

*Recommendation 19 2014: Protection of VMEs in NEAFC Regulatory Areas, as Amended by Recommendation 09:2015 and Recommendation 10:2018*

The Commission hereby adopts the following recommendation pursuant to Article 5 of the Convention:

**Recommendation on the protection of vulnerable marine ecosystems in the NEAFC  
Regulatory Area**

As proposed by the Permanent Committee on Management and Science, the Commission hereby adopts the following recommendation pursuant to Articles 5, 6 and 7 of the Convention:

**Article 1  
Objective of the Recommendation**

1. The objective of this Recommendation is to ensure the implementation by NEAFC of effective measures to prevent significant adverse impacts of bottom fishing activities on vulnerable marine ecosystems known to occur or likely to occur in the NEAFC Regulatory Area based on the best available scientific information provided or endorsed by the International Council for the Exploration of the Sea (ICES).
2. This Recommendation takes into account NEAFC's responsibility as a regional fisheries management organisation to adopt measures in the Regulatory Area in regard to bottom fishing activities, in order to contribute to the key objectives of the UN General Assembly Resolutions on the protection of vulnerable marine ecosystems and to ensure the long-term sustainability of deep sea fish stocks and non-target species; the rebuilding of depleted stocks and, where scientific information is uncertain, unreliable, or inadequate, conservation and management measures established consistent with the precautionary approach.
3. This Recommendation shall be without prejudice to any sovereign rights of coastal States over the continental shelf in accordance with the UN Convention on the Law of the Sea for the purpose of exploring and exploiting its natural resources, including living organisms belonging to sedentary species, such as vulnerable marine ecosystems.
4. For the purpose of this Recommendation, NEAFC will take into account the guidance provided by the FAO in the framework of the Code of Conduct for Responsible Fisheries and any other internationally agreed standards, as appropriate.

**Article 2  
Use of terms**

For the purpose of this Recommendation:

- (a) "bottom fishing activities" means the use of fishing gear that is likely to contact the seafloor during the normal course of fishing operations;

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- (b) “encounter” means catch of vulnerable marine ecosystem indicator species above threshold levels set out in Article 9;
- (c) ”existing bottom fishing areas” means the portion of the Regulatory Area where bottom fishing has historically occurred as set out in Article 4;
- (d) “exploratory bottom fishing” means all commercial bottom fishing activities outside area closures and existing bottom fishing areas, or if there are significant changes to the conduct and technology of bottom fishing activities within existing bottom fishing areas;
- (e) “significant adverse impacts” has the same meaning and characteristics as those described in paragraphs 17-20 of the FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas;
- (f) “VME indicators” are those included in Annex 5; and
- (g) “vulnerable marine ecosystems”, hereafter VMEs, has the same meaning and characteristics as those contained in paragraphs 42 and 43 of the FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas.

**Article 3**  
**Regulation of bottom fishing activities**

The Commission shall, taking account of the advice provided by ICES, and that provided pursuant to Article 7.3, as well as data and information arising from reports pursuant to Article 8 adopt conservation and management measures to prevent significant adverse impacts on VMEs. Such measures may include:

- (a) allowing, prohibiting or restricting bottom fishing activities;
- (b) requiring specific mitigation measures for bottom fishing activities;
- (c) allowing, prohibiting or restricting bottom fishing activities with certain gear types, or changes in gear design and/or deployment; and/or
- (d) any other relevant requirements or restrictions to prevent significant adverse impacts on VMEs.

**Article 4**  
**Existing bottom fishing areas**

Based on information concerning bottom fishing activities in the period 1987-2007, there are hereby established existing bottom fishing areas as set out in Annex 1. The Secretary shall update Annex 1 following decisions by the Commission pursuant to Articles 5.3 and 6.8.

**Article 5**  
**Area closures for the protection of VMEs**

1. Area closures for the protection of VMEs in the Regulatory Area shall be based on advice by ICES and on the procedures set out in recommendations regulating fishing activities in the Regulatory Area.
2. Bottom fishing activities shall be prohibited in the following areas, within the coordinates as defined in Annex 2:
  - (a) Northern MAR Area;
  - (b) Middle MAR Area (Charlie-Gibbs Fracture Zone and sub-Polar Frontal Region);
  - (c) Southern MAR Area;
  - (d) Altair Seamount;
  - (e) Antialtair Seamount;
  - (f) Hatton Bank 1;
  - (g) Rockall Bank;
  - (h) Logachev Mounds;
  - (i) West Rockall Mounds;
  - (j) Edora's bank;
  - (k) Southwest Rockall Bank;
  - (l) Hatton-Rockall Basin; and
  - (m) Hatton Bank 2.
3. If ICES advises that there are sub-areas where significant adverse impacts on VMEs are not considered likely within the areas referred to in paragraph 2 of this Article, the Recommendation may be amended by the Commission to exclude those sub-areas from the prohibition under paragraph 2.
4. Within the areas defined in paragraph 2 Contracting Parties intending to conduct scientific investigations, which shall exclude exploratory bottom fishing pursuant to Article 6, shall notify

the Secretary of their intended research programmes, taking account of Article 206 of the 1982 UN Convention on the Law of the Sea. The Secretary shall forward such notifications to all Contracting Parties as well as to PECMAS.

5. Contracting Parties shall ensure that any such proposed investigations shall be assessed to see whether they would have significant adverse impacts on VMEs.

## **Article 6**

### **Exploratory bottom fishing**

1. Prior to proposing to undertake exploratory bottom fishing, Contracting Parties shall gather relevant data to facilitate assessments of exploratory bottom fishing by the Permanent Committee on Management and Science (PECMAS) and ICES. Such data should preferably include data from sea-bed mapping programmes, i.e. data from echo-sounders, if practicable multi-beam sounders, and/or other data relevant to the preliminary assessment of the risk of significant adverse impacts on VMEs.

2. The relevant Contracting Party shall forward to the Secretary a Notice of Intent to undertake exploratory bottom fishing at least six months prior to the proposed start of the fishing. The Notice of Intent shall be accompanied by the following information:

(a) harvesting plan, which outlines target species, proposed dates and areas and the type of bottom fishing gear to be used. Area and effort restrictions shall be considered to ensure that fishing occurs on a gradual basis in a limited geographical area;

(b) mitigation plan, including measures to prevent significant adverse impact to VMEs that may be encountered during the fishery;

(c) catch monitoring plan, including recording/reporting of all species caught;

(d) a sufficient system for recording/reporting of catch, detailed to conduct an assessment of activity, if required;

(e) fine-scale data collection plan on the distribution of intended tows and sets, to the extent practicable on a tow-by-tow and set-by-set basis;

(e) data collection plan to facilitate the identification of VMEs in the area fished;

(f) plans for monitoring of bottom fishing activities using gear monitoring technology, including cameras if practicable; and

(g) monitoring data obtained pursuant to paragraph 1 of this Article.

3. The Notice of Intent, along with the accompanying information, shall be forwarded by the Secretary to all Contracting Parties as well as to PECMAS for review. The relevant Contracting

Party shall also provide an assessment of the proposed exploratory bottom fishing in accordance with Article 7 of this Recommendation.

4. Exploratory bottom fishing shall only commence after having been assessed by PECMAS and approved by the Commission.
5. Preference shall be given by the relevant Contracting Party to exploratory bottom fishing using fishing gear and methods with the least bottom contact, in well-mapped areas and at times when impacts are likely to have the least adverse impacts on organisms other than the target species.
6. The relevant Contracting Party shall ensure that vessels flying its flag and conducting exploratory bottom fishing have a scientific observer on board. Observers shall collect data in accordance with the VME Data Collection Protocol as set out in Annex 3.
7. The relevant Contracting Party shall provide a report of the results of such activities to the Secretary for circulation to ICES and to all other Contracting Parties. It shall ensure that the data, which derives from exploratory bottom fishing, will be made available to ICES.
8. The Commission shall review the assessments undertaken in accordance with Article 7 and the results of the fishing protocols implemented by the participating fleets. The Commission may decide to authorise new bottom fishing activities based upon the results of exploratory bottom fishing conducted in the previous two years. Areas where such new bottom fishing activities are authorised shall be defined as “existing bottom fishing areas” pursuant to Article 4.

#### **Article 7**

##### **Assessment of proposed exploratory bottom fishing activities**

1. Each Contracting Party proposing to undertake exploratory bottom fishing in the Regulatory Area shall submit to the Secretary, in addition to the Notice of Intent, a preliminary assessment of the known and anticipated impacts of the proposed bottom fishing activity as described in Annex 4.
2. The Secretary shall promptly forward the assessment to all Contracting Parties and to PECMAS. The elaboration of the assessment shall be carried out in accordance with guidance developed by ICES, or, in the absence of such guidance, to the best of the ability of the Contracting Party concerned.
3. PECMAS shall, either at its next session or through correspondence, undertake an evaluation, in accordance with the precautionary approach, of the submitted documentation, taking account of the risks of significant adverse impact on VMEs. Such evaluation shall take place no later than three months following the date of submission of the Notice of Intent. It shall be undertaken according to procedures and standards developed by PECMAS, which shall use any other information required, including information from other fisheries in the region or similar fisheries elsewhere and, in particular, any advice provided by ICES.

4. PECMAS shall subsequently provide advice to the Commission as to whether the proposed exploratory bottom fishing should be approved, or would have significant adverse impacts on VMEs and, if so, on the mitigation measures to prevent such impacts. The Commission shall, within 30 days of receiving this advice, either give or withhold its approval for the proposed bottom fishing activities.

### **Article 8** **Encounters with possible VMEs**

1. Each Contracting Party shall ensure that fishing vessels flying its flag abide by the following rules, where, in the course of bottom fishing activities, evidence of VMEs is encountered:

- (a) fishing vessels shall quantify catch of VME indicators;
- (b) if the quantity of VME indicators caught in a fishing operation (such as trawl tow or set of a gillnet or longline) is beyond the thresholds defined in Article 9, the following shall apply:
  - (i) if an encounter is discovered in connection with the hauling of a trawl gear, the fishing vessel shall cease fishing and move out of an area defined as a 2 nautical mile wide band (polygon) on both sides of the “track” of the trawl haul during which an encounter occurred. The “track” is defined as the line joining consecutive VMS positions, supplemented by more exact information, between the start and the end of the tow, extended by 2 nautical miles at both ends;
  - (ii) if an encounter is discovered in connection with other bottom fishing gears the fishing vessel shall cease fishing and move away at least 2 nautical miles from the position that the evidence suggests is closest to the exact encounter location. The master shall use his or her best judgment based on all available sources of information; and
  - (iii) the master shall report the incident, including the “track” or position determined under sub-paragraphs (i) and (ii), without delay to its flag state, which shall forward the information to the Secretary immediately. Contracting Parties may if they so wish also require their vessels to report the incident directly to the Secretary.

2. The Secretary shall immediately inform all Contracting Parties, and ICES, and archive the information received pursuant to paragraph 1, and shall at the same time implement a temporary closure in the areas identified in paragraph 1.b of this Article.

3. In order to assess accurately the position and the extent of the VME encountered in terms of paragraph 1 of this Article, sea bed mapping, preferably, should be carried out using echosounders, and if practicable multi-beam sounders. The result of any mapping shall be submitted

to ICES for its evaluation and advice. This advice shall be forwarded to PECMAS prior to any eventual decision taken by the Commission to reopen such areas.

4. PECMAS shall examine the temporary closure, and any relevant ICES advice, at its next meeting or by correspondence. If, on the basis of assessment by ICES, PECMAS advises that the area has or is likely to have a VME, the Secretary shall request Contracting Parties to maintain the temporary closure until such time that the Commission has acted upon the advice from PECMAS. If the PECMAS evaluation does not conclude that the temporary closed area has or is likely to have a VME, the Secretary shall inform Contracting Parties which may re-open the area to their fishing vessels.

### **Article 9 Threshold levels**

An encounter with a possible VME is defined as:

- (a) for a trawl tow, and other fishing gear than longlines: the presence of more than 30 kg of live coral and/or 400 kg of live sponge of VME indicators; and
- (b) for a longline set: the presence of VME indicators on 10 hooks per caught per 1000 hook segment or per 1200 m section of long line, whichever is the shorter.

### **Article 10 Review**

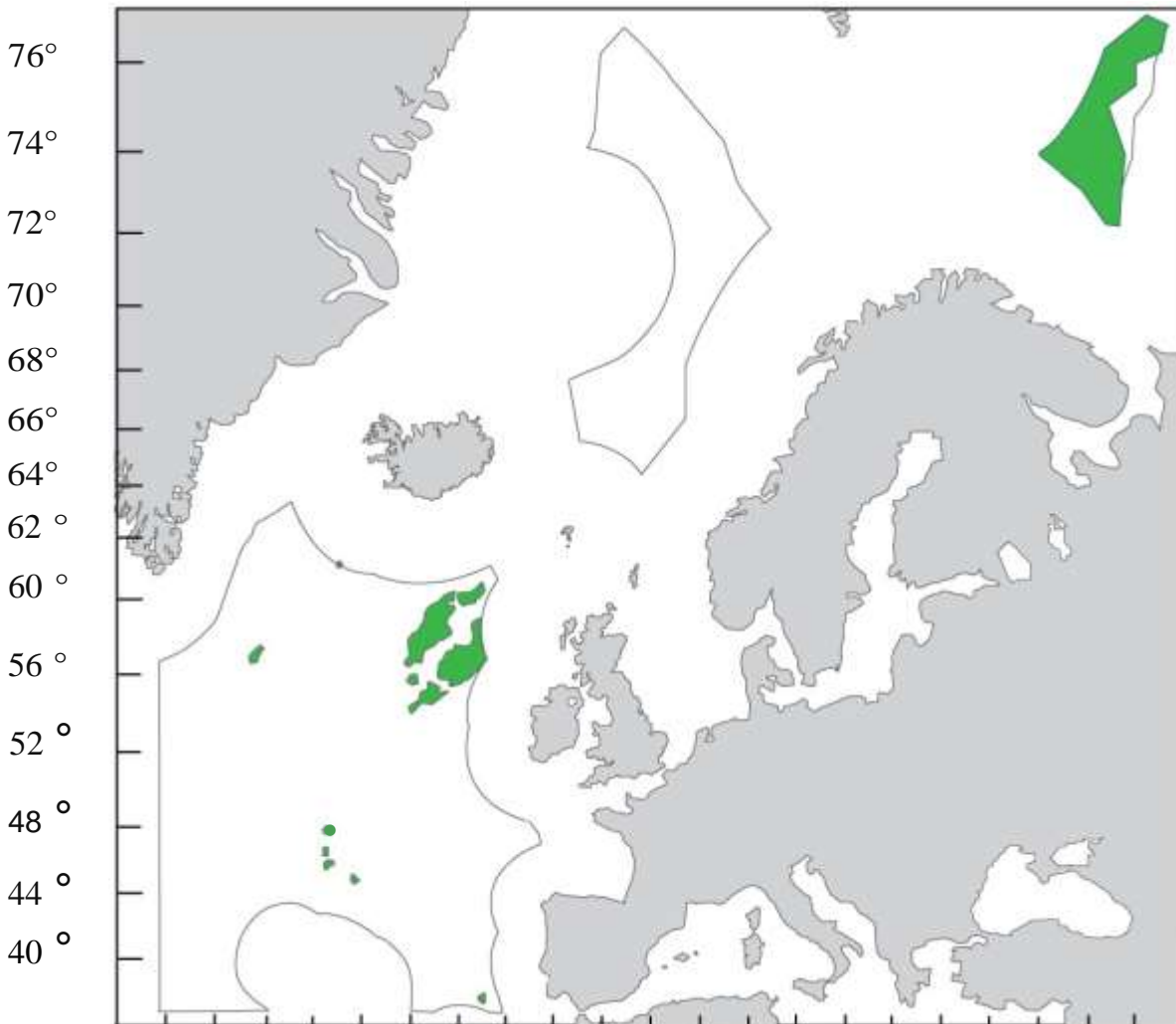
1. The Commission shall every 5 years from the date of this Recommendation entering into force examine the effectiveness of this Recommendation in protecting VMEs from significant adverse impacts. In addition, this review process shall be supplemented by modifications required as a result of new scientific advice.

2. Article 5.2 shall be in force until 31 December 2022. Before that time, the measure shall be reviewed by the Commission with the intention of extending the period that the article is in force, unless the conclusion of the review is that the continued application of the measure or parts of the measure is not required.

### **Article 11 Repeals**

Recommendations 16:2008 (bottom fishing), PV:2009 (VMEs closed to bottom fishing), 13:2009 (bottom fishing), 11:2010 (bottom fishing), PV:2010 (existing and new bottom fishing areas), 15:2011 (bottom fishing), NA:2011 (consolidated text), 8:2013 (Hatton Rockall VME closures) and 9:2013 (Edora's Bank VME closure) are repealed.

**Existing Bottom Fishing Areas**





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**Existing Fishing Area Coordinates**

**(Hatton Bank HAR 1 – 5; Josephine Seamount JOS 1; Mid-Atlantic MAR 1 – 5; Barents Sea BAR 1 and Reykjanes Ridge )**

<b>HAR 1</b>					
	lat	lon	LAT	LON	
1	60.0557	-14.2048	60°03.34	-14°12.29	
2	59.6708	-14.0275	59°40.25	-14°01.65	
3	59.5262	-14.2562	59°31.57	-14°15.37	
4	59.3197	-14.6393	59°19.18	-14°38.36	
5	59.2495	-14.8738	59°14.97	-14°52.43	
6	59.1178	-14.9539	59°07.07	-14°57.23	
7	59.0620	-15.7430	59°03.72	-15°44.58	
8	58.9765	-15.9202	58°58.59	-15°55.21	
9	59.0620	-16.3034	59°03.72	-16°18.20	
10	59.2992	-16.5207	59°17.95	-16°31.24	
11	59.6160	-16.5207	59°36.96	-16°31.24	
12	59.6160	-15.4456	59°36.96	-15°26.74	
13	59.8005	-14.8280	59°48.03	-14°49.68	
14	60.0670	-14.3420	60°04.02	-14°20.52	
15	60.0557	-14.2048	60°03.34	-14°12.29	

<b>HAR 2</b>					
	lat	lon	LAT	LON	
1	59.6998	-16.7094	59°41.99	-16°42.56	
2	59.2496	-16.8066	59°14.97	-16°48.39	
3	59.1530	-17.4699	59°09.18	-17°28.19	
4	58.9913	-17.3384	58°59.48	-17°20.30	
5	59.0884	-16.9552	59°05.30	-16°57.31	
6	58.9618	-16.7094	58°57.71	-16°42.56	
7	58.4600	-17.4584	58°27.60	-17°27.51	
8	58.1897	-17.5156	58°11.38	-17°30.94	
9	58.0901	-17.2297	58°05.41	-17°13.78	
10	57.9720	-17.2412	57°58.32	-17°14.47	
11	57.9144	-17.1039	57°54.86	-17°06.23	
12	57.8292	-17.0925	57°49.75	-17°05.55	
13	57.5511	-17.7844	57°33.07	-17°47.06	
14	57.4928	-18.2075	57°29.57	-18°12.45	
15	57.2955	-18.4935	57°17.73	-18°29.61	
16	57.2151	-18.8194	57°12.91	-18°49.16	
17	57.0662	-19.3512	57°03.97	-19°21.07	
18	56.4992	-19.5399	56°29.95	-19°32.39	
19	56.6127	-20.0202	56°36.76	-20°01.21	

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20	56.3791	-20.4377	56°22.75	-20°26.26
21	56.3791	-20.6435	56°22.75	-20°38.61
22	56.4992	-20.8494	56°29.95	-20°50.96
23	56.6190	-20.8494	56°37.14	-20°50.96
24	56.8354	-20.4262	56°50.13	-20°25.57
25	57.2368	-20.5635	57°14.21	-20°33.81
26	57.5818	-20.5635	57°34.91	-20°33.81
27	57.8566	-20.1803	57°51.40	-20°10.82
28	57.9235	-19.8830	57°55.41	-19°52.98
29	58.4809	-19.2425	58°28.85	-19°14.55
30	58.6806	-19.2826	58°40.84	-19°16.95
31	58.9766	-18.9967	58°58.59	-18°59.80
32	59.2145	-18.2876	59°12.87	-18°17.26
33	59.2700	-17.9216	59°16.20	-17°55.30
34	59.5001	-17.6643	59°30.01	-17°39.86
35	59.6998	-16.7094	59°41.99	-16°42.56

<b>HAR 3</b>				
	lat	lon	LAT	LON
1	54.9406	-17.2011	54°56.44	-17°12.07
2	54.5810	-18.0303	54°34.86	-18°01.82
3	54.4083	-18.3962	54°24.50	-18°23.77
4	54.4781	-19.0538	54°28.69	-19°03.23
5	54.4150	-19.3112	54°24.90	-19°18.67
6	53.9767	-19.9516	53°58.60	-19°57.10
7	54.1847	-20.1289	54°11.08	-20°07.73
8	54.3350	-20.1003	54°20.10	-20°06.02
9	54.6373	-19.3912	54°38.24	-19°23.47
10	54.9800	-19.2540	54°58.80	-19°15.24
11	55.0685	-18.7393	55°04.11	-18°44.36
12	55.4303	-18.6822	55°25.82	-18°40.93
13	55.4076	-18.4134	55°24.46	-18°24.80
14	55.1438	-17.7730	55°08.63	-17°46.38
15	54.9505	-18.0303	54°57.03	-18°01.82
16	54.9800	-17.1325	54°58.80	-17°07.95
17	54.9406	-17.2011	54°56.44	-17°12.07

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<b>HAR 4</b>				
	lat	lon	LAT	LON
1	58.4869	-14.7537	58°29.21	-14°45.22
2	58.0659	-14.7766	58°03.96	-14°46.59
3	57.4928	-14.6851	57°29.57	-14°41.11
4	56.9385	-14.5479	56°56.31	-14°32.87
5	56.5812	-14.3020	56°34.87	-14°18.12
6	55.5696	-15.4571	55°34.18	-15°27.42
7	55.5146	-15.7887	55°30.88	-15°47.32
8	55.3914	-15.9488	55°23.48	-15°56.93
9	55.2116	-16.7523	55°12.69	-16°45.14
10	55.2884	-16.8972	55°17.30	-16°53.83
11	55.4329	-16.8667	55°25.98	-16°52.00
12	55.5223	-16.6862	55°31.34	-16°41.17
13	55.5081	-17.5842	55°30.49	-17°35.05
14	55.6858	-17.8416	55°41.15	-17°50.49
15	56.2935	-17.7901	56°17.61	-17°47.41
16	56.4992	-17.4756	56°29.95	-17°28.54
17	56.7509	-17.3955	56°45.05	-17°23.73
18	56.8948	-17.1325	56°53.69	-17°07.95
19	56.9167	-16.7780	56°55.00	-16°46.68
20	57.1904	-16.7094	57°11.42	-16°42.56
21	57.1532	-15.7887	57°09.19	-15°47.32
22	57.2708	-15.3942	57°16.25	-15°23.65
23	57.6188	-15.3054	57°37.13	-15°18.32
24	57.8415	-15.3104	57°50.49	-15°18.63
25	57.9537	-15.4859	57°57.22	-15°29.15
26	58.0668	-15.4376	58°04.01	-15°26.26
27	58.2131	-15.4859	58°12.79	-15°29.15
28	58.3882	-15.2392	58°23.29	-15°14.35
29	58.3628	-15.1350	58°21.77	-15°08.10
30	58.5018	-14.9024	58°30.11	-14°54.14
31	58.4869	-14.7537	58°29.21	-14°45.22

<b>HAR 5</b>				
	lat	lon	LAT	LON
1	55.8531	-19.9630	55°51.19	-19°57.78
2	55.4368	-19.7457	55°26.21	-19°44.74
3	55.3361	-20.2375	55°20.17	-20°14.25
4	55.4855	-20.7236	55°29.13	-20°43.41
5	55.7856	-20.4548	55°47.14	-20°27.29
6	55.8531	-19.9630	55°51.19	-19°57.78

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<b>JOS 1</b>				
	Lat	lon	LAT	LON
1	37.0621	-14.1703	37°03.73	-14°10.22
2	36.7150	-14.1044	36°42.90	-14°06.26
3	36.5521	-14.1854	36°33.12	-14°11.13
4	36.5622	-14.2668	36°33.73	-14°16.01
5	36.7029	-14.5385	36°42.17	-14°32.31
6	36.8795	-14.5560	36°52.77	-14°33.36
7	37.0560	-14.2415	37°03.36	-14°14.49
8	37.0621	-14.1703	37°03.73	-14°10.22

<b>MAR 1</b>				
	Lat	lon	LAT	LON
1	57.1717	-33.3419	57°10.30	-33°20.51
2	57.0976	-33.1241	57°05.85	-33°07.45
3	56.7293	-33.4885	56°43.76	-33°29.31
4	56.4943	-33.5696	56°29.66	-33°34.18
5	56.3731	-34.0165	56°22.39	-34°00.99
6	56.5289	-34.2443	56°31.73	-34°14.66
7	56.7449	-34.1446	56°44.69	-34°08.68
8	57.1517	-33.5070	57°09.10	-33°30.42
9	57.1717	-33.3419	57°10.30	-33°20.51

<b>MAR 2</b>				
	Lat	lon	LAT	LON
1	44.7495	-25.2187	44°44.97	-25°13.12
2	44.4873	-24.9684	44°29.24	-24°58.10
3	44.3749	-25.2867	44°22.50	-25°17.20
4	44.5689	-25.4261	44°34.13	-25°25.57
5	44.7977	-25.3331	44°47.86	-25°19.99
6	44.7495	-25.2187	44°44.97	-25°13.12

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<b>MAR 3</b>				
	Lat	lon	LAT	LON
1	45.6840	-27.2571	45°41.04	-27°15.42
2	45.4763	-27.1426	45°28.58	-27°08.56
3	45.4286	-27.4180	45°25.72	-27°25.08
4	45.2023	-27.6218	45°12.14	-27°37.31
5	45.1872	-27.7613	45°11.23	-27°45.68
6	45.4913	-27.8757	45°29.48	-27°52.54
7	45.6690	-27.6683	45°40.14	-27°40.10
8	45.6690	-27.2571	45°40.14	-27°15.42
9	45.6840	-27.2571	45°41.04	-27°15.42

<b>MAR 4</b>				
	lat	lon	LAT	LON
1	46.3844	-27.6218	46°23.06	-27°37.31
2	46.0528	-27.6469	46°03.17	-27°38.81
3	46.0528	-27.9186	46°03.17	-27°55.12
4	46.3992	-27.9186	46°23.95	-27°55.12
5	46.3992	-27.6683	46°23.95	-27°40.10
6	46.3844	-27.6218	46°23.06	-27°37.31

<b>MAR 5</b>				
	lat	lon	LAT	LON
1	47.5556	-27.4395	47°33.34	-27°26.37
2	47.2919	-27.3036	47°17.51	-27°18.21
3	47.2919	-27.8042	47°17.51	-27°48.25
4	47.4638	-27.9437	47°27.83	-27°56.62
5	47.7243	-27.8042	47°43.46	-27°48.25
6	47.5556	-27.4859	47°33.34	-27°29.16
7	47.5556	-27.4395	47°33.34	-27°26.37

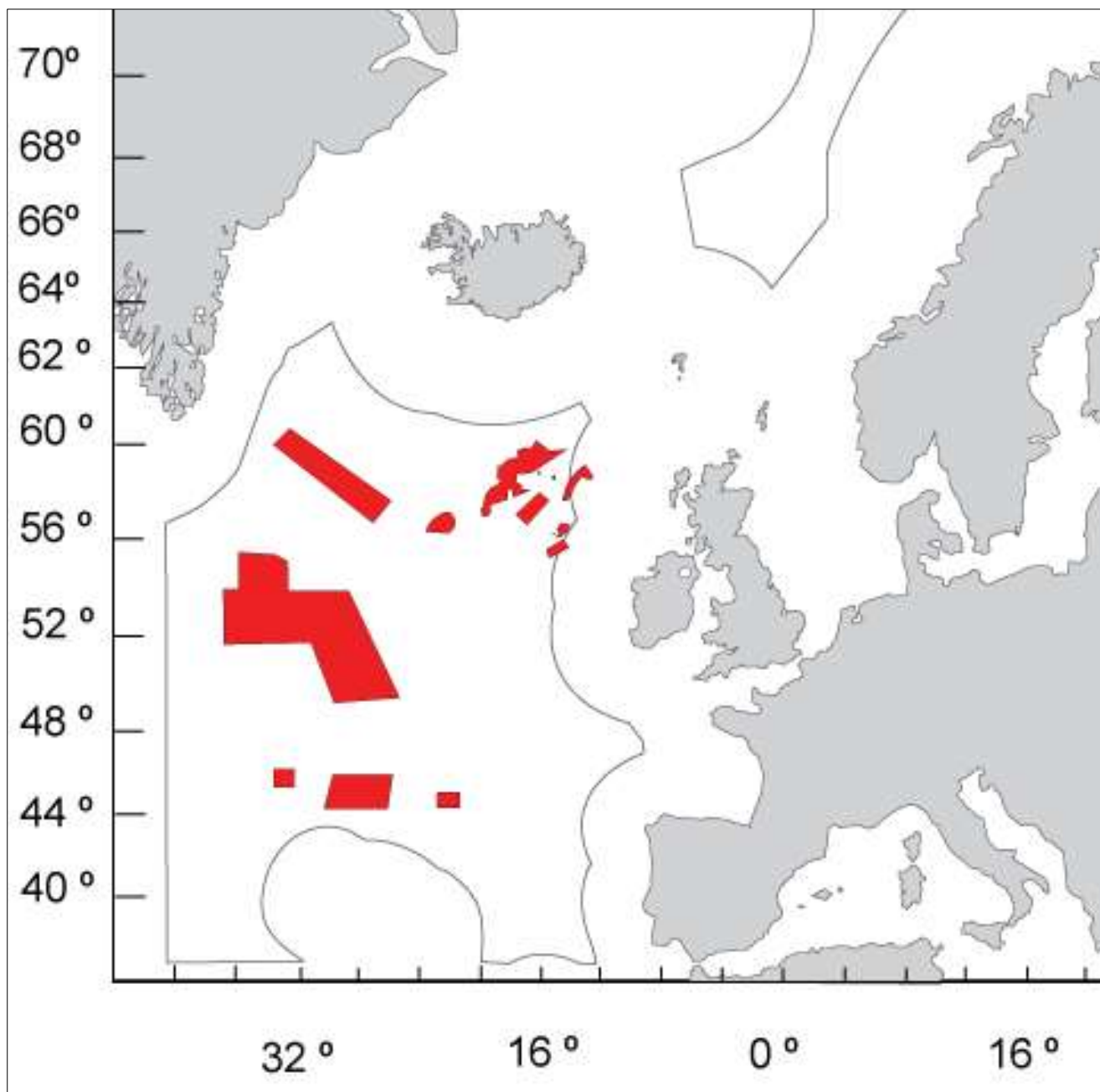
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<b>BAR 1</b>				
	lat	lon	LAT	LON
1	74.1356	41.0604	74°08.14	41°03.62
2	73.7439	41.3600	73°44.63	41°21.60
3	73.4273	41.0317	73°25.64	41°01.90
4	73.1143	40.7075	73°06.86	40°42.45
5	72.6406	40.5967	72°38.44	40°35.80
6	72.1881	40.5433	72°11.29	40°32.60
7	72.2545	39.7799	72°15.27	39°46.79
8	72.6810	38.8237	72°40.86	38°49.42
9	73.0749	37.6254	73°04.49	37°37.52
10	73.3730	36.6445	73°22.38	36°38.67
11	73.6367	35.3640	73°38.20	35°21.84
12	73.9028	34.1123	73°54.17	34°06.74
13	73.9778	33.7019	73°58.67	33°42.11
14	74.2908	35.0644	74°17.45	35°03.86
15	74.5760	36.0207	74°34.56	36°01.24
16	74.9065	36.9441	74°54.39	36°56.65
17	75.0406	37.2724	75°02.44	37°16.34
18	75.3456	38.0887	75°20.74	38°05.32
19	75.8010	38.9516	75°48.06	38°57.10
20	76.2513	39.5952	76°15.08	39°35.71
21	76.8997	42.8932	76°53.98	42°53.59
22	76.7279	44.7579	76°43.67	44°45.47
23	76.2339	43.8950	76°14.03	43°53.70
24	76.0200	42.0669	76°01.20	42°04.01
25	75.5715	42.1034	75°34.29	42°06.20
26	75.0994	39.5952	75°05.96	39°35.71
27	74.1356	41.0604	74°08.14	41°03.62

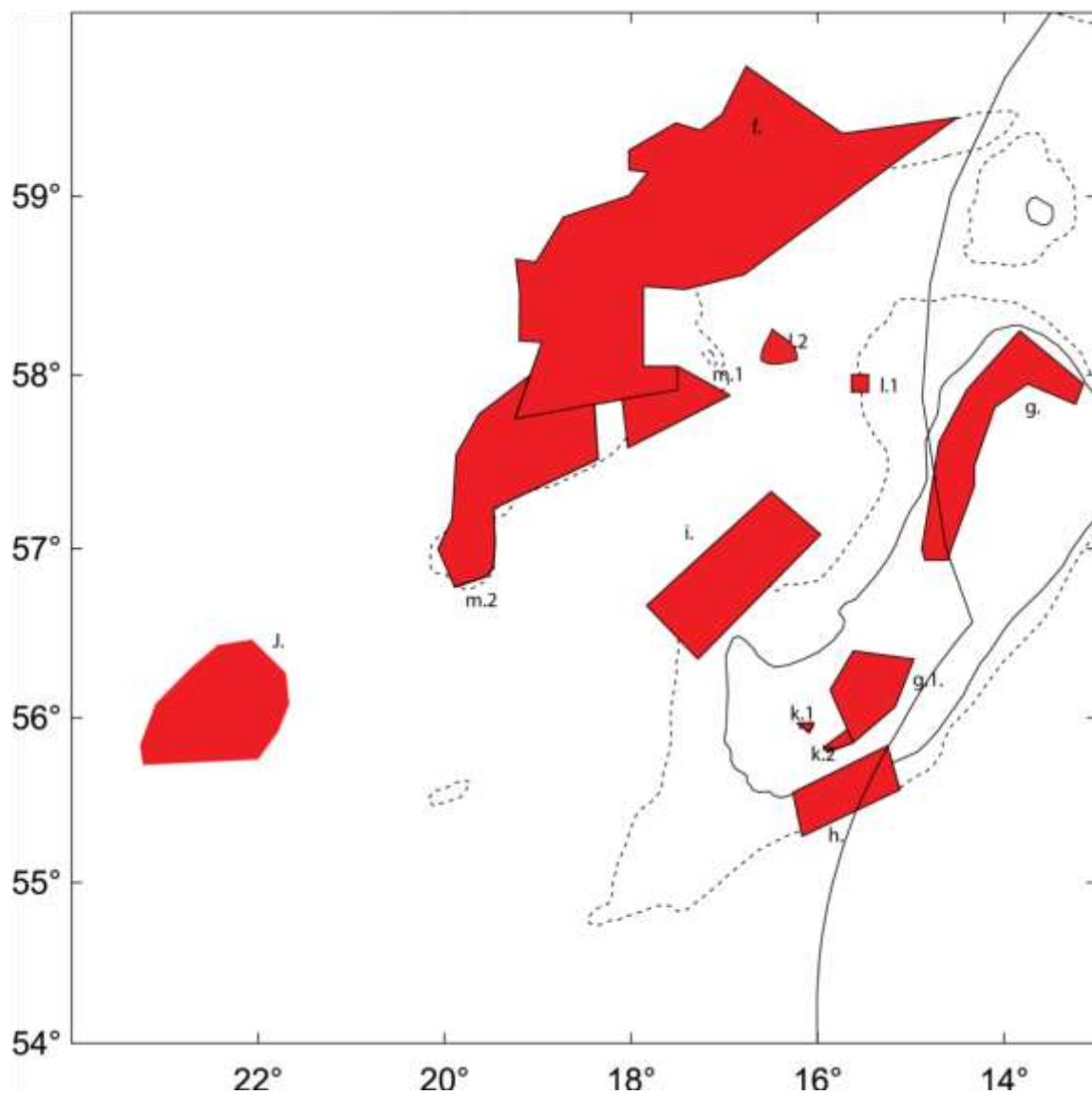
<b>Reykjanes Ridge</b>				
	lat	lon	LAT	LON
1	60.9844	-27.0000	60°59.07	-27°00.00
2	60.8811	-27.4432	60°52.86	-27°26.59
3	60.8893	-27.6897	60°53.36	-27°41.38
4	60.9592	-27.8432	60°57.55	-27°50.59
5	61.0295	-27.7756	61°01.77	-27°46.53
6	61.1569	-28.0560	61°09.41	-28°03.36
7	61.1901	-28.0221	61°11.41	-28°01.33
8	60.9844	-27.0000	60°59.07	-27°00.00

Annex 2

**Area closures for the protection of VMEs**



### Hatton Rockall Closures





**Coordinates of areas closed for the protection of VMEs**

**Area (a): Northern MAR Area**

	lat	lon	LAT	LON
1	59.7500	-33.50000	59°45.00	-33°30.00
2	57.5000	-27.50000	57°30.00	-27°30.00
3	56.7500	-28.50000	56°45.00	-28°30.00
4	59.2500	-34.50000	59°15.00	-34°30.00
5	59.7500	-33.50000	59°45.00	-33°30.00

**Area (b): Middle MAR Area (Charlie-Gibbs Fracture Zone and sub-Polar Frontal Region)**

	lat	lon	LAT	LON
1	53.5000	-38.0000	53°30.00	-38°00.00
2	53.5000	-36.8170	53°30.00	-36°49.00
3	55.0760	-36.8170	55°04.53	-36°49.00
4	54.9830	-34.6890	54°58.99	-34°41.36
5	54.6860	-34.0000	54°41.18	-34°00.00
6	53.5000	-34.0000	53°30.00	-34°00.00
7	53.5000	-30.0000	53°30.00	-30°00.00
8	51.5000	-28.0000	51°30.00	-28°00.00
9	49.0000	-26.5000	49°00.00	-26°30.00
10	49.0000	-30.5000	49°00.00	-30°30.00
11	51.5000	-32.0000	51°30.00	-32°00.00
12	51.5000	-38.0000	51°30.00	-38°00.00
13	53.5000	-38.0000	53°30.00	-38°00.00

**Area (c): Southern MAR Area**

	lat	lon	LAT	LON
1	44.5000	-30.5000	44°30.00	-30°30.00
2	44.5000	-27.0000	44°30.00	-27°00.00
3	43.2500	-27.2500	43°15.00	-27°15.00
4	43.2500	-31.0000	43°15.00	-31°00.00
5	44.5000	-30.5000	44°30.00	-30°30.00

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**Area (d): Altair Seamount**

	lat	lon	LAT	LON
1	45.0000	-34.5833	45°00.00	-34°35.00
2	45.0000	-33.7500	45°00.00	-33°45.00
3	44.4167	-33.7500	44°25.00	-33°45.00
4	44.4167	-34.5833	44°25.00	-34°35.00
5	45.0000	-34.5833	45°00.00	-34°35.00

**Area (e): Antialtair Seamount**

	lat	lon	LAT	LON
1	43.7500	-22.8333	43°45.00	-22°50.00
2	43.7500	-22.0833	43°45.00	-22°05.00
3	43.4167	-22.0833	43°25.00	-22°05.00
4	43.4167	-22.8333	43°25.00	-22°50.00
5	43.7500	-22.8333	43°45.00	-22°50.00

**Area (f): Hatton Bank**

	lat	lon	LAT	LON
1	59.4333	-14.5000	59°26.00	-14°30.00
2	59.2000	-15.1333	59°12.00	-15°08.00
3	58.5667	-16.7833	58°34.00	-16°47.00
4	58.4833	-17.4167	58°29.00	-17°25.00
5	58.5000	-17.8667	58°30.00	-17°52.00
6	58.0500	-17.8667	58°03.00	-17°52.00
7	58.0500	-17.5000	58°03.00	-17°30.00
8	57.9167	-17.5000	57°55.00	-17°30.00
9	57.7500	-19.2500	57°45.00	-19°15.00
10	58.1858	-18.9585	58°11.15	-18°57.51
11	58.1928	-19.1995	58°11.57	-19°11.97
12	58.4625	-19.1942	58°27.75	-19°11.65
13	58.6515	-19.2380	58°39.09	-19°14.28
14	58.6352	-19.0215	58°38.11	-19°01.29
15	58.8857	-18.7257	58°53.14	-18°43.54
16	59.0048	-18.0218	59°00.29	-18°01.31
17	59.1335	-17.8218	59°08.01	-17°49.31
18	59.1458	-18.0245	59°08.75	-18°01.47
19	59.2527	-18.0260	59°15.16	-18°01.56
20	59.4028	-17.5203	59°24.17	-17°31.22
21	59.3628	-17.2560	59°21.77	-17°15.36
22	59.4485	-17.0277	59°26.91	-17°01.66
23	59.7115	-16.7660	59°42.69	-16°45.96
24	59.3495	-15.7458	59°20.97	-15°44.75
25	59.3500	-15.6667	59°21.00	-15°40.00
26	59.4333	-14.5000	59°26.00	-14°30.00

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**Area (g): Rockall Bank**

*North West Rockall:*

	lat	lon	LAT	LON
1	57	-14.8833	57°00.00	-14°53.00
2	57.6167	-14.7	57°37.00	-14°42.00
3	57.9167	-14.4	57°55.00	-14°24.00
4	58.25	-13.8333	58°15.00	-13°50.00
5	57.95	-13.15	57°57.00	-13°09.00
6	57.8333	-13.2333	57°50.00	-13°14.00
7	57.95	-13.75	57°57.00	-13°45.00
8	57.8167	-14.1	57°49.00	-14°06.00
9	57.4833	-14.3167	57°29.00	-14°19.00
10	57.3667	-14.3167	57°22.00	-14°19.00
11	57	-14.5667	57°00.00	-14°34.00
12	56.9333	-14.6	56°56.00	-14°36.00
13	56.9333	-14.85	56°56.00	-14°51.00
14	57	-14.8833	57°00.00	-14°53.00

*South-West Rockall (Empress of Britain Bank):*

Area 1

	lat	lon	LAT	LON
1	56.4	-15.6167	56°24.00	-15°37.00
2	56.35	-14.9667	56°21.00	-14°58.00
3	56.0667	-15.1667	56°04.00	-15°10.00
4	55.85	-15.6167	55°51.00	-15°37.00
5	56.1667	-15.8667	56°10.00	-15°52.00
6	56.4	-15.6167	56°24.00	-15°37.00

Area 2

	lat	lon	LAT	LON
1	55.9483	-16.1883	55°56.90	-16°11.30
2	55.97	-16.1883	55°58.20	-16°11.30
3	55.9717	-16.0467	55°58.30	-16°02.80
4	55.9483	-16.0467	55°56.90	-16°02.80
5	55.9483	-16.1883	55°56.90	-16°11.30

Area 3

	lat	lon	LAT	LON
1	55.8317	-15.9333	55°49.90	-15°56.00
2	55.8083	-15.9333	55°48.50	-15°56.00
3	55.805	-15.8433	55°48.30	-15°50.60
4	55.8267	-15.8433	55°49.60	-15°50.60
5	55.8317	-15.9333	55°49.90	-15°56.00

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**Area (h): Logachev Mounds**

	lat	lon	LAT	LON
1	55.2833	-16.1667	55°17.00	-16°10.00
2	55.5667	-15.1167	55°34.00	-15°07.00
3	55.8333	-15.25	55°50.00	-15°15.00
4	55.55	-16.2667	55°33.00	-16°16.00
5	55.2833	-16.1667	55°17.00	-16°10.00

**Area (i): West Rockall Mounds**

	lat	lon	LAT	LON
1	57.3333	-16.5	57°20.00	-16°30.00
2	57.0833	-15.9667	57°05.00	-15°58.00
3	56.35	-17.2833	56°21.00	-17°17.00
4	56.6667	-17.8333	56°40.00	-17°50.00
5	57.3333	-16.5	57°20.00	-16°30.00

**Area (j): Edora's Bank**

	lat	lon	LAT	LON
1	56.4333	-22.4333	56°26.00	-22°26.00
2	56.4667	-22.0667	56°28.00	-22°04.00
3	56.2667	-21.7	56°16.00	-21°42.00
4	56.0833	-21.6667	56°05.00	-21°40.00
5	55.9167	-21.7833	55°55.00	-21°47.00
6	55.75	-22	55°45.00	-22°00.00
7	55.7167	-23.2333	55°43.00	-23°14.00
8	55.8333	-23.2667	55°50.00	-23°16.00
9	56.0833	-23.1	56°05.00	-23°06.00
10	56.3	-22.7167	56°18.00	-22°43.00
11	56.4333	-22.4333	56°26.00	-22°26.00

**Area (k) Southwest Rockall Bank**

Area 1

	lat	lon	LAT	LON
1	55.9694	-16.2196	55°58.16	-16°13.18
2	55.9706	-16.0427	55°58.24	-16°02.56
3	55.9144	-16.0925	55°54.86	-16°05.55
4	55.9694	-16.2196	55°58.16	-16°13.18

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**Area (k) Southwest Rockall Bank**

Area 2

	lat	lon	LAT	LON
1	55.9310	-15.6806	55°55.86	-15°40.84
2	55.8500	-15.6167	55°51.00	-15°37.00
3	55.7977	-15.8968	55°47.86	-15°53.81
4	55.8215	-15.9399	55°49.29	-15°56.39
5	55.9310	-15.6806	55°55.86	-15°40.84

**Area (l) Hatton–Rockall Basin**

Area 1

	lat	lon	LAT	LON
1	58.0025	-15.4538	58°00.15	-15°27.23
2	58.0025	-15.6377	58°00.15	-15°38.26
3	57.90317	-15.6377	57°54.19	-15°38.26
4	57.90317	-15.4538	57°54.19	-15°27.23
5	58.0025	-15.4538	58°00.15	-15°27.23

Area 2

	lat	lon	LAT	LON
1	58.1077	-16.6192	58° 06.46	-16° 37.15
2	58.2656	-16.4744	58° 15.93	-16° 28.46
3	58.1129	-16.1733	58° 06.77	-16° 10.40
4	58.0572	-16.1738	58° 03.43	-16° 10.43
5	58.0248	-16.4197	58° 01.49	-16° 25.19
6	58.0436	-16.6159	58° 02.62	-16° 36.96
7	58.1077	-16.6192	58° 06.46	-16° 37.15

**Area (m) Hatton Bank 2**

Area 1

	lat	lon	LAT	LON
1	57.8626	-18.0978	57°51.76	-18°05.87
2	57.9167	-17.5000	57°55.00	-17°30.00
3	58.0500	-17.5000	58°03.00	-17°30.00
4	57.8850	-16.9388	57°53.10	-16°56.33
5	57.5851	-18.0335	57°35.11	-18°02.01
6	57.8626	-18.0978	57°51.76	-18°05.87

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**Area (m) Hatton Bank 2**

Area 2

	lat	lon	LAT	LON
1	57.9993	-19.0842	57°59.96	-19°05.05
2	57.7500	-19.2500	57°45.00	-19°15.00
3	57.8345	-18.3970	57°50.07	-18°23.82
4	57.5188	-18.3547	57°31.13	-18°21.28
5	57.2348	-19.4738	57°14.09	-19°28.43
6	57.0368	-19.4588	57°02.21	-19°27.53
7	56.8853	-19.4828	56°53.12	-19°28.97
8	56.8370	-19.5604	56°50.22	-19°33.62
9	56.7780	-19.8954	56°46.68	-19°53.72
10	57.0007	-20.0704	57°00.04	-20°04.22
11	57.1718	-19.9207	57°10.31	-19°55.24
12	57.5445	-19.8773	57°32.67	-19°52.64
13	57.7780	-19.6310	57°46.68	-19°37.86
14	57.9993	-19.0842	57°59.96	-19°05.05

**VME Data Collection Protocol**

Observers on fishing vessels in the Regulatory Area who are deployed pursuant to Article 6.6 of this Recommendation shall:

- (a) Monitor any set for evidence of presence of VMEs and identify coral, sponges and other organisms to the lowest level;
- (b) Record on data sheets the following information for identification of VMEs: vessel name, gear type, date, position (latitude/longitude), depth, species code, trip-number, set-number, and name of the observer on data sheets, if possible;
- (c) Collect, if required, representative samples from the entire catch (biological samples shall be collected and frozen when requested by the scientific authority in a Contracting Party); and
- (d) Provide samples to the scientific authority of a Contracting Party at the end of the fishing trip.

### **Assessment of Exploratory Bottom Fishing Activities**

Assessments should address, *inter alia*:

- (a) Type(s) of fishing conducted or contemplated, including vessels and gear types, fishing areas, target and potential by catch species, fishing effort levels and duration of fishing (harvesting plan);
- (b) Best available scientific and technical information on the current state of fishery resources and baseline information on the ecosystems, habitats and communities in the fishing area, against which future changes are to be compared;
- (c) Identification, description and mapping (geographical location and extent) of VMEs known or likely to occur in the fishing area;
- (d) Identification, description and evaluation of the occurrence, character, scale and duration of likely impacts, including cumulative impacts of the proposed fishery on VMEs in the fishing area;
- (e) Data and methods used to identify, describe and assess the impacts of the activity, the identification of gaps in knowledge, and an evaluation of uncertainties in the information presented in the assessment;
- (f) Risk assessment of likely impacts by the fishing operations to determine which impacts on VMEs are likely to be significant adverse impacts; and
- (g) Mitigation and management measures to be used to prevent significant adverse impacts on VMEs and the measures to be used to monitor effects of the fishing operations.



**VME INDICATOR SPECIES**

The following is a list of seven habitat types as well as physical elements for the NEAFC Regulatory Area, with the taxa most likely to be found in these habitats, which shall be considered as VME indicators.

<b>VME Habitat type</b>	<b>Representative Taxa</b>
1. Cold-water coral reef	
a. <i>Lophelia pertusa</i> reef	<i>Lophelia pertusa</i>
b. <i>Solenosmilia variabilis</i> reef	<i>Solenosmilia variabilis</i>
2. Coral garden	
a. Hard bottom garden	
i. Hard bottom gorgonian and black coral gardens	<i>Anthothelidae</i> <i>Chrysogorgiidae</i> <i>Isididae, Keratoisidinae</i> <i>Plexauridae</i> <i>Acanthogorgiidae</i> <i>Coralliidae</i> <i>Paragorgiidae</i> <i>Primnoidae</i> <i>Schizopathidae</i>
ii. Colonial scleractinians on rocky outcrops	<i>Lophelia pertusa</i> <i>Solenosmilia variabilis</i>
iii. Non-reefal scleractinian aggregations	<i>Enallopsammia rostrata</i> <i>Madrepora oculata</i>
b. Soft-bottom coral gardens	
i. Soft-bottom gorgonian and black coral gardens	<i>Chrysogorgiidae</i>
ii. Cup-coral fields	<i>Caryophylliidae</i> <i>Flabellidae</i>
iii. Cauliflower coral fields	<i>Nephtheidae</i>
3. Deep-sea sponge aggregations	
a. Other sponge aggregations	<i>Geodiidae</i> <i>Ancorinidae</i> <i>Pachastrellidae</i>
b. Hard-bottom sponge gardens	<i>Axinellidae</i> <i>Mycalidae</i>

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- |    |                               |  |
|----|-------------------------------|--|
|    |                               | <i>Polymastiidae</i>   |
|    |                               | <i>Tetillidae</i>  |
| c. | Glass sponge communities      | <i>Rossellidae</i><br><i>Pheronematidae</i>  |
| 4. | Seapen fields                 | <i>Anthoptilidae</i><br><i>Pennatulidae</i><br><i>Funiculinidae</i><br><i>Halipteridae</i><br><i>Kophobelemnidae</i><br><i>Protoptilidae</i><br><i>Umbellulidae</i><br><i>Vigulariidae</i> |
| 5. | Tube-dwelling anemone patches | <i>Cerianthidae</i>  |
| 6. | Mud- and sand-emergent fauna  | <i>Bourgetcrinidae</i><br><i>Antedontidae</i><br><i>Hyocrinidae</i><br><i>Xenophyophora</i><br><i>Syringamminidae</i>  |
| 7. | Bryzoan patches               |  |

\* \* \* \* \*

<b>Physical elements</b>	<b>Explanation</b>
Isolated seamounts	Non-MAR seamounts
Steep-slopes and peaks on mid-ocean ridges	Steep ridges and peaks support coral gardens and other VME species in high density
Knolls	A topographic feature that rises less than 1,000 metres from the seafloor
Canyon-like features	A steep sided “catchment” feature not necessarily associated with a shelf, island or bank margin
Steep flanks >6.4°	From NAFO SCR Doc. 11/73