9	08° 31,1	162	3,1
05-may-18	2	13:15	58° 27,6	08° 33,7	17:15	58° 21,2	08° 52,1	174	3,1
05-may-18	3	18:00	58° 21,0	08° 54,2	22:00	58° 12,2	09° 10,9	173	3,1
06-may-18	4	22:50	58° 10,7	09° 13,2	2:50	57° 59,1	09° 23,0	160	3,1
06-may-18	5	3:45	58° 00,2	09° 21,8	7:20	58° 11,0	09° 12,3	159	3,1
06-may-18	6	8:05	58° 10,8	09° 14,1	12:05	58° 01,0	09° 26,6	177	3,1
06-may-18	7	12:55	58° 01,7	09° 25,5	16:45	58° 12,0	09° 15,7	184	3,1
06-may-18	8	17:30	58° 11,1	09° 16,0	21:30	57° 59,6	09° 26,1	179	3,1
07-may-18	9	22:25	57° 57,3	09° 24,4	1:40	57° 48,2	09° 28,2	159	3,1
07-may-18	10	2:45	57° 46,9	09° 27,6	6:25	57° 57,8	09° 23,7	158	3,1
07-may-18	11	7:20	57° 58,0	09° 27,1	11:15	58° 10,1	09° 18,1	180	3,1
07-may-18	12	12:10	58° 09,8	09° 17,9	16:15	57° 57,5	09° 27,0	180	3,1
07-may-18	13	17:00	57° 57,5	09° 27,8	20:50	58° 09,1	08° 20,0	185	3,1
08-may-18	14	21:40	58° 08,2	09° 19,2	1:40	57° 58,2	09° 26,0	172	3,1
08-may-18	15	2:40	57° 58,7	09° 24,6	6:30	58° 09,8	09° 17,1	170	3,1
08-may-18	16	7:20	58° 09,0	09° 17,2	11:35	57° 56,6	09° 25,6	167	3,1
08-may-18	17	12:25	57° 58,4	09° 24,7	16:20	58° 09,7	09° 18,7	174	3,1
08-may-18	18	17:10	58° 09,5	09° 18,5	21:10	57° 57,5	09° 25,3	172	3,1
09-may-18	19	22:10	57° 58,9	09° 23,8	2:00	58° 10,1	09° 15,4	168	3,1
09-may-18	20	2:50	58° 11,9	09° 12,6	6:55	58° 20,2	08° 55,9	176	3,1
09-may-18	21	7:45	58° 20,1	08° 56,5	12:30	58° 10,2	09° 15,0	173	3,1
09-may-18	22	13:20	58° 09,3	09° 16,7	17:40	57° 57,7	09° 25,2	166	3,1
10-may-18	23	6:45	58° 10,7	09° 16,9	11:30	57° 57,1	09° 26,7	177	3,1
10-may-18	24	12:20	57° 58,0	09° 26,3	16:15	58° 09,7	09° 17,8	175	3,1
10-may-18	25	17:00	58° 11,0	09° 15,5	19:40	58° 17,1	09° 04,0	180	3,1

Table 6. Hauls description in the fourth trip (May 2018). Highlighted in yellow the hauls for selectivity experiments. Highlighted in red useless haul.

Date	Haul Nº	H start	Lat. Start	Long. Start	H. end	Lat. End	Long. End	depth (ft)	speed (kn)
12-may-18	1	8:25	58° 34,0	08° 15,6	12:20	58° 27,9	08° 36,6	188	3,1
12-may-18	2	13:10	58° 27,1	08° 38,5	17:20	58° 20,2	08° 55,8	180	3,1
12-may-18	3	18:00	58° 19,9	08° 57,5	22:00	58° 10,8	09° 13,2	179	3,1
13-may-18	4	22:50	58° 09,4	09° 15,2	2:50	57° 58,6	09° 24,4	163	3,1
13-may-18	5	3:45	58° 01,6	09° 23,6	7:30	58° 11,0	09° 13,7	168	3,1
13-may-18	6	8:20	58° 11,2	09° 14,7	12:20	58° 00,8	09° 25,4	175	3,1
13-may-18	7	13:20	58° 02,6	09° 25,0	17:15	58° 13,2	09° 13,2	182	3,1
13-may-18	8	18:00	58° 12,3	09° 12,2	22:15	58° 01,0	09° 23,0	168	3,1
14-may-18	9	23:30	57° 59,7	09° 23,7	3:00	57° 47,1	09° 28,4	161	3,1
14-may-18	10	3:55	57° 49,9	09° 27,4	7:25	58° 00,5	09° 22,4	158	3,1
14-may-18	11	8:20	58° 02,0	09° 21,0	12:15	58° 12,9	09° 10,5	163	3,1

14-may-18	12	13:00	58° 11,7	09° 11,5	17:00	58° 01,5	09° 21,7	163	3,1
14-may-18	13	17:50	58° 01,5	09° 25,3	20:15	57° 54,9	09° 30,5	187	3,1
15-may-18	14	21:00	57° 52,7	09° 31,9	0:30	57° 42,4	09° 32,7	207	3,1
15-may-18	15	2:45	57° 31,4	09° 29,3	6:45	57° 20,2	09° 24,6	198	3,1
15-may-18	16	8:30	57° 19,4	09° 24,1	11:30	57° 10,6	09° 19,6	199	3,1
15-may-18	17	12:30	57° 11,4	09° 20,0	16:30	57° 23,2	09° 27,5	223	3,1
15-may-18	18	17:25	57° 25,2	09° 28,6	21:15	57° 37,2	09° 32,6	228	3,1
16-may-18	19	22:10	57° 36,1	09° 31,9	2:10	57° 24,0	09° 27,7	219	3,1
16-may-18	20	3:05	57° 25,3	09° 28,8	7:05	57° 37,7	09° 32,8	230	3,1
16-may-18	21	8:00	57° 36,8	09° 31,8	1:00	57° 25,1	09° 28,0	215	3,1
16-may-18	22	12:55	57° 25,6	09° 28,0	16:30	57° 36,5	09° 31,1	213	3,1
16-may-18	23	17:35	57° 35,1	09° 31,9	21:25	57° 23,7	09° 27,5	223	3,1
17-may-18	24	22:15	57° 25,2	09° 28,3	2:30	57° 38,1	09° 32,3	218	3,1
17-may-18	25	3:25	57° 36,5	09° 32,2	7:35	57° 25,0	09° 28,5	227	3,1
17-may-18	26	8:30	57° 24,6	09° 28,5	12:30	57° 37,2	09° 32,7	232	3,1
17-may-18	27	13:25	57° 35,8	09° 32,0	17:25	57° 24,6	09° 27,8	218	3,1
17-may-18	28	18:30	57° 24,0	09° 28,0	22:30	57° 37,2	09° 32,9	231	3,1
18-may-18	29	23:30	57° 36,4	09° 32,7	3:30	57° 24,4	09° 28,4	234	3,1
18-may-18	30	4:30	57° 26,5	09° 28,4	8:25	57° 38,5	09° 32,5	215	3,1
18-may-18	31	9:20	57° 40,5	09° 33,2	13:15	57° 53,0	09° 32,6	217	3,1
18-may-18	32	14:15	57° 54,5	09° 24,9	18:15	58° 05,7	09° 22,0	180	3,1
18-may-18	33	19:15	58° 06,5	09° 18,5	22:10	58° 13,2	09° 05,1	161	3,1

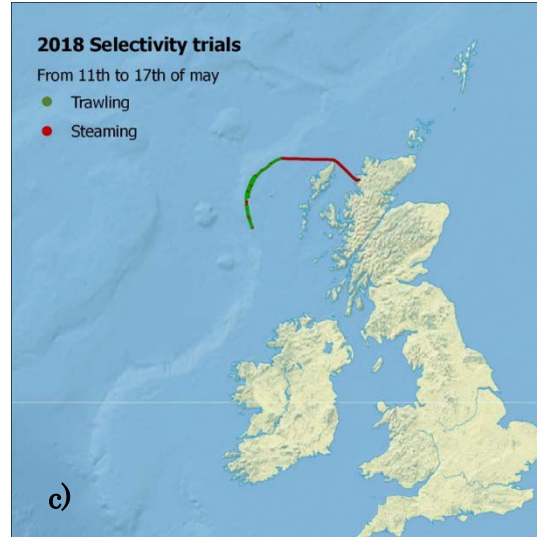
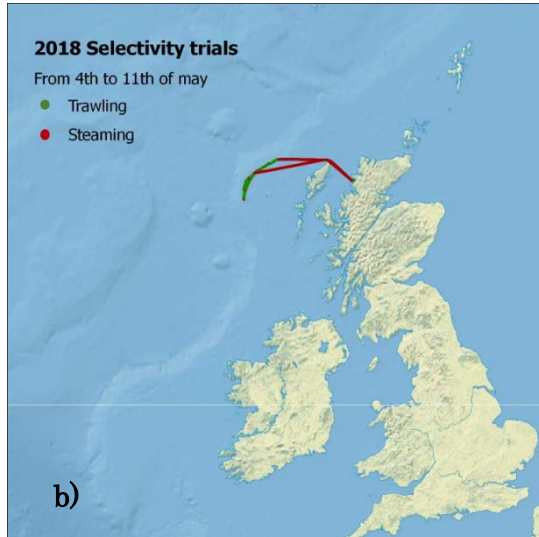
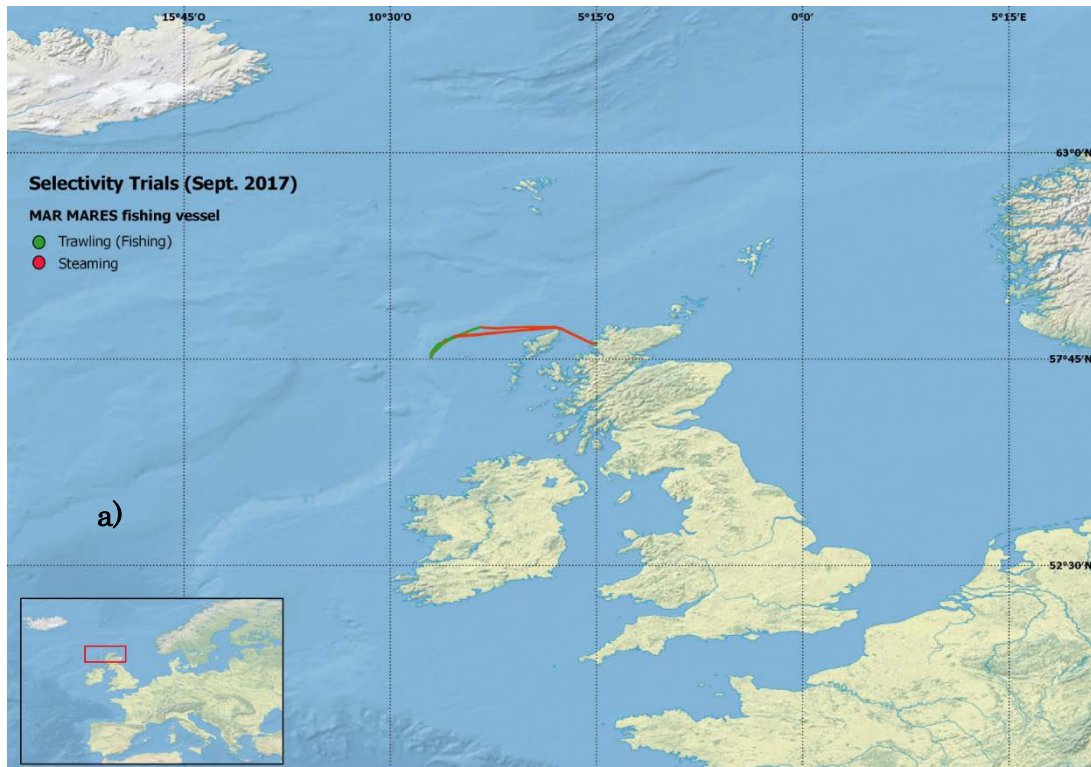


Figure 3: Plotted tracks of the F/V “Mar Mares” during the selectivity cruises. In red color we can see the track when the vessel was steaming and in green color when the vessel was fishing.

3.2 Selectivity of the device

Six were the selected group of species for escape analysis: Hake (*Merluccius merluccius*), Megrim (*Lepidorhombus spp.*), Haddock (*Melanogrammus aeglefinus*), Saithe (*Pollachius virens*), Ling (*Molva molva*) and Greater Silver smelt (*Argentina silus*). All the individuals from these species were measured during the sampling of each compartment, except the Megrim and Greater Silver smelt when great amounts were caught. When that situation occurred, subsampling was required.

The results obtained by cruise can be seen in table 7 (First cruise) and table 8 (Second cruise). According with the observations, Haddock showed the higher escape rates from all the analyzed species, 45,2% and 19.8% on average for the first and second cruise respectively. Megrim, as we could predict due to its bottom contact behavior, are the species with the lower escape rates through the square mesh upper panel, 4.6% and 3.4% on average. Hake shows moderate escapees, 16.6% and 15.3% while ling escape rate is 20.0% and 24.9% for each of the cruises. Saithe, present in representative quantities during the first cruise showed an escape rate of 36.1%, nevertheless in the second cruise was only testimonial. Finally, Greater silver smelt was present only in the second cruise with a considerably high escape rate of 38.4% on average

Table 7. Results on retention percentage by haul and compartment for the six species analyzed during September 2017. There was no catch of greater silver smelt during this cruise.

Trip	Haul Nº	Towing speed	HAKE		MEGRIM		HADDOCK		SAITHE		LING		GREATER SILVER SMELT	
			HKE SMP	HKE codend	LEZ SMP	LEZ codend	HAD SMP	HAD Codend	POC SMP	POC Codend	LIN SMP	LIN Codend	ARU SMP	ARU Codend
1	5	3,1	19,1%	80,9%	1,6%	98,4%	47,0%	53,0%	50,0%	50,0%	20,5%	79,5%	--	--
	15	3,1	12,5%	87,5%	2,1%	97,9%	43,5%	56,5%	36,2%	63,8%	20,0%	80,0%	--	--
	20	3,1	14,3%	85,7%	2,0%	98,0%	39,1%	60,9%	22,2%	77,8%	16,0%	84,0%	--	--
	21	3,1	50,0%	50,0%	3,0%	97,0%	47,8%	52,2%	15,2%	84,8%	48,0%	52,0%	--	--
	26	3,1	20,0%	80,0%	2,4%	97,6%	55,6%	44,4%	26,7%	73,3%	23,1%	76,9%	--	--
2	4	3,1	37,5%	62,5%	5,2%	94,8%	48,7%	51,3%	26,1%	73,9%	44,4%	55,6%	--	--
	5	3,1	26,7%	73,3%	3,5%	96,5%	44,7%	55,3%	40,6%	59,4%	13,5%	86,5%	--	--
	9	3,1	12,9%	87,1%	3,4%	49,0%	39,5%	60,5%	20,0%	80,0%	13,4%	86,6%	--	--
	10	3,1	20,8%	79,2%	4,0%	96,0%	45,1%	54,9%	46,7%	53,3%	10,9%	89,1%	--	--
	14	3,1	10,0%	90,0%	2,7%	97,3%	38,8%	61,2%	5,9%	94,1%	13,6%	86,4%	--	--
	15	3,1	0,0%	100,0%	6,8%	93,2%	46,3%	53,8%	47,6%	52,4%	22,2%	77,8%	--	--
	19	3,1	20,8%	76,1%	4,0%	95,1%	45,1%	56,2%	46,7%	38,2%	10,9%	51,0%	--	--
	20	3,1	18,8%	81,2%	3,6%	96,4%	47,7%	52,3%	39,1%	60,9%	29,4%	70,6%	--	--
	24	3,1	13,6%	86,4%	5,7%	94,3%	44,2%	55,8%	21,4%	78,6%	21,9%	78,1%	--	--
	25	3,1	5,0%	95,0%	7,1%	92,9%	52,2%	47,8%	66,7%	33,3%	20,0%	80,0%	--	--
	5	3,1	19,1%	80,9%	1,6%	98,4%	47,0%	53,0%	50,0%	50,0%	20,5%	79,5%	--	--
Average			16,6%	83,1%	4,6%	90,5%	45,2%	54,9%	36,1%	62,4%	20,0%	76,2%	--	--

Table 8. Results on retention percentage by haul and compartment for the six species analyzed during May 2018.

Trip	Haul Nº	Towing speed	HAKE		MEGRIM		HADDOCK		SAITHE		LING		GREATER SILVER SMELT	
			HKE SMP	HKE codend	LEZ SMP	LEZ codend	HAD SMP	HAD Codend	POC SMP	POC Codend	LIN SMP	LIN Codend	ARU SMP	ARU Codend
1	9	3,1	25,0%	75,0%	1,7%	98,3%	12,5%	87,5%	0,0%	100,0%	41,2%	58,8%	52,6%	47,4%
	10	3,1	51,1%	48,9%	7,1%	92,9%	35,1%	64,9%	33,3%	66,7%	27,8%	72,2%	48,7%	51,3%
	14	3,1	17,1%	82,9%	3,8%	96,2%	0,0%	100,0%	0,0%	100,0%	7,0%	93,2%	47,9%	52,1%
	15	3,1	21,1%	78,9%	2,6%	97,4%	87,5%	12,5%	0,0%	100,0%	20,6%	79,4%	31,9%	68,1%
2	4	3,1	14,0%	86,0%	2,9%	97,1%	50,0%	50,0%	0,0%	100,0%	45,5%	54,5%	46,7%	53,3%
	5	3,1	21,5%	78,5%	3,8%	96,2%	20,0%	80,0%	0,0%	0,0%	31,1%	68,9%	67,4%	32,6%
	9	3,1	19,9%	80,1%	1,8%	98,2%	39,3%	60,7%	25,0%	75,0%	21,4%	78,6%	36,8%	63,2%
	10	3,1	26,1%	73,9%	3,8%	96,2%	32,8%	67,2%	0,0%	0,0%	28,0%	72,0%	48,1%	51,9%
	16	3,1	2,9%	97,1%	1,7%	98,3%	0,0%	100,0%	0,0%	100,0%	23,1%	76,9%	22,7%	77,3%
	20	3,1	7,9%	92,1%	11,6%	88,4%	0,0%	100,0%	0,0%	100,0%	14,1%	85,9%	30,4%	69,6%
	22	3,1	20,9%	79,1%	1,5%	98,5%	0,0%	100,0%	0,0%	0,0%	28,2%	71,8%	36,4%	63,6%
	24	3,1	0,0%	100,0%	4,2%	95,8%	0,0%	100,0%	0,0%	0,0%	33,4%	66,6%	23,9%	76,1%
	25	3,1	3,7%	96,3%	2,8%	97,2%	0,0%	100,0%	0,0%	100,0%	28,9%	71,1%	23,5%	76,5%
	27	3,1	0,0%	100,0%	1,2%	98,8%	0,0%	100,0%	0,0%	0,0%	11,1%	88,9%	31,8%	68,2%
	29	3,1	4,5%	95,5%	1,6%	98,4%	0,0%	100,0%	0,0%	0,0%	19,5%	80,5%	30,1%	69,9%
	32	3,1	8,3%	91,7%	1,5%	98,5%	40,0%	60,0%	50,0%	50,0%	18,2%	81,8%	35,6%	64,4%
Average			15,3%	84,8%	3,4%	96,7%	19,8%	80,2%	6,8%	55,7%	24,9%	75,1%	38,4%	61,6%

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