



Vottunarstofan Tún ehf.

Sustainable Fisheries Scheme

Marine Stewardship Council Sustainable Fisheries Assessment

ISF Iceland Saithe Fishery

Certificate Code: F-TUN-1106

First Annual Surveillance Report

Conformity Assessment Body: Vottunarstofan Tún ehf.

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Client: Iceland Sustainable Fisheries Ltd.

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1. General Information

Fishery name	ISF Iceland Saithe Fishery		
Unit(s) of assessment	North Atlantic Saithe (<i>Pollachius virens</i>) in ICES division Va / FAO Area 27 within the exclusive economic zone of Iceland using harvest methods bottom trawl, Danish seine, Longline, Handline, Gillnet, and <i>Nephrops</i> trawl.		
Date certified	11.09.2014	Date of expiry	10.09.2019
Surveillance level and type	<i>Normal Surveillance level; On-site</i>		
Date of surveillance audit	14-16 September 2015		
Surveillance stage (tick one)	1st Surveillance	x	
	2nd Surveillance		
	3rd Surveillance		
	4th Surveillance		
	Other (expedited etc)		
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2. Background

This report contains the findings of the first surveillance audit for Marine Stewardship Council Fishery certification of the ISF Iceland saithe fishery, caught by demersal otter trawl, Danish seine, longline, handline, gillnet, and *Nephrops* trawl within the Icelandic exclusive economic zone (ICES Division Va / FAO Area 27).

The purpose of this report is to outline any changes to the ISF Iceland saithe fishery since the certification report, including (but not limited to) changes to management systems, relevant regulations, personnel involved in science, management or industry, scientific information base, and any changes that could impact traceability.

The surveillance audit assesses changes made from the full assessment. Therefore, the full Public Certification Report provides the relevant context for this surveillance audit report.

Surveillance audits may raise or close conditions and recommendations as circumstances for the fishery and certification change. Therefore, the status of the certificate is defined by the latest Surveillance Audit.

2.1 Management systems

There have been no changes to the specific fishery management system since the certification. The Fisheries Directorate record all non-compliance, including minor infringements and sanctions. They report no systematic non-compliance issues.

2.2 Regulations

There was a change in regulations regarding logbooks (Regulation 557/2007). According to regulation 126/2014 ¹, fishers are required to record incidental catches of birds and marine mammals by species and number in their logbooks. Logbooks are submitted to the Directorate of Fisheries (DoF).

2.3 Personnel

The team is not aware of any significant changes to personnel involved in science and management.

2.4 Scientific base of information

2.4.1 Target stock

Current status. The harvest ratio for Icelandic saithe is slightly below the MSY level ($H_{2014} < H_{MSY}$) and biomass is at a level consistent with MSY ($SSB > B_{trigger}$). SSB has remained well above B_{lim} , and has been increasing in recent years (ICES 2015a).

Historically, catches of saithe from the Iceland grounds declined in the 1990's, increased into the mid-2000's, and were near the time series average in 2014 (**Figure 1**).

¹ <http://stjornartidindi.is/Advert.aspx?ID=9bc42c49-4617-4fa3-a4f5-424936339ff0>

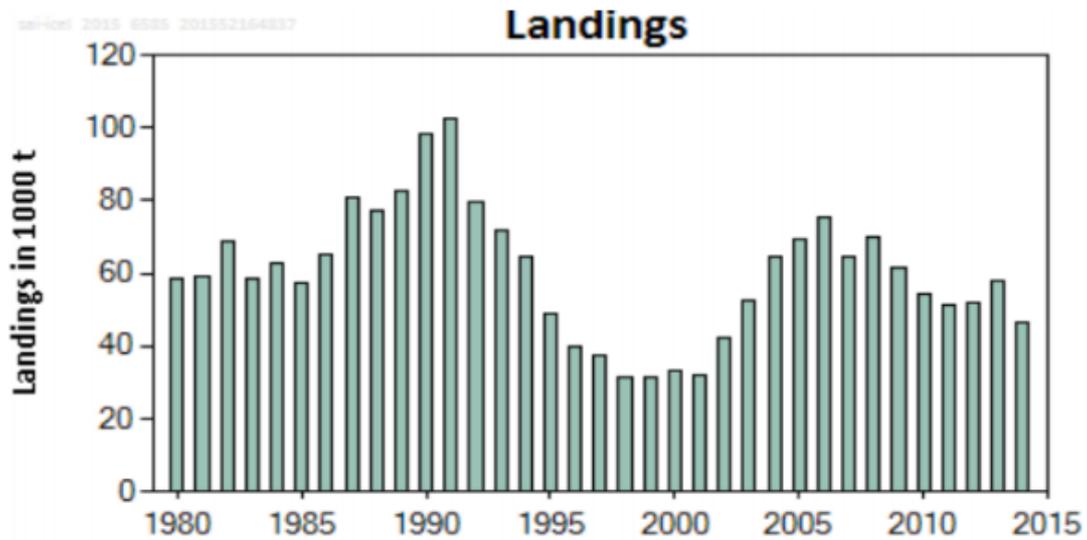


Figure 1: Historical catches of Saithe (*Pollachius virens*) in Division Va (Iceland grounds). Source: ICES (2015a).

Spawning stock biomass has been relatively high (near the maximum) from 1980 to the present (**Figure 2**), and the harvest rate has declined from 27% to 18% from 2009 to 2014 (**Figure 3**).

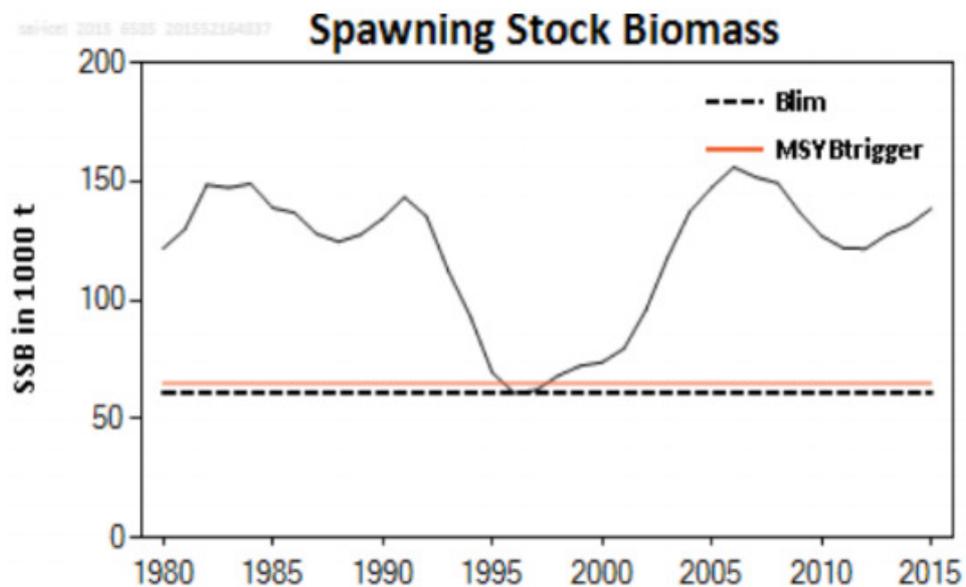


Figure 2: Historical estimates of spawning stock biomass (SSB) of Saithe (*Pollachius virens*) in Division Va (Iceland grounds). Source: ICES (2015a).

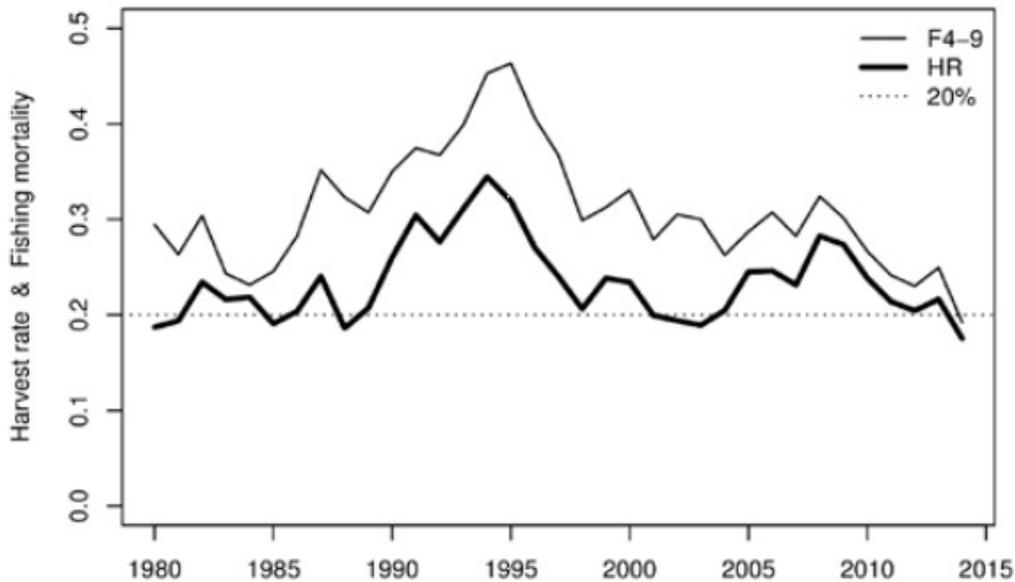


Figure 3: Historical estimates of harvest rate (HR) and fishing mortality (ages 4-9) of Saithe (*Pollachius virens*) in Division Va (Iceland grounds). Source: ICES (2015a).

The year classes from 2008 and 2009 are above average, but recruitment has declined below average since then (**Figure 4**).

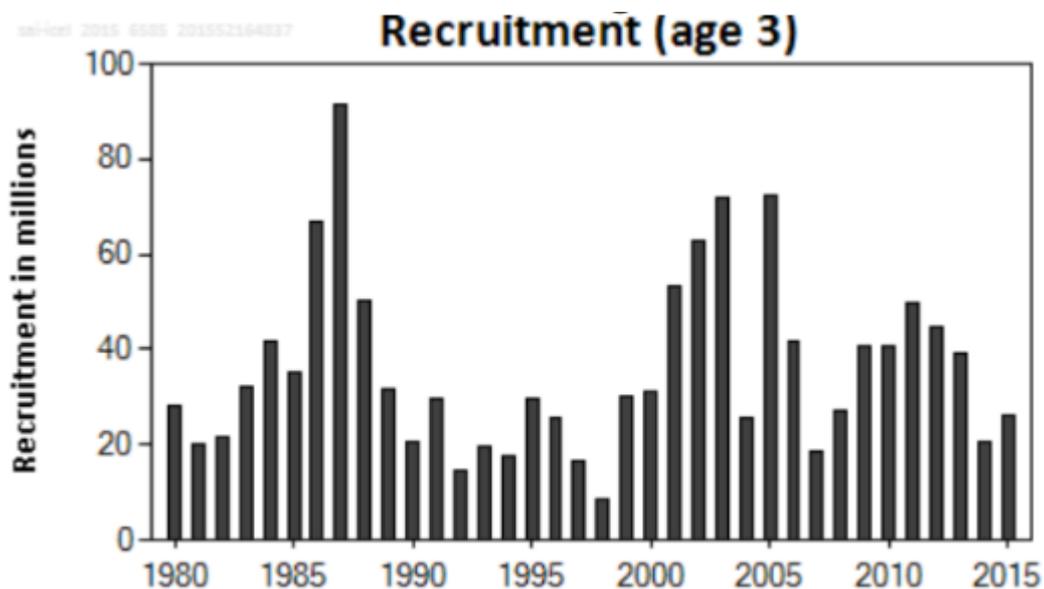


Figure 4: Historical estimates of recruitment (age 3) of Saithe (*Pollachius virens*) in Division Va (Iceland grounds). Source: ICES (2015a).

Management advice is derived from a statistical catch-at-age model that uses catches in the model and in the forecast. A management plan was reviewed by ICES (Hjörleifsson and Björnsson 2013) and adopted by the Minister of Industry and Innovation in 2013 (MII 2013). There have been no changes to the management system directed specifically at the target stock since the last MSC assessment.

The TAC based on the HCR was reduced from 58,000t for 2014/2015 to 55,000t for 2015/2016 (ICES 2015a).

2.4.2 Retained Catch, Bycatch and ETP

Main retained species by quantity

The team used 2014/15 landings data to review the list of retained species making up >5% of the catch (which would be identified as ‘main’ on that basis) and compared the species list for each gear type with the species list used in the assessment (**Table 1**).

Table 1: Main retained species on the basis of percentage of catch; identified in the assessment and identified from the most recent (2014-15) landings data. Those which do not appear in both lists are in bold.

UoC	Main retained species (>5%) in the PCR	Species making up >5% of landings 2014-15
Bottom trawl	Cod (<i>Gadus morhua</i>) Golden redfish (<i>Sebastes norvegicus</i>) Haddock (<i>Melanogrammus aeglefinus</i>) Greenland halibut (<i>Reinhardtius hippoglossoides</i>) deep sea redfish (<i>Sebastes mentella</i>)	Cod Golden redfish Haddock
Danish seine	Cod Haddock Plaice (<i>Pleuronectes platessa</i>) Golden redfish	Cod Haddock Plaice
Longline	Cod Haddock Ling Wolffish (<i>Anarhichas lupus</i>) Tusk (<i>Brosme brosme</i>)	Cod Haddock Ling
Handline	Cod	cod*
Gillnets	Cod	cod
<i>Nephrops</i> trawl	Cod Ling (<i>Molva molva</i>) Norway lobster (<i>Nephrops norvegicus</i>) Grey sole (<i>Glyptocephalus cynoglossus</i>) Anglerfish (<i>Lophius piscatorius</i>)	Cod Ling Norway lobster grey sole golden redfish

* NB a significant catch of mackerel is also taken by handline, but this is a different handline fishery which does not overlap with the saithe fishery

In other words, overall fewer ‘main’ retained species were identified via a review of the most recent catch data than in the original full assessment, with the only exception the addition of golden redfish to the list for *Nephrops* trawl. The team considered the discrepancies in the two lists, and concluded that since the lists used in the original full assessment were based on a 5-year average, and given that proportions of species in the landings of a mixed fishery may vary from year to year, it was not appropriate to revise the lists from those used in the assessment. The only addition to the list for this year would be golden redfish for *Nephrops* trawls, but this fishery is MSC certified so does not present a sustainability risk. Deep-sea redfish is considered further in relation to conditions (below).

Main retained species by vulnerability

The team reviewed 2014-15 landings for the species designated as ‘main’ retained on the basis of vulnerability, as given in **Table 2**. Wolffish and grey skate are considered further in relation to the

conditions (below). For the other species, the team concluded that there was no evidence of any significant change in catch rates, with interaction rates with the fishery remaining very low or zero.

Table 2: 2014-15 landings (tonnes, percentage in brackets) for 'main' retained species on the basis of vulnerability

	Wolffish (<i>Anarhichas lupus</i>)	Leafscale gulper shark (<i>Centrophorus squamosus</i>)	Mackerel shark/ porbeagle (<i>Lamna nasus</i>)	Eel (<i>Anguilla anguilla</i>)	Orange roughy (<i>Hoplostethus atlanticus</i>)	Atlantic salmon (<i>Salmo salar</i>)	Grey skate (<i>Dipturus batis</i>)
Bottom trawl	1986 (0.78%)	0	0	0	6 (0.002%)	0	29 (0.01%)
Danish seine	1101 (4.4%)	0	0	0	0	0	20 (0.08%)
Longline	4623 (4.0%)	0	0	0	0	0	66 (0.06%)
Handline	10 (0.05%)	0	0	0	0	0	0
Gillnets	7 (0.03%)	0	0	0	0	0	2 (0.008%)
Nephrops trawl	77 (0.95%)	0	0	0	0	0	20 (0.25%)

Bycatch

The fishery is required to land everything which is caught, so there are no discards of fish, including non-commercial species (see regulation 468/2013²). Stakeholders remained confident that this system is working effectively (Áslaug Hólmgeirsdóttir and Þórhallur Ottesen, Directorate of Fisheries, pers. comm.). The only exception is accidental bycatch of birds or mammals, which may be discarded. Nominally, it is a requirement to report this bycatch in the logbooks (regulation 126/2014³), but MRI staff (Þorsteinn Sigurðsson, head of Marine Resources Section, Marine Research Institute, pers. comm.) were somewhat sceptical that this always occurs in practice when an inspector is not on board. Nevertheless, they did not consider that bird or mammal bycatch was significant in any of the UoCs, aside from that already taken into account in the assessment.

Table 3: Species/stock status for main retained species only for each gear type in the main assessment (Tún 2014).

Species/Stock	Gear	Above Point of Recruitment Impairment	Preventing Recovery	Reference
Cod <i>Gadus morhua</i> ICES Division Va	All	Yes (biomass 'higher than has been observed over the last four decades' – ICES 2015)	NA	Anon 2015 ICES 2015b
Golden Redfish <i>Sebastes norvegicus</i> ICES subareas V, VI, XII and XIV	Demersal Trawl Danish Seine	Yes; biomass increasing since ~2000, well above MSYBtrigger	NA	Anon 2015, ICES 2015c
Haddock <i>Melanogrammus aeglefinus</i>	Demersal Trawl Danish	Yes; stock has been declining since 2005 because of low / variable recruitment but remains	NA	Anon 2015, ICES 2015d

² <http://www.reglugerd.is/reglugerdir/allar/nr/468-2013>

³ <http://stjornartidindi.is/Advert.aspx?ID=9bc42c49-4617-4fa3-a4f5-424936339ff0>

ICES Division Va	Seine Longline	above Blim; 2014 year class estimated to be strong		
Greenland halibut <i>Reinhardtius hippoglossoides</i>	Demersal Trawl	Yes: stock at ~two thirds BMSY, increasing since 2005	No. Based on the stock assessment, the stock is increasing.	ICES 2015e
Deepwater Redfish <i>Sebastes mentella</i> Icelandic slope stock	Demersal Trawl	Unknown; but biomass estimated to have increased	See under conditions below	ICES 2015f
Plaice <i>Pleuronectes platessa</i>	Danish seine	Yes – fishing mortality declining since 1994, fishable stock biomass increasing since 2000	NA	Anon 2015
Ling <i>Molva molva</i>	Longline Nephrops trawl	Yes; stock at highest biomass level in time series (ICES)	NA	ICES 2015g
Atlantic Wolffish <i>Anarhichas lupus</i>	Trawl Longline Danish seine	Probably; biomass stable or increasing although recruitment still low; F greatly reduced	See under conditions below	Anon 2015
Tusk <i>Brosme brosme</i>	Longline	Yes (SSB 'likely above any candidate MSYBtrigger'; ICES 2015 advice)	NA	Anon 2015 ICES 2015h
Nephrops <i>Nephrops norvegicus</i>	Nephrops trawl	Biomass of large animals is high but recruitment has declined – presumably because of environmental factors	NA	Anon 2015
Grey sole (witch) <i>Glyptocephalus cynoglossus</i>	Nephrops trawl	Yes; Biomass fairly high relatively to time series, although recruitment declining; peak in recruitment came from much lower biomass than current	NA	Anon 2015
Anglerfish <i>Lophius piscatorius</i>	Nephrops trawl	Yes; Survey biomass index expanded massively in early 2000s to ~5X previous levels	NA	Anon 2015

2.4.3 Habitat and Ecosystem

Habitats

The bottom trawl UoC had a condition to improve its outcome performance level in relation to habitat impacts (Condition 3). A new condition (Condition 4) has been added in relation to management of habitat impacts, as a result of harmonisation with the golden redfish fishery (see Section 2.8 below). Further information on progress in relation to these conditions is given below.

Ecosystem

Iceland has seen considerable changes in the species composition and distribution of commercial fish species over the last few decades, as a result of climate change. The biomass of 'warm water species' (species on the northern edge of their range in Icelandic waters) has expanded – this includes saithe, also wolffish (*Anarhichas lupus*), ling, tusk and some others. However, MRI staff noted that while recruitment of these species in Icelandic waters expanded in the early 2000s, many of them are now showing persistently low recruitment (e.g. wolffish). They considered that this is environmentally-driven rather than related to stock biomass, but the mechanisms remain obscure (Þorsteinn Sigurðsson, head of Marine Resources Section, Marine Research Institute, pers. comm.).

2.5 Enhanced fisheries changes

N/A

2.6 Traceability

No issues or changes were identified within the fishery which may impact traceability negatively.

The scope of certification is up to the point of landing. Chain of custody commences from the point of landing. Catches of registered Icelandic fishing vessels licenced to fish within the Icelandic EEZ, landed whole or processed and sold directly or through auction houses, are eligible to carry the MSC logo, if and once the fish has passed through ownership of some member of the ISF (the client group) or other entity that has entered into certificate sharing mechanism with the ISF.

Entities that take ownership of the fish and/or are involved in any handling of the fish after landing with the view of marketing the fish as MSC-certified must enquire with an accredited conformity assessment body if they are required to be certified against MSC Chain of Custody standards.

Updated list of certificate sharers and other documents can be accessed at <https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/isf-saithe>.

2.7 TAC and Catch Data

Table 4: TAC and Catch data of the ISF Iceland Saithe fishery. Source: Landings from www.fiskistofa.is⁴. Landings and TAC are reported by quota year which is 1st of September to 31st of August.

TAC	Year	2014/15	Amount	58,000 t
UoA share of TAC	Year	2014/15	Amount	58,000 t
UoC share of TAC	Year	2014/15	Amount	58,000 t
Total green weight catch by UoC	Year (most recent)	2014/15	Amount	
			Bottom Trawl:	44.545t
			Gillnet:	2.959 t
			Handline:	2.012 t
			Danish seine:	1.222 t
			Longline:	924 t
			Nephrops trawl	531 t
	Year (second most recent)	2013/14	Amount	
			Bottom Trawl:	47.073 t
			Gillnet:	2.463 t
			Handline:	2.171 t
			Danish seine:	946 t
			Longline:	930 t
			Nephrops trawl	865 t

⁴ <http://www.fiskistofa.is/veidar/aflaupplysingar/bradabirgdatolur/>

2.8 Harmonisation

Golden redfish (*Sebastes norvegicus*)

This fishery was certified alongside the ISF golden redfish fishery (Tún 2014). The golden redfish was subject to an objection, which was subsequently withdrawn. In response to the objection, PI 2.4.1 and PI2.4.2 were re-scored and an additional condition imposed on the fishery, and the client action plan was strengthened.

At the time of certification of the golden redfish fishery, the saithe fishery, which was certified without objection, was not harmonised with the golden redfish fishery as regards PIs 2.4.1 and 2.4.2, the conditions and the client action plan. It is therefore appropriate, since this is the first opportunity to review the saithe fishery after the certification of the golden redfish fishery, to harmonise scoring and conditions of the saithe fishery with golden redfish. The new scoring and rationales are given in Appendix 1. The harmonised scoring resulted in one new condition for the saithe fishery. Since the client action plan for this condition was already in implementation as regards golden redfish (and the species are caught together in a mixed fishery), then it was possible to audit the fishery directly against the Year 1 milestone for this new condition.

Cod and haddock (*Gadus morhua* and *Melanogrammus aeglefinus*)

The ISF cod and haddock fisheries are also MSC certified, V. Tún having taken over the certificate from DNV. These fisheries were certified without conditions on PIs 2.4.1 and 2.4.2. V. Tún considered the requirements for expedited harmonisation of these fisheries with the saithe and golden redfish. Tún noted, however, that these fisheries are due for re-assessment at the next audit point, and therefore concluded that it was not necessary to harmonise these fisheries prior to re-assessment. Harmonisation will be given due consideration during re-assessment of these fisheries.

Lumpfish (*Cyclopterus lumpus*)

ISF gillnet lumpfish was certified on 23. December 2014, with a condition to evaluate bycatch of various species, including harbour porpoise. To this end, MRI have evaluated harbour porpoise bycatch in all gillnet fisheries, including the groundfish gillnet fishery which is one of the UoCs for this fishery, as well as the cod and haddock fisheries, and concluded that in fact, harbour porpoise bycatch in the groundfish gillnet fishery may be of equal or greater magnitude than in the lumpfish fishery.

The team concluded that in principle it is certainly appropriate to harmonise the scoring and conditions of the gillnet UoC in this fishery with the lumpfish fishery, since harbour porpoise bycatch seems to be more significant than previously thought. However, the team also noted that i) the gillnet fishery is mainly a cod fishery, with saithe a minor bycatch; and ii) the cod gillnet fishery is coming up for re-assessment in early 2016. It was unclear on this basis whether it was appropriate to go ahead with rescoring for harbour porpoise at this surveillance audit or whether to await the (more robust) conclusions of an assessment process.

V. Tún took advice from MSC, who advised that it would be appropriate to wait for the outcome of the cod gillnet fishery assessment, but that the issue should be noted at in the audit report. The intention of V. Tún is to harmonise with the outcome of the cod gillnet fishery re-assessment as regards harbour porpoise (and any other relevant issues) at the next surveillance audit (Year 2).

2.9 Summary of Conditions

Note: This section summarises the conditions after harmonisation – i.e. including one new condition not give in the PCR.

Table 5: Summary of assessment conditions in the ISF Iceland Saithe fishery

Condition number	Performance indicator (PI)	Status	PI score (before audit but after harmonisation with golden redfish)	PI revised score
1	2.1.1 (bottom trawl, Danish seine, longline)	Closed: Wolffish, Closed: Deep-sea redfish	75	75
2	2.1.2 (bottom trawl, Danish seine, longline)	On-target: Grey skate	75	75
3	2.4.1 (bottom trawl)	Behind target	75	75
4 (NEW)	PI 2.4.2 (bottom trawl)		75	75

3. Assessment Process

3.1 Audit Process

The announcement for the surveillance was published on the MSC website on 11th August 2015 and stakeholders were informed of the surveillance audit activities.

This surveillance audit was carried out by Dr. Jo Gascoigne, Thomas H. Jagielo, Dr. Ásgeir Daniélsson and Louise le Roux. Dr. Gascoigne served as Team Leader and was primarily responsible for Principles 2 and reporting, Mr. Jagielo was responsible for Principle 1 issues and Dr. Daniélsson for Principle 3 issues. Mrs. le Roux was responsible for CoC and RBF issues, while also serving as assessment secretary. Mrs. Lovísa Ó. Guðmundsdóttir served as secretary to the team.

Tún maintains an active list of stakeholders who were contacted and notified of the surveillance audit and of its on-site component being held in Reykjavík on 14-16 September 2015. All stakeholders were given the opportunity to comment on the surveillance announcement and to request an onsite meeting with a member of the assessment team during the site visit to Iceland. The Animal Welfare Institute requested a meeting with the assessment team. No other requests were received.

This surveillance audit was conducted parallel to the first surveillance audits for ISF Iceland golden redfish and Icelandic gillnet lumpfish fisheries.

3.2 Scope and history of assessments

The unit of assessment and certification covers the fishing of saithe by means of six different fishing methods (bottom trawl, Danish seine, longline, handline, gillnet, *Nephrops* trawl) within the Icelandic Economic Zone. A full assessment of the fishery was launched in April 2013 and it was certified in September 2014.

The fishery attained a score of 80 or more against each of the three MSC Principles and did not score less than 60 against any of the individual MSC Criteria. Three Performance Indicators (PI 2.1.1, PI 2.1.2 and PI 2.4.1) scored less than 80, so three conditions were set for this fishery. One recommendation was made.

3.3 Surveillance activities

The assessment team met with the following parties:

- the client organization Iceland Sustainable Fisheries (ISF),

- the Ministry of Industries and Innovation, the authority responsible for fisheries policy and regulations,
- the Fisheries Directorate, the authority responsible for implementing the management of Icelandic fisheries,
- the Marine Research Institute, which is responsible fisheries research and fisheries policy advice, and
- the Animal Welfare institute.

The assessment processes and the certifications were discussed in detail and the meetings provided an opportunity to discuss any changes to the fishery and specifically the progress against conditions and recommendations that exist for this fishery. All meetings took place 14th -15th of September at the Grand Hotel in Reykjavik, Iceland.

3.4 MSC standards

This surveillance audit was carried out according to the process requirements of “MSC Fisheries Certification Requirements and Guidance v2.0” and reported using “MSC Surveillance Reporting Template v1.0”. However, the original full assessment used „MSC Certification Requirements v1.3” which remains as the standard for the fishery.

3.5 Review and revision of client action plan

The surveillance audit was observed by ASI, the MSC accreditation body, who raised an observation that the client action plan was not perhaps sufficiently clear in terms of what would be presented to V. Tún as evidence of compliance. The client therefore prepared a revised Client Action Plan (CAP) aiming for greater clarity and auditability. The revised CAP was reviewed by the surveillance team to ensure compliance with the condition and milestones, within the timeframe allowed for the surveillance audit in the ‘Results’ section below, both the previous and the new action plan are given.

The team also used the opportunity to review additional evidence regarding stakeholder actions relating to implementation of the Client Action Plan. New evidence include various letters from the MRI, the Ministry of Industries and Innovation and an agreement from the Client Group to ensure necessary resources to implement the Client Action Plans.

4. Results

Table 6: Condition 1

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.1.1 (Bottom trawl, Danish seine, longline)	Scoring Issue c: “If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	75
Condition	For wolffish, deep-sea redfish (Icelandic slope stock) and grey skate, the fishery must put in place a partial strategy of demonstrably effective management measures, such that the fishery does not hinder their recovery and rebuilding. This can take the form of a partial strategy across the whole of Iceland (i.e. the expansion of existing Icelandic management measures for each species into a 'partial strategy' which is demonstrably effective) or a partial strategy in relation to this fishery specifically (such as a strategy to reduce wolffish and deep-sea redfish bycatch below the 5% threshold, and to		

	eliminate grey skate bycatch as far as possible), or any other effective approach.
Milestones	<p>At the End of Year 1 (first surveillance audit): There shall be evidence of the Client’s plan to evaluate impacts of bottom trawl, longline, and Danish seine on wolffish and grey skate and the impact of bottom trawl on deep-sea redfish. There shall be evidence of the Client’s engagement with the Marine Research Institute (MRI) with the goal of evaluating the impact of bottom trawl, longline, and Danish seine fisheries on wolffish, and grey skate and the impact of bottom trawls on deep-sea redfish. Score: 75</p> <p>At the End of Year 2 (second surveillance audit): By the end of Year 2 there shall be evidence of the development of options for suitable measures to ensure that the fishery does not pose a risk of serious or irreversible harm to the retained species this condition applies to. Score 75</p> <p>At the End of Year 3 (third surveillance audit): Evaluate the options developed in year 2. Consider suggested modifications, if needed and finalise and agree on a partial strategy. Score 75</p> <p>At the End of Year 4 (fourth surveillance audit): Implement the agreed upon partial strategy. Score 80.</p> <p>A formal commitment to the partial strategy shall remain in place for the duration of the certification period.</p>
PREVIOUS Client action plan	<p>Year 1</p> <ol style="list-style-type: none"> 1. Develop and implement a plan to evaluate impacts of bottom trawl, longline, and Danish seine on wolffish and grey skate and the impact of bottom trawl on deep-sea redfish. 2. Engage with the Ministry of Industries and Innovation (MII) and the Marine Research Institute (MRI) for support in the development of the plan, as required and to promote putting in place a partial strategy of demonstrably effective management measures, such that the fishery does not hinder the recovery and rebuilding of wolffish and grey skate in bottom trawls, longline, and Danish seine and deep-sea redfish in bottom trawls. 3. Consider internal options within the fishery. This may include contracting scientists to conduct an assessment of impact or other similar evaluation. <p>Year 2</p> <ol style="list-style-type: none"> 1. Develop options for reasonable measures within the fishery to prevent that the relevant fishing gear do not pose a risk of serious or irreversible harm to the retained species in the condition. 2. Consult all members of the Client Group on proposed options. 3. Continue engagement with the MII and the MRI to promote the development of options for reasonable measures at a national level <p>Year 3</p> <ol style="list-style-type: none"> 1. Evaluate the options developed in year two, consider suggested modifications, if relevant, and plan for implementation within the Client group. 2. Agree to a partial strategy within the Client group. 3. Continue engagement with the MII and the MRI in order to evaluate the options developed in year 2 and consider suggested modifications, if needed. 4. Engage with the MRI and the MII to continue promoting implementation at a national level. <p>Year 4</p> <ol style="list-style-type: none"> 1. Implement the measures developed and evaluated in year 2 and 3. 2. Continue engagement with the MII and the MRI to follow up on partial strategy and/or implement the partial strategy at a national level.
NEW Client action plan	<p>Year 1</p> <p><u>Wolffish bycatch.</u> ISF will ask MRI to analyze available data on wolffish as a bycatch of saithe</p>

targeted fisheries to establish a base point and discuss alternatives as the data has been evaluated and provided statistical results. MRI will analyse wolffish population status as part of their annual advice to government.

Grey skate bycatch. ISF will ask MRI to analyze available data on grey skate as a bycatch of saithe targeted fisheries, and/or trends in grey skate populations, to establish a base point and discuss alternatives as the data has been evaluated and provided statistical results.

Deep sea redfish. ISF will ask MRI to analyze available data on deep sea redfish as a bycatch of saithe targeted fisheries to establish a base point and discuss alternatives as the data has been evaluated and provided statistical results. MRI will analyse Deep sea redfish population status as part of their annual advice to government.

Improvements expected: Better information on stock status or trends for these species, better information on their real overlap with the saithe fishery.

Auditing: At the Year 1 audit, ISF will present i) the most recent MRI advice for wolffish and deep-sea redfish; ii) an analysis of available data on the bycatch of these species in the saithe fishery and iii) any available data giving an indication of population trends in grey skate.

Year 2

Wolffish bycatch. ISF meets with MRI to review findings from Year 1 analysis and assist in development of options or push for the development of options in light of findings in Year 1 analyses. The goal is for wolffish as a bycatch of saithe targeted fisheries to be maintained below 5%, or 2% if the stock continues to be depleted according to MRI advice.

Grey skate bycatch. ISF meets with MRI to review findings from Year 1 analysis and assist in development of options or push for the development of options in light of findings in Year 1 analyses. ISF meets with the Directorate of Fisheries to discuss improved logging of grey skate catches, as it is the responsibility of the Directorate to oversee collection of logging data. The analysis of the data will indicate specific areas and seasonal changes in grey skate bycatch. ISF will meet with MRI to discuss the findings, compare the catch data with stock measurements and ask for development of strategies to minimize the bycatch of grey skate when targeting saithe. The goal is to eliminate grey skate catch as far as possible.

Deep sea redfish bycatch. ISF meets with MRI to review findings from Year 1 analysis and assist in development of options or push for the development of options in light of findings in Year 1 analyses.

Improvements expected: The bycatch impacts for wolffish and deep-sea redfish are well understood; for grey skate, population trends are monitored and measures to improve logging of bycatch are being put in place if required; management options to reduce impacts on all three species are in development.

Auditing: At the Year 2 audit, ISF will present i) evidence that options are being developed to reduce wolffish and deep-sea redfish bycatch to the required level, as necessary; ii) evidence that work is underway to improve logging of grey skate bycatch if necessary (e.g. evidence of outreach to ISF members, evidence of discussions with DoF on strengthened enforcement or other), iii) evidence of monitoring grey skate population trends, and that measures are under discussion to minimise bycatch, as necessary.

Year 3

The actions of year 3 will depend on results from findings from previous year. The findings will have two main sources, the MRI annual and other research. The goal is to agree on a strategy to maintain a below 5% bycatch of wolffish from saithe targeted fisheries (below 2% if the stock continues to be categorised as depleted by MRI), to minimize grey skate bycatch as far as possible and deep sea redfish TAC awarded by the MII to be consistent with scientific advice by MRI.

Improvements expected: Management measures have been agreed that will reduce bycatch to or below target levels for all three species.

Auditing: Evidence that suitable management measures have been agreed (e.g. draft regulations, an

	<p>agreement accepted by all ISF members or similar)</p> <p>Year 4</p> <p>The strategies established in year 3 shall be in implementation by year four, if necessary. ISF will meet with MRI to evaluate the progress, meet with the MII to follow up on MRI findings and discuss progress and the commitment to the implemented strategies.</p> <p>Improvements expected: Management measures are implemented.</p> <p>Auditing: Evidence that required levels of bycatch are being achieved (e.g. landings data, DoF observer reports or similar). Evidence that measures have been implemented.</p>																																								
<p>Progress on Condition [Year 1]</p>	<p><u>Wolffish (<i>Anarhichas lupus</i>)</u></p> <p>According to MRI advice (Anon 2015), fishing mortality on wolffish has declined to below F_{max} for the first time in the time series. Biomass is increasing or stable, although recruitment remains low. MRI stakeholders expressed the view that low recruitment is a feature of all the ‘warm water’ species in the Icelandic fishery, and is most likely environmentally driven although the mechanism is unknown (see under ‘ecosystem’ above).</p> <p>Because of the change in the impact of the fishery on the wolffish stock (reduction in fishing mortality below the management trigger level), the team decided to rescore this PI for wolffish. The new score and rationale is given in Annex 2. The outcome of the rescoring is that SG80 is now met for wolffish for PI 2.1.1. This condition is therefore closed as regards wolffish.</p> <p><u>Deep-sea redfish (<i>Sebastes mentella</i>)</u></p> <p>The biomass survey index for deep-sea redfish from the October groundfish survey increased significantly in 2014 relative to 2013, but remains ~50% below the peak level; it is probably too early to say whether the stock status has started to improve. Landings have been dropping steadily since the mid-1990s, but this is a very long-lived species.</p> <p>The team reviewed the overlap of saithe with deep-sea redfish. Saithe is fished down to ~400m, while deep-sea redfish are fished only below ~500m. The team therefore concluded that this species is not in fact likely to be relevant to the saithe fishery. The team therefore decided to close this condition in relation to deep-sea redfish.</p> <p><u>Grey skate</u></p> <p>Grey skate was defined as a ‘main’ retained species on the basis of vulnerability. According to information provided by the MRI to the client, the biomass index of grey skate from groundfish and <i>Nephrops</i> surveys has been on an increasing trend since ~2000, most dramatically so since 2009 (Figure 5 and Figure 6). MRI hypothesise that this relates to decreasing trawl effort associated with the recovery of the cod stock, but there is no direct information to support this hypothesis.</p> <div data-bbox="383 1429 949 1848" data-label="Figure"> <table border="1"> <caption>Data for Figure 5: Total number in Groundfish surveys (spring and autumn combined) 1996-2014</caption> <thead> <tr> <th>Year</th> <th>Total Number</th> </tr> </thead> <tbody> <tr><td>1996</td><td>12</td></tr> <tr><td>1997</td><td>13</td></tr> <tr><td>1998</td><td>13</td></tr> <tr><td>1999</td><td>11</td></tr> <tr><td>2000</td><td>8</td></tr> <tr><td>2001</td><td>16</td></tr> <tr><td>2002</td><td>23</td></tr> <tr><td>2003</td><td>11</td></tr> <tr><td>2004</td><td>23</td></tr> <tr><td>2005</td><td>17</td></tr> <tr><td>2006</td><td>20</td></tr> <tr><td>2007</td><td>24</td></tr> <tr><td>2008</td><td>32</td></tr> <tr><td>2009</td><td>21</td></tr> <tr><td>2010</td><td>21</td></tr> <tr><td>2011</td><td>39</td></tr> <tr><td>2012</td><td>59</td></tr> <tr><td>2013</td><td>20</td></tr> <tr><td>2014</td><td>43</td></tr> </tbody> </table> </div> <p>Figure 5: Total number in Groundfish surveys (spring and autumn combined) 1996-2014). Data from MRI.</p>	Year	Total Number	1996	12	1997	13	1998	13	1999	11	2000	8	2001	16	2002	23	2003	11	2004	23	2005	17	2006	20	2007	24	2008	32	2009	21	2010	21	2011	39	2012	59	2013	20	2014	43
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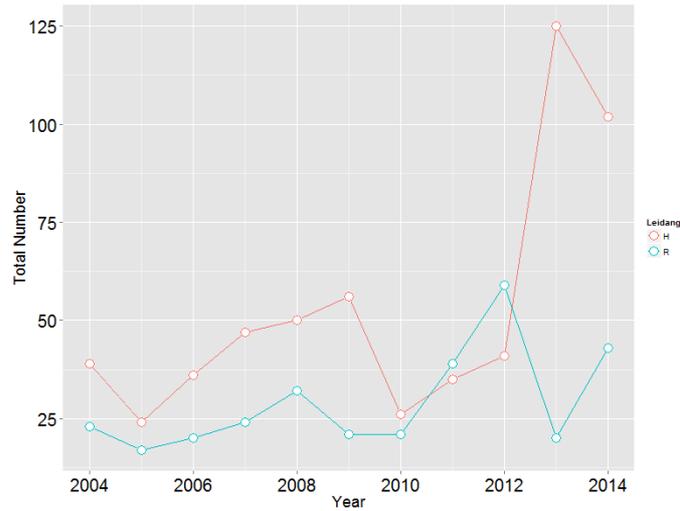


Figure 6: Grey skate. Total numbers. H (red): Nephrops survey , R (blue): Groundfish survey. Data from MRI.

Bottom trawl:

Information from the MRI reports that in bottom trawl hauls where saithe constituted more than 50% of the catch, grey skate bycatch was on average 4%. However, comparison of the geographic distribution of the saithe bottom trawl fishery clearly show limited overlap (**Figure 7**). On this basis, the team concluded that it is very unlikely that there is any significant bycatch of grey skate in the saithe trawl fishery specifically, and hence have concluded that grey skate should not be a ‘main’ retained species for the saithe bottom trawl fishery. Since SG60 and SG80 for PI2.1.1 apply to ‘main’ retained species only, this condition is now closed as regards grey skate for bottom trawl.

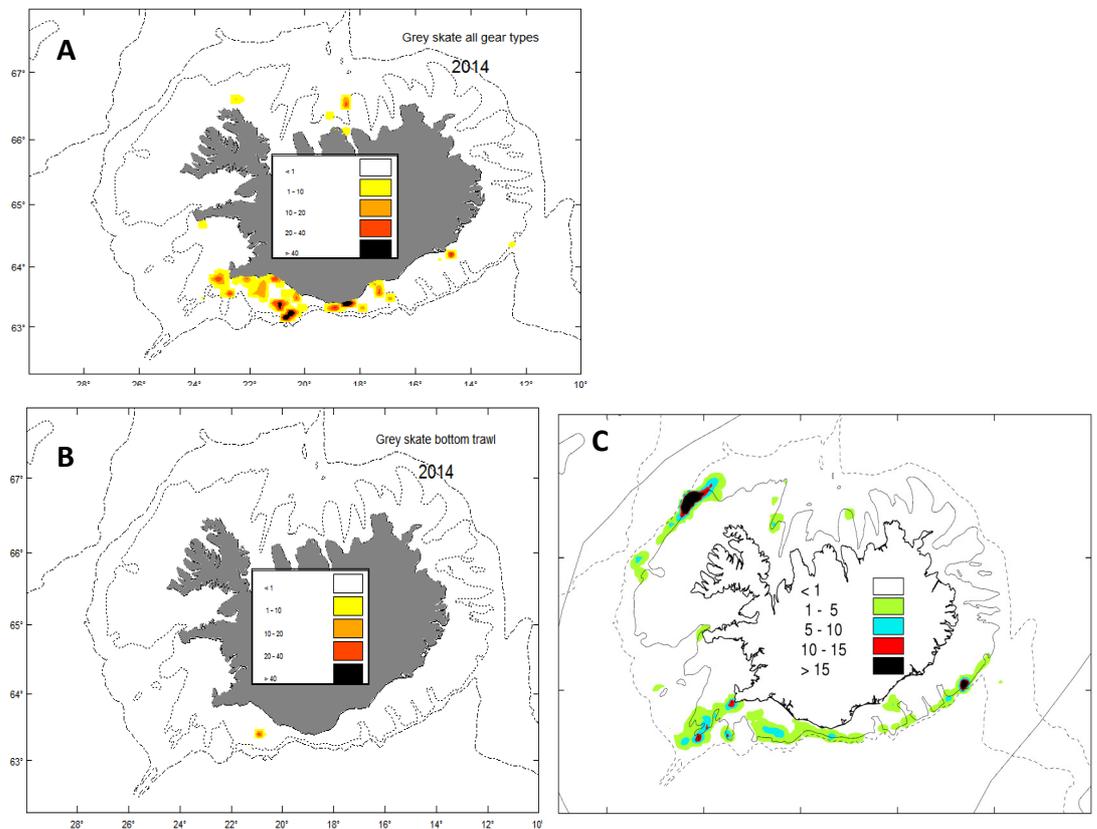


Figure 7: Reported 2014 catches of grey skate by A: all gear types; B: Bottom trawl, and C: reported

catches of saithe. Data from MRI.

Longline:

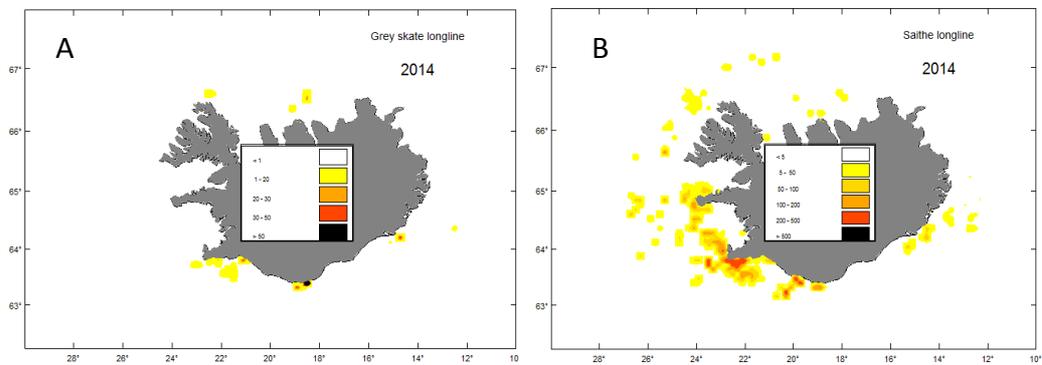


Figure 8: Longline catches of grey skate (A) and saithe (B) in 2014. Data from MRI.

Information from the MRI show that 70% of all grey skate catches around Iceland come from longline. Geographic information suggested overlap of the two species in the southern coastal area (Figure 8). However, haul by haul analysis indicated that these species are bycatch species, where the majority of catches of longline target cod and ling, which constituted 57% and 16% of the total catch, respectively.

Danish seine:

About 7% of all grey skate catches comes from Danish seine. Danish seines operate close to shore around Iceland and it overlaps with the distribution of grey skate catches from all gears (Figure 9, also see Figure 7A).

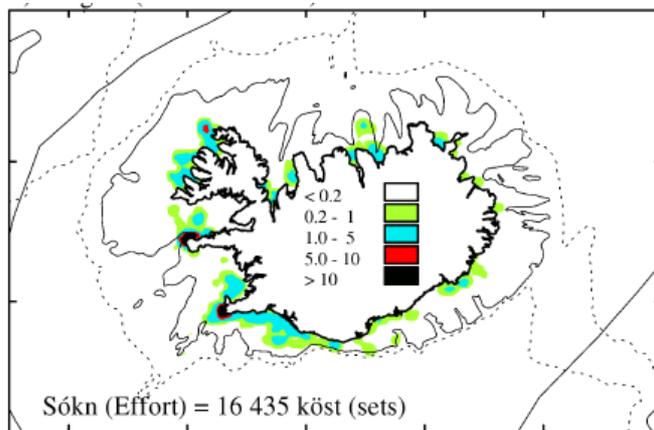


Figure 9: Danish Seine effort around Iceland for 2014. Data from Anon 2015.

In year 1, the team expected to see evidence of engagement with the MRI and analysis of bycatch of wolffish, grey skate and deep-sea redfish in the saithe fishery. ISF presented the team with data and analysis from the MRI, including new information on survey trends of grey skate. On the basis of this analysis and the MRI state of the stock reports; the team concluded that the condition on wolffish and deepsea redfish is now closed for all gears. The condition for grey skate is now closed for bottom trawl, and considered on target for longline and Danish seine.

Status of Wolffish (Bottom trawl, Danish seine, and longline): **Closed**

condition	<p>Deep-sea redfish (Bottom trawl): Closed</p> <p>Grey skate (Bottom trawl): Closed</p> <p>Grey skate (Longline, Danish seine): On target</p> <p>Overall: On target</p>
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Table 7: Condition 2

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.1.2 (trawl, Danish seine, longline)	Scoring Issue b “There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.”	75
Condition	For wolffish, deep-sea redfish (Icelandic slope stock) and grey skate, the fishery must put in place a partial strategy to prevent the fishery from hindering their recovery and rebuilding where there is an objective basis for confidence that the partial strategy will work, based on information directly from the fishery or the species. This can take the form of a partial strategy across the whole of Iceland (i.e. the expansion of existing Icelandic management measures for each species into a 'partial strategy' which is demonstrably effective) or a partial strategy in relation to this fishery specifically (such as a strategy to reduce wolffish and deep-sea redfish bycatch below the 5% threshold, and to eliminate grey skate bycatch as far as possible), or any other effective approach.		
Milestones	<p>At the End of Year 1 (first surveillance audit): There shall be evidence of the Client’s plan to evaluate impacts of bottom trawl, longline, and Danish seine on wolffish and grey skate and the impact of bottom trawl on deep-sea redfish. There shall be evidence of the Client’s engagement with the Marine Research Institute (MRI) with the goal of evaluating the impact of bottom trawl, longline, and Danish seine fisheries on wolffish, and grey skate and the impact of bottom trawls on deep-sea redfish. Score: 75</p> <p>At the End of Year 2 (second surveillance audit): By the end of Year 2 there shall be evidence of the development of options for suitable measures where there is an objective basis for confidence of working to ensure that the fishery does not pose a risk of serious or irreversible harm to the retained species in the condition. Score 75</p> <p>At the End of Year 3 (third surveillance audit): Evaluate the options developed in year 2. Consider suggested modifications, if needed and finalise and agree on a partial strategy. Score 75</p> <p>At the End of Year 4 (fourth surveillance audit): Implement the agreed upon partial strategy where there is an objective basis for confidence that the partial strategy will work based on information from the fishery and/or species. Score 80.</p> <p>A formal commitment to the partial strategy shall remain in place for the duration of the certification period.</p>		
PREVIOUS client action plan	<p>Year 1</p> <ol style="list-style-type: none"> 1. Develop and implement a plan to evaluate impacts of bottom trawl, longline, and Danish seine on wolffish and grey skate and the impact of bottom trawl on deep-sea redfish. 2. Engage with the Ministry of Industries and Innovation (MII) and the Marine Research Institute (MRI) for support in the development of the plan, as required and to promote putting in place a partial strategy of demonstrably effective management measures, such that the fishery does not hinder the 		

	<p>recovery and rebuilding of wolffish and grey skate in bottom trawls, longline, and Danish seine and deep-sea redfish in bottom trawls.</p> <ol style="list-style-type: none"> 3. Consider internal options within the fishery. This may include contracting scientists to conduct an assessment of impact or other similar evaluation. <p>Year 2</p> <ol style="list-style-type: none"> 1. Develop options for reasonable measures within the fishery to prevent that the relevant fishing gear do not pose a risk of serious or irreversible harm to the retained species in the condition. 2. Consult all members of the Client Group on proposed options. 3. Continue engagement with the MII and the MRI to promote the development of options for reasonable measures at a national level <p>Year 3</p> <ol style="list-style-type: none"> 1. Evaluate the options developed in year two, consider suggested modifications, if relevant, and plan for implementation within the Client group. 2. Agree to a partial strategy within the Client group. 3. Continue engagement with the MII and the MRI in order to evaluate the options developed in year 2 and consider suggested modifications, if needed. 4. Engage with the MRI and the MII to continue promoting implementation at a national level. <p>Year 4</p> <ol style="list-style-type: none"> 1. Implement the measures developed and evaluated in year 2 and 3. 2. Continue engagement with the MII and the MRI to follow up on partial strategy and/or implement the partial strategy at a national level.
<p>NEW client action plan</p>	<p>Year 1</p> <p><u>Wolffish bycatch.</u> ISF will ask MRI to analyze available data on wolffish as a bycatch of saithe targeted fisheries to establish a base point and discuss alternatives as the data has been evaluated and provided statistical results.</p> <p><u>Grey skate bycatch.</u> ISF will ask MRI to analyze available data on grey skate as a bycatch of saithe targeted fisheries to establish a base point and discuss alternatives as the data has been evaluated and provided statistical results.</p> <p><u>Deep sea redfish.</u> ISF will ask MRI to analyze available data on deep sea redfish as a bycatch of saithe targeted fisheries to establish a base point and discuss alternatives as the data has been evaluated and provided statistical results.</p> <p>Improvements expected: Better information on stock status or trends for these species, better information on their real overlap with the saithe fishery.</p> <p>Auditing: At the Year 1 audit, ISF will present i) the most recent MRI advice for wolffish and deep-sea redfish; ii) an analysis of available data on the bycatch of these species in the saithe fishery and iii) any available data giving an indication of population trends in grey skate.</p> <p>Year 2</p> <p><u>Wolffish bycatch.</u> ISF meets with MRI to review findings from Year 1 analysis and assist in development of options or push for the development of options in light of findings in Year 1 analyses. The goal is for wolffish as a bycatch of saithe targeted fisheries to be maintained below 5%.</p> <p><u>Grey skate bycatch.</u> ISF meets with MRI to review findings from Year 1 analysis and assist in development of options or push for the development of options in light of</p>

	<p>findings in Year 1 analyses. ISF meets with the Directorate of Fisheries to discuss improved logging of grey skate catches, as it is the responsibility of the Directorate to oversee collection of logging data. The analysis of the data will indicate specific areas and seasonal changes in grey skate bycatch. ISF will meet with MRI to discuss the findings, compare the catch data with stock measurements and ask for development of strategies to minimize the bycatch of grey skate when targeting saithe. The goal is to eliminate grey skate catch as far as possible.</p> <p><u>Deep sea redfish bycatch.</u> ISF meets with MRI to review findings from Year 1 analysis and assist in development of options or push for the development of options in light of findings in Year 1 analyses.</p> <p>Improvements expected: The bycatch impacts for wolffish and deep-sea redfish are well understood; for grey skate, population trends are monitored and measures to improve logging of bycatch are being put in place if required; management options to reduce impacts on all three species are in development.</p> <p>Auditing: At the Year 2 audit, ISF will present i) evidence that options are being developed to reduce wolffish and deep-sea redfish bycatch to the required level, as necessary; ii) evidence that work is underway to improve logging of grey skate bycatch if necessary (e.g. evidence of outreach to ISF members, evidence of discussions with DoF on strengthened enforcement or other), iii) evidence that trends in grey skate populations are positive, and/or that measures are under discussion to eliminate bycatch.</p> <p>Year 3</p> <p>The actions of year 3 will depend on results from findings from previous year. The findings will have two main sources, the MRI annual and other new researches. Based on findings from the two sources, ISF will meet with MRI and MII to discuss and ask for adjustments to strategies as information deems needed in relation to the MSC standards. The goal is to agree on a strategy to maintain a below 5% bycatch of wolf fish from saithe targeted fisheries, to eliminate grey skate bycatch as possible and deep sea redfish TAC awarded by the MII to be consistent with scientific advise by MRI.</p> <p>Improvements expected: Management measures have been agreed that will reduce bycatch to or below target levels for all three species.</p> <p>Auditing: Evidence that suitable management measures have been agreed (e.g. draft regulations, an agreement accepted by all ISF members or similar)</p> <p>Year 4</p> <p>The strategies established in year 3 should be in implementation by year four. ISF will meet with MRI to evaluate the progress, meet with the MII to follow up on MRI findings and discuss progress and the commitment to the implemented strategies.</p> <p>Improvements expected: Management measures are implemented.</p> <p>Auditing: Evidence that required levels of bycatch are being achieved (e.g. landings data, DoF observer reports or similar).</p>
<p>Progress on Condition [Year 1]</p>	<p><u>Wolffish</u></p> <p>As noted above, the fishing mortality on wolffish has been considerably reduced since the initial full assessment, allowing the team to reconsider whether the management strategy for wolffish has been demonstrably effective. Therefore, the team decided to rescure PI 2.1.2 for wolffish. The new score and rationale is given in Appendix 1. The outcome of the rescoring is that SG80 is now met for wolffish for PI 2.1.2. This condition is therefore closed as regards wolffish.</p> <p><u>Deep-sea redfish</u></p> <p>As noted above, the team has concluded that there is in fact hardly any overlap between the golden redfish fishery and the deep-sea redfish fishery, so this condition</p>

	<p>has been closed for deep-sea redfish.</p> <p><u>Grey skate</u></p> <p>The analysis for grey skate is the same as for Condition 1, and the team concluded that this condition is now closed for bottom trawl, and considered on target for longline and Danish seine.</p>
Status of condition	<p>Wolffish (Bottom trawl, Danish seine, and longline): Closed</p> <p>Deep-sea redfish (Bottom trawl): Closed</p> <p>Grey skate (Bottom trawl): Closed</p> <p>Grey skate (Longline, Danish seine): On target</p> <p>Overall: On target</p>

Table 8: REVISED Condition 3 (further to harmonisation with the ISF golden redfish fishery)

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.4.1 (bottom trawl)	<u>Scoring Issue a</u> “The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.”	75 (revised)
Condition	By the fourth surveillance audit necessary conservation and management measures for all vulnerable marine habitats shall be in place and implemented, such that the trawl fishery does not cause serious or irreversible harm to habitat structure, on a regional or bioregional basis, and function.		
Milestones	<p>At the End of Year 1 (first surveillance audit): There shall be evidence of the Client’s plan to evaluate potential damage to deep-sea sponge aggregations and corals. There shall be evidence of engagement with the Marine Research Institute (MRI) with the goal of evaluating potential damage to all vulnerable habitats by fishing activities. If MRI is unable to provide support for the implementation of the plan, the fishery shall prepare the plan on the basis of other means (e.g. independent consultants or scientists or other means as appropriate). The plan may include an Environmental Impact Assessment or other similar analysis. Score 75</p> <p>At the End of Year 2 (second surveillance audit): By the end of Year 2 there shall be evidence of ongoing work towards the implementation of the plan; i.e. developing options for conservation and management measures to all vulnerable habitats, such that the fishery does not cause serious or irreversible harm to habitat structure, on a regional or bioregional basis, and function. These options may be developed with the support of MRI, or may be developed within the client group, as appropriate. Options may include closed areas, move on thresholds or other actions as appropriate, but should be sufficient to ensure that there serious and irreversible harm to sponges and coral gardens is highly unlikely. Score 75</p> <p>At the End of Year 3 (third surveillance audit): Evaluate the options developed in year 2. Consider suggested modifications, if needed and finalise and agree on conservation and management measures. By the end of the year a partial strategy for the protection of deep-sea sponge aggregations and coral gardens from trawling shall be agreed upon, either at client group level or at a higher level. Score 75</p> <p>At the End of Year 4 (fourth surveillance audit): Implement the agreed upon partial strategy. Score 80.</p>		

	A formal commitment to the agreed upon conservation and management measures shall remain in place for the duration of the certification period.
<p>PREVIOUS Client action plan</p>	<p>Year 1</p> <ol style="list-style-type: none"> 1. Develop and implement a plan to evaluate potential damage to deep-sea sponge aggregations and coral garden habitats by fishing activities in the bottom trawl fishery. Engage with the Ministry of Industries and Innovation (MII) and the Marine Research Institute (MRI) for support in the development of the plan, as required. 2. Consult with the MRI with the objective of evaluating the impact of the fishery on deep-sea sponge aggregations and coral garden habitats. 3. Consider internal options within the fishery. This may include contracting scientists to conduct an Environmental Impact Assessment or other similar evaluation. 4. Implement benthic bycatch monitoring within ISF client Group. Engage with MRI and MII for scientific input and the Directorate of Fisheries for verification of monitoring. <p>Year 2</p> <ol style="list-style-type: none"> 1. Develop options for conservation and management measures of all vulnerable habitats within the fishery in line with international management frameworks for benthic habitat impacts such as FAO, NAFO, OSPAR, or other relevant frameworks. 2. Continue engagement with the MII and the MRI to develop a partial strategy, and/or develop a strategy internally within the fishery, with support from external scientists, consultants or other advisors if required. Consult all members of the Client Group on proposed options. 3. Continue engagement with MRI and Directorate of Fisheries about verification of monitoring for benthic bycatch, and finalize procedure of verification with MRI and DF. <p>Year 3</p> <ol style="list-style-type: none"> 1. Evaluate the options developed in year two, consider suggested modifications, if relevant, and plan for implementation within the Client Group. 2. Agree to a partial strategy within the Client group. The partial strategy shall be in line with international management frameworks for benthic habitat impacts such as FAO, NAFO, OSPAR, or other relevant frameworks. 3. Continue engagement with the MII and the MRI in order to evaluate the options developed in year 2 and consider suggested modifications, if needed. 4. Engage with the MRI and the MII to continue promoting implementation of a strategy in line international management frameworks for benthic habitat impacts at a national level. <p>Year 4</p> <ol style="list-style-type: none"> 1. Implement the measures/partial strategy that was developed and evaluated in year 2 and 3 in the Client Group. 2. Continue engagement with the MII and the MRI to follow up on partial strategy and/or implement the partial strategy which is in line international management frameworks for benthic habitat impacts at a national level.
<p>NEW Client Action</p>	<p>Year 1</p>

<p>Plan</p>	<p>ISF will engage MRI for data and information on potential damages caused by bottom trawling on all vulnerable habitats. In the event that MRI cannot provide the information and data, ISF will commit to work with an outside researcher. ISF will engage their members to agree upon and implement methods of benthic bycatch monitoring by ISF member vessels, as agreed with WWF during the objections process.</p> <p>Improvements: All available information on coral gardens and deep-sea sponge habitats' interaction with this fishery will be brought together. Data gaps will be clearly identified. Direct monitoring of the impacts of this fishery will be in preparation.</p> <p>Auditing: At the Year 1 audit, ISF will present i) evidence of engagement with MRI on habitat mapping and trawl impacts (e.g. meeting agendas and summaries or similar); ii) the data available from previous mapping (e.g. MRI reports or similar); iii) information on mapping projects underway or planned by MRI; iv) evidence of engagement with ISF members on benthic bycatch monitoring (e.g. meeting agendas etc.).</p> <p>Year 2</p> <p>Based on findings in year 1, ISF will meet with MRI and request an engagement by MRI to conserve vulnerable habitats and ask for options and plans to prevent serious or irreversible harm to habitat structures, if necessary. ISF will meet with members of the client group to discuss the condition and ask for feedback on actions made by each member to address the condition. The actions will be formalized into a plan, intended for engagement by members of the client group to meet the condition. To purpose is to ensure that serious or irreversible harm to sponges and coral gardens becomes a highly unlikely causes of bottom trawling.</p> <p>Improvements: Implementation of a monitoring plan will have begun to monitor impacts on coral gardens and sponges and reduce them to acceptable levels as required.</p> <p>Auditing: At the Year 2 audit, ISF will present the action plan, along with evidence from the monitoring efforts.</p> <p>Year 3</p> <p>ISF will meet with MRI to discuss findings from annual research on sponge and coral incidents. The meeting is intended to review statistics and discuss alternative actions, if needed. ISF will meet with members from the client group to discuss effects of actions taken in year 2 and adjust for improved efficiency, as needed. The goal is to protect deep sea sponge aggregations and coral gardens from impacts of trawling and seek an agreement among the members of the client group to this type of conservation. The actions of Year 3 are contingent on the outcome of findings showing whether and how conservation actions are required.</p> <p>Improvements: The plan, if required, is updated according to the results of ongoing monitoring, and agreed by ISF and all relevant parties.</p> <p>Auditing: At the Year 3 audit, ISF will present an updated plan, with evidence that it has been agreed by all participating parties (e.g. a signed agreement, meeting minutes, letters of support etc.)</p> <p>Year 4</p> <p>The agreement reached in year 3 is based on a contingent that there is actually a need for it. If a plan has been proven necessary and agreed upon in year three, ISF will monitor the implementation of the plan in year 4 in cooperation with the members of the client group.</p> <p>Improvements: If required, the plan is implemented; it is updated as new information is available.</p> <p>Auditing: At the Year 4 audit, ISF will present the updated plan if necessary, with</p>
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	evidence of implementation (e.g. benthic logbook data, MRI report or other similar).
Progress on Condition [Year 1]	<p><u>Progress on habitat mapping</u></p> <p>MRI noted that when habitat mapping started in 1999, the goal was to map the whole Icelandic EEZ in 15 years; 15 years on, it is now ~12% mapped. MRI have therefore accepted that a new approach is needed. To this end, they have started collecting detailed data on benthos in the groundfish surveys. These surveys operate with a mixture of fixed and random sites, some in the core fishing grounds and some outside, including in closed areas. A key advantage of this approach is that it targets directly the areas and species which are vulnerable to trawl impacts, since the survey is by trawl and includes the main fishing grounds. MRI have also prepared ID charts for benthic species to distribute to commercial fishing vessels. The addition of benthos to the groundfish surveys started in March 2014 so data outputs are as yet limited.</p> <p><u>Reporting of benthos by fishing vessels</u></p> <p>There is no regulation in Iceland requiring fishers to report benthic bycatch. Observers on board fishing vessels occasionally report benthic bycatch to the MRI. This data is used by the MRI for mapping Vulnerable Marine Ecosystems (VME's).</p> <p><u>Consultations by the fishery</u></p> <p>The fishery consulted with MRI regarding habitat impacts (see letter of 9 July 2015 and response of MRI of the same date). They asked about research activities on benthos and habitat impacts, and MRI explained the new mapping/survey project (described above).</p> <p><u>Benthic bycatch monitoring within ISF group</u></p> <p>NOTE: This aspect of the action plan (point 4 of the Year 1 plan) is a new addition to the saithe client action plan since harmonisation with golden redfish. ISF have, however, been implementing the saithe and golden redfish action plans together, since in practice the same fishery is involved, so the group considered that it was reasonable to audit this point straight away.</p> <p>No progress has been made on this aspect of the condition.</p>
Status of condition	<p>The saithe fishery was harmonised with the golden redfish fishery with regards to this condition. The client action plan for this condition was already in implementation as regards golden redfish (and the species are caught together in a mixed fishery), then it was possible to audit the fishery directly against the Year 1 milestone for this new condition.</p> <p>Because preparations for benthic bycatch monitoring by individual members of ISF are not yet underway, the condition is slightly behind target, although under the revised client action plan, the formal plan is not required until Year 2.</p> <p>The remedial action is to prepare and implement a programme of benthic bycatch monitoring, in order to improve data on the distribution of vulnerable habitats and to provide input to the strategy for reducing impacts. See Year 2 and Year 3 of the client action plan. The team considered that the client action plan does not need further revision, since ISF are only slightly behind target.</p>

Table 9: NEW Condition 4 (further to harmonisation with ISF golden redfish fishery)

Performance	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
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Indicator(s) & Score(s)	PI 2.4.2 – Bottom trawl	<i>Scoring Issue b “There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.”</i>	75
Condition	<p>By the fourth surveillance audit necessary conservation and management measures for deep-sea sponge aggregation and coral gardens shall be in place and implemented, such that there is a partial strategy in place and implemented for these habitat types specifically, ensuring that the trawl fishery does not cause serious or irreversible harm to habitat structure and function in Icelandic waters.</p> <p>This condition may be implemented together with Condition 3.</p>		
Milestones	<p>At the End of Year 1 (first surveillance audit): There shall be evidence of the Client’s plan to evaluate potential damage to deep-sea sponge aggregations and corals. There shall be evidence of engagement with the Marine Research Institute (MRI) with the goal of evaluating potential damage to all vulnerable habitats by fishing activities. If MRI is unable to provide support for the implementation of the plan, the fishery shall prepare the plan on the basis of other means (e.g. independent consultants or scientists or other means as appropriate). The plan may include an Environmental Impact Assessment or other similar analysis. Score 75</p> <p>At the End of Year 2 (second surveillance audit): By the end of Year 2 there shall be evidence of ongoing work towards the implementation of the plan; i.e. developing options for conservation and management measures to all vulnerable habitats, such that the fishery does not cause serious or irreversible harm to habitat structure, on a regional or bioregional basis, and function. These options may be developed with the support of MRI, or may be developed within the client group, as appropriate. Options may include closed areas, move on thresholds or other actions as appropriate, but should be sufficient to ensure that there serious and irreversible harm to sponges and coral gardens is highly unlikely. Score 75</p> <p>At the End of Year 3 (third surveillance audit): Evaluate the options developed in year 2. Consider suggested modifications, if needed and finalise and agree on conservation and management measures. By the end of the year a partial strategy for the protection of deep-sea sponge aggregations and coral gardens from trawling shall be agreed upon, either at client group level or at a higher level. Score 75</p> <p>At the End of Year 4 (fourth surveillance audit): Implement the agreed upon partial strategy. Score 80.</p> <p>A formal commitment to the agreed upon conservation and management measures shall remain in place for the duration of the certification period.</p>		
PREVIOUS Client action plan	<p>Year 1</p> <ol style="list-style-type: none"> 1. Develop and implement a plan to evaluate potential damage to deep-sea sponge aggregation and coral garden habitats by fishing activities in the bottom trawl fishery. Engage with the Ministry of Industries and Innovation (MII) and the Marine Research Institute (MRI) for support in the development of the plan, as required. 2. Consult with the MRI with the objective of evaluating the impact of the fishery on deep-sea sponge aggregations and coral garden habitats. 3. Consider internal options within the fishery. This may include contracting scientists to conduct an Environmental Impact Assessment or other similar evaluation. 		

	<p>4. Implement benthic bycatch monitoring within ISF client Group. Engage with MRI and MII for scientific input and the Directorate of Fisheries for verification of monitoring.</p> <p>Year 2</p> <ol style="list-style-type: none"> 1. Develop options for conservation and management measures of all vulnerable habitats within the fishery in line with international management frameworks for benthic habitat impacts such as FAO, NAFO, OSPAR, or other relevant frameworks. 2. Continue engagement with the MII and the MRI to develop a partial strategy, and/or develop a strategy internally within the fishery, with support from external scientists, consultants or other advisors if required. 3. Continue engagement with MRI and the Directorate of Fisheries about verification of monitoring for benthic bycatch, and finalize procedure of verification with MRI and DF <p>Year 3</p> <ol style="list-style-type: none"> 1. Evaluate the options developed in year two, consider suggested modifications, if relevant, and plan for implementation within the Client Group. 2. Agree to a partial strategy within the Client group. The partial strategy shall be in line with international management frameworks for benthic habitat impacts such as FAO, NAFO, OSPAR, or other relevant frameworks. 3. Continue engagement with the MII and the MRI in order to evaluate the options developed in year 2 and consider suggested modifications, if needed. 4. Engage with the MRI and the MII to continue promoting implementation of a strategy in line international management frameworks for benthic habitat impacts at a national level. <p>Year 4</p> <ol style="list-style-type: none"> 1. Implement the measures/partial strategy that was developed and evaluated in year 2 and 3 in the Client Group. 2. Continue engagement with the MII and the MRI to follow up on partial strategy and/or implement the partial strategy which is in line international management frameworks for benthic habitat impacts at a national level.
<p>NEW Client Action Plan</p>	<p>Year 1</p> <p>ISF will engage MRI for data and information on potential damages caused by bottom trawling on all vulnerable habitats. In the event that MRI cannot provide the information and data, ISF will commit to work with an outside researcher. ISF will engage their members to agree upon and implement methods of benthic bycatch monitoring by ISF member vessels, as agreed with WWF during the objections process.</p> <p>Improvements: All available information on coral gardens and deep-sea sponge habitats’ interaction with this fishery will be brought together. Data gaps will be clearly identified. Direct monitoring of the impacts of this fishery will be in preparation.</p> <p>Auditing: At the Year 1 audit, ISF will present i) evidence of engagement with MRI on habitat mapping and trawl impacts (e.g. meeting agendas and summaries or similar); ii) the data available from previous mapping (e.g. MRI reports or similar); iii) information on mapping projects underway or planned by MRI; iv) evidence of engagement with ISF members on benthic bycatch monitoring (e.g. meeting agendas etc.).</p> <p>Year 2</p> <p>Based on findings in year 1, ISF will meet with MRI and request an engagement by MRI</p>

	<p>to conserve vulnerable habitats and ask for options and plans to prevent serious or irreversible harm to habitat structures. ISF will meet with members of the client group to discuss the condition and ask for feedback on possible actions made by each member to address the condition. A plan will be formalized, intended for engagement by members of the client group to meet the condition, to monitor and log impacts on coral gardens and sponges. To purpose is to ensure that serious or irreversible harm to sponges and coral gardens becomes a highly unlikely causes of bottom trawling.</p> <p>ISF will launch a research program in cooperation with selected client group members, who are most focused on saithe fisheries, to log benthic catches. The program will be executed with MRI or the University of Iceland, or an independent third party who provide the scientific guidance of the research project.</p> <p>Improvements: A plan will have been drafted and put in place to monitor impacts on coral gardens and sponges and reduce them to acceptable levels, as required.</p> <p>Auditing: At the Year 2 audit, ISF will present the action plan, along with evidence that it has been discussed by ISF members and other relevant parties.</p> <p>Year 3</p> <p>ISF will meet with MRI to discuss findings from annual research on sponge and coral incidents. The meeting is intended to review statistics and discuss alternative actions, if needed. ISF will meet with members from the client group to discuss effects of actions taken in year 2 and adjust for improved efficiency, as needed. The goal is to protect deep sea sponge aggregations and coral gardens from impacts of trawling and seek an agreement among the members of the client group to this type of conservation. The actions of year 3 are contingent on that findings show that there is a proven need to implement conservation actions.</p> <p>Improvements: The plan, if required, is updated according to the results of ongoing monitoring, and agreed by ISF and all relevant parties.</p> <p>Auditing: At the Year 3 audit, ISF will present an updated plan, with evidence that it has been agreed by all participating parties (e.g. a signed agreement, meeting minutes, letters of support etc.)</p> <p>Year 4</p> <p>The agreement reached in year 3 is based on a contingent that there is actually a need for it. If a plan has been proven necessary and agreed upon in year three, ISF will monitor the implementation of the plan in year 4 in cooperation with the members of the client group.</p> <p>Improvements: If required, the plan is implemented; it is updated as new information is available.</p>
<p>Progress on Condition [Year1]</p>	<p>This condition is essentially the same as condition 3 – details of actions are given under Condition 3 above.</p> <p>This condition is likewise <u>behind target</u>.</p>
<p>Status of condition</p>	<p>As for Condition 3, this condition is behind target. Remedial actions are the same as for Condition 3.</p>

Table 10: Recommendation 1

Performance Indicator(s) & Score(s)	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
	2.3.1 (all)		n/a
Recommendation	Skippers of all vessels in the client fleet should be required to record all bycatch and ETP species (i.e. birds, marine mammals, elasmobranchs) caught, irrespective of whether they are landed or viable individuals returned back to sea.		
Milestones	n/a		
Client action plan	Iceland Sustainable Fisheries will raise the issue through dialogue with the MRI, MII and other stakeholders. Board members of ISF as well as members of the companies that own ISF have seat in number of boards and committees in the seafood industry in Iceland and will use that platform to get the message out.		
Progress on Recommendation [Year 1]	No evidence of progress on this recommendation was provided. However, it should be noted that regulation 126/2014 was recently implemented where fishers are required to record number and species of marine mammal- and bird bycatch in logbooks.		
Status of recommendation	n/a		

5. Conclusion

The conclusion of the audit is that ISF is behind target with two of four conditions. Specifically, more progress needed to be made in monitoring and recording of bycatch of benthic organisms directly.

There has been good progress on the majority of conditions, apart from the two conditions relating to habitat where the fishery is behind target, and remedial action is proposed. Iceland Sustainable Fisheries ehf. **should** retain MSC certified status for their ISF Iceland Saithe fishery.

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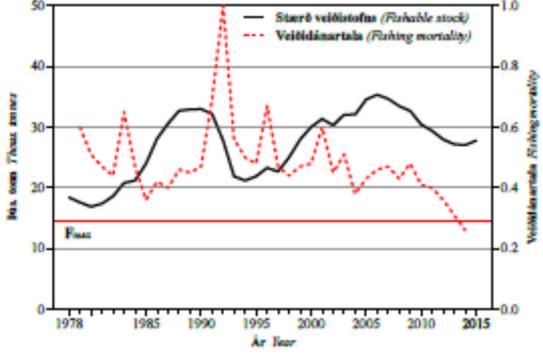
Appendices

Appendix 1. Re-scoring evaluation tables

Rescoring was considered necessary for PI's 2.1.1 and 2.1.2 for wolffish. Wolffish was considered a main retained species in the bottom trawl, Danish seine, and Longline fisheries. Therefore rescoring was considered for all three gears.

PI's 2.4.1 and 2.4.2 were also rescored in order to harmonise with the ISF golden redfish fishery.

PI 2.1.1: Wolffish: Bottom trawl, Danish seine, and Longline

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	Main retained species are likely to be within biologically based limits (if not, go to scoring issue c below).	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
	Met?	Y	N – go to scoring issue c	N
Justification		<p>RESCORING FOR ATLANTIC WOLFFISH, YEAR 1 SURVEILLANCE AUDIT: Applies to <u>Bottom Trawl, Danish seine, and Longline</u></p>  <p><i>Figure 1: Fishable stock biomass and fishing mortality for Atlantic wolffish. Source: Anon 2015.</i></p> <p>Figure 1 gives fishable stock biomass (biomass >70cm; black solid line) and fishing mortality (red dashed line) for Atlantic wolffish, from the MRI 2015 advice (Anon 2015). No biomass reference point is defined, but the biomass is high relative to the time series. A reference is defined for fishing mortality (Fmax) and fishing mortality was estimated to be below this point for the first time in the time series. For the 2015/16 fishing season, MRI recommend a modest increase in the TAC (from 7400t to 8200t) for the first time since the TAC was reduced to 7500t in 2011/12.</p> <p>Conversely, survey indices indicate that the recruitment is still low (see Figure 2 below). MRI indicated that this is most likely an environmentally-driven effect common to many 'warm water' species in Icelandic waters, but the mechanism is not understood.</p>		

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
		<p>Figure 2: Biomass index and Juvenile index for wolffish. Source: Anon 2015</p> <p>On the basis of the reducing fishing mortality and high biomass, the team considered that the stock is 'likely' to be within biologically-based limits. However, because of the continued low recruitment, which is unexplained, the team did not consider that the stock was 'highly likely' to be within biologically-based limits. Therefore the stock is scored according to scoring issue c.</p>		
b	Guide-post			Target reference points are defined for retained species.
	Met?			No
	Justification	Applies to Bottom Trawl, Danish seine, and Longline Target reference points are not defined for all retained species.		
c	Guide-post	If main retained species are outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.	If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	
	Met?	Y	Y	
	Justification	Applies to Bottom Trawl, Danish seine, and Longline It was noted in the previous scoring that fishing mortality was above the MSY proxy level (Fmax), that landings have consistently exceeded the TAC and that MII had a history of setting the TAC at levels in excess of MRI advice. It was further noted that although biomass was at a relatively high level relative to the time series, MRI considered that a decrease in the fishable stock was likely due to poor recruitment, unless fishing mortality was decreased to an appropriate level. For this reason, the team considered that SG80 was not met, although they considered that the measures in place (the Icelandic quota management system) plus the relatively high biomass, was sufficient for SG60 to be met. In re-scoring at the first surveillance audit (September 2015), these issues are updated in turn below: 1. Fishing mortality As noted under scoring issue a), the latest estimate of fishing mortality by MRI suggests that fishing mortality is now below Fmax for the first time in the time series.		

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species													
		<p>2. Landings relative to the TAC</p> <p>Landings continue to exceed the TAC, but by a more modest proportion (2013/14: TAC 7500t, landings 7929t – an excess of 5.7%). The team noted that some flexibility is required to make the TAC/quota system compatible with the requirement for zero discarding – it is permitted within restricted limits to exchange quota of different species against each other, in units of ‘cod equivalents’. This makes the minor overshoot of some TACs inevitable. The team did not consider that this level of overshoot would be likely to hinder the recovery and rebuilding of the wolffish stock, particularly given that MRI are aware of the history of TAC overshoot in this fishery as part of the context of their advice.</p> <p>3. TAC relative to advice</p> <p>The TAC has been set at the level advised by MRI for the last two seasons (2013/14 and 2014/15) and there is a commitment by MII to continue to respect MRI advice in setting TACs, even for species without formal agreed harvest control rules.</p> <p>4. Likely future stock trends</p> <p>MRI note that the low recruitment is likely environmental and on this basis cannot be impacted via fisheries management. Nevertheless, MRI are now sufficiently confident that fishing mortality is at an appropriate level to recommend a modest increase in the TAC for the 2015/16 season (to 8200t).</p> <p>On this basis, the team reviewed the scoring for SG80. They considered that the management measures in place (the stock assessment, MRI advice, TAC and quota management system) constituted a ‘partial strategy’, as required by SG80. They considered that the reduction in fishing mortality to appropriate levels was such that this partial strategy could now be considered ‘demonstrably effective’, and that it was clear that the fishery was now not hindering the recovery and rebuilding of this stock. On this basis, the team considered that SG80 is now met for Atlantic wolffish for this fishery.</p>													
d	Guide-post	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.													
	Met?	n/a													
	Justification	Applies to <u>Bottom Trawl, Danish seine, and Longline</u> Stock status for wolffish is assessed													
References		Anon. 2015													
Summary of scoring elements		Scoring elements overall performance indicator: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Bottom Trawl</th> <th></th> </tr> </thead> <tbody> <tr> <td>Cod (from PCR)</td> <td style="background-color: #c8e6c9;">80</td> </tr> <tr> <td>Golden Redfish (from PCR)</td> <td style="background-color: #c8e6c9;">80</td> </tr> <tr> <td>Haddock (from PCR)</td> <td style="background-color: #c8e6c9;">80</td> </tr> <tr> <td>Greenland halibut (from PCR)</td> <td style="background-color: #c8e6c9;">80</td> </tr> <tr> <td>Grey Skate (from PCR)</td> <td style="background-color: #ffcdd2;">60</td> </tr> </tbody> </table>		Bottom Trawl		Cod (from PCR)	80	Golden Redfish (from PCR)	80	Haddock (from PCR)	80	Greenland halibut (from PCR)	80	Grey Skate (from PCR)	60
Bottom Trawl															
Cod (from PCR)	80														
Golden Redfish (from PCR)	80														
Haddock (from PCR)	80														
Greenland halibut (from PCR)	80														
Grey Skate (from PCR)	60														

PI 2.1.1	The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
	Wolffish (this report)	80
	Danish Seine	
	Cod (from PCR)	80
	Golden Redfish (from PCR)	80
	Haddock (from PCR)	80
	Plaice (from PCR)	80
	Grey Skate (from PCR)	60
	Wolffish (this report)	80
	Longline	
	Cod (from PCR)	80
	Haddock (from PCR)	80
	Ling (from PCR)	80
	Tusk (from PCR)	80
	Grey Skate (from PCR)	60
	Wolffish (this report)	80
OVERALL PERFORMANCE INDICATOR SCORE for Atlantic wolffish:		80
Bottom Trawl: OVERALL PERFORMANCE INDICATOR SCORE for all Scoring Elements:		75
Danish Seine: OVERALL PERFORMANCE INDICATOR SCORE for all Scoring Elements:		75
Longline: OVERALL PERFORMANCE INDICATOR SCORE for all Scoring Elements:		75
CONDITION NUMBER (if relevant):		1

PI 2.1.2: Wolffish: Bottom trawl, Danish seine, and Longline

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	There are measures in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing retained species.
	Met?	Yes	Yes	No
	Justification	<p>RESCORING FOR ATLANTIC WOLFFISH, YEAR 1 SURVEILLANCE AUDIT: Applies to <u>Bottom Trawl, Danish seine, and Longline</u></p> <p>In relation to scoring issue a) the situation has not changed. The previous rationale is given below.</p> <p>The Fisheries Management Act requires that all catches shall be landed. All the catch landed in Iceland by the Icelandic fishing fleet must be weighed and reported in Iceland. Port authorities are responsible for the correct weighing and recording of the catch. Masters of fishing vessels shall keep special log books of catch statistics (such as location, dates, gear and catch quantity) and inspectors from the DF have access to the log books.</p> <p>In addition, closure of fishing areas is an important part of the quota management system in order to protect spawning grounds and juvenile fish. These measures form a strategy to manage impact of the fishery on retained species.</p> <p>Many of the retained species are managed by the MRI through TACs and/or other appropriate measures. These include all of the species considered as main retained by weight and management measures would be considered as a strategy at the 100 level.</p> <p>However for other vulnerable species the measures in place include monitoring of landings, spatial and/or temporal closures and bans on discards. These measures form a partial strategy at the 80 level.</p>		
b	Guide-post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	Yes	Yes	No

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
	Justification	Applies to <u>Bottom Trawl, Danish seine, and Longline</u> As noted in the new rationale for PI 2.1.1, the team considered that the fisheries management strategy, as applied to wolffish, can now be shown to be ‘demonstrably effective’ in reducing fishing pressure on the wolffish stock. The recent trend in fishing mortality, as given by the MRI stock assessment, provides an objective basis for confidence that the strategy is working. SG80 is now met for wolffish. In relation to SG100, however, the team considered that the continued low recruitment does not give ‘high confidence’ that the strategy will work over the long term, since the reasons for low recruitment (while most likely not related to the fishery) are unknown.		
c	Guide-post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Yes	No
	Justification	Applies to <u>Bottom Trawl, Danish seine, and Longline</u> The situation in relation to this scoring issue has not changed. The rationale is given below. The team noted that there is increased confidence that the TAC will continue to be set in conformance with MRI advice. There is therefore increased confidence in this scoring at the SG80 level, but the continued (albeit modest) discrepancy between the TAC and landings precluded SG100 from being met. SG80: The quota system ensures implementation of the strategy. Information from the DF database, the Coast Guard and the logbook returns provide evidence that the partial strategy is being implemented successfully. The discard ban and official weighing has been in place for some decades. Discards have been decreasing (Pálsson et al. 2013). Area closures during spawning and closures to protect undersized fish have also been in place for decades. The minister of fisheries has presented a statement on responsible fisheries in Iceland, together with relevant parties in the fishing industry, where conformity between the scientific fisheries advice and the authorities’ decisions on the TAC is the principal factor for ensuring responsible fisheries management. ⁵ In recent years Icelandic authorities have committed themselves to several management plans in order to secure sustainable fisheries indicating that the authorities are determined to meet their obligations, including issues related to vulnerable species.		
d	Guide-post			There is some evidence that the strategy is achieving its overall objective.
	Met?			No
	Justification	Applies to <u>Bottom Trawl, Danish seine, and Longline</u> Many of the retained species stocks are well managed through the TAC’s and other measures including surveillance, verified landings, and discard bans. However, MRI does not provide TAC advice on some of the lesser retained species which are not targeted. Therefore a score of 100 cannot be justified.		

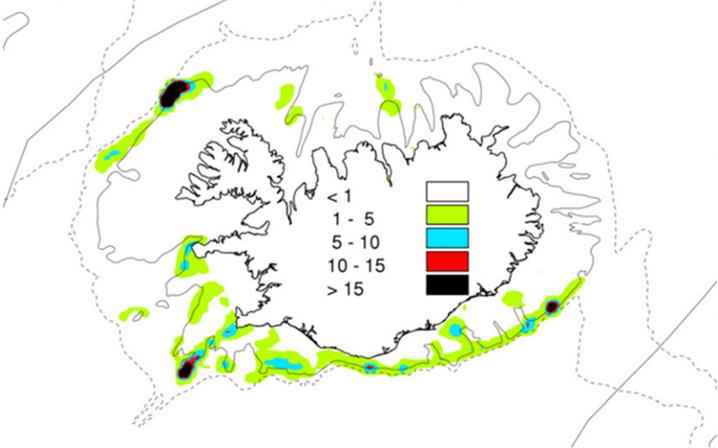
⁵ <http://www.fisheries.is/management/government-policy/responsible-fisheries/nr/62>

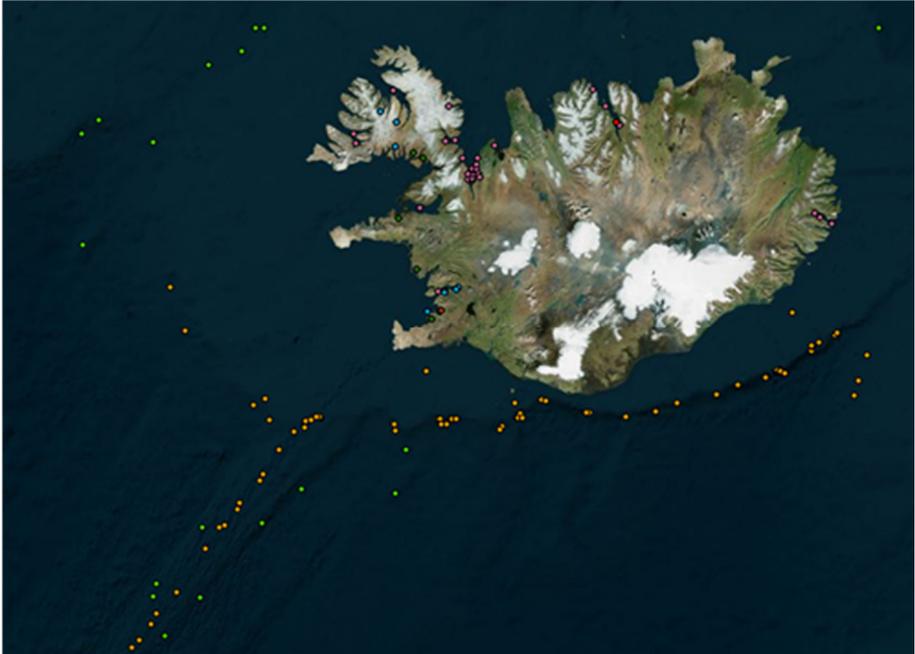
PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
e	Guide-post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Yes	Yes	Yes
	Justification	<p>Applies to <u>Bottom Trawl, Danish seine, and Longline</u></p> <p>Various shark species are occasionally reported as retained species. Vessels are required to have VMS (although not video linked), and fishermen are required to land all species intact, with dockside verification of the catch. In Iceland there is a domestic market for shark flesh and sharks are landed whole. It is thus the flesh rather than the fins that is valuable.</p>		
References		Pálsson et al. 2013		
Summary of scoring elements	Scoring elements overall performance indicator:			
	Bottom Trawl			
	Cod (from PCR)		85	
	Golden Redfish (from PCR)		85	
	Haddock (from PCR)		85	
	Greenland halibut (from PCR)		85	
	Grey Skate (from PCR)		75	
	Wolffish (this report)		85	
	Danish Seine			
	Cod (from PCR)		85	
Golden Redfish (from PCR)		85		
Haddock (from PCR)		85		
Plaice (from PCR)		85		
Grey Skate (from PCR)		75		
Wolffish (this report)		85		
Longline				
Cod (from PCR)		85		
Haddock (from PCR)		85		
Ling (from PCR)		85		
Tusk (from PCR)		85		
Grey Skate (from PCR)		75		
Wolffish (this report)		85		

PI 2.1.2	There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species
OVERALL PERFORMANCE INDICATOR SCORE for <u>Atlantic wolffish</u> :	85
Bottom Trawl: OVERALL PERFORMANCE INDICATOR SCORE for all Scoring Elements:	75
Danish Seine: OVERALL PERFORMANCE INDICATOR SCORE for all Scoring Elements:	75
Longline: OVERALL PERFORMANCE INDICATOR SCORE for all Scoring Elements:	75
CONDITION NUMBER (if relevant):	2

PI 2.4.1 Bottom trawl– Outcome (Habitat)

Evaluation Table for PI 2.4.1

PI 2.4.1	The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function		
Scoring Issue	SG 60	SG 80	SG 100
a	Guide-post	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
	Met?	Yes	No
	Justification	<p>1. Fishing area</p> <p>The highest catches of saithe are taken along the continental shelf and off the south and west coast of Iceland. Figure 3.2 of the main report – distribution of saithe fishing effort - is pasted below for reference (Figure 1).</p>  <p>Figure 1. (Figure 3.2 of main report). Distribution of saithe catch around Iceland (all gears, dark areas indicate highest catch (tonnes/nmi²))</p>	

PI 2.4.1	<p>The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function</p>
	<p>2. Habitat structure vs function: The scoring guideposts refer to 'habitat structure and function'. In relation to <i>Lophelia</i> reefs as well as other complex habitats, the key habitat function arises from the habitats' structural complexity – i.e. function arises directly from structure. Impacts of fishing as concerns these habitats have been typically considered in relation to habitat structure (damage to structural complexity), rather than habitat function. Since function flows from structure, however, the team considered that habitat structure is a direct proxy for habitat function – loss of structure results in loss of function in similar measure.</p> <p>3. Distribution of sensitive habitats in relation to fishing activity</p> <p>Figure 2 gives the MESH (OSPAR/JNCC) habitat map for OSPAR threatened and/or declining habitats for Iceland and around. Information on sensitive habitats in the Northeast Atlantic is available from OSPAR (2008a) and habitat related maps for Icelandic waters are provided in variety of published reports (e.g. Steingrímsson & Einarsson 2004, Garcia et al. 2006, Ólafsdóttir & Burgos 2012). OSPAR lists threatened and/or declining habitats in Icelandic waters is as follows:</p> <p>a) Present in Iceland and considered threatened/declining everywhere they occur</p> <ul style="list-style-type: none"> deep-sea sponge aggregations <i>Lophelia pertusa</i> reefs maerl beds intertidal <i>Mytilus</i> beds coral gardens <i>Zostera</i> beds intertidal mudflats <i>Modiolus</i> reefs <p>b) Present or possibly present, but not considered threatened/declining in Icelandic waters</p> <ul style="list-style-type: none"> hydrothermal vents seapens and burrowing megafauna <p>c) Unclear (probably not present)</p> <ul style="list-style-type: none"> seamounts (no information provided by Iceland to OSPAR, no seamounts shown on the OSPAR interactive habitat map for Icelandic waters) 

PI 2.4.1

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function

Figure 2: MESH (OSPAR/JNCC) habitat map for OSPAR threatened and/or declining habitats for Iceland. Yellow = *Lophelia*, green = Deep-sea sponge aggregation, pink = maerl beds, red = hydrothermal vents, dark green = *Zostera* beds, blue = intertidal *Mytilus edulis* beds. (see website⁶)

Modiolus modiolus beds occur at depths up to 70 m (OSPAR 2009). Seamounts occur along the Mid-Atlantic ridge (OSPAR 2010a) and as far as the team can tell, seamounts do not occur in the area of the fishery.

Hydrothermal vents are found in volcanic active areas. In Icelandic waters such areas are the Mid Atlantic Ridge (i.e. the Reykjanes Ridge) and the Tjörnes Fracture Zone off Eyjafjörður, N Iceland (Figure 3). The assessed fishery is not operating in the Tjörnes Fracture Zone but is so on the Reykjanes Ridge. However, the hydrothermal vents at Steinahóll are situated inside a closed area for otter trawling which has been in operation since 1994 (Figure 4). Furthermore, where hydrothermal vents are considered to be threatened in the OSPAR area (around the Azores) it is from deep-sea mining and scientific prospecting, not fishing (OSPAR 2010a).

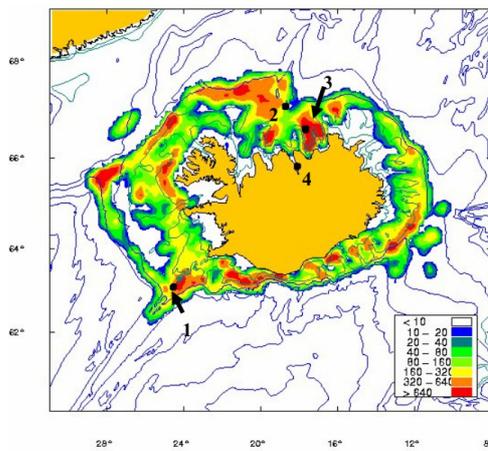
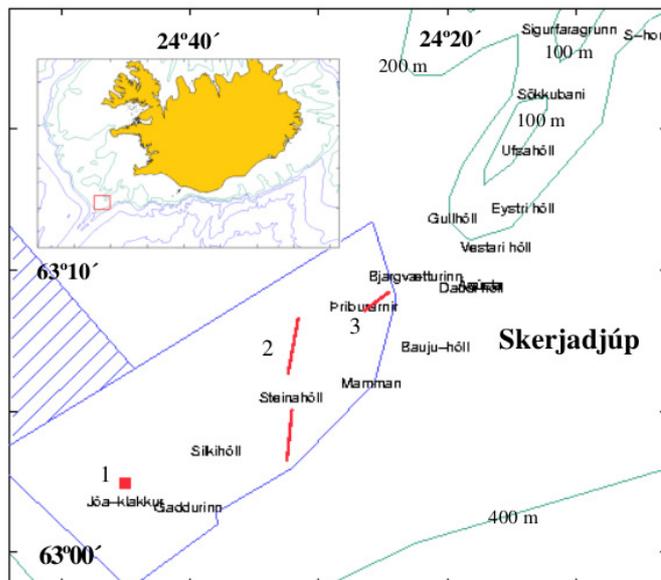
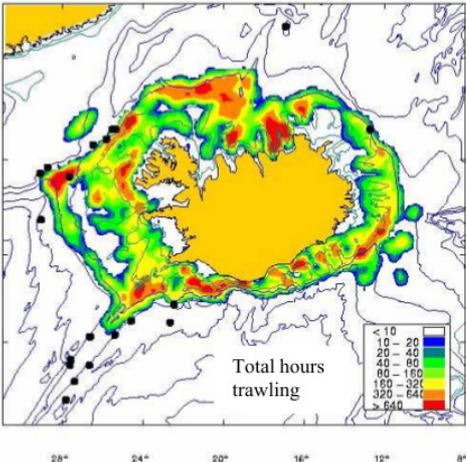


Figure 3. Location of areas of hydrothermal activity in Icelandic waters in relation to bottom trawling effort (total trawling hours 2003 [combined groundfish, shrimp and *Nephrops* fisheries]). (1) Steinahóll on the Reykjanes Ridge (see also Figure 5 above) (2-4) Hydrothermal vents in the the Tjörnes Fracture Zone; Kolbeinsey vent fields (2), Grimsey vent fields (3) and in Eyjafjörður (4). Source: Garcia et al. 2006.



⁶ http://www.searchmesh.net/default.aspx?page=1974&&mapInstance=MESHAtlanticMap_&Layers=OSPARhabPoints

<p>PI 2.4.1</p>	<p>The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function</p>
	<p>Figure 4. Position of the Steinahóll hydrothermal vent and occurrence of coral (indicated with red lines or square) on the Reykjanes Ridge. Area closed for otter trawling (since 1994) is outlined with a blue line (closed throughout the year) and blue hatched area (trawling allowed 1 st February – 15 th April). Source: Steingrímsson & Einarsson 2004</p> <p>The fishery does not interact with maerl beds, intertidal <i>Mytilus edulis</i> beds, <i>Zostera</i> beds, <i>Modiolus modiolus</i> beds and intertidal mudflats because these habitats occur only in shallower waters than the fishery operates (i.e. exclusively above 100m – Figure 2; OSPAR 2009). The fishery also does not interact with seamounts and hydrothermal vent habitats, because the former do not apparently occur in Icelandic waters and the latter are protected from trawling.</p> <p>In addition, the fishery operates over habitats which are not considered threatened and/or declining, including subtidal sand, muddy sand and gravel.</p> <p>Those that overlap with this fishery are therefore the following::</p> <ul style="list-style-type: none"> deep-sea sponge aggregations Lophelia reefs coral gardens seapens and burrowing megafauna subtidal sedimentary habitats <p>4. Likely impacts of the fishery on habitats</p> <p>4.1 Deep-sea sponge aggregations: By comparing Figure 1 with Figure 5 below it is clear that there is potential overlap between this fishery and deep-sea sponge habitats. In considering the probability of serious or irreversible harm to deep-sea sponge aggregations from this fishery, the team considered the following points:</p> <p>There is no explicit protection for this habitat type in Icelandic waters</p> <p>This habitat occurs in the depth range 300-750 m (Garcia et al. 2006), giving an overlap with this fishery in the shallowest ~100m of its depth range, although saithe is more common in slightly shallower (~250m) waters.</p> <p>The habitat is not yet fully mapped around Iceland but the information available (see Figures 1 and 5) suggest that it occurs on the limit of the depth range of bottom trawling in the Icelandic EEZ, and outside it. Beyond where bottom trawling takes place in the vicinity of the habitat the slope of the shelf is steep (off NW Iceland) or bottom topography is mountainous and inaccessible for bottom trawling (Reykjanes ridge; Figure 6).</p> <p>Bottom trawling would certainly cause damage to this habitat, and OSPAR note that recovery may take several decades, with information limited about indirect effects such as smothering.</p>  <p>Figure 5. Geographic distribution of deep-sea sponge aggregation around Iceland in relation to bottom trawling effort (total trawling hours 2003 [combined groundfish, shrimp and Nephrops fisheries]). Source:</p>

PI 2.4.1

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function

Garcia et al. 2006.

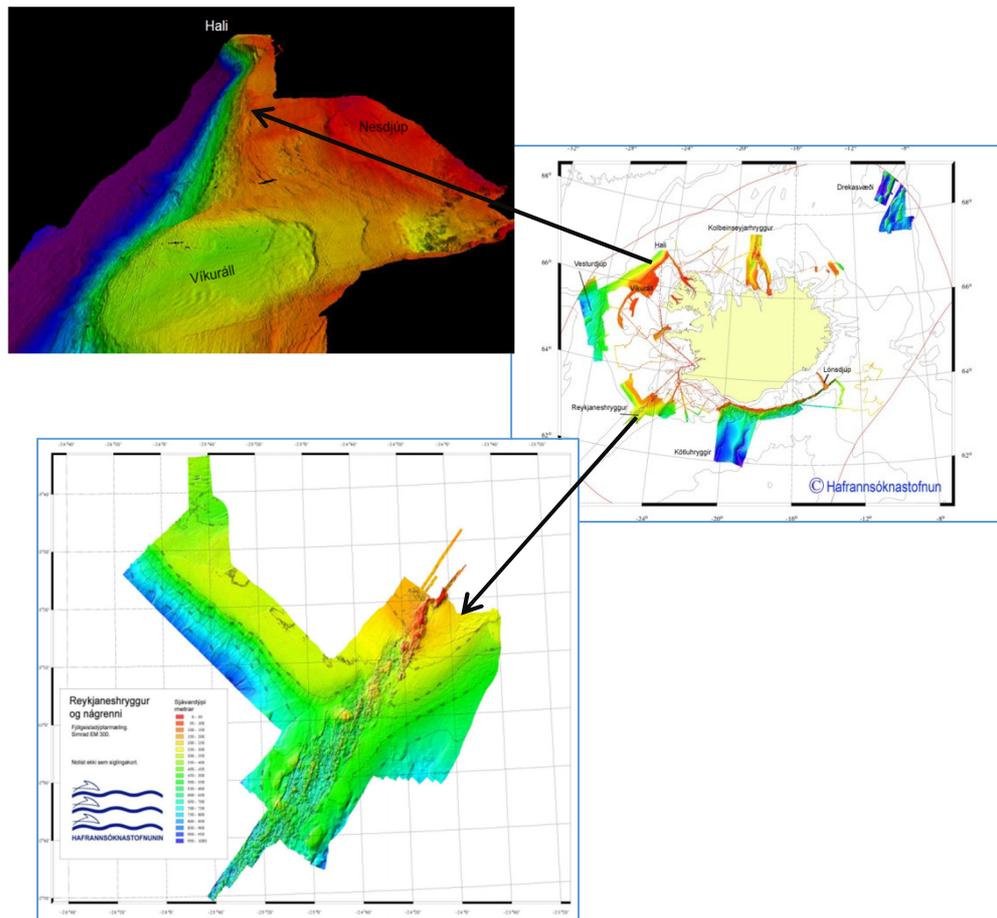


Figure 6. Multibeam maps showing the topography of the shelf break off NW Iceland (top left) and part of the Reykjanes ridge (lower left). Source: MRI (<http://www.hafro.is/undir.php?ID=10&REF=2>) and Helgadóttir et al. 2014 (<http://www.hafro.is/rad-hafsbotn14/glaerur/Gudrun%20Helgad.pdf>)

On the basis of i) the evidence of limited overlap between this habitat and bottom trawling for saithe, ii) the fact that there is a large closed area west of Iceland which may offer some protection to this habitat and iii) the habitat is likely to be mainly out of reach for bottom trawling due to unsuitable bottom topography; the team considered that SG60 is met (a probability of not greater than 40% of serious or irreversible harm to some areas of this habitat). However, the team did not feel that there was sufficient evidence available to demonstrate that SG80 is met; there may be some risk of damage in some areas. The score for this component is met at SG60.

4.2 Lophelia reefs: In the past some relatively large areas of coral have vanished due to bottom trawling (Figure 7; Steingrímsson & Einarsson 2004, Garcia et al. 2006). The present occurrence of *Lophelia pertusa* around Iceland is confined to the south and southeast continental slope and on the Reykjanes ridge (Figures 7&8). *Lophelia* is found at 200-600 m depth (Ólafsdóttir & Burgos 2012). The bottom trawling effort along the shelf break off S Iceland is very patchy as 55% of the shelf area had <10 tows/nm² during 1991-2002 and 77% <20 tows/nm² but where effort was highest >50 tows/nm² occurred during the same period (Figure 9; Steingrímsson & Einarsson 2004). Coral habitats are currently being explored and mapped by MRI and based on this effort 10 coral areas have been closed for bottom contacting fisheries, in total 480 km² (Figure 10). Furthermore, coral areas on the Reykjanes ridge have been protected for bottom trawling since 1994 (Figure 4).

PI 2.4.1

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function

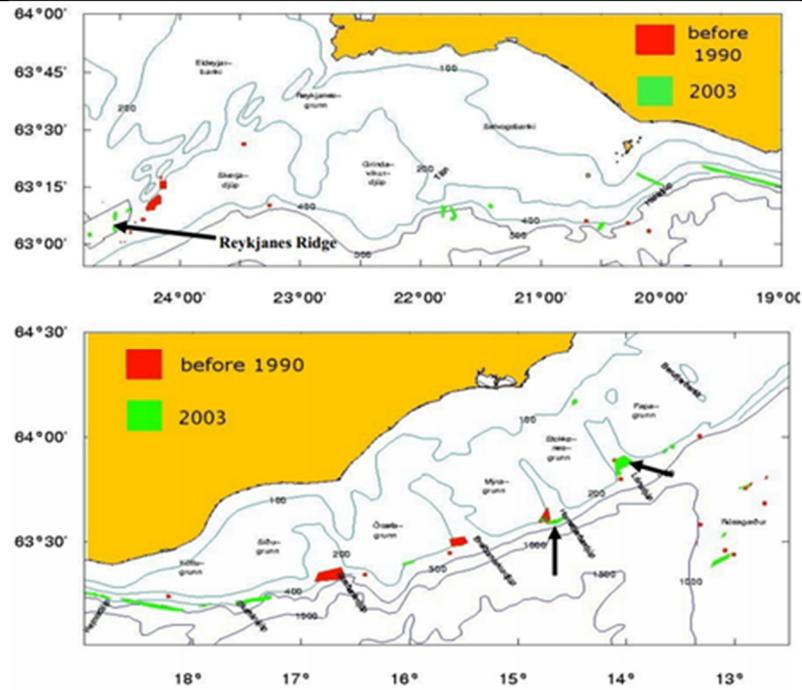


Figure 7. Occurrence of coral areas off Iceland, based on information from fishermen: Red - coral areas known to exist prior to 1990 (various sources of information); green - coral areas existing in 2003 (results from questionnaire). Arrows indicate the largest existing coral areas. Source: Garcia et al. 2006



Figure 8. Present occurrence (light blue dots) of *Lophelia pertusa* in Icelandic waters. Source: Ólafsdóttir et al. 2014⁷

⁷ <http://www.hafro.is/rad-hafsbotn14/glaerur/Steinunn%20Hilma%20glaerur.pdf>

PI 2.4.1

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function

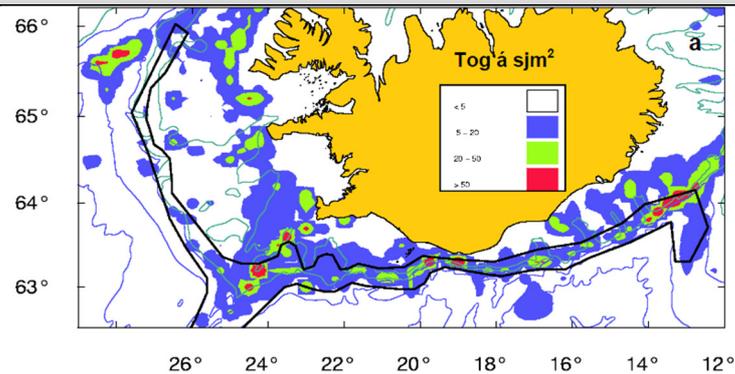


Figure 9. Spatial distribution of fishing effort off Iceland 1991-2002 (otter trawling for ground fish; number of fishing events per nm^2). The historic distribution area of coral grounds at the shelf break off S and W Iceland is enclosed with black line. Source: Steingrímsson & Einarsson 2004

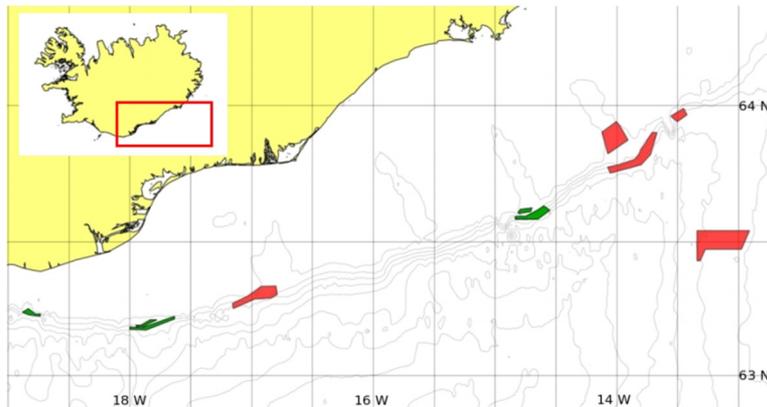


Figure 10. Coral areas (*Lophelia pertusa*) off SE Iceland where ban on using bottom contacting fishing gear has been in operation since 2005 (green) and 2011 (red). Source: Ólafsdóttir & Burgos 2012, Steingrímsson & Einarsson 2004)

In considering the probability of serious or irreversible harm to *Lophelia* reefs from this fishery, the team considered the following points:

Bottom trawling is known to have a serious and irreversible (or only reversible very slowly) impact on this habitat type. Some *Lophelia* areas are known to have been lost to trawling in the past in Icelandic waters.

There is explicit protection of 10 *Lophelia* areas where no fishing gear with bottom contact are allowed, including bottom trawling (Figure 10 above). Permanent area closure for bottom trawling is in operation along the shelf break off W Iceland including seabed on the shallow part of the Reykjanes Ridge where *Lophelia* reefs occur (Figures 4). These measures do in fact apply to more or less all known *Lophelia* reefs (compare Figure 8 with 4 and 10)

Other known *Lophelia* areas are reported to be out of the range of bottom trawling (see information and references in Table 3.6 of the main report)

Detailed habitat mapping has so far concentrated on the areas most at risk from trawling or other threats. Ongoing habitat mapping may identify further areas and the intention is to protect these (see discussion under PI 2.4.3).

Overall, the team considered that the risk of serious or irreversible harm to known areas of *Lophelia* reef is low, because coral areas which were at high risk to bottom trawling have been closed specifically for their protection (Figures 4 & 10) or have been free from bottom trawling due to ban on bottom trawling W of Iceland with the aim of protecting juvenile redfish (Figure 4). Remaining areas are either too deep for trawling or are unsuitable for trawling (slope too steep, mountainous, see Figure 6). The team felt on this basis that SG80 is met (risk of some damage 30% or less).

PI 2.4.1

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function

In relation to SG100 the mapping of *Lophelia* reefs by MRI up to now has focused on areas of high trawl activity, therefore the remaining unmapped areas are subject to less fishing pressure. However, the mapping is still ongoing and some undiscovered areas may still be exposed to risk. The risk of impact in this regard is obviously difficult to quantify, but the team considered that although remaining undiscovered areas which are exposed to trawling but unimpacted are likely to be small and/or sparse, it could not be argued on this basis that SG100 is met (lack of evidence). The score for this element is therefore 80.

4.3 Coral gardens: Coral gardens are mainly deep water habitats (OSPAR 2010b; Figure 11). Their main characteristic is a relatively dense aggregation of colonies or individuals of one or more coral species belonging to different taxonomic groups, such as leather corals (Alcyonacea), gorgonians (Gorgonacea), sea pens (Pennatulacea), black corals (Antipatharia) and hard corals (Scleractinia). They can occur on a wide range of soft and hard seabed substrata. Soft-bottom coral gardens may be dominated by solitary scleractinians, or sea pens, whereas hard-bottom coral gardens are often found to be dominated by groups like gorgonian corals (OSPAR 2010b).

Taxonomic groups that make up coral garden habitats in Icelandic waters are found primarily in the depth range of approx. 500-1700 m (Figure 11). Gorgonacea corals occur all around Iceland (Figure 12). They were relatively uncommon on the shelf (< 500m depth) but were generally found in relatively high numbers in deep waters (>500m) off the South, West and North Iceland. Similar patterns were observed in the distribution of pennatulaceans off Iceland. Pennatulaceans were relatively rare in water shallower than 500m but more common in deep waters, especially off South Iceland (Figure 13).

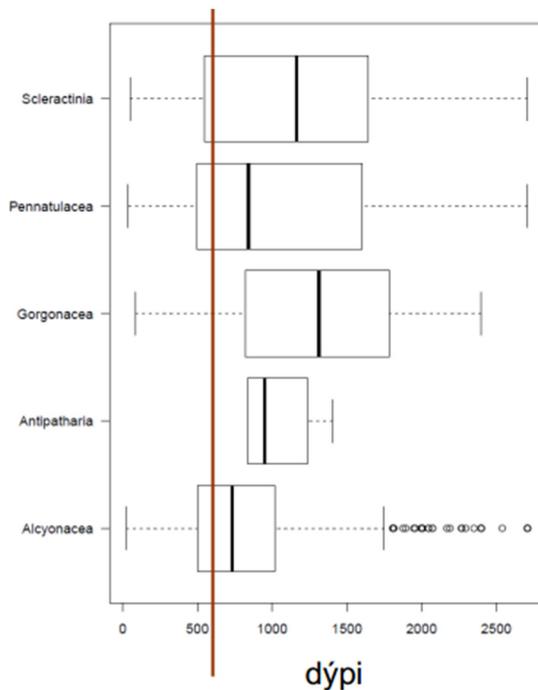


Figure 11. Boxplots showing the distribution of various groups of corals making up 'coral garden' habitat by depth (dýpi) around Iceland (see Table 3.6 of the main report). (The red line should be ignored for these purposes.) Source: Ólafsdóttir et al. 2014⁸

⁸ <http://www.hafro.is/rad-hafsbotn14/glaerur/Steinunn%20Hilma%20glaerur.pdf>

PI 2.4.1

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function

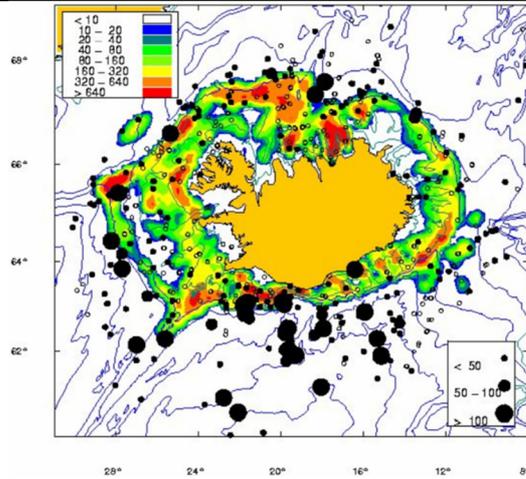


Figure 12. Distribution of *Gorgonacea* corals (number of colonies in a sample) off Iceland in relation to bottom trawling effort (total trawling hours 2003 [combined groundfish, shrimp and *Nephrops* fisheries]). Data from the BIOICE database. Source: Garcia et al. 2006

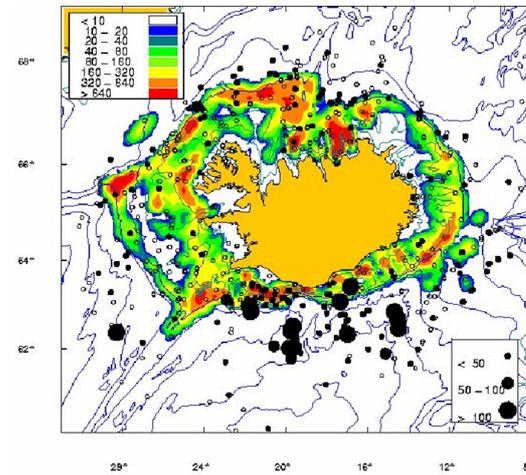


Figure 13. Distribution of *Pennatulacea* corals (seapens; number of colonies in a sample) off Iceland in relation to bottom trawling effort (total trawling hours 2003 [combined groundfish, shrimp and *Nephrops* fisheries]). Data from the BIOICE-database. Source: Garcia et al. 2006

In reviewing the likely habitat impact of trawling on this habitat, the team considered that the overlap with the fishery (down to ~400m) with the habitat is limited (**Figure 11**), although somewhere ~the shallowest ~10-20 percentile of the depth range is within range of the fishery for four out of the five taxa (and the overlap may be greater for some individual species). In addition there is a large area west of Iceland where this type of habitat occurs, which is permanently closed for bottom trawling. As for sponge habitat, the team concluded that there is evidence for limited overlap, based on a review of **Figures 11-13**, in relation to the geographic and depth distribution of the fishery and a large area of this habitat is closed to bottom trawling. On this basis, SG60 is met, following the same logic as for sponges. However, as for sponges, the team did not feel that there was sufficient evidence available to demonstrate that SG80 is met. The score for this component is 60.

4.4 Seapens and burrowing megafauna: 'Seapens and burrowing megafauna' habitat is found on plains of fine mud, at water depths ranging from 15–200m or more, which are heavily bioturbated by burrowing megafauna and this habitat occurs extensively in sheltered basins of fjords, sea lochs, voes and in deeper offshore waters (OSPAR 2010c). This habitat type is characteristic of *Nephrops* grounds, and this habitat type is therefore mainly relevant in relation to the gear type 'nephrops trawl'. However, since some whitefish trawling may occur in these areas, it is considered here as well.

PI 2.4.1	<p>The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function</p>																
	<p>In reviewing the likely habitat impact of trawling on this habitat, the team considered the following issues:</p> <p>There is no explicit protection for this habitat type in Icelandic waters.</p> <p>OSPAR considers this habitat 'threatened and/or declining' in some areas (such as the North Sea) but not in Area I (which includes Iceland).</p> <p>Pennatulacea corals (seapens) are known to be relatively common in Icelandic waters (Figure 12, Garcia et al. 2006)</p> <p>Overall, the team considered that the evidence of i) limited scale of the fishery compared to the habitat, and ii) apparent continued abundance of this habitat type (and acceptance by OSPAR that this habitat type is not threatened and/or declining in Icelandic waters) meant that the risk of serious and/or irreversible damage from this fishery on this habitat type could be assessed to be 30% or less (i.e. SG80 is met). In relation to SG100, there is some direct evidence regarding the effect of trawls on the habitat (e.g. Ball et al. 2000) but the team considered that there is not sufficient quantitative information on trends in distribution and health of this habitat type over time to justify a score of 100. The score for this component is therefore 80.</p> <p>4.5 Other subtidal sedimentary habitats: The fishery operates on subtidal sedimentary habitats - without the other features listed above - which are not considered threatened and/or declining. This includes subtidal sand, muddy sand and gravel.</p> <p>A study was designed to examine the short- and long-term effects of otter trawling on a macrobenthic infaunal community in an area that had never been trawled before (Ragnarsson & Lindegarth 2009). No significant treatment effects could be detected on total abundance or on multivariate structure, and tests for individual species revealed only a single case of short-term effect. However, trawling caused significant short-term reduction in species richness and persistent effects on the Shannon-Wiener diversity index.</p> <p>On the basis of this research, the team considered that there is evidence that serious or irreversible harm is not being caused to these habitats by this fishery, and that the risk of harm is less than 20%, i.e. SG100 is met.</p>																
Overall Score	<table border="0" style="width: 100%;"> <tr> <td style="width: 60%;">Scoring element:</td> <td style="text-align: right;">Score:</td> </tr> <tr> <td>Deep-sea sponge aggregations</td> <td style="text-align: right;">60</td> </tr> <tr> <td><i>Lophelia</i> reefs</td> <td style="text-align: right;">80</td> </tr> <tr> <td>Coral gardens</td> <td style="text-align: right;">60</td> </tr> <tr> <td>Seapens and burrowing megafauna</td> <td style="text-align: right;">80</td> </tr> <tr> <td>Other subtidal sedimentary habitats</td> <td style="text-align: right;">100</td> </tr> <tr> <td colspan="2"><hr/></td> </tr> <tr> <td>Combined score:</td> <td style="text-align: right;">75</td> </tr> </table> <p>SG60 is met for all scoring elements. SG80 is met for three out of five scoring elements, therefore the overall score is 75.</p>	Scoring element:	Score:	Deep-sea sponge aggregations	60	<i>Lophelia</i> reefs	80	Coral gardens	60	Seapens and burrowing megafauna	80	Other subtidal sedimentary habitats	100	<hr/>		Combined score:	75
Scoring element:	Score:																
Deep-sea sponge aggregations	60																
<i>Lophelia</i> reefs	80																
Coral gardens	60																
Seapens and burrowing megafauna	80																
Other subtidal sedimentary habitats	100																
<hr/>																	
Combined score:	75																
Harmonisation	<p>Harmonisation: ISF Iceland Cod and haddock fisheries: score = 90. The scoring for this PI for the ISF cod/haddock certifications centred on the general assumptions that habitat had been damaged a long time ago and that current fishing patterns are fairly well established, and thus resulting in a "new, but well established, baseline habitat". This is not the approach that was taken by this assessment team. The current assessment team explicitly considered known</p>																

PI 2.4.1	The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function	
	vulnerable habitats such as corals and deep-sea sponge aggregations. ISF Iceland redfish: The scoring is harmonised with the ISF Iceland golden redfish fishery.	
References	Anon. 2004; Ball <i>et al.</i> 2000; Garcia <i>et.al.</i> 2006; Jennings <i>et al.</i> 2001; Ragnarsson & Lindegarth 2009; Ministry of the Environment 2010; Ministry of Fisheries 2004; OSPAR Commission 2008a&b; OSPAR 2008; OSPAR 2010 a, b & c; Ólafsdóttir & Burgos 2012; Thórarinsdóttir <i>et al.</i> 2010; Steingrímsson & Einarsson 2004; http://www.ospar.org/content/content.asp?menu=00180302000132_000000_000000 ; http://www.searchmesh.net/default.aspx?page=1974&&mapInstance=MESHAtlanticMap &Layars=OSPARhabPoints	
OVERALL PERFORMANCE INDICATOR SCORE:		75
CONDITION NUMBER (if relevant):		3

PI 2.4.2 Bottom trawl– Management (Habitat)

Evaluation Table for PI 2.4.2

PI 2.4.2	There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
Scoring Issue	SG 60	SG 80	SG 100
a	Guide-post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.
	Met?	Yes	Yes
		Yes	Yes

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
	Justification	<p>Scoring elements:</p> <ul style="list-style-type: none"> • deep-sea sponge aggregations (ostur) • <i>Lophelia</i> reefs • coral gardens • seapens and burrowing megafauna • subtidal sedimentary habitats <p><u>Note:</u> In relation to this scoring issue, the team felt it made sense to score in relation to the measures/partial strategy/strategy for habitats in general – confidence in, and implementation of the strategy is considered in relation to each component.</p> <p>The Ministry of the Environment has developed a National Strategy Plan for the preservation of biological diversity (Ministry of Environment 2010). Two of the key elements of this strategy are (a) develop fishing methods with less impact on marine ecosystems, and (b) protect vulnerable benthic ecosystems. Act 97/1997 (“um veiðar í fiskveiðilandhelgi Íslands”) also provides a framework which allows managers to close vulnerable habitats to fishing as and when the need arises. The Nature Conservation Act no. 44/1999 also provides measures to protect marine habitats. Iceland has ratified a number of conventions on the protection and management of marine species, such as the Convention on Biological Diversity, the OSPAR Convention and the CITES Convention. These conventions have established objectives for conserving endangered, threatened or protected species and habitats and within them a number of mechanisms have been developed to detect and reduce impacts. For example the OSPAR Strategy on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area has identified a number of key species and habitats which are considered threatened or declining (OSPAR Commission 2008 a&b). Iceland has nominated 14 areas to the OSPAR Network of Marine Protected Areas (OSPAR 2013; Umhverfissráðuneytið 2014⁹). The team considered that this framework constituted a 'strategy' to protect marine habitats from fisheries impacts. SG100 is met.</p>		
b	Guide-post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	Met?	Yes	Partial	Partial

⁹<http://www.umhverfissraduneyti.is/frettir/nr/2577>

PI 2.4.2	There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types
Justification	<p>Scoring elements:</p> <ul style="list-style-type: none"> deep-sea sponge aggregations (ostur) <i>Lophelia</i> reefs coral gardens seapens and burrowing megafauna subtidal sedimentary habitats <p><u>Deep-sea sponge aggregation:</u> There are no explicit protection measures for deep-sea sponge habitats in Icelandic waters, although there is a legal and regulatory framework which would allow such areas to be designated (i.e. there is a strategy in general, but implementation has not focused on this habitat type). In the rationale for PI 2.4.1 above, we identify the following aspects which provide a measure of protection to this habitat:</p> <ul style="list-style-type: none"> there is limited overlap with bottom trawl fisheries (in general) there is a large area west of Iceland closed to bottom trawling the habitat is likely to be out of reach for bottom trawling due to unsuitable bottom topography (Figure 6) <p>The team considered, therefore that it was plausible to suggest that the habitat is not strongly at risk from this fishery, so SG60 is met (see rationale for PI 2.4.1). In relation to SG80, while there is mapping of the habitat, there is no information either on historical trends in sponge distribution or on interactions with the fishery (e.g. sponge catches). Therefore SG80 is not met.</p> <p><u>Lophelia reefs:</u> In contrast to ostur (sponges), implementation of the habitat protection strategy has focused on this habitat type, which is widely perceived (not just in Iceland) to be the most vulnerable to towed fishing gear. Several areas have been closed to fishing to protect <i>Lophelia</i> coral reefs (see map in main report Figure 3.17); the other reef areas are either within closed area for bottom trawling (e.g. Reykjanes Ridge, Figure 5 above), outside the depth range of trawling or on grounds unsuitable for trawling (slope too steep, mountainous). While not all areas have been mapped, the unmapped areas are those considered at lowest risk from trawl damage, and not considered likely to have extensive coral habitat. Operation of all Icelandic fishing vessels is monitored by VMS and MRI has access to electronic logbooks for scientific purposes (high resolution data). During a site visit the DF confirmed that no vessel has violated the closure of coral areas. There is therefore an objective basis for high confidence that this strategy will work, and SG100 is met.</p> <p><u>Coral gardens:</u> As for sponge aggregations, the team considered that the limited overlap with bottom trawl fisheries and the closed area west of Iceland provide plausible measures of protection at the SG60 level. If necessary, there is a legal and regulatory framework which would allow designation of protected areas as in the case of <i>Lophelia</i> reefs (i.e. there is a strategy in general, but implementation has not focused on this habitat type). Therefore SG60 is met. In relation to SG80, since there is no information on historical trends in habitat distribution, or on interactions with the fishery, SG80 is not met.</p>

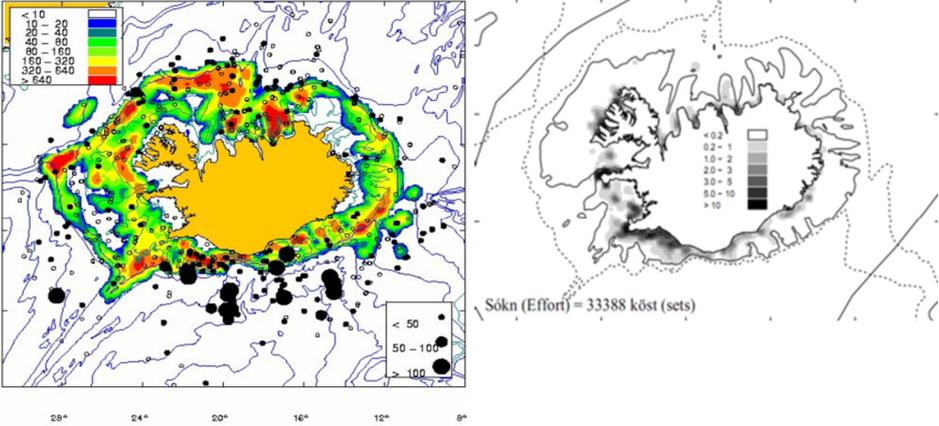
PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types														
		<p>Seapens and burrowing megafauna: The overlap of this fishery with this habitat type is limited – most fishing activity in these areas is by <i>Nephrops</i> trawls. The habitat type has remained widespread and is not considered threatened in Icelandic waters by OSPAR.</p> <p>The team therefore concluded that there is an objective basis for concluding that the current situation (strategy although not focused in implementation on this habitat type) is nonetheless sufficient, since habitat outcome is met at the 80 level. However, it is not possible to argue that there has been extensive testing in relation to impacts on this habitat type or its distribution over time, although there is some information available, so SG100 is not met. The score for this component is 80.</p> <p>Subtidal sedimentary habitats: There has been testing (Garcia et al. 2006b, Ragnarsson & Lindegarth 2009, Thórarinsdóttir et al. 2010) showing that demersal trawling has low impacts on this habitat type in Icelandic waters and elsewhere. Therefore SG100 is met.</p>														
Overall scores for PI 2.4.2 SI(b)		<table border="0"> <thead> <tr> <th>Scoring element:</th> <th>Score:</th> </tr> </thead> <tbody> <tr> <td>Deep-sea sponge aggregations</td> <td>60</td> </tr> <tr> <td><i>Lophelia</i></td> <td>100</td> </tr> <tr> <td>Coral gardens</td> <td>60</td> </tr> <tr> <td>Seapens and burrowing megafauna</td> <td>80</td> </tr> <tr> <td>Other subtidal sedimentary habitats</td> <td>100</td> </tr> </tbody> </table>			Scoring element:	Score:	Deep-sea sponge aggregations	60	<i>Lophelia</i>	100	Coral gardens	60	Seapens and burrowing megafauna	80	Other subtidal sedimentary habitats	100
Scoring element:	Score:															
Deep-sea sponge aggregations	60															
<i>Lophelia</i>	100															
Coral gardens	60															
Seapens and burrowing megafauna	80															
Other subtidal sedimentary habitats	100															
c	Guide-post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.												
	Met?		Partial	Partial												
	Justification	<p>Scoring elements:</p> <ul style="list-style-type: none"> • deep-sea sponge aggregations (ostur) • <i>Lophelia</i> reefs • coral gardens • hydrothermal vents • seapens and burrowing megafauna • subtidal sedimentary habitats <p>For sponges and coral gardens, the partial strategy is not currently being implemented successfully (score for habitat outcome <80). For seapens and burrowing megafauna, there is some evidence (habitat outcome = 80 although the strategy is not focused on this habitat type). For <i>Lophelia</i> reefs, there is clear evidence that the strategy is being implemented successfully (closed areas where the habitat overlaps with the fishery, with strong surveillance and no evidence of infringements, as described above). For non-vulnerable sedimentary habitats, there is clear evidence that no actions under the strategy appear to be required (habitat outcome = 100).</p>														

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types																
Overall scores for PI 2.4.2 SI(c)		<table> <thead> <tr> <th>Scoring element:</th> <th>Score:</th> </tr> </thead> <tbody> <tr> <td>Deep-sea sponge aggregations</td> <td>80 not met</td> </tr> <tr> <td><i>Lophelia</i></td> <td>100</td> </tr> <tr> <td>Coral gardens</td> <td>80 not met</td> </tr> <tr> <td>Seapens and burrowing megafauna</td> <td>80</td> </tr> <tr> <td>Other subtidal sedimentary habitats</td> <td>100</td> </tr> </tbody> </table>			Scoring element:	Score:	Deep-sea sponge aggregations	80 not met	<i>Lophelia</i>	100	Coral gardens	80 not met	Seapens and burrowing megafauna	80	Other subtidal sedimentary habitats	100		
Scoring element:	Score:																	
Deep-sea sponge aggregations	80 not met																	
<i>Lophelia</i>	100																	
Coral gardens	80 not met																	
Seapens and burrowing megafauna	80																	
Other subtidal sedimentary habitats	100																	
d	Guide-post			There is some evidence that the strategy is achieving its objective.														
	Met?			No														
	Justification	There is no evidence on whether closure of coral areas have contributed to the recovery of the habitat, and little information on changes in distributions of habitats over time (limited historical information).																
Overall score		<table> <thead> <tr> <th>Scoring element:</th> <th>Score:</th> </tr> </thead> <tbody> <tr> <td>Deep-sea sponge aggregations</td> <td>65</td> </tr> <tr> <td><i>Lophelia</i></td> <td>95</td> </tr> <tr> <td>Coral gardens</td> <td>65</td> </tr> <tr> <td>Seapens and burrowing megafauna</td> <td>85</td> </tr> <tr> <td>Other subtidal sedimentary habitats</td> <td>95</td> </tr> <tr> <td>Combined score:</td> <td>75</td> </tr> </tbody> </table> <p>Three of five elements achieve scores higher than 80 and two elements score 65.</p>			Scoring element:	Score:	Deep-sea sponge aggregations	65	<i>Lophelia</i>	95	Coral gardens	65	Seapens and burrowing megafauna	85	Other subtidal sedimentary habitats	95	Combined score:	75
Scoring element:	Score:																	
Deep-sea sponge aggregations	65																	
<i>Lophelia</i>	95																	
Coral gardens	65																	
Seapens and burrowing megafauna	85																	
Other subtidal sedimentary habitats	95																	
Combined score:	75																	
References		Anon. 2012a; Act 97/1997; Ministry for the Environment 2010; OSPAR Commission 2008 a&b; Ólafsdóttir & Burgos 2012; OSPAR 2013; Schopka et al. 2010; Umhverfisiráðuneytið 2014																
OVERALL PERFORMANCE INDICATOR SCORE:				75														
CONDITION NUMBER (if relevant):				4														

PI 2.4.1 Danish seine - Outcome (Habitat)

Evaluation Table for PI 2.4.1

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
	Met?	Yes	Yes	Partial
	Justification	<p>1. Operation of a Danish seine</p> <p>The Danish seine operates in a somewhat similar way to an otter trawl but has no trawl doors (the main element of the otter trawl causing habitat damage). In addition, it cannot be used on rough ground, and is generally operated over flat or flattish sandy substrates. The main use for Danish seines is in targeting flatfish, who inhabit these types of habitats, although it can target most species of demersal whitefish.</p> <p>2. Habitat scoring elements relevant to Danish seine</p> <p>Danish seine cannot be used over rough ground, so this eliminates the sponges, <i>Lophelia</i> and coral gardens. The two habitat scoring elements to be considered here are therefore i) seapens and burrowing megafauna and ii) subtidal sedimentary habitats.</p> <p>3. Habitat impacts of Danish seine</p> <p>3.1 Sedimentary habitats: A recent study on the impact of the Danish seine on benthos showed that it had limited negative impact on benthic habitats in the study area (Thorarinsdóttir et al. 2010). The study compared fished and closed areas within Skagafjörður found no differences in species composition between the two treatments, although abundance tended to be higher in the closed area (significant difference for two out of 9 benthic taxa from grab sampling). The habitat in this area was sedimentary. On this basis, the team considered that there is evidence that the habitat type is not likely to suffer serious or irreversible harm from Danish seine fishing, although it may suffer some reversible changes, therefore 100 is met.</p> <p>3.2 Seapens and burrowing megafauna: The main gear-type used in this habitat is the <i>Nephrops</i> trawl, and there is no specific information available, as far as we are aware, which considered habitat impacts of the Danish seine in this habitat. The <i>Nephrops</i> trawl, since it has doors, was considered by the team to be likely to cause more damage than the Danish seine, so to be precautionary the same score was given for this scoring element (score of 80).</p> <p>The team also noted that Danish seining is concentrated close to land off the SW and W Iceland, in areas where Pennatulaceans are uncommon (Figure 1).</p>		

PI 2.4.1	The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function	
		 <p>Figure 1. Distribution of Pennatulacea corals (seapens; number of colonies in a sample) off Iceland in relation to bottom trawling effort (total trawling hours 2003 [combined groundfish, shrimp and Nephrops fisheries]). Data from the BIOICE-database. Location of effort with Danish seine in 2011 (sets), dark areas indicate highest effort. Source: Garcia et al. 2006, www.fisheries.is.</p>
Overall Scoring	<p>Scoring element:</p> <p>Sedimentary habitats</p> <p>Seapens and burrowing megafauna</p> <hr/> <p>Combined score</p>	<p>Score:</p> <p>100</p> <p>80</p> <hr/> <p>90</p> <p>Sedimentary habitats scored 100 and seapens and burrowing megafauna scored 80, therefore the overall score was 90.</p>
References	<p>Anon. 2004; Ball <i>et al.</i> 2000; Garcia <i>et al.</i> 2006; Jennings <i>et al.</i> 2001; Ministry of the Environment 2010; Ministry of Fisheries 2004; OSPAR Commission 2008a&b; Thorarinsdóttir <i>et al.</i> 2010; Ólafsdóttir & Burgos 2012; Steingrímsson & Einarsson 2004; http://www.fisheries.is/fisheries/fishing-gear/danish-seine/; http://www.fao.org/fishery/fishtech/1003/en</p>	
OVERALL PERFORMANCE INDICATOR SCORE:		90
CONDITION NUMBER (if relevant):		-

PI 2.4.2 Danish seine - Management (Habitat)

Evaluation Table for PI 2.4.2

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of the fishery on habitat types.
	Met?	Yes	Yes	Yes
	Justification	<p>Scoring elements: seapens and burrowing megafauna subtidal sedimentary habitats</p> <p>Note: In relation to this scoring issue, the team felt it made more sense to score in relation to the measures/partial strategy/strategy for habitats in general – confidence in and implementation of the strategy is considered by in relation to each component.</p> <p>The Ministry of the Environment has developed a National Strategy Plan for the preservation of biological diversity (Ministry of Environment 2010). Two of the key elements of this strategy are (a) develop fishing methods with less impact on marine ecosystems, and (b) protect vulnerable benthic ecosystems. Act 97/1997 (“um veiðar í fiskveiðilandhelgi Íslands”) also provides a framework which allows managers to close vulnerable habitats to fishing as and when the need arises. The Nature Conservation Act no. 44/1999 also provides measures to protect marine habitats. Iceland has ratified a number of conventions on the protection and management of marine species, such as the Convention on Biological Diversity, the OSPAR Convention and the CITES Convention. These conventions have established objectives for conserving endangered, threatened or protected species and habitats and within them a number of mechanisms have been developed to detect and reduce impacts. For example the OSPAR Strategy on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area has identified a number of key species and habitats which are considered threatened or declining (OSPAR Commission 2008a&b). Iceland has nominated 14 areas to the OSPAR Network of Marine Protected Areas (OSPAR 2013, Umhverfissráðuneytið 2014¹⁰). The team considered that this framework constituted a 'strategy' to protect marine habitats from fisheries impacts, therefore SG100 is met</p>		

¹⁰<http://www.umhverfissraduneyti.is/frettir/nr/2577>

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types								
b	Guide-post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.						
	Met?	Yes	Yes	Partial						
	Justification	<p>Scoring elements:</p> <ul style="list-style-type: none"> • seapens and burrowing megafauna • subtidal sedimentary habitats <p><u>Seapens and burrowing megafauna</u>: Again, the overlap of this fishery with this habitat type is limited – although <i>Nephrops</i> grounds largely made up of this type of habitat, the areas fished for <i>Nephrops</i> in Iceland are limited compared to the extent of this habitat (see rationale for 2.4.1 above). In addition, as also noted above, studies on the impact of <i>Nephrops</i> trawling suggest that impacts are largely defined by fishing intensity and have reduced over time, while the habitat type has remained widespread. In addition, it is reasonable to suppose the Danish seines have a lower impact than trawls on this habitat type, having no doors, although this has not been fully quantified.</p> <p>The team therefore concluded that there is an objective basis for concluding that the current situation (strategy although not focused in implementation on this habitat type) is nonetheless sufficient, since habitat outcome is met at the 80 level. However, it is not possible to argue that there has been extensive testing in relation to impacts on this habitat type or its precise distribution over time, so SG100 is not met. The score for scoring element is 80.</p> <p><u>Subtidal sedimentary habitats</u>: There has been testing (Thorarinsdóttir et al. 2010), showing that Danish seines have low impacts on this habitat type. Therefore SG100 is met for this scoring element.</p>								
Overall scores for PI 2.4.2 SI(b)		<table> <thead> <tr> <th><u>Scoring element:</u></th> <th><u>Score:</u></th> </tr> </thead> <tbody> <tr> <td>Seapens and burrowing megafauna</td> <td>80</td> </tr> <tr> <td>Other subtidal sedimentary habitats</td> <td>100</td> </tr> </tbody> </table>			<u>Scoring element:</u>	<u>Score:</u>	Seapens and burrowing megafauna	80	Other subtidal sedimentary habitats	100
<u>Scoring element:</u>	<u>Score:</u>									
Seapens and burrowing megafauna	80									
Other subtidal sedimentary habitats	100									
c	Guide-post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.						
	Met?		Yes	Partial						

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types										
	Justification	Scoring elements: <ul style="list-style-type: none"> • seapens and burrowing megafauna • subtidal sedimentary habitats For seapens and burrowing megafauna, there is some evidence that the strategy is working acceptably (habitat outcome = 80 although the strategy is not focused on this habitat type). For non-vulnerable sedimentary habitats, there is clear evidence that no actions appear to be required under the strategy (habitat outcome = 100).										
Overall scores for PI 2.4.2 SI(c)		<table> <thead> <tr> <th><u>Scoring element:</u></th> <th><u>Score:</u></th> </tr> </thead> <tbody> <tr> <td>Seapens and burrowing megafauna</td> <td>80</td> </tr> <tr> <td>Other subtidal sedimentary habitats</td> <td>100</td> </tr> </tbody> </table>			<u>Scoring element:</u>	<u>Score:</u>	Seapens and burrowing megafauna	80	Other subtidal sedimentary habitats	100		
<u>Scoring element:</u>	<u>Score:</u>											
Seapens and burrowing megafauna	80											
Other subtidal sedimentary habitats	100											
d	Guide-post			There is some evidence that the strategy is achieving its objective.								
	Met?			No								
	Justification	There is no evidence on whether closure of coral areas have contributed to the recovery of the habitat, and limited information on changes in distributions of habitats over time (limited historical information).										
Overall Scores		<table> <thead> <tr> <th><u>Scoring element:</u></th> <th><u>Score:</u></th> </tr> </thead> <tbody> <tr> <td>Seapens and burrowing megafauna</td> <td>85</td> </tr> <tr> <td>Other subtidal sedimentary habitats</td> <td>95</td> </tr> <tr> <td>Combined score:</td> <td>90</td> </tr> </tbody> </table>			<u>Scoring element:</u>	<u>Score:</u>	Seapens and burrowing megafauna	85	Other subtidal sedimentary habitats	95	Combined score:	90
<u>Scoring element:</u>	<u>Score:</u>											
Seapens and burrowing megafauna	85											
Other subtidal sedimentary habitats	95											
Combined score:	90											
References		Anon. 2012a; Regulation 97/1997; Ministry for the Environment 2010; OSPAR Commission 2008a&b; Ólafsdóttir & Burgos 2012; OSPAR 2013; Schopka et al. 2010; Umhverfisstofnun 2014										
OVERALL PERFORMANCE INDICATOR SCORE:				90								
CONDITION NUMBER (if relevant):												

PI 2.4.1 Longline - Outcome (Habitat)

Evaluation Table for PI 2.4.1

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
	Met?	Yes	Yes	Yes
	Justification	<p>1. Habitat scoring elements</p> <p>The spatial distribution of longlining around Iceland is given in Figure 1 below.</p> <p>Figure 1. Spatial distribution of fishing effort with longline off Iceland 1991-2002 (number of fishing events nm^{-2}). The general distribution area of coral grounds off S and W Iceland is enclosed with black line. Source: Steingrímsson & Einarsson 2004</p> <p>Longlining therefore takes place mainly inshore, and does not overlap at all (or at least on a very small scale) with coral habitats, and very little with other complex deep-water habitats (sponges, coral gardens). For seapens and burrowing megafauna, there are very minor areas of overlap around the south coast.</p> <p>Nevertheless, longlining is not limited by habitat type, so for completeness, we consider vulnerable vs non-vulnerable habitats, noting that overlap with the former is unlikely.</p> <p>2. Vulnerable or potentially vulnerable habitats: Longlining is not perceived to have significant impacts on vulnerable benthic habitats. For example, the report 'Shifting Gears' on ecosystems impacts of fisheries (Chuenpagdee et al. 2003) ranks the relative impact of demersal longlines on marine ecosystems at 30/100 - better than all other methods of demersal fishing. Conversely, this means that scientific resources have not in most places been invested in trying to quantify habitat impacts of longlining, including in Iceland.</p> <p>In the sub-Antarctic, however, a CCAMLR impact / risk assessment process has been carried out for some other toothfish longline fisheries in habitats which are potentially similar (including cold water coral taxa). There have been efforts for the New Zealand Ross Sea toothfish longline fishery, for example, to evaluate in a systematic way the spatial footprint of the fishery on key vulnerable taxa such as corals (Sharp et al. 2009). They concluded that 0.088% of stony corals may have been lethally impacted by longline gear in the most heavily fished areas, and 0.008% of the population at the scale of the entire fishery. Overall, however, systematic analyses of this kind are rare, and empirical data on habitat impacts of longlines even rarer (Sharp et al. 2009).</p> <p>On this basis, and given the lack of geographic overlap with these habitats, the team concluded that habitat impacts from longlining are 'highly unlikely' (risk of impact of $\ll 30\%$). In relation to 'evidence' SG100, the team considered that although there is no direct information from Iceland, and although Sharp et al. (2009) was carried out in a different</p>		

PI 2.4.1	The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function		
	biogeographic zone, the results were at least qualitatively comparable, and combined with the lack of geographic overlap suggested a risk level well below 20%, as required for SG100. SG100 is therefore met for all vulnerable habitats. 2.2 Non-vulnerable sedimentary habitats: There is no mechanism by which longlining can cause damage to this habitat type. SG100 is therefore met.		
Overall score	Scoring element:	Score:	
	Vulnerable or potentially vulnerable habitats	100	
	Non-vulnerable sedimentary habitats	100	
	Combined score	100	
References	Anon. 2004; Ball <i>et al.</i> 2000; Chuenpagdee et al. 2003; Garcia <i>et.al.</i> 2006; Jennings <i>et al.</i> 2001; Ministry of the Environment 2010; Ministry of Fisheries 2004; OSPAR Commission 2008a&b; Sharp et al. 2009; Thorarinsdóttir et al. 2010; Ólafsdóttir & Burgos 2012; Steingrímsson & Einarsson 2004		
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			

PI 2.4.2 Longline - Management (Habitat)

Evaluation Table for PI 2.4.2

PI 2.4.2	There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
Scoring Issue	SG 60	SG 80	SG 100
a	Guide-post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.
	Met?	Yes	Yes
		Yes	Yes

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
	Justification	<p>Scoring elements: vulnerable habitats (limited overlap) subtidal sedimentary habitats</p> <p>Note: In relation to this scoring issue, the team felt it made more sense to score in relation to the measures/partial strategy/strategy for habitats in general – confidence in and implementation of the strategy is considered in relation to each component.</p> <p>The Ministry of the Environment has developed a National Strategy Plan for the preservation of biological diversity (Ministry of Environment 2010). Two of the key elements of this strategy are (a) develop fishing methods with less impact on marine ecosystems, and (b) protect vulnerable benthic ecosystems. Act 97/1997 (“um veiðar í fiskveiðilandhelgi Íslands”) also provides a framework which allows managers to close vulnerable habitats to fishing as and when the need arises. The Nature Conservation Act no. 44/1999 also provides measures to protect marine habitats. Iceland has ratified a number of conventions on the protection and management of marine species, such as the Convention on Biological Diversity, the OSPAR Convention and the CITES Convention. These conventions have established objectives for conserving endangered, threatened or protected species and habitats and within them a number of mechanisms have been developed to detect and reduce impacts. For example the OSPAR Strategy on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area has identified a number of key species and habitats which are considered threatened or declining (OSPAR Commission 2008a&b). Iceland has nominated 14 areas to the OSPAR Network of Marine Protected Areas (OSPAR 2013; Umhverfissráðuneytið 2014¹¹). The team considered that this framework constituted a 'strategy' to protect marine habitats from fisheries impacts. SG100 is met.</p>		
b	Guide-post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	Met?	Yes	Yes	Partial

¹¹<http://www.umhverfissraduneyti.is/frettir/nr/2577>

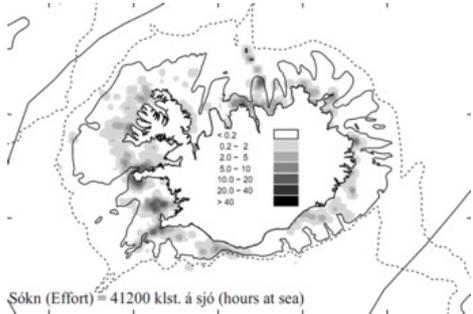
PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
	Justification	<p>Vulnerable habitats: There are no explicit protection measures for vulnerable habitats in Icelandic waters, except for <i>Lophelia</i> reefs, although there is a legal and regulatory framework which would allow such areas to be designated (i.e. there is a strategy in general, but implementation has not focused on all habitat types). In relation to <i>Lophelia</i>, which is widely perceived (not just in Iceland) to be the most vulnerable to towed fishing gear, however, several areas have been closed to fishing, including longlining (see map in main report Figure 3.17). As noted above, operation of all Icelandic fishing vessels is monitored by VMS and MRI has access to electronic logbooks for scientific purposes (high resolution data).</p> <p>In the rationale for 2.4.1 above, we note that habitat impacts of longlining on these habitat are, nonetheless, highly unlikely, according to evidence from other sub-polar areas, and also that the overlap of the longline fishing area with these habitats is limited / non-existent. The team therefore had high confidence that the strategy for habitats generally, as currently implemented, will work to protect vulnerable habitats from longlining. Therefore SG80 is met. However, testing is lacking to support with high confidence that the strategy will work, particularly for areas which may be less well mapped because they are not often trawled. Therefore SG100 is not met.</p> <p>Non-vulnerable sedimentary habitats: There is no mechanism by which longlining can cause damage to these types of habitats. SG100 is met for this component.</p>	
Overall scores for PI 2.4.2 SI(b)		Scoring element:	Score:
		Vulnerable or potentially vulnerable habitats	80
		Non-vulnerable sedimentary habitats	100
c	Guide-post		There is some evidence that the partial strategy is being implemented successfully.
	Met?		Yes
	Justification	For vulnerable habitats, there is evidence that the strategy is being implemented appropriately for this gear type (habitat outcome = 100 although the strategy is not focused on this habitat type). For <i>Lophelia</i> reefs in particular, there is clear evidence that the strategy is being implemented successfully (closed areas with strong surveillance and no evidence of infringements, as described under trawl above). For non-vulnerable sedimentary habitats, there is clear evidence that no actions under the strategy are required (habitat outcome = 100).	
d	Guide-post		There is some evidence that the strategy is achieving its objective.
	Met?		No
	Justification	There is no evidence on whether closure of coral areas have contributed to the recovery of the habitat, and limited information on changes in distributions of habitats over time (limited historical information).	

PI 2.4.2	There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
Overall Scoring	Scoring element:	Score:
	Vulnerable or potentially vulnerable habitats	90
	Non-vulnerable sedimentary habitats	95
	Combined score	90
References	Anon. 2012a; Regulation 97/1997; Ministry for the Environment 2010; OSPAR Commission 2008a&b; Ólafsdóttir & Burgos 2012; OSPAR 2013; Schopka et al. 2010; Umhverfisráðuneytið 2014	
OVERALL PERFORMANCE INDICATOR SCORE:		90
CONDITION NUMBER (if relevant):		-

PI 2.4.1 Handline - Outcome (Habitat)

Evaluation Table for PI 2.4.1

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
	Met?	Yes	Yes	Yes

PI 2.4.1	<p>The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function</p>								
<p>Justification</p>	<p>1. Habitat scoring elements</p> <p>The spatial distribution of handlining around Iceland is given in Figure 1 below.</p>  <p>Figure 1. Location of effort with handline in 2011 (hours at sea), dark areas indicate highest effort. Source: www.fisheries.is</p> <p>Handlining therefore takes place mainly inshore, and does not overlap at all with coral habitats (see Figures in 2.4.1 – trawl and longline), and very little with other complex deep-water habitats (sponges, coral gardens); neither does it overlap with hydrothermal vents. For seapens and burrowing megafauna, there are very minor areas of overlap around the south coast.</p> <p>Nevertheless, handlining is not limited by habitat type, so for completeness, we consider vulnerable vs non-vulnerable habitats, noting that overlap with the former is unlikely.</p> <p>2. Scoring by habitat scoring elements</p> <p><u>2.1 Vulnerable or potentially vulnerable habitats:</u> Handlining is not perceived to have significant impacts on vulnerable benthic habitats. For example, the report ‘Shifting Gears’ on ecosystems impacts of fisheries (Chuenpagdee et al. 2003) suggests that impacts of handlining on habitats are ‘very low’. Conversely, this means that scientific resources have in most places not been invested in trying to quantify habitat impacts of handlining, including in Iceland. It is, however, difficult to think of a mechanism by which handlining could cause widespread damage to benthic habitats, since its footprint is low. An analysis of the likely impacts of longlining (Sharp et al. 2009) suggested impacts on cold water corals in the Southern Ocean from a longline fishery of 0.008% of the population, and the team considered that it was reasonable to assume that handline impacts would be lower still. The handline fishery does not overlap with any of the vulnerable habitats listed above. Therefore, the risk of serious or irreversible harm is <<20% and SG100 is therefore met.</p> <p><u>2.2 Non-vulnerable sedimentary habitats:</u> There is no mechanism by which handlining can cause damage to this habitat type. SG100 is therefore met.</p>								
<p>Combined score</p>	<table border="0"> <thead> <tr> <th><u>Scoring element:</u></th> <th><u>Score:</u></th> </tr> </thead> <tbody> <tr> <td>Vulnerable or potentially vulnerable habitats</td> <td>100</td> </tr> <tr> <td>Non-vulnerable sedimentary habitats</td> <td>100</td> </tr> <tr> <td>Combined score</td> <td>100</td> </tr> </tbody> </table>	<u>Scoring element:</u>	<u>Score:</u>	Vulnerable or potentially vulnerable habitats	100	Non-vulnerable sedimentary habitats	100	Combined score	100
<u>Scoring element:</u>	<u>Score:</u>								
Vulnerable or potentially vulnerable habitats	100								
Non-vulnerable sedimentary habitats	100								
Combined score	100								
<p>References</p>	<p>Anon. 2004; Ball <i>et al.</i> 2000; Chuenpagdee et al. 2003; Garcia <i>et.al.</i> 2006; Jennings <i>et al.</i> 2001; Ministry of the Environment 2010; Ministry of Fisheries 2004; OSPAR Commission 2008 a&b; Thorarinsdóttir et al. 2010; Ólafsdóttir & Burgos 2012; Steingrímsson & Einarsson 2004</p>								
<p>OVERALL PERFORMANCE INDICATOR SCORE: 100</p>									

PI 2.4.1	The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function
CONDITION NUMBER (if relevant):	

PI 2.4.2 Handline - Management (Habitat)

Evaluation Table for PI 2.4.2

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of the fishery on habitat types.
	Met?	Yes	Yes	Yes
	Justification	<p>Note: In relation to this scoring issue, the team felt it made more sense to score in relation to the measures/partial strategy/strategy for habitats in general – confidence in and implementation of the strategy is considered by in relation to each component.</p> <p>The Ministry of the Environment has developed a National Strategy Plan for the preservation of biological diversity (Ministry of Environment 2010). Two of the key elements of this strategy are (a) develop fishing methods with less impact on marine ecosystems, and (b) protect vulnerable benthic ecosystems. Act 97/1997 (“um veiðar í fiskveiðilandhelgi Íslands”) also provides a framework which allows managers to close vulnerable habitats to fishing as and when the need arises. The Nature Conservation Act no. 44/1999 also provides measures to protect marine habitats. Iceland has ratified a number of conventions on the protection and management of marine species, such as the Convention on Biological Diversity, the OSPAR Convention and the CITES Convention. These conventions have established objectives for conserving endangered, threatened or protected species and habitats and within them a number of mechanisms have been developed to detect and reduce impacts. For example the OSPAR Strategy on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area has identified a number of key species and habitats which are considered threatened or declining (OSPAR Commission 2008a&b). Iceland has nominated 14 areas to the OSPAR Network of Marine Protected Areas (OSPAR 2013; Umhverfisráðuneytið 2014¹²). The team considered that this framework constituted a 'strategy' to protect marine habitats from fisheries impacts. SG100 is met.</p>		
b	Guide-post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	Met?	Yes	Yes	No

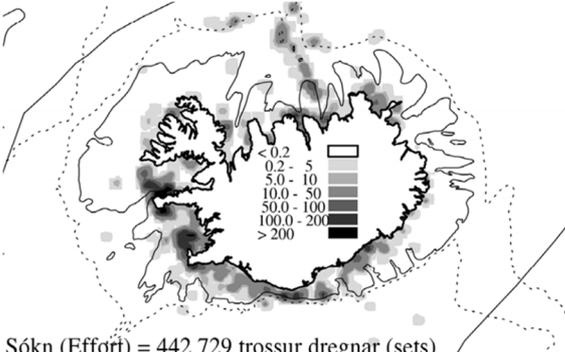
¹²<http://www.umhverfisraduneyti.is/frettir/nr/2577>

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types								
	Justification	<p>Vulnerable habitats: There are no explicit protection measures for vulnerable habitats in Icelandic waters, except for <i>Lophelia</i> reefs, although there is a legal and regulatory framework which would allow such areas to be designated (i.e. there is a strategy in general, but implementation has not focused on all habitat types). In relation to <i>Lophelia</i>, which is widely perceived (not just in Iceland) to be the most vulnerable to towed fishing gear, however, several areas have been closed to fishing (see map in main report Figure 3.17). As noted above, operation of all Icelandic fishing vessels is monitored by VMS and MRI has access to electronic logbooks for scientific purposes (high resolution data).</p> <p>In the rationale for 2.4.1 above, we note that habitat impacts of handlining on these habitat are, nonetheless, highly unlikely. The team therefore had high confidence that the strategy for habitats generally, as currently implemented, will work to protect vulnerable habitats from handlining, based on knowledge about the likely impacts of handlining on these habitats and the overlap (or lack of overlap) of the fishery with these habitats. SG100 is met</p> <p>Non-vulnerable sedimentary habitats: There is no mechanism by which handlining can cause damage to these types of habitats. SG100 is met for this component, and for the scoring issue as a whole.</p> <p>The effectiveness of habitat area closures has not been evaluated, therefore clear evidence cannot be provided to show that the strategy is successfully implemented and is achieving its objectives. SG100 is not met.</p>								
Overall scores for PI 2.4.2 SI(b)		<table border="0"> <tr> <td>Scoring element:</td> <td>Score:</td> </tr> <tr> <td>Vulnerable or potentially vulnerable habitats</td> <td>100</td> </tr> <tr> <td>Non-vulnerable sedimentary habitats</td> <td>80</td> </tr> </table>			Scoring element:	Score:	Vulnerable or potentially vulnerable habitats	100	Non-vulnerable sedimentary habitats	80
Scoring element:	Score:									
Vulnerable or potentially vulnerable habitats	100									
Non-vulnerable sedimentary habitats	80									
c	Guide-post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.						
	Met?		Yes	Yes						
	Justification	For vulnerable habitats in general, there is clear evidence that the strategy is being implemented appropriately for this gear type (habitat outcome = 100 although the strategy is not focused on this habitat type, plus no mechanism by which damage could be caused, other than over a negligible-sized footprint). For <i>Lophelia</i> reefs specifically, there is clear evidence that the strategy is being implemented successfully (closed areas with strong surveillance and no evidence of infringements, as described under trawl above). For non-vulnerable sedimentary habitats, there is clear evidence that no actions under the strategy appear to be required (habitat outcome = 100). Handlining is not overlapping with any of the vulnerable habitats. The overall score for this scoring issue is therefore 100.								
d	Guide-post			There is some evidence that the strategy is achieving its objective.						
	Met?			No						

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
	Justification	There is no evidence on whether closure of coral areas have contributed to the recovery of the habitat, and limited information on changes in distributions of habitats over time (limited historical information).	
Overall Score		Scoring element: Vulnerable or potentially vulnerable habitats Non-vulnerable sedimentary habitats <hr/> Combined score	Score: 95 90 <hr/> 90
References		Anon. 2012a; Regulation 97/1997; Ministry for the Environment 2010; OSPAR Commission 2008 a&b; Ólafsdóttir & Burgos 2012; OSPAR 2013; Schopka et al. 2010; Umhverfissráðuneytið 2014	
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			

PI 2.4.1 Gillnet - Outcome (Habitat)

Evaluation Table for PI 2.4.1

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
	Met?	Yes	Yes	Yes
	Justification	<p>1. Habitat scoring elements</p> <p>Gillnetting is not limited by habitat type, so all the habitat scoring elements identified for trawls above also potentially apply here.</p> <p>Conversely, gillnetting in Iceland is mainly carried out by smaller vessels relatively close to shore (see Figure 1). With limited exception to the north of Iceland, gillnetting is carried out within the 200m depth contour. This excludes overlap with sponge aggregations, <i>Lophelia</i> reefs or coral gardens (see Figures provided in the rationale for PI 2.4.1 – bottom trawl).</p> <p>The habitats concerned here are therefore the following:</p> <ul style="list-style-type: none"> seapens and burrowing megafauna subtidal sedimentary habitats without the other features listed above  <p>Sókn (Effort) = 442 729 trossur dregnar (sets)</p> <p>Figure 1. Distribution of gillnet effort around Iceland (from http://www.fisheries.is/fisheries/fishing-gear/gillnets/) showing 200m contour (solid line).</p> <p>2. Scoring by habitat scoring elements</p> <p><u>2.1 Seapens and burrowing megafauna:</u> Demersal gillnets are perceived in general to have medium impacts on vulnerable habitats –not as high as towed gears but higher than other forms of passive gear - this is because the nets can move across the bottom due to wave or current action (Chuenpagdee et al. 2003). However, not much work has been done in quantifying habitat impacts of gillnets, including in Iceland.</p> <p>In relation to the habitat 'seapens and burrowing megafauna' specifically, the team concluded that although gillnets can theoretically be damaging, they are likely to be less damaging to this habitat type than <i>Nephrops</i> trawls, which are the main gear type used in these areas, which are towed with trawl doors. Since this gear type scored 80 for habitat impacts (see rationale provided below), the team concluded it was a reasonable precautionary approach to score gillnets the same. SG80 is met.</p> <p><u>2.3 Non-vulnerable sedimentary habitats:</u> The team considered the risk of damage to these</p>		

PI 2.4.1	The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function																	
	habitats from gillnets to be <20%; therefore the score given to this component is 100.																	
Combined score	<table border="0"> <tr> <td><u>Scoring element:</u></td> <td><u>Score:</u></td> <td></td> </tr> <tr> <td>Seapens and burrowing megafauna</td> <td>80</td> <td></td> </tr> <tr> <td>Non-vulnerable sedimentary habitats</td> <td>100</td> <td></td> </tr> <tr> <td colspan="2"><hr/></td> <td></td> </tr> <tr> <td>Combined score</td> <td>90</td> <td></td> </tr> </table> <p>The scoring elements score 80 for one element and 100 for the other, giving an overall score of 90.</p>			<u>Scoring element:</u>	<u>Score:</u>		Seapens and burrowing megafauna	80		Non-vulnerable sedimentary habitats	100		<hr/>			Combined score	90	
<u>Scoring element:</u>	<u>Score:</u>																	
Seapens and burrowing megafauna	80																	
Non-vulnerable sedimentary habitats	100																	
<hr/>																		
Combined score	90																	
References	Anon. 2004; Ball <i>et al.</i> 2000; Chuenpagdee <i>et al.</i> 2003; Garcia <i>et.al.</i> 2006; Jennings <i>et al.</i> 2001; Ministry of the Environment 2010; Ministry of Fisheries 2004; OSPAR Commission 2008a&b; Thorarinsdóttir <i>et al.</i> 2010; Ólafsdóttir & Burgos 2012; Steingrímsson & Einarsson 2004																	
OVERALL PERFORMANCE INDICATOR SCORE:			90															
CONDITION NUMBER (if relevant):																		

PI 2.4.2 Gillnet - Management (Habitat)

Evaluation Table for PI 2.4.2

PI 2.4.2	There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types			
Scoring Issue	SG 60	SG 80	SG 100	
a	Guide-post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of the fishery on habitat types.
	Met?	Yes	Yes	Yes

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
	Justification	<p>Scoring elements: seapens and burrowing megafauna subtidal sedimentary habitats</p> <p>Note: In relation to this scoring issue, the team felt it made more sense to score in relation to the measures/partial strategy/strategy for habitats in general – confidence in and implementation of the strategy is considered by in relation to each component.</p> <p>The Ministry of the Environment has developed a National Strategy Plan for the preservation of biological diversity (Ministry of Environment 2010). Two of the key elements of this strategy are (a) develop fishing methods with less impact on marine ecosystems, and (b) protect vulnerable benthic ecosystems. Act 97/1997 (“um veiðar í fiskveiðilandhelgi Íslands”) also provides a framework which allows managers to close vulnerable habitats to fishing as and when the need arises. The Nature Conservation Act no. 44/1999 also provides measures to protect marine habitats. Iceland has ratified a number of conventions on the protection and management of marine species, such as the Convention on Biological Diversity, the OSPAR Convention and the CITES Convention. These conventions have established objectives for conserving endangered, threatened or protected species and habitats and within them a number of mechanisms have been developed to detect and reduce impacts. For example the OSPAR Strategy on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area has identified a number of key species and habitats which are considered threatened or declining (OSPAR Commission 2008a&b). Iceland has nominated 14 areas to the OSPAR Network of Marine Protected Areas (OSPAR 2013; Umhverfissráðuneytið 2014¹³). The team considered that this framework constituted a 'strategy' to protect marine habitats from fisheries impacts. SG100 is met.</p>		
b	Guide-post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	Met?	Yes	Yes	Partial

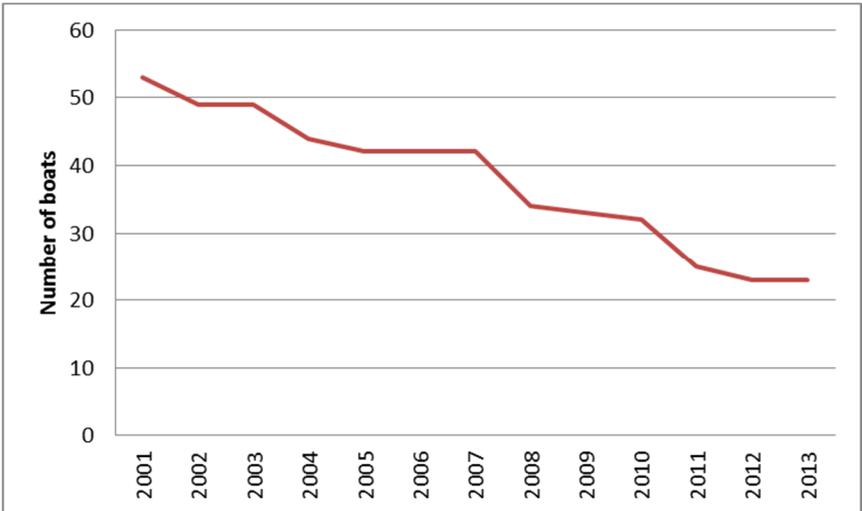
¹³<http://www.umhverfissraduneyti.is/frettir/nr/2577>

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
	Justification	<p>Scoring elements: seapens and burrowing megafauna subtidal sedimentary habitats</p> <p>Seapens and burrowing megafauna: The overlap of this fishery with this habitat type is limited – although <i>Nephrops</i> grounds largely made up of this type of habitat, the areas fished for <i>Nephrops</i> in Iceland are limited compared to the extent of this habitat (see rationale for 2.4.1 above). In addition, as also noted above, studies on the impact of <i>Nephrops</i> trawling suggest that impacts are largely defined by fishing intensity and have reduced over time, while the habitat type has remained widespread. In addition, it is reasonable to suppose that gillnets have a lower impact than trawls on this habitat type, since they are not towed, although this has not been fully quantified (but see Chuanpagdee et al. 2003).</p> <p>The team therefore concluded that there is an objective basis for concluding that the current situation (strategy although not focused in implementation on this habitat type) is nonetheless sufficient, since habitat outcome is met at the 80 level. However, it is not possible to argue that there has been extensive testing in relation to impacts on this habitat type or its precise distribution over time, so SG100 is not met. The score for this scoring element is 80.</p> <p>Subtidal sedimentary habitats: There has been testing (e.g. Thórarinsdóttir et al. 2010) showing that demersal trawling and Danish seine have low impacts on this habitat type. The team considered that it was reasonable to assume that gillnets would have lower impacts, since they are a passive rather than a towed gear (e.g. see rankings in Chuanpagdee et al. 2003). Therefore SG100 is met.</p>		
Overall scores for PI 2.4.2 SI(b)		Scoring element:	Score:	
		Seapens and burrowing megafauna	80	
		Subtidal sedimentary habitats	100	
c	Guide-post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Yes	Partial
	Justification	<p>Scoring elements: seapens and burrowing megafauna subtidal sedimentary habitats</p> <p>For seapens and burrowing megafauna, there is some evidence that the strategy is working acceptably (habitat outcome = 80 although the strategy is not focused on this habitat type). For non-vulnerable sedimentary habitats, there is clear evidence that no actions under the strategy appear to be required (habitat outcome = 100).</p>		

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types																		
Overall scores for PI 2.4.2 SI(c)		<table> <tr> <td>Scoring element:</td> <td>Score:</td> <td></td> <td></td> </tr> <tr> <td>Seapens and burrowing megafauna</td> <td></td> <td>80</td> <td></td> </tr> <tr> <td>Subtidal sedimentary habitats</td> <td></td> <td>100</td> <td></td> </tr> </table>			Scoring element:	Score:			Seapens and burrowing megafauna		80		Subtidal sedimentary habitats		100					
Scoring element:	Score:																			
Seapens and burrowing megafauna		80																		
Subtidal sedimentary habitats		100																		
d	Guide-post			There is some evidence that the strategy is achieving its objective.																
	Met?			No																
	Justification	There is no evidence on whether closure of coral areas have contributed to the recovery of the habitat, and limited information on changes in distributions of habitats over time (limited historical information).																		
Overall score		<table> <tr> <td>Scoring element:</td> <td>Score:</td> <td></td> <td></td> </tr> <tr> <td>Seapens and burrowing megafauna</td> <td></td> <td>85</td> <td></td> </tr> <tr> <td>Subtidal sedimentary habitats</td> <td></td> <td>95</td> <td></td> </tr> <tr> <td>Combined score</td> <td></td> <td>90</td> <td></td> </tr> </table>			Scoring element:	Score:			Seapens and burrowing megafauna		85		Subtidal sedimentary habitats		95		Combined score		90	
Scoring element:	Score:																			
Seapens and burrowing megafauna		85																		
Subtidal sedimentary habitats		95																		
Combined score		90																		
References		Anon. 2012a; Chuanpagdee et al. 2003; Regulation 97/1997; Ministry for the Environment 2010; OSPAR Commission 2008a&b; Ólafsdóttir & Burgos 2012; OSPAR 2013; Schopka et al. 2010; Umhverfisráðuneytið 2014																		
OVERALL PERFORMANCE INDICATOR SCORE:				90																
CONDITION NUMBER (if relevant):																				

PI 2.4.1 Nephrops trawl - Outcome (Habitat)

Evaluation Table for PI 2.4.1

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function																														
Scoring Issue		SG 60	SG 80	SG 100																												
Guide-post	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.																													
Met?	Yes	Yes	No																													
Justification	<p>1. Scoring elements: The habitat of <i>Nephrops norvegicus</i> is characterized by fine sand and mud, typically with sea-pen and burrowing megafauna communities (OSPAR 2010a). Based on the assessment against the Texel-Faial criteria such communities are ecologically significant, but not classified as rare or regionally important. Seapen- and burrowing megafauna communities are on the OSPAR List of threatened and/or declining species and habitats for region II (Greater North Sea) and III (Celtic Seas), but not for region I, including Icelandic waters.</p> <p>2. Scoring</p> <p>Seapens are sensitive to mechanical damage by <i>Nephrops</i> trawling. Studies on the impact of <i>Nephrops</i> trawling indicate that fishing intensity is the major factor controlling long-term negative trends in the benthos, rather than the direct impact from passage of the gear (Ball et al. 2000). Compared to early 1970s fishing effort had decreased by some 60–70% by the year 2000 (Garcia et.al. 2006). The trend in <i>Nephrops</i> fishing mortality suggests that the effort has, approximately, remained at similar level since 2000 (see Figure 1 below). Furthermore, during the period 2001-2013 the number of boats in the <i>Nephrops</i> fishery had reduced by around 50% (Figure 1 below). The main <i>Nephrops</i> fishing grounds are in the muddy deeps and banks off South Iceland and a good distance away from vulnerable habitats (Scleractinan corals) typically occurring close to the continental shelf break (e.g. Steingrímsson & Einarsson 2004, Garcia et.al. 2006). Furthermore, seapens (Pennatulacea) are relatively common on the continental shelf off S-Iceland, even in areas where relatively heavy trawling is taking place (see figure2 below).</p>																															
	 <table border="1"> <caption>Data for Figure 1: Number of boats licensed for Nephrops fishery during 2001-2013</caption> <thead> <tr> <th>Year</th> <th>Number of boats</th> </tr> </thead> <tbody> <tr><td>2001</td><td>53</td></tr> <tr><td>2002</td><td>49</td></tr> <tr><td>2003</td><td>49</td></tr> <tr><td>2004</td><td>44</td></tr> <tr><td>2005</td><td>42</td></tr> <tr><td>2006</td><td>42</td></tr> <tr><td>2007</td><td>42</td></tr> <tr><td>2008</td><td>34</td></tr> <tr><td>2009</td><td>33</td></tr> <tr><td>2010</td><td>32</td></tr> <tr><td>2011</td><td>25</td></tr> <tr><td>2012</td><td>23</td></tr> <tr><td>2013</td><td>23</td></tr> </tbody> </table>				Year	Number of boats	2001	53	2002	49	2003	49	2004	44	2005	42	2006	42	2007	42	2008	34	2009	33	2010	32	2011	25	2012	23	2013	23
Year	Number of boats																															
2001	53																															
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2004	44																															
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2008	34																															
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2010	32																															
2011	25																															
2012	23																															
2013	23																															
	<p>Figure 1. Number of boats licensed for <i>Nephrops</i> fishery during 2001-2013. Source: DF database</p>																															

PI 2.4.1 The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function

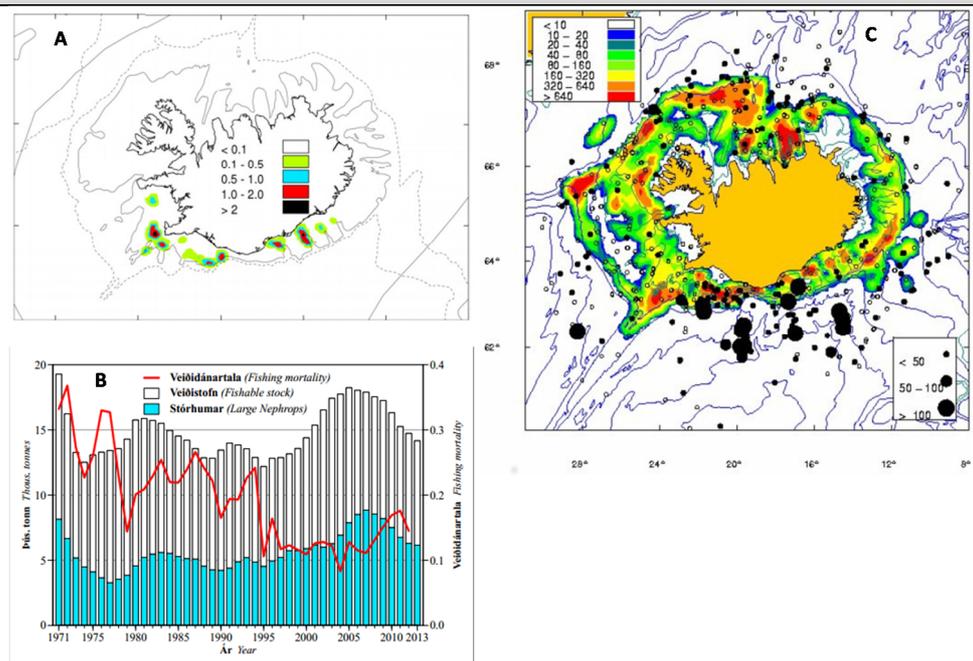


Figure 2: A: Area of fishing; B: Fishing mortality (red line), fishable stock and large Nephrops (blue bars); C: Distribution of seapens. Sources: Anon. 2013; Garcia et al. 2006

In scoring, the team noted the following:

High bottom trawling effort has been ongoing for decades, including trawling for *Nephrops*. The current effort by the *Nephrops* fishery is considerably less intensive as it used to be. Fishing intensity appears to be the main factor in determining damage in this habitat type (see Ball et al. 2000). Significant reduction in fishing effort in recent years (50% reduction in number of boats) suggest that the habitat has more chance to recover, if the effort remains at current level or lower.

Seapens are relatively common in areas with high fishing pressure on the continental shelf off S-Iceland.

There is limited overlap of seapen habitat with *Nephrops* trawling (see Figure 1 above)

OSPAR do not consider this habitat type to be 'threatened or declining' in Icelandic waters (or in any of Area I)

On this basis, the team considered it highly unlikely that the fishery will reduce key habitat forming species to a point where there would be serious or irreversible harm (risk of some damage from this gear type <30%). However, the team did not consider that there was sufficient evidence for SG100 to be met.

References Anon. 2004; Ball et al. 2000; Garcia et al. 2006; Ministry of the Environment 2010; Ministry of Fisheries 2004; OSPAR Commission 2008a&b; Ólafsdóttir & Burgos 2012; Steingrímsson & Einarsson 2004

OVERALL PERFORMANCE INDICATOR SCORE: 80

CONDITION NUMBER (if relevant):

PI 2.4.2 Nephrops trawl - Management (Habitat)

Evaluation Table for PI 2.4.2

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of the fishery on habitat types.
	Met?	Yes	Yes	Yes
	Justification	<p>Scoring elements: seapens and burrowing megafauna</p> <p>The Ministry of the Environment has developed a National Strategy Plan for the preservation of biological diversity (Ministry of Environment 2010). Two of the key elements of this strategy are (a) develop fishing methods with less impact on marine ecosystems, and (b) protect vulnerable benthic ecosystems. Act 97/1997 (“um veiðar í fiskveiðilandhelgi Íslands”) also provides a framework which allows managers to close vulnerable habitats to fishing as and when the need arises. The Nature Conservation Act no. 44/1999 also provides measures to protect marine habitats. Iceland has ratified a number of conventions on the protection and management of marine species, such as the Convention on Biological Diversity, the OSPAR Convention and the CITES Convention. These conventions have established objectives for conserving endangered, threatened or protected species and habitats and within them a number of mechanisms have been developed to detect and reduce impacts. For example the OSPAR Strategy on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area has identified a number of key species and habitats which are considered threatened or declining (OSPAR Commission 2008a&b). Iceland has nominated 14 areas to the OSPAR Network of Marine Protected Areas (OSPAR 2013; Umhverfissráðuneytið 2014¹⁴). The team considered that this framework constituted a 'strategy' to protect marine habitats from fisheries impacts. SG100 is met</p>		
b	Guide-post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	Met?	Yes	Yes	No

¹⁴<http://www.umhverfissraduneyti.is/frettir/nr/2577>

	Justification	<p>Seapens and burrowing megafauna: As noted above, the overlap of this fishery with this habitat type is limited – although <i>Nephrops</i> grounds largely made up of this type of habitat, the areas fished for <i>Nephrops</i> in Iceland are limited compared to the extent of this habitat (see rationale for 2.4.1 above and under bottom trawl). In addition, as also noted above, studies on the impact of <i>Nephrops</i> trawling suggest that impacts are largely defined by fishing intensity and have reduced over time, while the habitat type has remained widespread.</p> <p>The team therefore concluded that there is an objective basis for concluding that the current situation (strategy although not focused in implementation on this habitat type) is nonetheless sufficient, since habitat outcome is met at the 80 level. However, it is not possible to argue that there has been extensive testing in relation to impacts on this habitat type or its precise distribution over time, so SG100 is not met. The score for this element is 80.</p>		
c	Guide-post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Yes	No
	Justification	<p>Seapens and burrowing megafauna: For seapens and burrowing megafauna, there is some evidence that the strategy is being implemented successfully (habitat outcome = 80 although the strategy is not focused on this habitat type). In general, across a range of habitats, the strategy has focused on implementation in the habitat perceived to be most vulnerable (i.e. <i>Lophelia</i> reefs). Enforcement of the strategy (e.g. of the closed areas) is strong. SG80 is met.</p> <p>There is not, however, 'clear evidence' because of limited historical data on seapen distribution with which to compare current information. SG100 is not met.</p>		
d	Guide-post			There is some evidence that the strategy is achieving its objective.
	Met?			No
	Justification	<p>As noted above, there is little historical information on habitats with which to compare the current situation; e.g. there is no evidence on whether closure of coral areas have contributed to the recovery of the habitat.</p>		
References		<p>Anon. 2012a; Regulation 97/1997; Ministry for the Environment 2010; OSPAR Commission 2008a&b; Ólafsdóttir & Burgos 2012; OSPAR 2013; Schopka et al. 2010; Umhverfissráðuneytið 2014</p>		
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				-

Appendix 2. Stakeholder submissions

ISF: Commitment to allocation of resources



Vottunastofan Tún
Attn: Gunnar Gunnarsson
Parabakka 3
109 Reykjavík

Commitment to allocation of resources

Iceland sustainable fisheries ehf (ISF) has enhanced co-operation between the fishing industry, the fisheries science research institute and Icelandic authorities. ISF is responsible for implementing any conditions and recommendations set by the relevant certification body for actual and potential MSC certification of individual fisheries, including the certified cod, haddock, saithe, golden redfish and lumpfish fisheries, as well as the under assessment ling fishery. ISF will seek support from all the co-operation parties to provide resources necessary for the successful implementation of the respective Client Action plans.

In particular, the ISF responsibilities include the following:

ISF shall develop measures and strategies to evaluate and – if necessary – mitigate impacts of:

- the trawl, long line, and Danish seine fishing on wolffish and skate stocks to levels where recruitment to these stocks is not put at significant risk, and
- the trawl fishing on deep-sea redfish.

ISF shall seek to reduce risks to these stocks to levels where their recruitment is not put at significant risk.

ISF shall develop measures and strategies to evaluate and – if necessary – then mitigate impacts of:

- all relevant fisheries – in particular the trawl fisheries – on Vulnerable Marine Ecosystems (VME), such as cold-water corals and sponge beds, and
- all relevant fisheries – in particular the trawl fisheries – on other marine benthic habitat.

ISF shall seek to reduce risks to these habitats to levels where the risk of significant or irreversible harm to their structure and functions is reduced to low levels.

In developing, implementing and evaluating any measures and strategies pertaining to the fisheries certified and under assessment, ISF will:

1. Engage with the appropriate management bodies, in particular the Ministry of Industries and Innovation (MII), the Fisheries Directorate (FD) and the Marine Research Institute (MRI), to ensure these measures and strategies are based on the best available science and advice.
2. Co-operate with MRI in evaluations of measures and strategies to determine whether they are effective and whether any improvements are possible.
3. Develop options with MRI where necessary for reasonable measures within the fishery to mitigate risks to habitat and stocks where this is effective.
4. Implement any agreed measures to reduce risk to habitat and by catch.
5. Implement any agreed supporting tasks, including benthic by catch and impact monitoring within ISF client Group.
6. Maintain with MRI documentation of measures and strategies and any information on any evaluations.
7. Promote any measures and strategy at the national level for wider implementation among all fisheries.

ISF will seek to ensure that adequate technical, financial and other resources are made available to implement action required to meet the MSC fisheries requirements for certification. This includes facilitating appropriate funding to MRI to enable the institute to complete any agreed tasks, as well as commitment by the ISF to make every effort to define and fund internal options for implementation of individual actions, where appropriate, in the event of external resource shortages.

Reykjavík, July 16th 2015

Letter from the MRI to ISF.



Icelandic Sustainable Fisheries
Grandagarður 16
101 Reykjavík
Iceland

HAFRANNSÓKNASTOFNUN
Marine Research Institute

Reykjavík, 09.07.2015
Tilv. 21.9.0
JS/mp

Re: Consultations on fish stocks in Icelandic waters subject to MSC certification

In recent months the Icelandic Sustainable Fisheries plc. (ISF) representatives and experts at the Marine Research Institute (MRI), Reykjavík have consulted on fish stocks exploited in Icelandic waters that have been subject to different stages of MSC certification.

The species that have been consulted on include cod, haddock, two herring fisheries, saithe, Golden redfish, lumpfish and most recently ling caught in Icelandic waters. The MRI, as the principal organization in Iceland responsible for research and advice on sustainable harvest of fish stocks in Icelandic waters, has provided information on various aspects of the most recent assessments of the stocks in question, including explaining the type of analytical methods used, evaluation of parameters, stock status and development. Also one has consulted on the fishing operations and environmental aspects related to fishing activities, as far as it concerns matters related to the responsibilities of the MRI.

The MRI welcomes future cooperation with ISF in this area, including annual consultations on the development of the above fish stocks and other stock in Icelandic waters when and if relevant in this context.

On behalf of Marine Research Institute,


Jóhann Sigurjónsson

Letter from the MII to ISF.



Icelandic Sustainable Fisheries
Erla Kristinsdóttir, Verkefnastjóri
Grandagarður 16
101 Reykjavík

ATVINNUVEGA- OG
NÝSKÖPUNARRÁÐUNEYTIÐ

Ministry of Industries and Innovation

Skúlagötu 4 101 Reykjavík Iceland
tel.: + (354) 545 9700 postur@anr.is
anr.is

Reykjavík July 14, 2015
Reference: ANR15070152/11.1.0

Icelandic authorities emphasize a responsible and sustainable utilization of marine resources. Stock assessment as well as advice on Total Allowable Catch (TAC) is received from the Icelandic Marine Research Institute (MRI) and from International Council for the Exploration of the Sea (ICES). Icelandic authorities have since 2007 followed the policy to base fisheries management in Icelandic waters on the application of long term management plans (LTMP) and harvest control rules (HCR) which have been evaluated by ICES. At the moment there are harvest control rules in place for the most important stocks such as cod, haddock, saithe, Golden redfish and capelin. It's now a strictly enforced governmental policy in Iceland to increase the number of stocks which could be subject to a HCR when technically possible. One of these new HCR-candidates is definitely ling (*Molva molva*).

Sigurður Ingi Jóhannsson
Minister of Fisheries and Agriculture

Appendix 3. Surveillance audit information (if necessary)

Appendix 4. Additional detail on conditions/ actions/ results (if necessary)

Appendix 5. Revised Surveillance Program

The team used Table G13 (see Table 5.4 below) to determine that the ISF Iceland Saithe qualifies for reduced surveillance, since the ability to verify remotely was found to be high for all aspects of the fishery and no physical inspections are required to verify milestones. The fishery has 4 conditions, therefore the team proposes surveillance level 4, with 2 off-site and 2 on-site surveillance audits. However, the surveillance level will need to be harmonized with the ISF Iceland Ling fishery, which is an extension of scope to the ISF Iceland Saithe fishery, at the first surveillance after extension of scope completion for ling, which is due in 2016.

Table 11: Surveillance level rationale.

Year	Surveillance activity	Number of auditors	Rationale
Year 2	Off-site surveillance	2 auditors	<p>Information on the status of the stocks for wolffish and deep-sea redfish is readily available online through the MRI or ICES websites. Information for stock status for grey skate has not been available online, but the MRI provided information on survey indices and also indicated that this species will be included in stock status reports in future. Data in landings for all of these species is also readily available online by gear type.</p> <p>Condition regarding habitat, the potential damage to deep-sea sponges, corals and other vulnerable marine habitats, was deemed to be behind target at the 1st annual surveillance. Some information on habitats and habitat monitoring is available online and MRI and DF can easily be contacted for remote meetings if needed. The CAB concludes that an off-site surveillance is therefore sufficient.</p>
Year 3	Off-site Surveillance Audit	2 auditors	See above. Information is readily available online, stakeholder cooperation is good, they are easy to contact via e-mail or phone and can be reached for remote meetings. Off-site surveillance would therefore suffice for this fishery.
Year 4	On-site Surveillance Audit	2 auditors	As year 4 marks the starts of re-assessment an on-site surveillance is recommended. Although most of relevant documents can be obtained online or electronically, face-to-face meetings would provide more detailed status of the fishery before re-assessment.

Table 5.2: Timing of surveillance audit.

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
Year 2	September 2016	September 2016	Scientific advice expected to be released in June 2016*.
Year 3	September 2017	September 2017	Scientific advice expected to be released in June 2017*.

Year 4	September 2018	September 2018	Scientific advice expected to be released in June 2018*.
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Table 12: Fishery Surveillance Program.

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 4	On site (this report)	Off-site surveillance audit	Off-site surveillance audit	On-site surveillance audit, Re-assessment

Table 5.4: Table G13 in FCR 2.0 for assessing the information available to determine surveillance level.

	Ability to verify remotely is low	Ability to verify remotely is high	CAB evaluation
Client and stakeholder input	Electronic forms of communication and other mechanisms to engage with clients and stakeholders (such as video conferencing, phone conferencing, email, phone) are absent, limited or inefficient and ineffective in providing the information required for an audit in the particular circumstances of the fishery.	There are ample opportunities and mechanisms to engage with clients and stakeholders including electronic forms of communication, such as videoconferencing phone conferencing, email, phone. The mechanisms are effective in the particular circumstances of the fishery.	Electronic forms of communication are widely available throughout Iceland. Ability to verify remotely: <u>High</u>
Fishery reports, government documents, stock assessment reports and/or other relevant reports	Fishery reports and other types of reports required for the surveillance, and to demonstrate fishery performance in relation to any relevant conditions and on-going performance against the MSC's standard are not available publicly and cannot be transmitted electronically. There is no remote access to the information and there are none, or very limited other sources available to triangulate and confirm status of the fishery with respect to the MSC standard	Fishery reports and other documented evidence that can be used to demonstrate progress against conditions and other issue relevant to the MSC Principles and criteria can be easily and transparently checked remotely, due to such information being available publically, such as being available on a website or having been widely distributed and made publically available to several stakeholders. The reports can be transmitted electronically and veracity easily confirmed.	All document relating Icelandic fisheries advice, research and management are available online or can be obtained electronically. Both the MRI and the Directorate publish relevant documents online. Ability to verify remotely: <u>High</u>
Information	Information from	Where Information from	The Directorate of

appropriate to determination	electronic monitoring of position, observer data, logbooks, fisher interviews, dockside monitoring etc. is required for audits but cannot be easily transmitted to a remote auditor in a form that can be easily interpreted.	electronic monitoring of position, observer data, logbooks, fisher interviews, dockside monitoring etc. is required to verify performance against MSC standard, this information is available to be transmitted electronically to auditors in a form that can be easily interpreted.	Fisheries publishes data on landings/electronic logbooks online in real time. Information on infringements are also published online, in addition to annual reports. Ability to verify remotely: <u>High</u>
Transparency of the management system	Level of transparency of information by management is low such that information about performance of the fishery is generally not easily and widely available.	There is a high level of transparency in management, such that information on the fishery is widely and publically available or known to the wider group of stakeholders. Any information provided on the fishery can be easily verified	Information on fisheries is transparent and widely available online and public. Information provided by the fishery can easily be verified by checking online sources or through direct contact with relevant officials. Ability to verify remotely: <u>High</u>
Vessels, gear or other physical aspect of the fishery	There are milestones and conditions that require inspection of vessels or other physical aspects of the fishery during the audit and there are no reliable mechanisms for verifying these aspects of the fishery from a remote location.	There are no milestones that require investigation of physical aspects of the fishery or if there are, there are reliable mechanisms to enable verification of developments with respect to that milestone from a remote location.	Milestones in the saithe fishery do not require investigation of physical aspects of the fishery and can easily be verified by documentation or remote meetings. Ability to verify remotely: <u>High</u>