



Cruise report

Sand eel survey 2020

Arctic Hunter and **M/S Reykjanes**

North Sea/Skagerrak – Sand eel area 1r, 2r & 3r
Including the extended area

Cruise: 1/2020

Vessel: Arctic Hunter

Area: Nordsøen, sand eel area 1r & 2r

Departure: Esbjerg **Date:** 16.11.2020

Arrival: Esbjerg **Date:** 7.12.2020

Vessel: M/S Reykjanes

Area: Nordsøen, sand eel area 1r & 3r

Departure: Esbjerg **Date:** 16.11.2020

Arrival: Esbjerg **Date:** 7.12.2020

Project number: 39064-20

Participants (scientific)

Lonny Hedvig:

Cruise leader: Dirk Cornelis Tijssen Danmarks Tekniske Universitet, Institut for Monitoring og Data (DTU Aqua) 16/11 – 7/12 2020

Consultant: Henning Pedersen FOGA Aps, Esbjerg 16/11 – 7/12 2020

Reykjanes:

Cruise leader: Jan Thomsen Danmarks Tekniske Universitet, Institut for Monitoring og Data (DTU Aqua) 16/11 – 7/12 2020

Assistant: Søren Valeur Eskildsen Danmarks Tekniske Universitet, Institut for Monitoring og Data (DTU Aqua) 16/11 – x/11 2020

Objectives

The purpose of the sand eel dredge survey is to collect sand eels buried in the seabed and compare catches (number and age composition) with the previous year's collections to assess the 2019 year class strength of sand eel in area 1r, 2r and 3r of the different areas adopted by ICES in 2016 (figure 1). Data from the dredge survey is the basis for calculating an index, which is used in the stock assessment for sand eel in the North Sea.

Achievements

Types of data collected

- Dredge (sand eels; species, weight, length)

Arctic Hunter:

- 21 days at sea
- 174 valid dredge hauls distributed over 58 sample positions.

Reykjanes:

- 21 days at sea
- 159 valid dredge hauls distributed over 53 sample positions.

Sampling method and strategy

Due to the extension of the survey area compared to 2016, two vessels participated in the survey: Arctic Hunter and Reykjanes. Reykjanes worked on sand eel area 3r and the northern part of eel area 2r (i.e. the North Sea and the major part of Skagerrak). Arctic Hunter carried out the remaining stations (i.e. the central and southern part of the North Sea).

Number of samples per position

- At all positions, where samples are taken, three stations are carried out in a "star" formation using the dredge. Furthermore, one sediment sample is taken using Van Veen sampler (0.2m²).

Time of the day for sampling

Sampling using the dredge is carried out during night time (i.e. 15 min after sunset to 15 min before sunrise). There is no time restriction on sediment samples (if carried out).

Working up of samples on board

For more detailed description of the working-up procedure, see the cruise program.

Catch from dredge

The catch of the sand eel species is sorted (Lesser sand eel (*Ammodytes marinus* and *Ammodytes tobianus*) are pooled). The weight and the length distribution of the lesser sand eel are recorded. Sub-samples are frozen for split into the two species and age reading later in the laboratory. Each drag is worked up separately.

Results

In total where 333 valid stations were fished using the dredges (table 1) distributed on 111 positions. The weather conditions were in periods very rough and prevented fishing for approx. 7 day in total. Furthermore, hydraulic winch problems forced arctic Hunter to return to Esbjerg for repair. All stations carried out during the survey are listed in Table 2.

Table 1 Valid samples obtained during the Sand eels survey 2020.

year	2020				
gearQuality	V				
Count of station					
Row Labels		1r	2r	3r	Grand Total
Arctic Hunter		153	21		174
Reykjanes		9	78	72	159
Grand Total		162	99	72	333

Compare of achieved number of hauls to planned number of hauls

In total 128 positions were listed to be sampled potentially. Each position is supposed to be fished three times (star formation). If all stations were fished, this should result in a total of 384 dredge stations. Of the total positions, 93 positions have high priority and 35 have low priority. In 2020 a total of 111 positions were sampled resulting in 333 dredge stations. 90 of the high priority positions were fished. 21 positions of low priority were fished. The reason for not being able to fish all high priority positions were bad weather, which ruined the planning and forced sub-optimal performance due to time constrains.

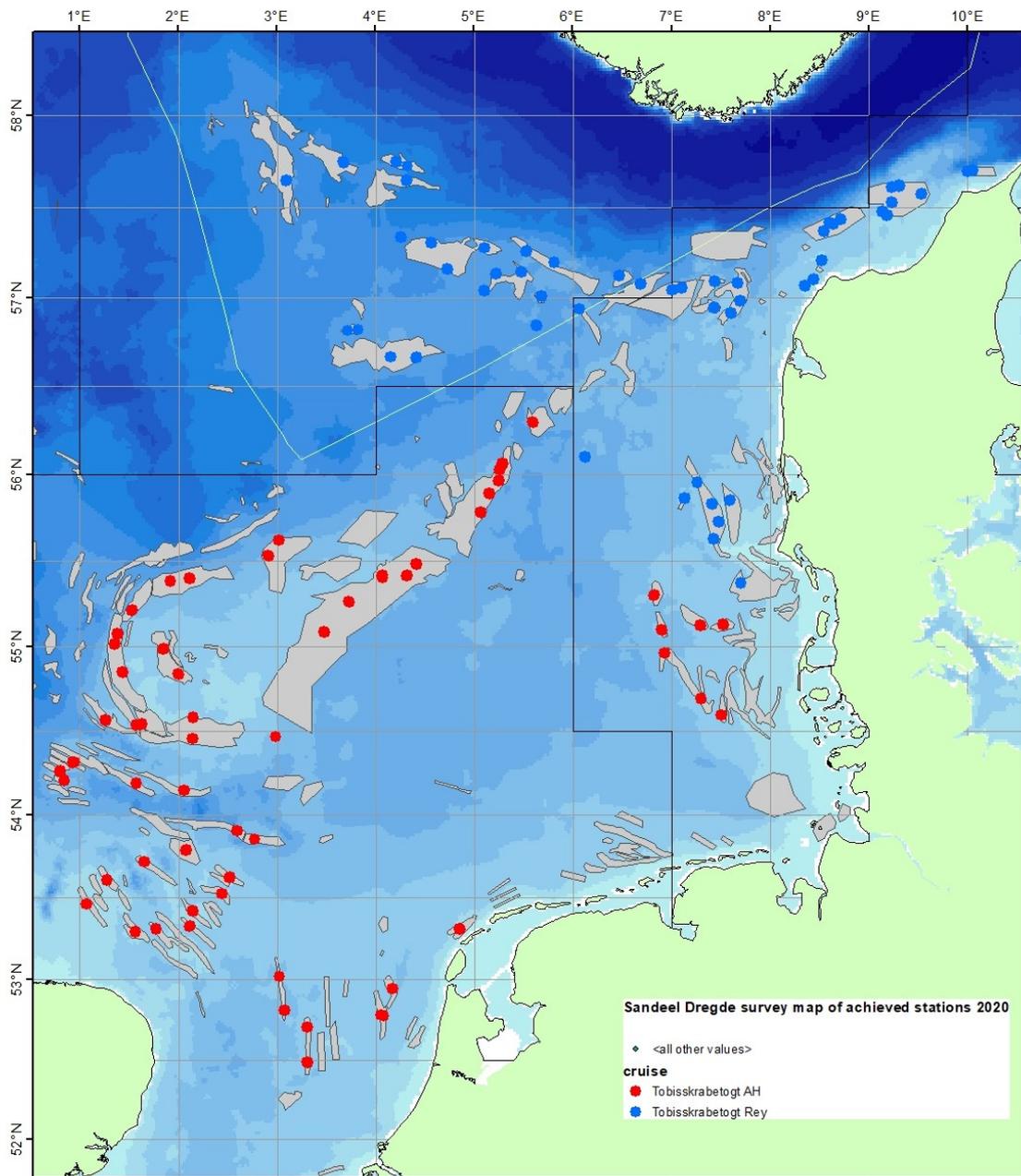


Figure 1 Realized stations in sand eel area 1r, 2r and 3r for the November/December cruise 2020 (Arctic Hunter (red) and Reykjanes (green)).

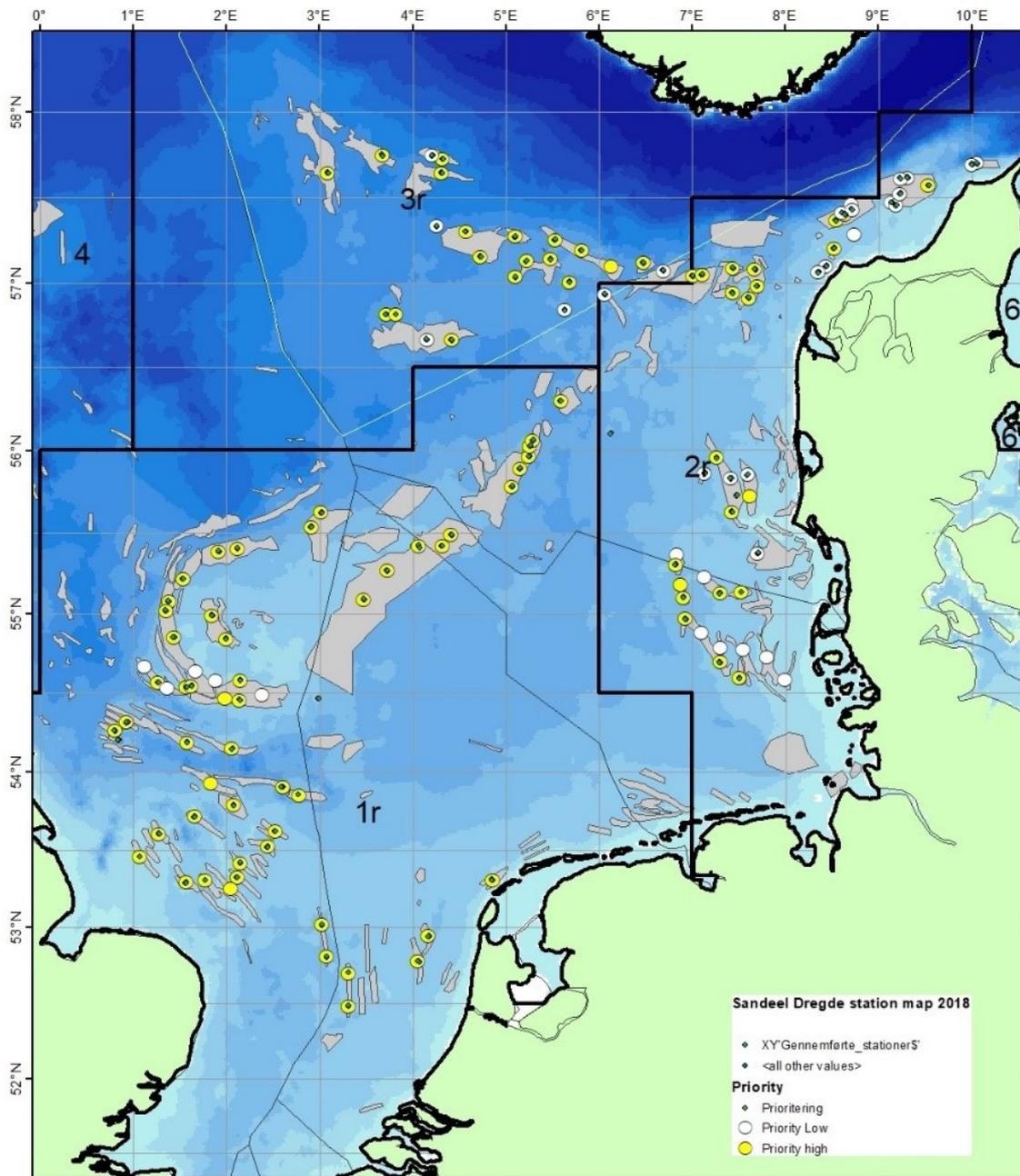


Figure 2 Compare of planned stations (according to Cruise plan) and realized stations in sand eel area 1r, 2r and 3r for the November/December cruise 2020. (Planned High priority station (yellow) and Planned Low priority station (white) and realized station (black dot).

Table 2 List of realized dredge and sediments stations during the sand eel survey in area 1r, 2r and 3r in November/December 2020.

ID	Vessel	Validity	date/SeaStart	fishing/gps	lat/Fs Start	lon/Fs Start	dir/Area	static/Rec/catch/g	distance	Gear ID	Depth (Average)	windspeed	Tidearea	Location	Priority
131	Arctic Hunter	V	19-11-2020	10	53.18.5810 N	004.51.0440 E	4C	35F4	0.379298	DK1	23.5	12	1r	Ny banke east	Priority high
131	Arctic Hunter	V	19-11-2020	10	53.18.4320 N	004.51.3930 E	4C	35F4	0.343357	DK1	24	12	1r	Ny banke east	Priority high
131	Arctic Hunter	V	19-11-2020	10	53.18.2830 N	004.51.0340 E	4C	35F4	0.372834	DK1	23	12	1r	Ny banke east	Priority high
128	Arctic Hunter	V	20-11-2020	10	52.56.3560 N	004.10.2260 E	4C	34F4	0.350393	DK1	25	12	1r	Ny banke east	Priority high
128	Arctic Hunter	V	20-11-2020	10	52.56.6370 N	004.10.2810 E	4C	34F4	0.335702	DK1	25	12	1r	Ny banke east	Priority high
128	Arctic Hunter	V	20-11-2020	10	52.56.3890 N	004.09.8960 E	4C	34F4	0.385503	DK1	25	12	1r	Ny banke east	Priority high
127	Arctic Hunter	V	20-11-2020	10	52.46.6950 N	004.03.4560 E	4C	34F4	0.373698	DK1	24	12	1r	Ny banke east	Priority high
127	Arctic Hunter	V	20-11-2020	10	52.46.3590 N	004.04.5170 E	4C	34F4	0.865022	DK1	24	12	1r	Ny banke east	Priority high
127	Arctic Hunter	V	20-11-2020	10	52.46.4930 N	004.03.1070 E	4C	34F4	0.356639	DK1	24	12	1r	Ny banke east	Priority high
123	Arctic Hunter	V	20-11-2020	10	52.29.2160 N	003.18.3220 E	4C	33F3	0.308125	DK1	26	9	1r	Svd for Dogger	Priority high
123	Arctic Hunter	V	20-11-2020	10	52.28.8820 N	003.18.6300 E	4C	33F3	0.390928	DK1	26	9	1r	Svd for Dogger	Priority high
123	Arctic Hunter	V	20-11-2020	10	52.29.1390 N	003.18.5310 E	4C	33F3	0.364975	DK1	26	9	1r	Svd for Dogger	Priority high
126	Arctic Hunter	V	20-11-2020	10	52.42.2150 N	003.18.4710 E	4C	34F3	0.40124	DK1	24	15	1r	Svd for Dogger	Priority high
126	Arctic Hunter	V	20-11-2020	10	52.42.1620 N	003.18.2630 E	4C	34F3	0.406435	DK1	24	15	1r	Svd for Dogger	Priority high
126	Arctic Hunter	V	20-11-2020	10	52.42.1020 N	003.18.6290 E	4C	34F3	0.350204	DK1	24	15	1r	Svd for Dogger	Priority high
124	Arctic Hunter	V	21-11-2020	10	52.48.5250 N	003.04.5090 E	4C	34F3	0.341948	DK1	26	12	1r	Svd for Dogger	Priority high
124	Arctic Hunter	V	21-11-2020	10	52.48.2490 N	003.04.5430 E	4C	34F3	0.325775	DK1	26	12	1r	Svd for Dogger	Priority high
124	Arctic Hunter	V	21-11-2020	10	52.48.3780 N	003.04.5750 E	4C	34F3	0.395263	DK1	26	12	1r	Svd for Dogger	Priority high
125	Arctic Hunter	V	21-11-2020	10	53.00.8640 N	003.01.4280 E	4C	35F3	0.360454	DK1	26	11	1r	Svd for Dogger	Priority high
125	Arctic Hunter	V	21-11-2020	10	53.01.1180 N	003.01.3940 E	4C	35F3	0.340197	DK1	26	11	1r	Svd for Dogger	Priority high
125	Arctic Hunter	V	21-11-2020	10	53.00.9900 N	003.01.5820 E	4C	35F3	0.358252	DK1	26	11	1r	Svd for Dogger	Priority high
8	Arctic Hunter	V	22-11-2020	10	54.34.7290 N	002.09.0580 E	4B	38F2	0.360664	DK1	20.5	13	1r	Dogger	Priority high
8	Arctic Hunter	V	22-11-2020	10	54.34.9850 N	002.09.0430 E	4B	38F2	0.391979	DK1	20.5	13	1r	Dogger	Priority high
8	Arctic Hunter	V	22-11-2020	10	54.34.8500 N	002.09.1160 E	4B	38F2	0.353818	DK1	20.5	13	1r	Dogger	Priority high
8	Arctic Hunter	V	22-11-2020	10	54.27.5720 N	002.08.6180 E	4B	38F2	0.342310	DK1	18.5	13	1r	Dogger	Priority high
8	Arctic Hunter	V	22-11-2020	10	54.27.5720 N	002.08.1620 E	4B	37F2	0.256173	DK1	18.5	13	1r	Dogger	Priority high
6	Arctic Hunter	V	22-11-2020	10	54.27.4370 N	002.08.6980 E	4B	37F2	0.363214	DK1	18.5	13	1r	Dogger	Priority high
4	Arctic Hunter	V	22-11-2020	10	54.27.9580 N	001.59.2890 E	4B	37F1	0.366046	DK1	20	15	1r	Dogger	Priority high
4	Arctic Hunter	V	22-11-2020	10	54.28.1720 N	001.59.2520 E	4B	37F1	0.333166	DK1	20	15	1r	Dogger	Priority high
4	Arctic Hunter	V	22-11-2020	10	54.28.0810 N	001.59.2970 E	4B	37F1	0.324545	DK1	20	15	1r	Dogger	Priority high
15	Arctic Hunter	V	23-11-2020	10	54.32.6340 N	001.37.8160 E	4B	38F1	0.406383	DK1	23	13	1r	Dogger	Priority high
15	Arctic Hunter	V	23-11-2020	10	54.32.5800 N	001.37.8160 E	4B	38F1	0.362039	DK1	23	13	1r	Dogger	Priority high
15	Arctic Hunter	V	23-11-2020	10	54.32.7320 N	001.37.7110 E	4B	38F1	0.345459	DK1	23	13	1r	Dogger	Priority high
15	Arctic Hunter	V	23-11-2020	10	54.32.1560 N	001.34.5650 E	4B	38F1	0.380615	DK1	26.5	14	1r	Dogger	Priority high
33	Arctic Hunter	V	25-11-2020	10	56.17.9350 N	005.35.0100 E	4B	41F5	0.369536	DK1	39.5	11	1r	Tail End	Priority high
33	Arctic Hunter	V	25-11-2020	10	56.17.7910 N	005.35.5780 E	4B	41F5	0.341264	DK1	39.5	11	1r	Tail End	Priority high
33	Arctic Hunter	V	25-11-2020	10	56.17.9580 N	005.35.5130 E	4B	41F5	0.359727	DK1	39.5	11	1r	Tail End	Priority high
32	Arctic Hunter	V	25-11-2020	10	56.03.6770 N	005.17.4210 E	4B	41F5	0.359479	DK1	44	6	1r	Tail End	Priority high
32	Arctic Hunter	V	25-11-2020	10	56.03.7210 N	005.16.7980 E	4B	41F5	0.35369	DK1	44	6	1r	Tail End	Priority high
32	Arctic Hunter	V	25-11-2020	10	56.03.8620 N	005.17.4450 E	4B	41F5	0.370015	DK1	44	6	1r	Tail End	Priority high
31	Arctic Hunter	V	25-11-2020	10	56.01.5170 N	005.15.7940 E	4B	41F5	0.383698	DK1	41.5	8	1r	Tail End	Priority high
31	Arctic Hunter	V	25-11-2020	10	56.01.6890 N	005.15.1520 E	4B	41F5	0.331049	DK1	41.5	8	1r	Tail End	Priority high
31	Arctic Hunter	V	25-11-2020	10	56.01.8260 N	005.15.7950 E	4B	41F5	0.342213	DK1	41.5	8	1r	Tail End	Priority high
30	Arctic Hunter	V	26-11-2020	10	55.57.7910 N	005.15.1720 E	4B	40F5	0.403553	DK1	46.5	8	1r	Tail End	Priority high
30	Arctic Hunter	V	26-11-2020	10	55.58.1250 N	005.14.9220 E	4B	40F5	0.325289	DK1	46.5	8	1r	Tail End	Priority high
30	Arctic Hunter	V	26-11-2020	10	55.57.7950 N	005.14.6740 E	4B	40F5	0.349115	DK1	46.5	8	1r	Tail End	Priority high
29	Arctic Hunter	V	26-11-2020	10	55.53.3020 N	005.09.1630 E	4B	40F5	0.351216	DK1	38	8	1r	Tail End	Priority high
29	Arctic Hunter	V	26-11-2020	10	55.53.4430 N	005.08.6190 E	4B	40F5	0.320122	DK1	38	8	1r	Tail End	Priority high
29	Arctic Hunter	V	26-11-2020	10	55.53.5760 N	005.09.1450 E	4B	40F5	0.33833	DK1	38	8	1r	Tail End	Priority high
28	Arctic Hunter	V	26-11-2020	10	55.48.7480 N	005.04.0800 E	4B	40F5	0.29872	DK1	38	0	1r	Tail End	Priority high
28	Arctic Hunter	V	26-11-2020	10	55.48.5160 N	005.03.5760 E	4B	40F5	0.332628	DK1	38	0	1r	Tail End	Priority high
28	Arctic Hunter	V	26-11-2020	10	55.47.0260 N	005.04.1280 E	4B	40F5	0.251331	DK1	38	0	1r	Tail End	Priority high
27	Arctic Hunter	V	26-11-2020	10	55.28.8810 N	004.24.8320 E	4B	39F4	0.3298	DK1	31.5	3	1r	Elbow Spit	Priority high
27	Arctic Hunter	V	26-11-2020	10	55.29.0000 N	004.24.3080 E	4B	39F4	0.336248	DK1	31.5	3	1r	Elbow Spit	Priority high
27	Arctic Hunter	V	26-11-2020	10	55.29.1620 N	004.24.8840 E	4B	39F4	0.364811	DK1	31.5	3	1r	Elbow Spit	Priority high
26	Arctic Hunter	V	26-11-2020	10	55.24.8380 N	004.19.2500 E	4B	39F4	0.331051	DK1	35	3	1r	Elbow Spit	Priority high
26	Arctic Hunter	V	26-11-2020	10	55.24.9840 N	004.18.6700 E	4B	39F4	0.355403	DK1	35	3	1r	Elbow Spit	Priority high
26	Arctic Hunter	V	26-11-2020	10	55.25.1080 N	004.19.2620 E	4B	39F4	0.360102	DK1	35	3	1r	Elbow Spit	Priority high
25	Arctic Hunter	V	26-11-2020	10	55.24.9540 N	004.03.6700 E	4B	39F4	0.343834	DK1	30	2	1r	Elbow Spit	Priority high
25	Arctic Hunter	V	26-11-2020	10	55.25.2860 N	004.03.9210 E	4B	39F4	0.349247	DK1	30	2	1r	Elbow Spit	Priority high
25	Arctic Hunter	V	26-11-2020	10	55.24.1960 N	004.04.1810 E	4B	39F4	0.304214	DK1	30	2	1r	Elbow Spit	Priority high
24	Arctic Hunter	V	27-11-2020	10	55.15.8210 N	003.43.2080 E	4B	39F3	0.335876	DK1	34.5	2	1r	Elbow Spit	Priority high
24	Arctic Hunter	V	27-11-2020	10	55.15.6800 N	003.43.7650 E	4B	39F3	0.339723	DK1	34.5	2	1r	Elbow Spit	Priority high
24	Arctic Hunter	V	27-11-2020	10	55.16.0000 N	003.43.5400 E	4B	39F3	0.347291	DK1	34.5	2	1r	Elbow Spit	Priority high
23	Arctic Hunter	V	27-11-2020	10	55.05.1950 N	003.28.2340 E	4B	39F3	0.353371	DK1	33.5	2	1r	Elbow Spit	Priority high
23	Arctic Hunter	V	27-11-2020	10	55.05.1010 N	003.28.8320 E	4B	39F3	0.340139	DK1	33.5	2	1r	Elbow Spit	Priority high
23	Arctic Hunter	V	27-11-2020	10	55.05.3850 N	003.28.5800 E	4B	39F3	0.324382	DK1	33.5	2	1r	Elbow Spit	Priority high
104	Arctic Hunter	V	27-11-2020	10	55.37.3770 N	003.01.1980 E	4B	40F3	0.331464	DK1	47.5	4	1r	Svd for Dogger	Priority high
104	Arctic Hunter	V	27-11-2020	10	55.37.2550 N	003.00.7040 E	4B	40F3	0.353189	DK1	47.5	4	1r	Svd for Dogger	Priority high
104	Arctic Hunter	V	27-11-2020	10	55.37.1470 N	003.01.2310 E	4B	40F3	0.32646	DK1	47.5	4	1r	Svd for Dogger	Priority high
105	Arctic Hunter	V	27-11-2020	10	55.32.3220 N	002.54.2320 E	4B	40F2	0.337591	DK1	43.5	4	1r	Svd for Dogger	Priority high
105	Arctic Hunter	V	27-11-2020	10	55.32.0000 N	002.54.2700 E	4B	40F2	0.354559	DK1	43.5	4	1r	Svd for Dogger	Priority high
105	Arctic Hunter	V	27-11-2020	10	55.31.8430 N	002.54.7960 E	4B	40F2	0.336533	DK1	43.5	4	1r	Svd for Dogger	Priority high
106	Arctic Hunter	V	27-11-2020	10	55.24.0010 N	002.07.3030 E	4B	39F2	0.322767	DK1	43.5	6	1r	Svd for Dogger	Priority high
106	Arctic Hunter	V	27-11-2020	10	55.23.8510 N	002.06.8560 E	4B	39F2	0.355834	DK1	43.5	6	1r	Svd for Dogger	Priority high
106	Arctic Hunter	V	27-11-2020	10	55.24.1500 N	002.06.8160 E	4B	39F2	0.326686	DK1	43.5	6	1r	Svd for Dogger	Priority high
107	Arctic Hunter	V	28-11-2020	10	55.22.9980 N	001.55.2940 E	4B	39F1	0.321766	DK1	47.5	0	1r	Svd for Dogger	Priority high
107	Arctic Hunter	V	28-11-2020	10	55.22.8400 N	001.54.7960 E	4B	39F1	0.379517	DK1	47.5	0	1r	Svd for Dogger	Priority high
107	Arctic Hunter	V	28-11-2020	10	55.23.1590 N	001.54.8020 E	4B	39F1	0.343479	DK1	47.5	0	1r	Svd for Dogger	Priority high
10	Arctic Hunter	V	28-11-2020	10	55.12.8350 N										

5	Arctic Hunter	V	2-12-2020	10	54.11.3840 N	001.34.9400 E	4B	3F71	0.339589	DK1	28.5	3	1r	Dogger	Priority high
5	Arctic Hunter	V	2-12-2020	10	54.11.2780 N	001.34.5610 E	4B	3F71	0.354684	DK1	28.5	3	1r	Dogger	Priority high
7	Arctic Hunter	V	2-12-2020	10	54.08.9650 N	002.03.8830 E	4B	3F72	0.355744	DK1	27	3	1r	Dogger	Priority high
7	Arctic Hunter	V	2-12-2020	10	54.08.9650 N	002.03.8830 E	4B	3F72	0.355744	DK1	27	3	1r	Dogger	Priority high
7	Arctic Hunter	V	2-12-2020	10	54.08.8460 N	002.03.4120 E	4B	3F72	0.34404	DK1	27	3	1r	Dogger	Priority high
115	Arctic Hunter	V	2-12-2020	10	53.47.3840 N	002.04.7240 E	4B	3F62	0.334353	DK1	30.5	10	1r	Svd for Dogger	Priority high
115	Arctic Hunter	V	2-12-2020	10	53.46.9940 N	002.04.5210 E	4B	3F62	0.329948	DK1	30.5	10	1r	Svd for Dogger	Priority high
115	Arctic Hunter	V	2-12-2020	10	53.47.2150 N	002.04.8600 E	4B	3F62	0.348853	DK1	30.5	10	1r	Svd for Dogger	Priority high
109	Arctic Hunter	V	2-12-2020	10	53.43.0000 N	001.39.4510 E	4B	3F61	0.342872	DK1	26.5	9	1r	Svd for Dogger	Priority high
109	Arctic Hunter	V	2-12-2020	10	53.42.8590 N	001.39.0160 E	4B	3F61	0.328995	DK1	26.5	9	1r	Svd for Dogger	Priority high
109	Arctic Hunter	V	2-12-2020	10	53.42.8760 N	001.39.3270 E	4B	3F61	0.329973	DK1	26.5	9	1r	Svd for Dogger	Priority high
130	Arctic Hunter	V	2-12-2020	10	53.36.1310 N	001.16.4450 E	4B	3F61	0.315212	DK1	24.5	10	1r	Ny banke west	Priority high
130	Arctic Hunter	V	2-12-2020	10	53.36.4260 N	001.16.6160 E	4B	3F61	0.302452	DK1	24.5	10	1r	Ny banke west	Priority high
129	Arctic Hunter	V	2-12-2020	10	53.35.1950 N	001.16.8690 E	4B	3F61	0.296083	DK1	24.5	10	1r	Ny banke west	Priority high
129	Arctic Hunter	V	3-12-2020	10	53.27.4340 N	001.04.0530 E	4C	3F51	1.698578	DK1	19	10	1r	Dossing	Priority high
129	Arctic Hunter	V	3-12-2020	10	53.27.4300 N	001.03.9500 E	4C	3F51	0.377315	DK1	19	10	1r	Dossing	Priority high
129	Arctic Hunter	V	3-12-2020	10	53.27.4900 N	001.04.1900 E	4C	3F51	0.361218	DK1	19	10	1r	Dossing	Priority high
116	Arctic Hunter	V	4-12-2020	10	53.25.2810 N	002.08.6100 E	4C	3F52	0.374549	DK1	18	15	1r	Svd for Dogger	Priority high
116	Arctic Hunter	V	4-12-2020	10	53.24.9680 N	002.08.7830 E	4C	3F52	0.340399	DK1	18	15	1r	Svd for Dogger	Priority high
116	Arctic Hunter	V	4-12-2020	10	53.25.2080 N	002.08.7400 E	4C	3F52	0.346667	DK1	18	15	1r	Svd for Dogger	Priority high
114	Arctic Hunter	V	4-12-2020	10	53.31.2480 N	002.26.2040 E	4B	3F62	0.351038	DK1	17.5	12	1r	Svd for Dogger	Priority high
114	Arctic Hunter	V	4-12-2020	10	53.31.5130 N	002.26.3250 E	4B	3F62	0.374864	DK1	17.5	12	1r	Svd for Dogger	Priority high
114	Arctic Hunter	V	4-12-2020	10	53.31.2630 N	002.26.5390 E	4B	3F62	0.328873	DK1	17.5	12	1r	Svd for Dogger	Priority high
113	Arctic Hunter	V	5-12-2020	10	53.37.1330 N	002.31.0390 E	4B	3F62	0.335861	DK1	23	9	1r	Svd for Dogger	Priority high
113	Arctic Hunter	V	5-12-2020	10	53.37.3930 N	002.31.2000 E	4B	3F62	0.338241	DK1	23	9	1r	Svd for Dogger	Priority high
113	Arctic Hunter	V	5-12-2020	10	53.37.1500 N	002.31.3230 E	4B	3F62	0.347439	DK1	23	9	1r	Svd for Dogger	Priority high
112	Arctic Hunter	V	5-12-2020	10	53.31.2630 N	002.26.5390 E	4B	3F62	0.327345	DK1	18	15	1r	Svd for Dogger	Priority high
112	Arctic Hunter	V	5-12-2020	10	53.51.2970 N	002.46.2510 E	4B	3F62	0.340754	DK1	35.5	15	1r	Svd for Dogger	Priority high
112	Arctic Hunter	V	5-12-2020	10	53.51.3570 N	002.46.3470 E	4B	3F62	0.329162	DK1	35.5	15	1r	Svd for Dogger	Priority high
111	Arctic Hunter	V	5-12-2020	10	53.54.3560 N	002.36.0950 E	4B	3F62	0.343913	DK1	32	11	1r	Svd for Dogger	Priority high
111	Arctic Hunter	V	5-12-2020	10	53.54.3530 N	002.35.9620 E	4B	3F62	0.354873	DK1	32	11	1r	Svd for Dogger	Priority high
111	Arctic Hunter	V	5-12-2020	10	53.54.4310 N	002.35.2170 E	4B	3F62	0.850688	DK1	32	11	1r	Svd for Dogger	Priority high
94	Arctic Hunter	V	6-12-2020	10	54.35.6320 N	007.30.3060 E	4B	3F67	0.367259	DK1	24.5	10	2r	West Coast Jutland	Priority high
94	Arctic Hunter	V	6-12-2020	10	54.35.9570 N	007.30.4510 E	4B	3F67	0.344765	DK1	24.5	10	2r	West Coast Jutland	Priority high
94	Arctic Hunter	V	6-12-2020	10	54.35.6350 N	007.30.0450 E	4B	3F67	0.35	DK1	24.5	10	2r	West Coast Jutland	Priority high
93	Arctic Hunter	V	6-12-2020	10	54.41.5790 N	007.17.8750 E	4B	3F67	0.35551	DK1	24.5	11	2r	West Coast Jutland	Priority high
93	Arctic Hunter	V	6-12-2020	10	54.41.9440 N	007.17.6600 E	4B	3F67	0.360296	DK1	24.5	11	2r	West Coast Jutland	Priority high
93	Arctic Hunter	V	6-12-2020	10	54.41.3690 N	007.17.6650 E	4B	3F67	0.565527	DK1	24.5	11	2r	West Coast Jutland	Priority high
90	Arctic Hunter	V	6-12-2020	10	54.57.7890 N	006.55.7370 E	4B	3F66	0.35994	DK1	29.5	8	2r	West Coast Jutland	Priority high
90	Arctic Hunter	V	6-12-2020	10	54.57.9200 N	006.55.1980 E	4B	3F66	0.345228	DK1	29.5	8	2r	West Coast Jutland	Priority high
90	Arctic Hunter	V	6-12-2020	10	54.57.7860 N	006.55.5620 E	4B	3F66	0.309765	DK1	29.5	8	2r	West Coast Jutland	Priority high
89	Arctic Hunter	V	6-12-2020	10	55.05.6780 N	006.54.1080 E	4B	3F66	0.35633	DK1	28	6	2r	West Coast Jutland	Priority high
89	Arctic Hunter	V	6-12-2020	10	55.05.9890 N	006.53.9080 E	4B	3F66	0.345578	DK1	28	6	2r	West Coast Jutland	Priority high
89	Arctic Hunter	V	6-12-2020	10	55.05.8660 N	006.54.4200 E	4B	3F66	0.335857	DK1	28	6	2r	West Coast Jutland	Priority high
87	Arctic Hunter	V	7-12-2020	10	55.18.2450 N	006.49.5140 E	4B	3F66	0.339423	DK1	25.5	9	2r	West Coast Jutland	Priority high
87	Arctic Hunter	V	7-12-2020	10	55.17.8720 N	006.49.2590 E	4B	3F66	0.325364	DK1	25.5	9	2r	West Coast Jutland	Priority high
87	Arctic Hunter	V	7-12-2020	10	55.18.4310 N	006.49.5140 E	4B	3F66	0.344927	DK1	25.5	9	2r	West Coast Jutland	Priority high
100	Arctic Hunter	V	7-12-2020	10	55.07.5900 N	007.17.5680 E	4B	3F67	0.359761	DK1	23.5	0	2r	West Coast Jutland	Priority high
100	Arctic Hunter	V	7-12-2020	10	55.07.4630 N	007.18.0130 E	4B	3F67	0.351161	DK1	23.5	0	2r	West Coast Jutland	Priority high
100	Arctic Hunter	V	7-12-2020	10	55.07.3330 N	007.17.5190 E	4B	3F67	0.367452	DK1	23.5	0	2r	West Coast Jutland	Priority high
99	Arctic Hunter	V	7-12-2020	10	55.07.9470 N	007.31.2410 E	4B	3F67	0.31839	DK1	23.5	0	2r	West Coast Jutland	Priority high
99	Arctic Hunter	V	7-12-2020	10	55.07.7930 N	007.31.2160 E	4B	3F67	0.26804	DK1	23.5	0	2r	West Coast Jutland	Priority high
99	Arctic Hunter	V	7-12-2020	10	55.07.7720 N	007.31.4710 E	4B	3F67	0.320331	DK1	23.5	0	2r	West Coast Jutland	Priority high
122	Arctic Hunter	V	3-12-2020	10	53.17.1590 N	001.33.5850 E	4C	3F51	0.335929	DK1	14.5	6	1r	Svd for Dogger	Priority high
122	Arctic Hunter	V	3-12-2020	10	53.17.4380 N	001.33.7760 E	4C	3F51	0.341007	DK1	14.5	6	1r	Svd for Dogger	Priority high
122	Arctic Hunter	V	4-12-2020	10	53.17.2100 N	001.33.8000 E	4C	3F51	0.341375	DK1	14.5	6	1r	Svd for Dogger	Priority high
118	Arctic Hunter	V	4-12-2020	10	53.18.4820 N	001.46.4170 E	4C	3F51	0.336291	DK1	18	2	1r	Svd for Dogger	Priority high
118	Arctic Hunter	V	4-12-2020	10	53.18.1660 N	001.46.2060 E	4C	3F51	0.346198	DK1	18	2	1r	Svd for Dogger	Priority high
118	Arctic Hunter	V	4-12-2020	10	53.18.4240 N	001.46.2190 E	4C	3F51	0.336828	DK1	18	2	1r	Svd for Dogger	Priority high
117	Arctic Hunter	V	4-12-2020	10	53.19.3440 N	002.06.7860 E	4C	3F52	0.351158	DK1	18	15	1r	Svd for Dogger	Priority high
117	Arctic Hunter	V	4-12-2020	10	53.19.3960 N	002.06.8630 E	4C	3F52	0.361366	DK1	18	15	1r	Svd for Dogger	Priority high
117	Arctic Hunter	V	4-12-2020	10	53.19.4900 N	002.06.9710 E	4C	3F52	0.353302	DK1	18	15	1r	Svd for Dogger	Priority high
54	Reykjanes	V	20-11-2020	10	57.38.9140 N	003.05.3600 E	4A	44F3	0.302391	DK3	58	15	3r	Norway EEZ	Priority high
54	Reykjanes	V	20-11-2020	10	57.38.6820 N	003.05.2620 E	4A	44F3	0.283165	DK3	58	15	3r	Norway EEZ	Priority high
54	Reykjanes	V	20-11-2020	10	57.38.7780 N	003.05.7360 E	4A	44F3	0.316821	DK3	58	15	3r	Norway EEZ	Priority high
51	Reykjanes	V	20-11-2020	10	57.45.1280 N	003.40.1700 E	4A	44F3	0.298211	DK3	67	15	3r	Norway EEZ	Priority high
51	Reykjanes	V	20-11-2020	10	57.44.4920 N	003.40.4690 E	4A	44F3	0.284457	DK3	67	15	3r	Norway EEZ	Priority high
51	Reykjanes	V	20-11-2020	10	57.44.5141 N	003.40.5800 E	4A	44F3	0.479919	DK3	67	15	3r	Norway EEZ	Priority high
64	Reykjanes	V	21-11-2020	10	57.44.6950 N	004.12.1670 E	4A	44F4	0.355093	DK3	70	15	3r	Norway EEZ	Priority low
64	Reykjanes	V	21-11-2020	10	57.44.8140 N	004.12.8530 E	4A	44F4	0.313295	DK3	70	15	3r	Norway EEZ	Priority low
64	Reykjanes	V	21-11-2020	10	57.44.9520 N	004.12.4300 E	4A	44F4	0.320452	DK3	70	15	3r	Norway EEZ	Priority low
52	Reykjanes	V	21-11-2020	10	57.43.6440 N	004.18.9230 E	4A	44F4	0.305703	DK3	68	15	3r	Norway EEZ	Priority high
52	Reykjanes	V	21-11-2020	10	57.43.1910 N	004.19.1070 E	4A	44F4	0.29659	DK3	68	15	3r	Norway EEZ	Priority high
52	Reykjanes	V	21-11-2020	10	57.43.5990 N	004.19.3810 E	4A	44F4	0.298484	DK3	68	15	3r	Norway EEZ	Priority high
53	Reykjanes	V	21-11-2020	10	57.38.8520 N	004.18.5610 E	4A	44F4	0.308698	DK3	70	15	3r	Norway EEZ	Priority high
53	Reykjanes	V	21-11-2020	10	57.38.5960 N	004.18.6770 E	4A	44F4	0.296601	DK3	70	15	3r	Norway EEZ	Priority high
53	Reykjanes	V	21-11-2020	10	57.38.7850 N	004.18.9780 E	4A	44F4	0.279536	DK3	70	15	3r	Norway EEZ	Priority high
63	Reykjanes	V	22-11-2020	10	57.20.2340 N	004.15.2610 E	4B	43F4	0.276288	DK3	68	15	3r	Norway EEZ	Priority low
63	Reykjanes	V	22-11-2020	10	57.19.9780 N	004.15.1150 E	4B	43F4	0.340681	DK3	68	15	3r	Norway EEZ	Priority low
63	Reykjanes	V	22-11-2020	10	57.20.0780 N	004.16.8140 E	4B	43F4	0.161844	DK3	68	15	3r	Norway EEZ	Priority low
50	Reykjanes	V	22-11-2020	10	57.18.1070 N	004.33.7800 E									

37	Revkjanes	V	27-11-2020	10	57.02.5600 N	006.59.9600 E	4B	43F6	0.330017	DK3	43	2	3r	Norway EEZ	Priority high
37	Revkjanes	V	27-11-2020	10	57.02.4090 N	007.00.4260 E	4B	43F7	0.302474	DK3	43	2	3r	Norway EEZ	Priority high
37	Revkjanes	V	27-11-2020	10	57.02.6630 N	007.00.3660 E	4B	43F7	0.314707	DK3	43	2	3r	Norway EEZ	Priority high
38	Revkjanes	V	27-11-2020	10	57.03.0560 N	007.05.9710 E	4B	43F7	0.315579	DK3	29	4	2r	Tail End	Priority high
38	Revkjanes	V	27-11-2020	10	57.02.9820 N	007.06.5450 E	4B	43F7	0.325837	DK3	29	4	2r	Tail End	Priority high
38	Revkjanes	V	27-11-2020	10	57.03.2480 N	007.06.2950 E	4B	43F7	0.316444	DK3	29	4	2r	Tail End	Priority high
38	Revkjanes	V	28-11-2020	10	57.05.4210 N	007.25.8940 E	4B	43F7	0.321981	DK3	27	7	2r	Tail End	Priority high
39	Revkjanes	V	28-11-2020	10	57.05.3690 N	007.26.4700 E	4B	43F7	0.334757	DK3	27	7	2r	Tail End	Priority high
39	Revkjanes	V	28-11-2020	10	57.05.6470 N	007.26.1770 E	4B	43F7	0.303263	DK3	27	7	2r	Tail End	Priority high
34	Revkjanes	V	28-11-2020	10	56.56.6530 N	007.25.9170 E	4B	42F7	0.316794	DK3	28	6	1r	Tail End	Priority high
34	Revkjanes	V	28-11-2020	10	56.56.4960 N	007.25.4700 E	4B	42F7	0.322225	DK3	28	6	1r	Tail End	Priority high
34	Revkjanes	V	28-11-2020	10	56.56.4460 N	007.26.0660 E	4B	42F7	0.327204	DK3	28	6	1r	Tail End	Priority high
36	Revkjanes	V	28-11-2020	10	56.54.8020 N	007.35.9320 E	4B	42F7	0.337263	DK3	25	5	1r	Tail End	Priority high
36	Revkjanes	V	28-11-2020	10	56.54.5950 N	007.36.3420 E	4B	42F7	0.317987	DK3	25	5	1r	Tail End	Priority high
36	Revkjanes	V	28-11-2020	10	56.54.8880 N	007.36.3510 E	4B	42F7	0.317112	DK3	25	5	1r	Tail End	Priority high
35	Revkjanes	V	28-11-2020	10	56.58.8130 N	007.41.6500 E	4B	42F7	0.321344	DK3	23	2	1r	Tail End	Priority high
35	Revkjanes	V	28-11-2020	10	56.58.9530 N	007.42.1180 E	4B	42F7	0.315707	DK3	23	2	1r	Tail End	Priority high
35	Revkjanes	V	28-11-2020	10	56.59.0470 N	007.41.5370 E	4B	42F7	0.323503	DK3	23	2	1r	Tail End	Priority high
40	Revkjanes	V	28-11-2020	10	57.04.6890 N	007.40.4150 E	4B	43F7	0.309203	DK3	28	2	2r	Tail End	Priority high
40	Revkjanes	V	28-11-2020	10	57.04.9850 N	007.40.4340 E	4B	43F7	0.313353	DK3	28	2	2r	Tail End	Priority high
40	Revkjanes	V	28-11-2020	10	57.04.8450 N	007.39.9710 E	4B	43F7	0.326409	DK3	28	2	2r	Tail End	Priority high
80	Revkjanes	V	1-12-2020	10	57.42.0380 N	010.02.9480 E	20	44G0	0.330484	DK3	24	15	2r	Skagerrak	Priority Low
80	Revkjanes	V	1-12-2020	10	57.42.0650 N	010.03.6120 E	20	44G0	0.327024	DK3	24	15	2r	Skagerrak	Priority Low
80	Revkjanes	V	1-12-2020	10	57.42.2670 N	010.03.2950 E	20	44G0	0.313234	DK3	24	15	2r	Skagerrak	Priority Low
81	Revkjanes	V	1-12-2020	10	57.41.7140 N	010.00.4110 E	20	44G0	0.311858	DK3	24	15	2r	Skagerrak	Priority Low
81	Revkjanes	V	1-12-2020	10	57.41.8370 N	009.59.9030 E	20	44F9	0.320944	DK3	24	15	2r	Skagerrak	Priority Low
81	Revkjanes	V	1-12-2020	10	57.41.5470 N	009.59.9690 E	20	44F9	0.339694	DK3	24	15	2r	Skagerrak	Priority Low
77	Revkjanes	V	2-12-2020	10	57.34.5420 N	009.32.9800 E	20	44F9	0.325252	DK3	22	8	2r	Skagerrak	Priority high
77	Revkjanes	V	2-12-2020	10	57.34.2250 N	009.31.7970 E	20	44F9	0.318685	DK3	22	8	2r	Skagerrak	Priority high
77	Revkjanes	V	2-12-2020	10	57.34.3790 N	009.32.3760 E	20	44F9	0.324402	DK3	22	8	2r	Skagerrak	Priority high
78	Revkjanes	V	2-12-2020	10	57.36.9990 N	009.18.8920 E	20	44F9	0.325389	DK3	24	10	2r	Skagerrak	Priority Low
78	Revkjanes	V	2-12-2020	10	57.37.2190 N	009.18.5600 E	20	44F9	0.334804	DK3	24	10	2r	Skagerrak	Priority Low
78	Revkjanes	V	2-12-2020	10	57.36.8780 N	009.18.3990 E	20	44F9	0.336737	DK3	24	10	2r	Skagerrak	Priority Low
79	Revkjanes	V	2-12-2020	10	57.36.7640 N	009.14.2230 E	20	44F9	0.322835	DK3	23	10	2r	Skagerrak	Priority Low
79	Revkjanes	V	2-12-2020	10	57.36.8540 N	009.13.7510 E	20	44F9	0.322595	DK3	23	10	2r	Skagerrak	Priority Low
79	Revkjanes	V	2-12-2020	10	57.36.5690 N	009.13.8610 E	20	44F9	0.374531	DK3	23	10	2r	Skagerrak	Priority Low
76	Revkjanes	V	2-12-2020	10	57.31.6990 N	009.13.6380 E	20	44F9	0.326813	DK3	19	14	2r	Skagerrak	Priority Low
76	Revkjanes	V	2-12-2020	10	57.31.3920 N	009.13.4980 E	20	44F9	0.327384	DK3	19	14	2r	Skagerrak	Priority Low
76	Revkjanes	V	2-12-2020	10	57.31.4380 N	009.14.1910 E	20	44F9	0.336335	DK3	19	14	2r	Skagerrak	Priority Low
75	Revkjanes	V	3-12-2020	10	57.27.5150 N	009.11.1380 E	20	43F8	0.336254	DK3	19	15	2r	Skagerrak	Priority Low
75	Revkjanes	V	3-12-2020	10	57.27.2540 N	009.10.9020 E	20	43F9	0.338654	DK3	19	15	2r	Skagerrak	Priority Low
75	Revkjanes	V	3-12-2020	10	57.27.3650 N	009.11.5280 E	20	43F9	0.374175	DK3	19	15	2r	Skagerrak	Priority Low
72	Revkjanes	V	3-12-2020	10	57.28.3160 N	009.08.2220 E	20	43F9	0.330863	DK3	21	15	2r	Skagerrak	Priority Low
72	Revkjanes	V	3-12-2020	10	57.28.6260 N	009.08.4460 E	20	43F9	0.328039	DK3	21	15	2r	Skagerrak	Priority Low
72	Revkjanes	V	3-12-2020	10	57.28.5620 N	009.08.0120 E	20	43F9	0.314757	DK3	21	15	2r	Skagerrak	Priority Low
74	Revkjanes	V	3-12-2020	10	57.25.9900 N	008.43.1970 E	20	43F8	0.330327	DK3	28	14	2r	Skagerrak	Priority Low
74	Revkjanes	V	3-12-2020	10	57.28.1000 N	008.42.6410 E	20	43F8	0.335734	DK3	28	14	2r	Skagerrak	Priority Low
74	Revkjanes	V	3-12-2020	10	57.25.8120 N	008.42.8080 E	20	43F8	0.3227	DK3	28	14	2r	Skagerrak	Priority Low
71	Revkjanes	V	3-12-2020	10	57.24.9190 N	008.36.6370 E	20	43F8	0.344081	DK3	31	12	2r	Skagerrak	Priority Low
71	Revkjanes	V	3-12-2020	10	57.24.9480 N	008.36.0050 E	20	43F8	0.33206	DK3	31	12	2r	Skagerrak	Priority Low
71	Revkjanes	V	4-12-2020	10	57.24.7510 N	008.36.2600 E	20	43F8	0.328868	DK3	31	12	2r	Skagerrak	Priority Low
70	Revkjanes	V	4-12-2020	10	57.24.2160 N	008.38.4710 E	20	43F8	0.311471	DK3	27	10	2r	Skagerrak	Priority high
70	Revkjanes	V	4-12-2020	10	57.24.4730 N	008.38.1070 E	20	43F8	0.307398	DK3	27	10	2r	Skagerrak	Priority high
70	Revkjanes	V	4-12-2020	10	57.24.1800 N	008.37.9560 E	20	43F8	0.321789	DK3	27	10	2r	Skagerrak	Priority high
69	Revkjanes	V	4-12-2020	10	57.22.2400 N	008.32.8530 E	20	43F8	0.321575	DK3	31	10	2r	Skagerrak	Priority high
69	Revkjanes	V	4-12-2020	10	57.22.1560 N	008.32.2610 E	20	43F8	0.342476	DK3	31	10	2r	Skagerrak	Priority high
69	Revkjanes	V	4-12-2020	10	57.21.9460 N	008.32.6530 E	20	43F8	0.312211	DK3	31	10	2r	Skagerrak	Priority high
67	Revkjanes	V	4-12-2020	10	57.12.5350 N	008.31.3200 E	20	43F8	0.331396	DK3	31	10	2r	Skagerrak	Priority high
67	Revkjanes	V	4-12-2020	10	57.12.2900 N	008.30.9230 E	20	43F8	0.326938	DK3	31	10	2r	Skagerrak	Priority high
67	Revkjanes	V	4-12-2020	10	57.12.3380 N	008.31.5810 E	20	43F8	0.310605	DK3	21	10	2r	Skagerrak	Priority high
65	Revkjanes	V	4-12-2020	10	57.06.1670 N	008.26.2950 E	4B	43F8	0.321874	DK3	18	9	2r	Skagerrak	Priority Low
65	Revkjanes	V	4-12-2020	10	57.05.9650 N	008.25.8180 E	4B	43F8	0.322971	DK3	18	9	2r	Skagerrak	Priority Low
65	Revkjanes	V	4-12-2020	10	57.05.9930 N	008.26.4480 E	4B	43F8	0.34099	DK3	18	9	2r	Skagerrak	Priority Low
66	Revkjanes	V	5-12-2020	10	57.04.0710 N	008.21.3990 E	4B	43F8	0.324528	DK3	20	6	2r	Skagerrak	Priority Low
66	Revkjanes	V	5-12-2020	10	57.04.0480 N	008.20.7990 E	4B	43F8	0.319592	DK3	20	6	2r	Skagerrak	Priority Low
66	Revkjanes	V	5-12-2020	10	57.03.7800 N	008.21.2090 E	4B	43F8	0.327953	DK3	20	6	2r	Skagerrak	Priority Low
82	Revkjanes	V	5-12-2020	10	55.57.2730 N	007.15.8470 E	4B	40F7	0.340656	DK3	26	9	2r	West Coast Jutland	Priority high
82	Revkjanes	V	5-12-2020	10	55.57.5210 N	007.15.4980 E	4B	40F7	0.339994	DK3	26	9	2r	West Coast Jutland	Priority high
82	Revkjanes	V	5-12-2020	10	55.57.1680 N	007.15.4000 E	4B	40F7	0.340145	DK3	26	9	2r	West Coast Jutland	Priority high
83	Revkjanes	V	6-12-2020	10	55.51.8800 N	007.07.9590 E	4B	40F7	0.33652	DK3	25	9	2r	West Coast Jutland	Priority Low
83	Revkjanes	V	6-12-2020	10	55.51.7390 N	007.07.4390 E	4B	40F7	0.351462	DK3	25	9	2r	West Coast Jutland	Priority Low
83	Revkjanes	V	6-12-2020	10	55.51.7240 N	007.08.1000 E	4B	40F7	0.331705	DK3	25	9	2r	West Coast Jutland	Priority Low
103	Revkjanes	V	6-12-2020	10	55.51.3250 N	007.35.5490 E	4B	40F7	0.331225	DK3	19	9	2r	West Coast Jutland	Priority Low
103	Revkjanes	V	6-12-2020	10	55.51.0650 N	007.35.2900 E	4B	40F7	0.35689	DK3	19	9	2r	West Coast Jutland	Priority Low
103	Revkjanes	V	6-12-2020	10	55.51.2150 N	007.35.8490 E	4B	40F7	0.339323	DK3	19	9	2r	West Coast Jutland	Priority Low
84	Revkjanes	V	6-12-2020	11	55.49.6180 N	007.24.5450 E	4B	40F7	0.339957	DK3	25	10	2r	West Coast Jutland	Priority Low
84	Revkjanes	V	6-12-2020	10	55.49.7950 N	007.25.0900 E	4B	40F7	0.344362	DK3	25	10	2r	West Coast Jutland	Priority Low
84	Revkjanes	V	6-12-2020	10	55.49.8140 N	007.24.4400 E	4B	40F7	0.338447	DK3	25	10	2r	West Coast Jutland	Priority Low
102	Revkjanes	V	6-12-2020	10	55.43.7060 N	007.28.4730 E	4B	40F7	0.344286	DK3	21	7	2r	West Coast Jutland	Priority high
102	Revkjanes	V	6-12-2020	10	55.43.3810 N	007.28.5920 E	4B	40F7	0.339527	DK3	21	7	2r	West Coast Jutland	Priority high
102	Revkjanes	V	6-12-2020	10	55.43.6840 N	007.28.8490 E	4B	40F7	0.317562	DK3	21	7	2r	West Coast Jutland	Priority