



Vottunarstofan Tún ehf.

Sustainable Fisheries Scheme

Marine Stewardship Council Fisheries Assessment

ISF Iceland Saithe Fishery: Expedited Assessment of the ISF Iceland Ling

Scope Extension of the ISF Iceland Saithe Fishery

Public Certification Report

Conformity Assessment Body:

Client:

Vottunarstofan Tún ehf.

Iceland Sustainable Fisheries ehf.

10 November 2015

10 November 2015

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Glossary

B_{lim}	Limit biomass reference point below which recruitment of stock is expected to be impaired
B_{loss}	A particular B _{lim} used by ICES based on the lowest past observed spawning stock biomass.
B_{MSY}	Biomass corresponding to the maximum sustainable yield (biological reference point); the peak value on a domed yield-per-recruit curve
B_{trigger}	The point when management intervention should be taken to avoid the stock falling below the limit reference point.
CAB	Conformity Assessment Body
CITES	The Convention on International Trade in Endangered Species of Wild Fauna and Flora
COC	Chain of Custody
CPUE	Catch per unit of effort
CR	MSC Certification Requirements version 1.3
DF	Directorate of Fisheries
EEZ	Exclusive Economic Zone
ETP	Endangered, Threatened and Protected species
F	Fishing Mortality
FAO	Food and Agriculture Organization of the United Nations
GADGET	Globally applicable Area Disaggregated General Ecosystem Toolbox
GCR	Guidance to the MSC Certification Requirements v1.3
GT	Gross Tonnage
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Seas
IPI stock	Inseparable or practically inseparable stocks
ITQ	Individual Transferable Quota
LRP	Limit Reference Point
LTL	LTL species: Low Trophic Level species
MII	Ministry of Industries and Innovation
MRI	Marine Research Institute (Hafrannsóknastofnun)
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
nm	Nautical miles
PCR	Public Certification Report
PI	Performance Indicator

PSA	Product Susceptibility Analysis
RBF	Risk Based Framework
SG	Scoring Guidepost
SI	Scoring Issue
SICA	Scale Intensity Consequence Analysis
t	tonnes
TAC	Total Allowable Catch
TRP	Target Reference Point
VMS	Vessel monitoring system

1. Executive Summary

1.1 Scope of the Assessment

This report presents the results of an expedited assessment of the ling (*Molva molva*) fishery within the Icelandic Exclusive Economic Zone (EEZ), North-east Atlantic, and ICES area Va2 against the Marine Stewardship Council's (MSC) Principles and Criteria for Sustainable Fishing. The assessment is to be conducted as an extension of scope of the MSC certified ISF Iceland Saithe fishery.

The report provides an account of the processes followed by the assessment team during the stages of information gathering and the scoring of the fishery against the MSC Principles and Criteria for Sustainable Fishing. The report provides a qualitative description of the fishery. The report is not intended to follow standard editing norms of scientific journals, but intends to address the needs of both fisheries specialists and other interested parties e.g. consumers and/or other stakeholders. In order to avoid duplication, basic introductory text about the fishery are found in section 3, whereas key aspects of the fishery are summarised fully in the scoring tables in Appendix 1. The report contains sections 1, 2, 3.1-3.3, 4, 5, and 6 of the "Full Assessment Reporting Template" and these sections are populated from the ISF Iceland Saithe PCR where appropriate (see FCR2.0: PE3.1.2).

1.2 Assessment Team Members and Coordinator

The assessment was conducted by two experts. Dr. Paul A.H. Medley served as a team leader as well as an expert assessor on Principle 1. Dr. Ásgeir Daníelsson served as an expert assessor on Principle 3 issues. Louise le Roux MSc served as Assessment Coordinator and Secretary of the assessment on behalf of Vottunarstofan Tún.

1.3 Outline of the Assessment

A pre-assessment of the Icelandic ling fishery was conducted in 2014 based on an expedited P1 assessment guided by Certification Requirements v1.3. The ling fishery is assessed as an extension of scope to the ISF Iceland Saithe fishery. Gap analysis was completed prior to announcement of the fishery assessment in April 2015¹. The assessment is conducted under the same requirements as the original saithe assessment, i.e. MSC Certification Requirements v1.3. Site visit and stakeholder meetings were conducted during the first week of May, followed by a scoring meeting of the team.

A Preliminary Draft Report, including conditions and their milestones, was completed in June 2015 and presented to the client. The client and the Conformity Assessment Body (CAB) consulted external entities, i.e. the Marine Research Institute (MRI) and the Ministry of Industries and Innovation (MII), on the conditions and milestones.

The client prepared and submitted a Client Action Plan, in addition to details and outcomes of consultation with MRI and MRI (see Appendix 1.3 and Appendix 3.1). The team accepted the CAP and a Peer Review Report was submitted to a Peer Reviewer. The team replied to peer review comments, and added some text to rationales for clarification. In addition the team determined the surveillance level and frequency for the fishery as outlined in Appendix 4.

Public Comment Draft Report (PCDR) was issued on 27 August 2015, a date that also constitutes the Eligibility Date for the assessed fishery. The team received comments (technical oversight) on the

¹ https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/isf-saithe/expedited-assessment-ling/02_ISF_Iceland_Ling_Expedited_Assessment_Announcement.pdf

PCDR from the MSC in relation to traceability matters. These were addressed and necessary amendments made to the report (see Appendix 3.1.4). No objections were received to Determination and Final Report issued on 6 October 2015.

1.4 Main Strengths and Weaknesses of the Assessed Fishery

Strengths:

- Exploitation is controlled through catch limits, which are well administered, with negligible discarding.
- The fishery is now managed through analytical stock assessments rather than as a data-limited stock, which is an improvement made since 2012.
- The management system is well documented and transparent.

Weaknesses:

- Ling is a secondary species to cod, and this is reflected in the more limited information available for the assessment.
- The basis for setting the limit reference point for this stock has not been well justified, and it is not clear that the default methods are precautionary in this case.
- The harvest control rule is not fully defined.

1.5 Overall Conclusion

The ISF Iceland Ling Fishery reaches the minimum aggregate score of 80 for Principle 1 and a minimum of 60 for each Performance Indicator. The ling fishery is an extension of scope of the ISF Iceland Saithe fishery, which reached minimum aggregate scores of 80 for Principles 2 and 3 and a minimum of 60 for each Performance Indicator. However, the ling fishery fails to reach the minimum score of 80 on two Performance Indicators, prompting the setting of conditions.

The average weighted scores for each of the three Principles were:

- | | |
|------------------------------------|---------------------------------|
| - Principle 1 – Target Species: | 82.5 |
| - Principle 2 – Ecosystem: | Not scored – Extension of scope |
| - Principle 3 – Management System: | Not scored – Extension of scope |

Two Performance Indicators failed to reach the minimum score of 80:

- | | |
|--|----|
| - PI 1.1.2 – Limit and target reference points are appropriate for the stock | 75 |
| - PI 1.2.2 – There are well defined and effective harvest control rules in place | 75 |

1.6 Final Determination, Conditions and Recommendations

The following conditions have been set:

Condition 1 PI 1.1.2 – Limit and target reference points are appropriate for the stock

A limit reference point needs to be defined such that it is above the point where there is significant risk of impairing reproductive capacity. This might be achieved by providing scientific evidence that the B_{loss} , or an alternative higher biomass, being used as the limit reference point, is sufficiently precautionary consistent with MSC requirements.

Condition 2 PI 1.2.2 – There are well defined and effective harvest control rules in place

A well-defined harvest control rule should be put in place that is consistent with the harvest strategy and defines how the exploitation rate will be reduced as the stock approaches the limit reference point. Evidence should be provided that the HCR is precautionary.

No recommendations were made by the assessment team regarding the fishery.

The client and the CAB consulted external entities, i.e. the Marine Research Institute (MRI) and the Ministry of Industries and Innovation (MII), on the above conditions and the milestones for meeting those conditions. Subsequent to those consultations, the client submitted a Client Action Plan outlining how the conditions will be met within the set timeframe.

On the basis of the results of the evaluation, consultation with external entities and the submitted Client Action Plan, the assessment team passed a determination to recommend that the scope of the certification of the ISF Iceland Saithe fishery shall be extended to include the ISF Iceland Ling fishery against the MSC Fisheries Standard.

Vottunarstofan Tún's certification committee has reached a decision to uphold the above determination.

2. Authorship and Peer Reviewers

2.1 Team Members and Assessment Coordinator

Dr. Paul A.H. Medley, Team Leader

Primarily responsible for Principle 1

Dr. Paul Medley is an independent fisheries consultant, based in the UK. His expertise includes mathematical modelling of fisheries and ecological systems, techniques for multispecies stock assessment and external review of stock assessment methodologies. He has been an invited expert for a number of stock assessment working group meetings. He has a wide practical experience in marine biology, including design and implementation of surveys and fisheries experiments. This includes addressing wider environmental issues of ecological management, including maintenance of marine biodiversity. He has taken part in several MSC fishery assessments and has worked with MSC on new methodology developments. Dr. Medley has a university degree (Ph.D.) in fisheries science, he has over five years' experience in the fisheries sector related to the tasks under his responsibility, and has passed MSC team leader training.

Dr. Ásgeir Daníelsson, Team Member

Primarily responsible for Principle 3

Dr. Ásgeir Daníelsson is the head of research and forecasting in the Economics department of the Central Bank of Iceland. He has lectured on economics and statistics at the University of Iceland and University of Akureyri. He has over 25 years' experience of macroeconomic analysis of the Icelandic fisheries for the Central Bank of Iceland and previously the National Economic Institute. He has been involved in and advised numerous national and international task forces on the utilization of living marine resources and fisheries management. From 1993-1994 and 2001-2004 he was a member of a committee, set up by the Icelandic Minister of Fisheries, formulating a long term policy on exploitation of fish stocks. He has worked with the "Nairobi group" set up by the UN's UNEP and UNSD, and was later commissioned by the FAO to provide a guide on the incorporation of environmental factors into national accounting with special regard to fisheries and the living marine environment. Dr. Daníelsson has written and co-authored several peer-reviewed publications, as well as research reports on the utilization of fish stocks in Icelandic waters, ITQ efficiency and environmental- and economic accounting of fisheries. During the last three years, Dr. Daníelsson has served as Principle 3 expert for several MSC fishery assessments, including the ISF Iceland Saithe fishery assessment. Dr. Daníelsson has a university degree (Ph.D.) in economics, has over five years' experience in the fisheries sector related to the tasks under his responsibility and has passed MSC team member training.

Louise le Roux, M.Sc.

Assessment Coordinator and Secretary

Louise le Roux is an assessment coordinator for Tún's fisheries certification program and R&D manager at the deCode Genetics. In 1993-1998 she was in charge of research on the deep-sea red crab at the Namibian Ministry of Fisheries and Marine Resources. Duties included administration, management advice and stock assessment. In 1998-2000 she lectured and was involved in the development and teaching of various courses for the Natural Resources B.Sc. program on fisheries biology, management and population dynamics at the University of Namibia. She also briefly taught for the Fisheries Training program at the United Nations University in Iceland. Louise le Roux has attended MSC CAB training seminars, where the assessment methodology, certification requirements and the use of the Risk Based Framework (RBF) have been covered. She has served on Tún's certification committee and has led several expert teams conducting MSC pre- and full

assessments. Ms. Le Roux has a university degree (M.Sc.) in fisheries biology and has passed the MSC online seminar for team leaders, including modules on RBF and traceability.

Further details of the team members and assessment secretary can be obtained from Tún and from downloading the announcement of the assessment: https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/isf-saithe/expedited-assessment-ling/02_ISF_Iceland_Ling_Expedited_Assessment_Announcement.pdf

2.2 Peer Reviewer

Robert O'Boyle M.Sc.

Robert O'Boyle received his B.Sc. and M.Sc. from McGill and Guelph Universities in 1972 and 1975 respectively. He was with Canada's Department of Fisheries and Oceans (DFO) at the Bedford Institute of Oceanography (BIO) in Dartmouth, Nova Scotia during 1977-2007. During this time, he conducted assessments of the Maritime and Gulf region's fish resources (e.g. herring, capelin, cod, haddock, pollock, flatfishes, sharks). He headed the Marine Fish Division, with responsibility for the finfish research programs and assessment-related activities of over 80 scientific and support staff. He also coordinated the peer review of scientific advice on fisheries resources and ocean uses and was Associate Director of Science, as such being extensively involved in science program management at the regional and national level. He has been involved in a number of national and international reviews, ranging from science program design to resource assessment. He is currently president of Beta Scientific Consulting Inc. (betasci.ca) which provides a variety of services on ocean resource management including meeting chairing, technical review, analyses and assessment. Projects have included analyses and assessments of forage species (Gulf of Mexico and Atlantic Coast Menhaden, Gulf of St. Lawrence and Scotian Shelf Herring), deepwater species (Scotian Shelf Cusk) and endangered species (Atlantic Leatherback Turtles). He has been and is currently the principle one or two expert of a number of MSC certifications (e.g. BC Dogfish, Chilean Hake, Nova Scotia, US and Australian Swordfish, Barents Sea Cod, Haddock, and Saithe, North Sea Haddock, Danish Plaice, Deepwater Black Scabbardfish, Blue Ling, and Roundnose Grenadier, Russian Pollack and US West Coast groundfish) and has been peer reviewer on a number of MSC assessments. He has been the chair and / or reviewer of NMFS and ASMFC stock assessments (e.g. GARM III, SEDAR 18, SARC 50, SARC 54, SARC 55, River Herring/Eel), and has prepared special reports on ocean management issues for government, industry and NGO groups. He has been a member of the Scientific and Statistical Committee of the New England Fisheries Management Council since 2008. He pursues research projects related to resource and ocean management and assessment, including the interaction of cod and grey seals on the Scotian Shelf, the impact of fish migrations of fishery selectivity patterns and risk analysis in data poor assessments.

3. Description of the Fishery

3.1 Unit(s) of Assessment (UoA) and Scope of Certification Sought

3.1.1 UoA and Proposed Unit of Certification (UoC)

See section 3.1.2 for the final Unit of Certification.

3.1.2 Final Unit of Certification

The ISF ling fishery is in within scope of the MSC standard. The CAB confirmed the following:

- The fishery does not target amphibians, birds, reptiles, or mammals and does not use poisons or explosives.
- The fishery is subject to Icelandic jurisdiction and is not conducted under a controversial unilateral exemption to an international agreement.
- No entity within the client group has been successfully prosecuted for violations against forced labour laws.
- There are mechanisms for resolving disputes through negotiation, the Directorate of Fisheries, the Ministry of Industries and Innovation, the Icelandic courts, and ultimately the Council of Europe court. Disputes are not common within the fishery.
- The fishery is neither an enhanced nor introduced species based fishery (ISBF).
- There are no inseparable or practically inseparable (IPI) species caught in the fishery. Blue ling (*Molva dypterygia*), a closely related species of the same genus, is also landed. However, these two species are easily distinguished from each other and must be landed separately by law.
- The CAB reviewed the pre-assessment and other available information to determine the unit of assessment required.
- The ISF ling fishery has not failed an assessment within the last two years.
- The client has confirmed willingness to share certificate.
- The fishery has elements overlapping with other certified fisheries within the Icelandic EEZ. These fisheries are ISF cod-, haddock-, saithe, and redfish fisheries, as well as Icelandic lumpfish and herring. However, these issues pertain to Principles 2 and 3, which is covered in the ISF Iceland Saithe PCR.

Table 1: Unit(s) of Assessment and Unit(s) of Certification

Unit(s) of Assessment	
Fish stock	Ling (<i>Molva molva</i>) in ICES subarea Va
Location of Fishery	FAO Statistical Area 27 / ICES Va; Icelandic Exclusive Economic Zone
Management	Ministry of Industries and Innovation
Fishing Methods	Longline, Bottom trawl, <i>Nephrops</i> trawl, Gillnet, Danish seine, Handline
Fishery Practices	All registered vessels that carry valid permits for fishing within the Icelandic Exclusive Economic Zone issued by the Icelandic Directorate of Fisheries, including vessels fishing and operating in Icelandic waters through bilateral agreement.
Rationale for choosing the UoA	The Unit of Assessment includes all vessels, operating longline, bottom trawl, <i>Nephrops</i> trawl, gillnet, Danish seine, and handline that fish ling in Icelandic

	waters.
Unit(s) of Certification	
Fish stock	Ling (<i>Molva molva</i>) in ICES subarea Va
Location of Fishery	FAO Statistical Area 27 / ICES Va; Icelandic Exclusive Economic Zone
Management	Ministry of Industries and Innovation
Fishing Methods	Longline, Bottom trawl, <i>Nephrops</i> trawl, Gillnet, Danish seine, Handline
Fishery Practices	All registered vessels that carry valid permits for fishing within the Icelandic Exclusive Economic Zone issued by the Icelandic Directorate of Fisheries, and that fish, supply and/or sell ling to Iceland Sustainable Fisheries ehf. and/or its authenticated certificate sharers.
Eligible Fishers	Any new entry to the group of registered vessels targeting the ling stock and/or that are incidentally catching ling in other MSC certified fisheries within Icelandic jurisdiction

3.1.3 Total Allowable Catch (TAC) and Catch Data

Table 2: TAC and Catch Data

TAC	Year	2013/14	Amount	13,500 t
UoA share of TAC	Year	2013/14	Amount (Total)	11,797.7 t
			Longline	8,057.5 t
			Bottom trawl	1,687.0 t
			<i>Nephrops</i> trawl	1,115.5 t
			Gillnet	708.2 t
			Handline	18.9 t
UoC share of total TAC	Year	2013/14	Amount	See UoA
Total green weight catch by UoC	Year (most recent)	2013/14	Amount	11,797.7 t
	Year (second most recent)	2012/13	Amount	11,196 t

3.2 Overview of the fishery

Along with tusk, ling is one of the codfish species that has long been of commercial interest in Iceland, but is less valuable than catch of the most important species, such as cod, haddock and saithe. The ling fishery is mostly conducted by Icelandic vessels, apart from Norwegian and Faroese vessels that fish some ling in a mixed fishery around Iceland. Ling is mainly fished by longline, bottom trawl and gillnets off south and west of Iceland, with the most important grounds being close to the Westman Islands off the south coast. With higher sea temperatures in recent years ling has moved to the west and north of Iceland. These environmental changes in the ocean around Iceland have affected the ling stock and it is now caught in multispecies fisheries around the country rather than only off the south coast as was the case previously. The recruitment has been variable

and in the most recent years low in spite of the estimated stock being at a historical maximum. There is ongoing research to address these questions.

Annual catches are reported by around 150 longliners, 60 trawlers, 50 gillnetters and ten *Nephrops* boats (ICES WGDEEP 2014).

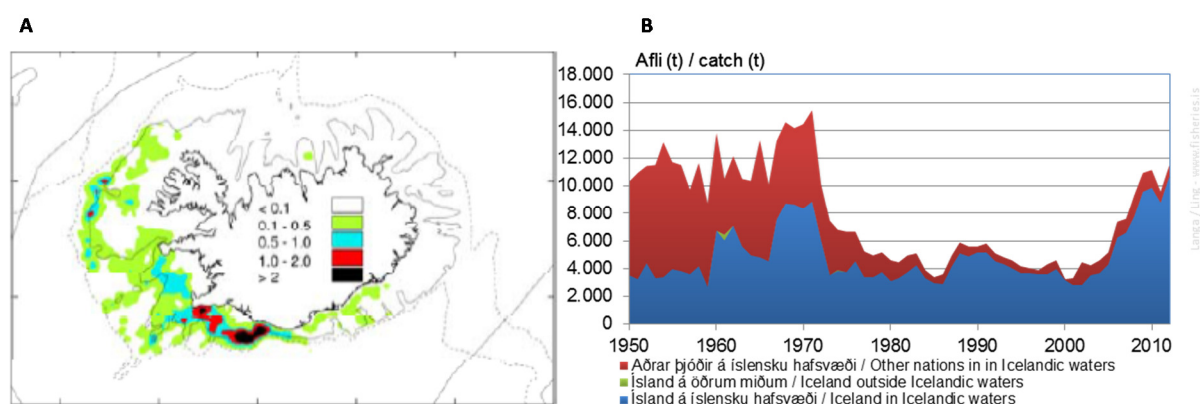


Figure 1: Main fishing grounds (A, tonnes/nmi²) and annual catch (B) of ling in Icelandic waters (Source: www.fisheries.is and Anon. 2014)

The majority of ling catch is salted and exported to southern Europe, mainly Spain, Italy and France. However, some part of the catch is also exported fresh or frozen to Western Europe.

Annual catches of ling by Icelandic vessels ranged from 4,000 to 8,000 tonnes since 1950, but have been increasing since 2000. Annual catch by mainly German foreign vessels was similar to that of Icelandic vessels when these were active in Icelandic waters, resulting in total annual catches from 1950 to 1971 of 10,000 to 15,000 tonnes (**Figure 1**). The highest catch of 15,000 tonnes was recorded in 1971.

From 1982 to 2005, landed catch of ling ranged from 3,200 to 5,900 tonnes. Catches have increased substantially from that period to about 11,000 tonnes in 2009 and 2010, but decreased again in 2011. In 2012, the catch was 11,800 tonnes, of which Icelandic vessels caught about 11,000 tonnes. The Icelandic fleet has caught 85-90% of all ling from Icelandic waters over the last three decades (**Figure 2**).

The division of catch by fishing gear has changed substantially over the last few years. The contribution of longline to the total catch has increased from ca. 11%, in the years 1982 – 1989, to 64% in 2012. The contribution of gillnets to the fishery has decreased substantially, and contributed only 2% to the catch in 2012, compared to 24% from 2000-2002. Bottom trawls contributed about 12% to the annual catch in 2012, which is lower than previous years.

Most longline catches of ling take place at depths of less than 300m, and trawl catch is in waters less than 500m depth.

The ling stock is managed within the Icelandic fisheries management system. The Marine Research Institute (MRI) offers annual advice for the stock through ICES working groups for deep-sea stocks (WGDEEP/WKDEEP). For 2014, the advice is based on a target fishing mortality proxy, being the same reference point used for the years 2004 to 2008, which the stock assessment indicated was close to F_{MSY} . The Ministry of Industries and Innovation (MII), subsequently issued a total allowable catch (TAC) for the fishery based on the scientific advice. Ling is assessed by ICES on a biennial basis.

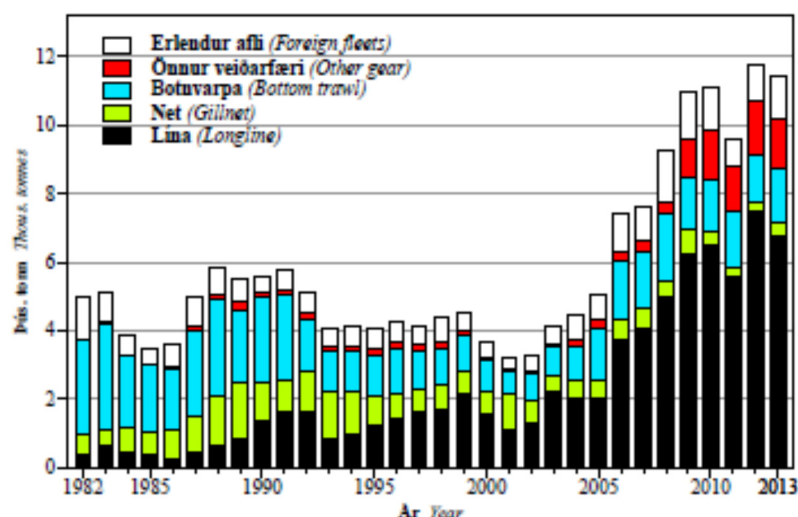


Figure 2: Ling landings (thousand tonnes) in Icelandic waters divided by gear from 1982 – 2013. (Source: Anon 2014)

Table 3: TAC and landings (tonnes) of ling in Icelandic waters

Year	Rec. TAC	National TAC	Icelandic Landings	Other landings	Total
1999/00			3,496	475	3,961
2000/01			3,182	359	3,451
2001/02	3,000	3,000	2,542	426	2,968
2002/03	3,000	3,000	3,137	578	3,715
2003/04	3,000	3,000	3,864	744	4,608
2004/05	4,000	4,000	4,488	750	5,238
2005/06	4,500	5,000	5,842	1,119	6,961
2006/07	5,000	5,000	6,625	992	7,617
2007/08	6,000	7,000	7,008	1,552	8,560
2008/09	6,000	7,000	9,160	1,329	10,489
2009/10	6,000	7,000	9,450	1,263	10,713
2010/11	7,500	7,500	9,327	768	10,095
2011/12	8,800	9,000	10,074	1,059	11,133
2012/13	12,000	11,500	11,196	1,249	12,445
2013/14	14,000	13,500	11,802		

Source: <http://www.hafro.is/Astand/2014/18-langa.PDF> and www.fiskistofa.is

From the 2002/03 to 2011/12 fishing seasons, total catches of ling were above the issued TAC. The main reasons for this excess catch were the transfer of quota shares from one year to the next, conversion of quotas from one species to another and catches by Norway and Faroe Islands through bilateral agreement (**Table 3**), and transfer of quotas between fishing years. Levels of catches by foreign vessels are known in advance, but this was not taken into account by the MII when allocating TAC to Icelandic vessels in the past. As of 2012/13, the national TAC has been set below MRI advice

to account for foreign catches. In addition, the MII implemented further restrictions to the quota transfers between species.

3.3 Principle One: Target Species Background

3.3.1 Life histories

The common ling or ling, *Molva molva*, is a large fish belonging to a family of codlike fishes². The largest ling on record in Icelandic waters were 212cm long. Ling is a marine demersal fish, found over a wide depth range of 15-1,000 meters depth, but it is most common at depths of 100-400m, with younger fish occurring in shallower waters. Ling is widely distributed in the European waters and can be found from Norway to the Mediterranean Sea. In the Northeast Atlantic it can be found from around Iceland and the Barents Sea to Morocco, and in the Northwest Atlantic ling is found off southern Greenland and Canada.³ Ling occurs in the following ICES areas: Subareas I and II; Divisions Va; Division Vb; Divisions IIIa and IVa, and in Subareas VI, VII, VIII, IX, XII, and XIV (other areas) (see **Figure 3**). Ling appears to be sufficiently isolated on separate fishing grounds and can be considered as individual assessment units.⁴

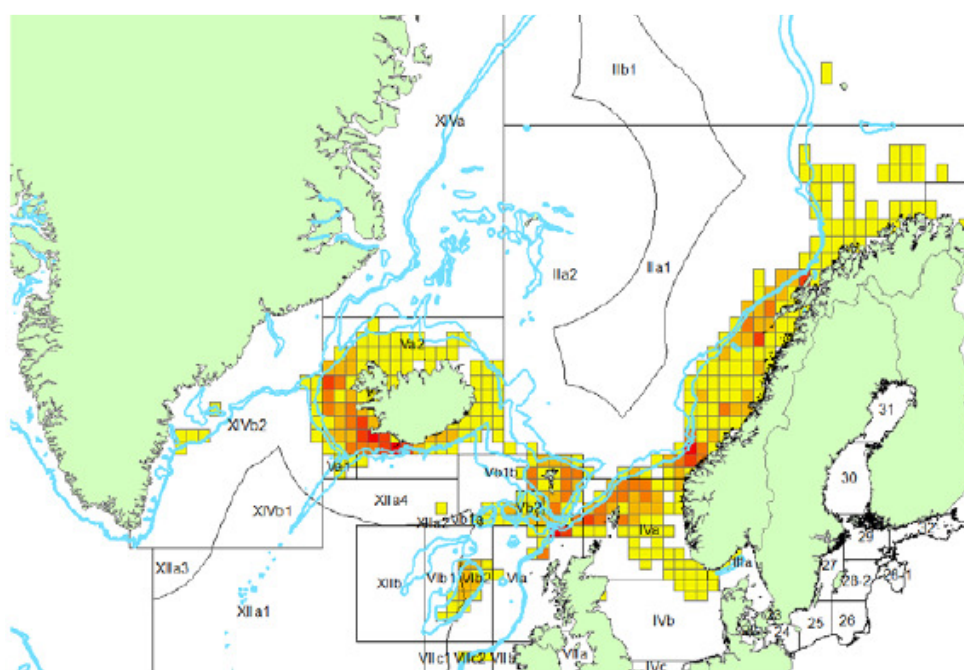


Figure 3: Distribution of ling within various ICES subareas. Source: ICES 2014c.

Ling is a classic predator of other fish, with a large mouth and sharp teeth. It mostly eats herring, flatfishes, and other codfishes, but it can also prey on benthic invertebrates such as lobsters, cephalopods and starfish (www.fisheries.is).

Ling spawns along the continental shelf break off south and west Iceland in May and June. The species reaches sexual maturity at ages 5 to 8 years, when it has reached lengths of 60-80cm. The species can reach at least 25 years of age (www.fisheries.is).

² http://en.wikipedia.org/wiki/Common_ling

³ <http://www.fishbase.gr/summary/33>; <http://www.fisheries.is/main-species/codfishes/ling/>

⁴ <http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2012/2012/Ling.pdf>

3.3.2 Status of the stock

The stock is considered in a good state, well above its limit and any B_{MSY} candidate reference points. This is primarily due to a series of particularly strong recruitments in 2007-2010. However, the estimates for recruitment over the last 3 years, 2011-2014, are the lowest on record, so the stock is expected to decline over the coming years.

Sampling of commercial catches is conducted and considered to be good in relation to spatial and temporal distribution of landings. The mean length of fish sampled from longlines decreased from 91cm in the year 2000 to 80cm in 2008, which may be the result of increased recruitment in recent years rather than increased fishing effort. Mean lengths in 2009 to 2011 increased slightly to 83-84cm (ICES WGDEEP 2012). The limited age data that is available indicate that most ling caught in the spring survey is between 5 and 8 years of age, and ling from longlines is between 6 and 9 years of age (ICES 2014c).

The Catch per unit effort (CPUE) over the last four years, has been the highest on record, since the advent of mandatory catch logbooks in 1991 (**Figure 4**). CPUE is not considered to be a good index of stock trends, but it nevertheless does show the same trend as the survey data (Anon 2013; ICES WGDEEP 2012).

Biomass indices for ling is available from the Icelandic groundfish surveys. Ling is found in the deeper waters south and west of Iceland during the spring and autumn surveys. The fishable biomass (fish >40cm) index gradually decreased by more than half from 1985 to 2001. From 2003 to 2007, the biomass index increased sharply to the second highest level observed. Then the index fell sharply in 2008 and 2009 to levels similar to those in the late 1980's, and subsequently increased again after 2010 to the highest level recorded in 2013 (**Figure 4A**). The biomass index for large fish (>80cm) show a similar trend (Anon 2013; ICES WGDEEP 2012). However, the recruitment index (fish <40cm) has decreased in recent years from high values observed from 2004 to 2010 (**Figure 4B**). It must be noted that there are some uncertainties regarding the high biomass index values in 2007 and 2012/13, which could, at least to a certain extent, be an artifact of changed catchability.

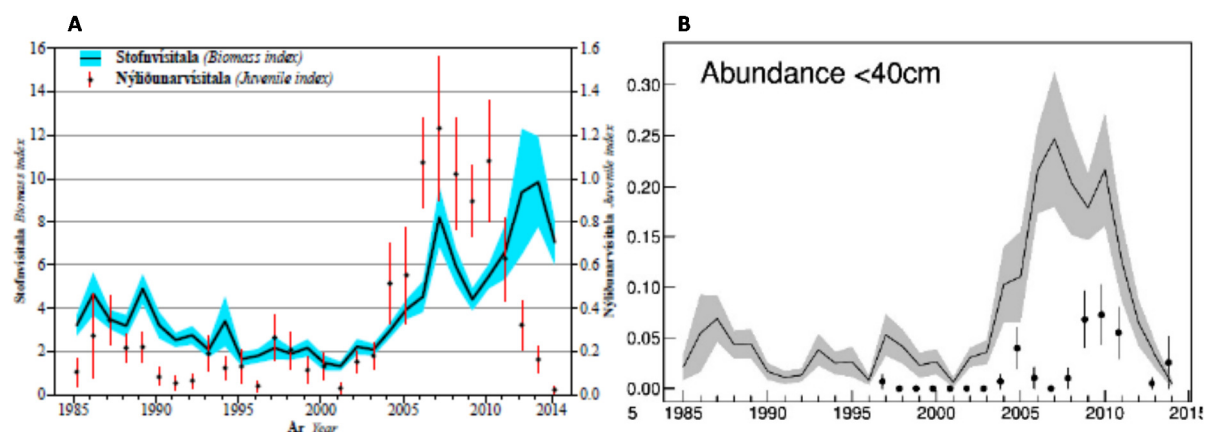


Figure 4: A. Ling biomass index (>40cm) from the annual groundfish survey in March from 1982 to 2013 and Fproxy (catch/index). B. Ling recruitment index of fish <40cm. (Source: Anon. 2014; ICES WGDEEP 2014).

Relative fishing mortality or Fproxy for ling was relatively high from 1994 to 2003, but rapidly decreased in concert with the increase in biomass index from 2004 to 2007 (**Figure 4A**). Fishing mortality in 2012 was close to the average for 2004 to 2012, and has continued to decline to the target level in 2014 (**Figure 5**).

Since 2010, the MRI has been developing a model for ling using GADGET software. The most serious constraint to the model is the lack of reliable age data for ling. The model was therefore not used

exclusively as a basis for fishery advice. However, the model results are consistent with other data and also show an increasing stock and decreasing fishing mortality in recent years. The model indicates that the fishing mortality for 2014 was just above F_{MSY} .

Survey data and CPUE indicate that the ling stock has increased rapidly from 2000, and is now at its highest recorded level. However, exploitation rate also increased substantially from 2007 to 2010 due to fishing in excess of MRI advice and the set TAC. Based on F_{MSY} , the MRI recommends that the TAC for the 2014/15 fishing season not exceed 14,400 tonnes and this TAC should include catches from foreign vessels in Icelandic waters.

A model of ling in Iceland was developed in GADGET and benchmarked for stock assessment by ICES in 2014 and relevant reference points developed using boot-strap methods (ICES 2014c). The model was adopted and the 2014 advice was based on this analytical assessment and the ICES MSY approach (see **Figure 5** for summary). Fishery advice for 2014 was based on F_{MSY} and the annual TAC recommended was 14,352t (ICES 2014a).

The model defined F_{MSY} at 0.24 and identified $B_{trigger}$ at 9,500t. $B_{trigger}$ is the point when management intervention should be taken to avoid the stock falling below the limit reference point. The stock assessment shows increasing spawning stock in recent years and increased recruitment from 2000-2010, but poor recruitment since 2012. Fishing mortality was high until 2010, but has decreased to levels close to MSY since then. Projection based on the model indicate that the stock is likely to decrease in the future based on poor recruitment and that landings will most likely be reduced to under 10,000t (Anon 2014).

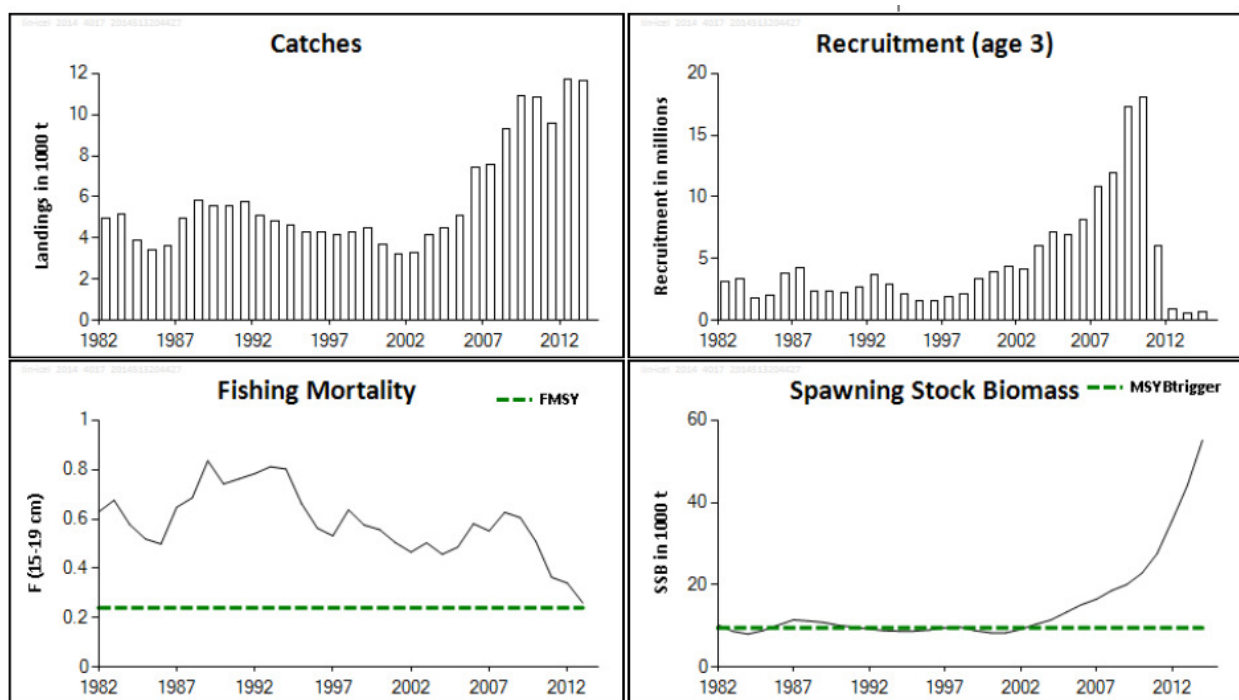


Figure 5: Summary of stock assessment of ling in Iceland (Source: ICES 2014a)

3.4 Principle Two: Ecosystem Background

For details on Principle 2; see saithe assessment: <https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/isf-saithe>

3.5 Principle Three: Management System Background

In the gap analysis it was identified that the PI's 3.2.1, 3.2.2, and 3.2.5 may need to be scored. However, during the scoring meeting, the team evaluated these PI's and came to the conclusion that re-scoring was not required due to complete overlap with the saithe fishery.

Ling was included in the quota system in Iceland in 2001. This means that it has been regulated by the same fisheries management system as saithe from this time, the surveillance and the policing of ling fishing is the same as that for saithe, regulations on reporting of catches and bycatches, landings and weighing are the same and also penalties for breaching these regulations.

Since 2014, the MRI has adopted a harvest control rule for the advice on the TAC for ling. The Ministry of Industries and Innovation has decided to adopt this rule. However, this decision has not been announced in a formal manner. The harvest control rules for cod, haddock and saithe have been announced on the governmental website www.fisheries.is.

The Icelandic quota system allows that a quota for a species can be exchanged for quotas in another species in proportions determined by coefficients based on historical landing prices. This allowance is intended to create flexibility and reduce discarding. This allowance has been subject to various restrictions. In spite of these restrictions this allowance was the reason for a large part of the fishing of ling in excess of TACs during 2007-2010 as was pointed out in the Marine Research Institute's reports published in 2011-2013. The allowance has not been abolished but transfers have been made more restrictive so that the amount of additional quotas that can be obtained in this way is much smaller than previously. The national TAC was also set below the recommended TAC to allow for catches by foreign vessels. This has resulted in catches in excess of recommended TACs being reduced to 3.7% in the 2012/2013 fishing year. In the last complete fishing year, 2013/2014, the catches were below the TAC.

Given these considerations it is the view of the assessment team that ling would achieve the same scores as ISF Iceland saithe on the performance indicators of Principle 3.

For other Principle 3 details, see assessment downloads for the ISF Iceland Saithe fishery: <https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/isf-saithe>

4. Evaluation Procedure

4.1 Harmonised Fishery Assessment

At the time of the assessment there is no other ling fishery in assessment within the Icelandic EEZ for certification against the Marine Stewardship Council's (MSC) Principles and Criteria for Sustainable Fishing. Harmonisation issues for Principles 2 and 3 have been addressed in the Public Certification Report (PCR) for the ISF Iceland Saithe fishery.

4.2 Previous assessments

N/A

4.3 Assessment Methodologies

This is an expedited assessment as a means of extending the scope of the ISF Iceland Saithe certification. The methodology applied with regard to process requirements follows MSC Fisheries Certification Requirements v2.0 (effective as of 1 April 2015) for expedited assessments. However, for standards requirements and scoring procedures, MSC Certification Requirements v1.3 were followed, since the ling fishery is assessed as an extension of scope of the saithe fishery which was evaluated against v1.3. The setup of the report follows the *"MSC Full Assessment Reporting Template v2.0"* with modification as indicated in *FCR v2.0: PE3.1.2*. A gap analysis was conducted to determine overlapping assessment areas with the ISF Iceland Saithe fishery.

The assessment team proposed the use of the Default Assessment Tree for Principle 1 as the main assessment framework. No comments or objections were received in response to the proposed methodology. The Default Assessment Tree was therefore used.

4.4 Evaluation Processes and Techniques

4.4.1 Site Visits

Site visits and stakeholder meetings were conducted as announced in Reykjavík, Iceland, during the period 5th to 8th of May 2015, see **Table 4** below.

4.4.2 Consultations

Stakeholders were invited to submit comments and to consult the assessment team from the onset of the assessment process. Public notification of the assessment, its scope, methodology and assessment team, was issued with an invitation to comment and consult the team, and the same was sent out by e-mail to a list of stakeholders. Meetings were arranged with representatives of the client and key stakeholders, as summarized in **Table 4**.

A Preliminary Draft Report, including two conditions and their milestones, was completed in June 2015 and presented to the client. The client and the CAB consulted external entities, i.e. the MRI) and the MII, on the conditions and milestones. Subsequently, the client submitted a Client Action Plan to the CAB.

Following a peer review of the assessment report, Public Comment Draft Report was issued, on which comments were raised by the MSC.

Final Report and Determination were submitted on 5 October 2015, No objections were received to those during the subsequent 15 working days consultation period.

Table 4: Itinerary of site visits and stakeholder consultation in the Icelandic ling fishery assessment

Meetings with Client and other Stakeholders	Subjects of Consultation
05.05.2015: Meeting with the Client (ISF). Erla Kristinsdóttir (ISF), Members of Assessment team.	Meeting with project management of the Client; general discussion on the fishery practice and its management; relations of the fishery to research, management and control bodies; issues outstanding with regard to availability of data, research and policy. Traceability issues.
06.05.2015: Marine Research Institute. Björn Steinarsson and Bjarki Elvarsson, scientists at MRI; Members of Assessment Team	Scientific research and data on the fishery, with special regard to stock assessment.
06.05.2015: Ministry of Industries and Innovation and Directorate of Fisheries. Jóhann Guðmundsson (MII); Erna Jónsdóttir (MII); Ásta Einarsdóttir (MII); Áslaug Holmgeirsdóttir (DF); Þorsteinn Hilmarsson (DF); Members of Assessment Team	Fisheries policy. Management practices and objectives. Enforcement of fishery policies and management decisions. Monitoring, surveillance and landing statistics. Traceability issues.
08.06.2015: Meeting with the Client (ISF). Louise le Roux (Tun), Gunnar Gunnarsson (Tun), Kristinn Hjálmarsson (ISF), Gisli Gislason (MSC)	Meeting with project manager for the client to present the major conclusions of the assessment, the scoring results, conditions and milestones for achieving conditions.
26.06.2015: Client (ISF) and Marine Research Institute. Louise le Roux (Tun), Gunnar Gunnarsson (Tun), Kristinn Hjálmarsson (ISF), Þorsteinn Sigurðsson (MRI)	Consultation on conditions

4.4.3 Evaluation Techniques

All the required public announcements were published on the website of the MSC and mailed electronically to the client and a list of stakeholders.

A working knowledge of the ling fishery was obtained by literature review and by interviews with key actors and stakeholders in the fishery. Only Principle 1 was considered during the assessment (**Table 5**). During the scoring meeting, the team also evaluated three Principle 3 PI's, but concluded that re-scoring was not required due to complete overlap with the saithe fishery (see section 3.5).

Table 5: Scoring elements in the ISF Iceland Ling fishery

Component	Scoring elements	Main/Not main	Data-deficient or not
Principle 1	Ling (<i>Molva molva</i>) in Icelandic EEZ	N/A	Not data-deficient
Principle 2	Not scored	Not scored	Not scored
Principle 3	Not scored	Not scored	Not scored

Representatives of the client, Iceland Sustainable Fisheries ehf., were interviewed. The assessment team conducted separate meetings with representatives of the Marine Research Institute, the Ministry of Industries and Innovation (MII), and the Directorate of Fisheries (DF) to discuss matters related to marine biological research data, fisheries advice, fisheries management and government policy, as well as the enforcement and monitoring of official regulations.

A scoring meeting was held shortly after the completion of site visit and stakeholder meetings, where team members reviewed and scored the fishery. Relevant team members presented preliminary scoring to other team members for each PISG to be scored. Each PISG was subsequently discussed by all team members and a consensus reached either during the meeting or by e-mail.

For the fishery to meet the minimum requirements for MSC certification it must (a) achieve a weighted aggregate score of at least 80 for each of the three MSC Principles and (b) achieve a score of at least 60 for each Performance Indicator. The summary of the scoring for the ISF Iceland ling fishery is presented in Section 6.

A Preliminary Draft Report, including conditions and their milestones, was completed in June 2015 and presented to the client. The client and the Conformity Assessment Body (CAB) consulted external entities, i.e. the Marine Research Institute (MRI) and the Ministry of Industries and Innovation (MII), on the conditions and milestones. Subsequently, the client submitted a Client Action Plan to the CAB.

The client prepared and submitted a Client Action Plan, in addition to details and outcomes of consultation with MRI and MRI (see Appendix 1.3 and Appendix 3.1). The team accepted the CAP and a Peer Review Report was submitted to a Peer Reviewer. The team replied to peer review comments, and added some text to rationales for clarification. In addition the team determined the surveillance level and frequency for the fishery in Appendix 4.

Public Comment Draft Report (PCDR) was issued on 27 August 2015, a date that also constitutes the Eligibility Date for the assessed fishery. The team received comments (technical oversight) on the PCDR from the MSC in relation to traceability matters. These were addressed and necessary amendments made to the report (see Appendix 3.1.4).

5. Traceability

5.1 Eligibility Date

The **eligibility date** (ED) for this fishery will be the date of publication of the Public Comment Draft Report (see *FCRv2.0 7.6.1.2*), i.e. **27 August 2015**. The eligibility date and its implications for chain of custody were discussed with the client prior to the launching of the assessment and were further underlined in subsequent memos referring to the MSC chain of custody standard. As outlined below there is already in force a robust system of traceability and segregation that gives confidence in the ED set. The catch is recorded at sea and again by official weighmasters at landing points by vessel, gear and species.

5.2 Traceability within the Fishery

All commercial operations are subject to a permit from the Directorate of Fisheries (DF), and all vessels are required to carry a VMS system, which is monitored 24hrs a day by the Coast guard. The DF collects, retains and publishes data on fishing and catches landed by the Icelandic fleet and by other vessels and monitors compliance with rules on weighing and recording of catches. Records of landings can be traced back to each individual fishing vessel and gear.

All vessels are required to fill out log books to record details of fishing practices such as location, dates, gear and catch quantity. Vessels that process catch at sea fill out log books electronically and send them directly to the DF.

All landed catch is separated by species and weighed on certified scales by licensed operators who are employed by the local port authorities or sometimes by a facility that is approved for this purpose. Inspectors from the DF regularly monitor the landing of catches to ensure that catch is weighed and recorded according to precise applicable rules. Therefore substitution with other species is most unlikely.

The unit of certification allows for catch from the entire Icelandic EEZ to be entered into chain of custody. All registered fishing vessels operating bottom trawl, Danish seine, gillnet, longline, handline, or *Nephrops* trawl within the Icelandic EEZ are eligible. All of these vessels must land catches with official weighmasters. Fish caught directly or purchased by members of the client group from vessels, auctions or processors, is traceable to catch dates, catch areas and vessels.

For each vessel fishing in Icelandic waters, there is extensive monitoring of the catch at the species level and information on catch by species, fishing vessel, and gear is recorded and available in real time. In addition, buyers have to provide information to the DF as well. Catches and sales can thus be monitored at a species level per vessel. This extensive level of monitoring within the Icelandic EEZ and of Icelandic vessels minimises any risk of substitution, either across species or from fish caught outside the units of assessment.

Table 6: Traceability Factors within the ISF Iceland ling fishery

Traceability Factor	Description of risk factor if present. Where applicable, a description of relevant mitigation measures or traceability systems (this can include the role of existing regulatory or fishery management controls)
Potential for non-certified gear/s to be used within the fishery	Other gear catching ling in the Icelandic EEZ are pelagic trawls, shrimp trawls and other gear. However, reported catches from these gears combined were less than 0.1% of the total ling catch for 2012 and 2013. Therefore the possibility of non-certified gear being used is negligible. There is also an effective monitoring and surveillance program conducted by the Icelandic Coast Guard and the Directorate of Fisheries. Captains are required to fill out logbooks, and all catches are recorded by fishing gear and species by official weighmasters upon landing.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	It is possible that vessels covered by the UoC may catch ling in small amounts when using non-certified gears while targeting other species. Such bycatch would however also be recorded upon landing, specified by vessel, date, gear, quantity and fishing region by officially approved weighmasters. Possible catching by vessels covered by the UoC of ling in areas outside the UoC is unlikely since the entire ling fishery is contained within the Icelandic EEZ.
Potential for vessels outside of the UoC or client group fishing the same stock	Ling is caught by a large number of vessels, of which the majority are Icelandic vessels and eligible fishers, who are subject to the monitoring and logging requirements outlined above. A proportion of ling (somewhere in the range of 8-12%) is caught by foreign vessels operating within the Icelandic EEZ through bilateral agreements with Norway and Faroe Islands. The team considered these vessels part of the UoA. Still, if landed in Iceland those are also subjected to weighing and recording in the same manner as the Icelandic vessels, i.e. traced to vessel and gear.
Risks of mixing between certified and non-certified catch during storage,	Fishers are required to separate and land catch by species and all catch in Iceland by the Icelandic fishing fleet must be weighed and reported in Iceland to Port Authorities who are responsible for weighing catch on

transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction)	<p>certified scales either by licensed operators or processing plants approved for this purpose. Foreign vessels landing Icelandic catch in Iceland are subject to the same regulations.</p> <p>In the event that eligible vessels are landing ling in foreign ports, there is a possibility that certified and non-certified ling could be simultaneously handled, e.g. in cold storage facilities, prior to entry into chain of custody. Although not common, this is a possibility, especially of fish gutted on ice, delivered in boxes or tubs. Provided these carry identification traceable to the delivery and vessel, traceability back to unit of certification is ensured, since all vessels are obliged to report to Fisheries Directorate landings in foreign ports by type of species, fishing gear, area and quantities. Furthermore, the FD issues catch certificates required for entry into Third Country.</p> <p>Substantial amount of fish is landed and traded via auction. The possibility may rise that ling from vessels within the UoC and ling from foreign vessels outside the UoC may be simultaneously handled at auctions. The majority of foreign vessels fishing ling under bilateral agreement in Iceland do not land their catch in Iceland, but are required to report all details of catches by species, quantity, area, gear type and vessel to the Icelandic Directorate of Fisheries. However, if such vessels were to land fish anywhere in Iceland, information are recorded by official weighmasters upon landing, in the same manner as for all Icelandic vessels and can thus be traced back to species, quantity, area, gear and vessel. Icelandic regulation require fish from foreign vessels to be kept and processed separate from all other fish throughout the chain of custody.</p> <p>At first point of sale, i.e. entry into chain of custody, the tracing of the fish back to UoC will require verification by the buyer and its CoC CAB.</p>
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)	Fishing by vessels with on-board processing facilities is monitored by weighing landed products in a similar way and converting to catch weight by means yield indices, estimated several times a day by sampling catch and processed products on board. Basic handling of the catch, such as gutting and possibly heading, is commonly conducted by most types of vessels at sea, while further processing and freezing (whole, headed/gutted, fillets) is typically done by the large vessels (trawlers).
Risks of mixing between certified and non-certified catch during transshipment	The DF monitors, via the VMS, that trans-shipment of fish is not conducted. Some Icelandic fishery practices export fish directly from vessels, without involvement of domestic processing operations, and typically after being transferred to containers. However, recent law stipulates that any unprocessed fish must be landed and weighed in Icelandic ports prior to export ⁵ . Un- or semi-processed catch may thus be exported, after landing and weighing, for storing in cold storages and/or processing in facilities in a Third Country, some of which may be subsidiaries of ISF's shareholders. Given the tight monitoring system operated by DF, partly via the VMS, the fishing by vessels outside the unit of certification and, thereby, the opportunities to substitute certified fish with non-certified fish, are unlikely.
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent Chain of Custody is required	None identified.

⁵ <http://www.reglugerd.is/reglugerdir/allar/nr/224-2006>

5.3 Eligibility to Enter Further Chains of Custody

Potential certification will include all registered Icelandic vessels, as well as officially licensed fish auctions, provided these auctions do not take ownership of the catch and/or are not involved in the processing of the catch either as owners of the fish or sub-contractors. A list of vessels with valid licenses for fishing within the Icelandic EEZ is available from the Fisheries Directorate upon request (<http://www.fiskistofa.is>). A list of vessels and their quotas can be found here: <http://www.fiskistofa.is/veidar/aflaheimildir/uthlutadaflamark/> (see „Úthlutun til skipa 2015/2016“).

Fish from eligible fishing vessels, whole and/or semi-processed, landed at any officially approved landing site (harbour) and/or sold via (first sale) fish auction and/or kept in cold store facilities in Iceland or in a Third Country, may therefore enter into further certified chain of custody and be eligible to carry the MSC eco-label, provided these are sold through a registered sharing partner of the fishery certificate, i.e. shareholder of the Iceland Sustainable Fisheries Ltd.

Chain of custody will commence as of the first point of sale, change of ownership and/or processing after landing. Auctions that may or may not take possession of the fish and merely serve as facilitators of trade do not need chain of custody certification. Auctions that are not members of the client group and that either take ownership of the fish and/or engage in processing the fish after landing, e.g. by gutting or otherwise, must have chain of custody certification.

Operators who do not share the certificate but who take ownership of the fish before it is sold to certificate sharers are required to hold MSC Chain of Custody certification. Subcontractors, who do not take ownership of the catch but are involved in the handling of the fish after landing, are required either to be holders of MSC Chain of Custody certification or to be listed as subcontractors on the scope of another MSC Chain of Custody certificate holder.

The Icelandic Consumer Agency (Neytendastofa) issues authorisations to conduct official weighing of fish landed in Icelandic ports. The current list of officially authorised weighmasters is available on <https://rafraen.neytendastofa.is/pages/loggiltirvigfarmenn/>.

A map of the official points of landing for fish can be found here:

http://gafl.fiskistofa.is/index.php?option=com_content&view=article&id=53:dreifikort&catid=38:kynningarefni&Itemid=62

The Iceland Sustainable Fisheries Ltd. has issued a statement outlining the general terms of a potential extension of the client group for wider sharing of a potential certificate. A list of current members of the client group can be obtained directly on the ISF website⁶ or from the Conformity Assessment Body upon request.

5.4 Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to Enter Further Chains of Custody

N/A

⁶ <http://www.isf.is/isf-aethildarfyrirtaeligki.html>

6. Evaluation Results

6.1 Principle Level Scores

Table 7: Final Principle scores.

Final Principle Scores	
Principle	Score
Principle 1 – Target Species	82.5
Principle 2 – Ecosystem	Not scored
Principle 3 – Management System	Not scored

6.2 Summary of PI Level Scores

Table 8a: Complete copy of the “MSC fishery assessment scoring worksheets” for ISF Iceland ling

Prin- ciple	Wt (L1)	Component	Wt (L2)	PI No.	Performance Indicator (PI)	Wt (L3)	Weight in Principle			Score	Contribution to Principle Score	
						<u>Either</u>		<u>Or</u>			<u>Either</u>	<u>Or</u>
One	1	Outcome	0.5	1.1.1	Stock status	0.5	0.25	0.333	0.1667	90	22.50	15.00
				1.1.2	Reference points	0.5	0.25	0.333	0.1667	75	18.75	12.50
				1.1.3	Stock rebuilding			0.333	0.1667	N/A		0.00
		Management	0.5	1.2.1	Harvest strategy	0.25	0.125			80	10.00	10.00
				1.2.2	Harvest control rules & tools	0.25	0.125			75	9.38	9.38
				1.2.3	Information & monitoring	0.25	0.125			90	11.25	11.25
				1.2.4	Assessment of stock status	0.25	0.125			85	10.63	10.63

Prin- ciple	Wt (L1)	Component	Wt (L2)	PI No.	Performance Indicator (PI)	Wt (L3)	Weight in Principle			Score	Contribution to Principle Score
Two	1	Retained species	0.2	2.1.1	Outcome	0.333	0.0667	Not scored This is an extension of scope of the ISF Iceland Saithe fishery		0.00	
				2.1.2	Management	0.333	0.0667			0.00	
				2.1.3	Information	0.333	0.0667			0.00	
		Bycatch species	0.2	2.2.1	Outcome	0.333	0.0667			0.00	
				2.2.2	Management	0.333	0.0667			0.00	
				2.2.3	Information	0.333	0.0667			0.00	
		ETP species	0.2	2.3.1	Outcome	0.333	0.0667			0.00	
				2.3.2	Management	0.333	0.0667			0.00	
				2.3.3	Information	0.333	0.0667			0.00	
		Habitats	0.2	2.4.1	Outcome	0.333	0.0667			0.00	
				2.4.2	Management	0.333	0.0667			0.00	
				2.4.3	Information	0.333	0.0667			0.00	
		Ecosystem	0.2	2.5.1	Outcome	0.333	0.0667			0.00	
				2.5.2	Management	0.333	0.0667			0.00	
				2.5.3	Information	0.333	0.0667			0.00	
Three	1	Governance and policy	0.5	3.1.1	Legal & customary framework	0.25	0.125	Not scored This is an extension of scope of the ISF Iceland Saithe fishery		0.00	
				3.1.2	Consultation, roles & responsibilities	0.25	0.125			0.00	
				3.1.3	Long term objectives	0.25	0.125			0.00	
				3.1.4	Incentives for sustainable fishing	0.25	0.125			0.00	
		Fishery specific management system	0.5	3.2.1	Fishery specific objectives	0.2	0.1			0.00	
				3.2.2	Decision making processes	0.2	0.1			0.00	
				3.2.3	Compliance & enforcement	0.2	0.1			0.00	
				3.2.4	Research plan	0.2	0.1			0.00	
				3.2.5	Management performance evaluation	0.2	0.1			0.00	

Table 8b: Overall weighted Principle-level scores

Principle		Either	Or
Principle 1 - Target species	Stock rebuilding PI not scored	82.5	
	Stock rebuilding PI scored		68.8
Principle 2 - Ecosystem		0.0	
Principle 3 - Management		0.0	

6.3 Summary of Conditions

Table 9: Summary of conditions for the ISF Iceland Ling fishery

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
1	A limit reference point needs to be defined such that it is above the point where there is significant risk of impairing reproductive capacity. This might be achieved by providing scientific evidence that the B_{loss} , or an alternative higher biomass, being used as the limit reference point, is sufficiently precautionary consistent with MSC requirements.	PI 1.1.2	N/A
2	A well-defined harvest control rule should be put in place that is consistent with the harvest strategy and defines how the exploitation rate will be reduced as the stock approaches the limit reference point. Evidence should be provided that the HCR is precautionary. <i>It should be noted that this condition is strongly linked to condition 1.</i>	PI 1.2.2	N/A

6.4 Recommendations

N/A

6.5 Final Determination, Formal Conclusion and Agreement

The client and the CAB consulted external entities, i.e. the Marine Research Institute (MRI) and the Ministry of Industries and Innovation (MII), on the above conditions and the milestones for meeting those conditions. Subsequent to those consultations, the client submitted a Client Action Plan outlining how the conditions will be met within the set timeframe.

On the basis of the results of the evaluation, consultation with external entities and submitted Client Action Plan, the assessment team passed a determination to recommend that the scope of the certification of the ISF Iceland Saithe fishery shall be extended to include the ISF Iceland Ling fishery against the MSC Fisheries Standard.

Vottunarstofan Tún's Certification Committee for sustainable fisheries has met to consider the Public Certification. The Committee concurs with the above Determination.

The ISF Iceland Saithe fishery certification will be extended to include the ISF Iceland Ling fishery as outlined in the PCR.

6.6 Changes in the fishery prior to and since Pre-Assessment

N/A

7. References

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Appendices

Appendix 1 Scoring and Rationales

Appendix 1.1 Performance Indicator Scores and Rationale

Principle 1 Scoring tables

Evaluation Table for PI 1.1.1

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	It is likely that the stock is above the point where recruitment would be impaired.	It is highly likely that the stock is above the point where recruitment would be impaired.	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
	Met?	Y	Y	Y
	Justification	The commercial catch data, surveys and stock assessment indicate that ling in Division Va is well above the spawning stock biomass limit reference point, here used to identify when recruitment is at risk of impairment. The spawning stock biomass has been estimated to be at its highest level on record, since 1982. This is largely the result of high recruitment from 2004 to 2010, although this has sharply decreased to very low levels in more recent years, suggesting it will not be sustained. The recent decline in recruitment (2010–2011) will likely result in a decline in fishable biomass and catches in the coming years. Because the stock is currently 6-7 times higher than the limit reference point, higher than the lower 95% percentile even after accounting for retrospective bias, there is high degree of certainty that the stock is above B_{lim} , meeting SG100.		
b	Guide-post		The stock is at or fluctuating around its target reference point.	There is a high degree of certainty that the stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years.
	Met?		Y	N
	Justification	<p>Fishing mortality has decreased since 2008 and is now the lowest in the time-series, but has been reduced to the target F_{MSY} in recent years. A target reference point for biomass has not been established, but the B_{MSY} trigger defines the lower boundary for the MSY region. The F_{MSY} is close to the target level, much reduced from previous years.</p> <p>Given that the biomass is 5-6 times the MSY trigger point, it is well within the MSY region as currently defined. The MSY reference point estimated in the last stock assessment was around 30000t, and the current biomass is estimated to be well above this point. Therefore the stock is highly likely to be above its long term MSY level, meeting SG80. However, the unprecedented high and low recent recruitments make projections uncertain, and there is a lack of a more precise established estimate of the long term biomass that might be achieved based on F_{MSY}. More importantly, F_{MSY} has only been recently achieved in 2013 so the actual biomass that might be attained under this fishing regime remains highly uncertain. Therefore it cannot be concluded with a high degree of certainty that the stock is at or above its long term MSY state and SG100 is not met.</p>		

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing
References	ICES. 2014a. 9.3.15.2 Ling (<i>Molva molva</i>) in Division Va. Advice June 2014 ICES. 2014b. Report of the Benchmark Workshop on Deep-sea Stocks (WKDEEP), 3–7 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM: 44.

Stock Status relative to Reference Points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Target reference point	B _{MSY} (trigger) B _{MSY} F _{MSY}	9,500t SSB 29,959t SSB 0.24 year ⁻¹	$B_{2014}/B_{\text{trigger}} = 55171/9500 = 5.8$ $B_{2014}/B_{\text{MSY}} = 55171/29959 = 1.84$ $F_{2013}/F_{\text{MSY}} = 0.26/0.24 = 1.08$
Limit reference point	B _{lim} (lowest estimated SSB since 1982)	8,100t SSB	$B_{2014}/B_{\text{lim}} = 55171/8100 = 6.8$
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 1.1.2

PI 1.1.2		Limit and target reference points are appropriate for the stock		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated.	
	Met?	Y	Y	
	Justification	The fishery is managed under the “MSY approach” policy, which is used to provide scientific advice. Appropriate MSY based reference points have been developed estimated from the available information for this stock. F _{MSY} is based upon stock simulations incorporating both recruitment and yield per recruit dynamics. B _{lim} is set at point above which no effect on recruitment has been observed. This meets SG80.		
b	Guide-post		The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues.
	Met?		N	N
	Justification	The established limit reference point was estimated as 8,100t based on the lowest estimated biomass in the time series since 1982 (B _{loss}). Setting the limit RP at the B _{loss} point assumes that the recruitment during this period was not at risk. There is evidence that the current high SSB has not brought about an increase in recruitment, but that recent high recruitment is likely the result of changing environmental conditions affecting several species and that this high recruitment has led to the current high biomass levels. The long		

PI 1.1.2		Limit and target reference points are appropriate for the stock		
		<p>term recruitment that might be expected under the current management regime ($F_{MSY}=0.24$) is unclear.</p> <p>The stochastic simulations used to estimate long term equilibrium yields under different fishing mortalities suggested that the maximum yield, under the recruitment assumptions, was 5,306t (95% confidence interval 4,776 6,059t) and F_{MSY} was estimated to be 0.24 year⁻¹ (95%CI 0.22 0.28). The spawning stock at MSY (B_{MSY}) was estimated at 29,959t (95%CI 18,801 32,408). The biomass estimates from the simulation remain uncertain, and have not been adopted as the basis for target or limit reference points for biomass. Nevertheless, they suggest the current limit reference point may not be set at a precautionary level consistent with MSC requirements. The default precautionary limit reference point suggested by MSC guidance would be 0.5 B_{MSY} (CR1.3 CB2.3.3), which would be closer to 15,000t rather than 8,100t as currently set.</p> <p>It is not clear that the limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity. Fishing mortalities to 1982-2010 were on average 2.5 times the current F_{MSY} target, while the limit reference point is less than 50% of the lower 95% confidence limit of the B_{MSY} estimated from stochastic simulations, so SG80 is not met.</p>		
c	Guide-post		The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.	The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.
	Met?		Y	N
	Justification	<p>The established trigger reference point was set at the previous precautionary approach reference point ($B_{trigger}=9,500t$), which was estimated based on the upper 97.5% quantile of the bootstrap estimates of B_{LIM}. Although the biomass target may be considered to be above this point, a precise estimate of the target has not been established for biomass, the trigger being part of the HCR. The stochastic simulations suggested that the spawning stock at MSY (B_{MSY}) would be in the region of 30,000t (95% interval 18,801 – 32,408). However, if the F_{MSY} is applied, what will be achieved in practice remains highly uncertain.</p> <p>The fishery is being managed by setting the TAC consistent with the target fishing mortality (F_{MSY}). This target reference point is established, is being applied and is intended to maintain the stock at a level consistent with B_{MSY}. This meets SG80.</p> <p>There is no evidence that the F_{MSY} reference point currently is set at a particularly precautionary level or that it takes into account the ecological role of the stock. Multispecies effects on ling stock dynamics are not known. Therefore, SG100 is not met.</p>		
d	Guide-post		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		Not relevant	
	Justification	Ling is not a key low trophic species.		
References		<p>ICES. 2014a. Advice basis. <i>In</i> Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 1, Section 1.2.</p> <p>ICES. 2014b. Report of the Benchmark Workshop on Deep-sea Stocks (WKDEEP), 3–7</p>		

PI 1.1.2	Limit and target reference points are appropriate for the stock	
	February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM: 44. ICES. 2014c. Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP), 4–11 April 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM: 17. Elvarsson, B. Þ., Thordarson, G. 2014. Defining reference points for the Gadget assessment of Ling in Va. February 3, 2014. Working Document 02 for ICES 2014b.	
OVERALL PERFORMANCE INDICATOR SCORE:		75
CONDITION NUMBER (if relevant):		1

Evaluation Table for PI 1.1.3

Given the current status of the stock, PI 1.1.3 is not scored.

Evaluation Table for PI 1.2.1

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the target and limit reference points.
	Met?	Y	Y	N
	Justification	<p>Ling is almost always caught in mixed fisheries in Va with cod, haddock and other demersal stocks mainly with trawls, longlines and gillnets, but also other gears. The Icelandic management system has various measures to deal with these kinds of interacting fisheries, such as transfer of quota between boats, quota year and species.</p> <p>The primary control on exploitation of ling is the TAC. The Ministry of Fisheries is responsible for management of the Icelandic fisheries, and issues regulations for commercial fishing for each fishing year, including management of the ling TAC. Since the 2006/2007 fishing season, all vessels have operated under a TAC.</p> <p>An individual transferable quota (ITQ) system was established in 1984, and ling in Va was added to this system in the 2001/2002 quota year. The ITQ system allows free transfer of quota between boats, and can either be on a temporary (one year leasing) or a permanent (permanent selling) basis. Even in multispecies fisheries, companies can specialize in particular species to some extent and adjust their quota holdings accordingly. The system allows for limited flexibility with regards converting a quota share of one species into another within a boat, allowance of landings of fish under a certain size without it counting fully in weight to the quota, and allowance of the transfer of unfished quota between management years. The objective of these measures was to minimize any discarding incentive, discarding being effectively banned. The allowance that it is possible to</p>		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		<p>exchange the quotas for one species for another creates the potential for overshoot in the set ling TAC, albeit limited.</p> <p>With some minor exceptions it is required by law to land all catches, so no minimum landing size is in force. To reduce fishing of small fish, various measures such as mesh size regulation, sorting grids and closure of fishing areas are in place. There is a system of instant area closure, which aims to minimize fishing on juveniles. An area is closed temporarily (for 2 weeks) for fishing if on-board inspections (not 100% coverage) reveal that more than a certain percentage of the catch is composed of fish less than the defined minimum length. However, this has not as yet been applied to ling, being primarily a measure used for cod, so benefits on ling are uncertain.</p> <p>Overall, the elements of the harvest strategy include effective data collection, scientific advice and appropriate management response. Under the MSY approach, these appear to be working together and have recently achieved target exploitation levels in this stock. As the management system includes evaluation of performance (annual estimates of fishing mortality compared to the target levels) and should be responsive to this, SG80 is met.</p> <p>There is no evidence that the harvest strategy is designed to achieve objectives for this stock. The strategy for the multispecies fishery is based on the sum of single species management, and the strategy is the result of various responses to conflicts concerns within the fishery. Without further evidence of an over-arching design to the current monitoring and set of controls, the SG100 cannot be met.</p>		
b	Guide-post	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	Y	Y	N
	Justification	<p>The MSY approach has only recently been applied since 2012, so it has not yet been fully tested and evidence that it will achieve its objectives, such as clearly maintaining the stock at the target level, is limited. The target fishing mortality has effectively been attained, the TAC is now following scientific advice based on the agreed policy and catches have been close to the levels set by management, notwithstanding the potential for some overshoot due to quota-swap mechanisms. This meets SG80.</p> <p>The harvest strategy has not been fully evaluated, particularly given that it forms part of a multispecies, multigear fishery. The fishery has only just achieved its target exploitation level, so a number of years' information will be needed before evidence is available that it is able to maintain the stock at the target level. Therefore, SG100 is not achieved.</p>		
c	Guide-post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Y		
	Justification	Extensive information is collected from the commercial catches and scientific surveys on this stock. This information is reviewed and analyzed at the annual working group meetings and during the stock assessment bench-mark workshops. This should detect changes in stock status and is attempting to discriminate between causes of those changes. Given this level of monitoring, the working group should be able to determine whether the harvest strategy is able to achieve the fishery objectives.		
d	Guide-post			The harvest strategy is periodically reviewed and improved as

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
				necessary.
	Met?			N
	Justification	<p>There is evidence of the strategy being improved as more information has become available. Before 2007, ling in the NE Atlantic was assessed as a single management unit, but is now managed as smaller units, including ling in Division Va. Between 2007 and 2012, ling in Va was assessed based on trends in survey indices from the Icelandic spring and autumn survey. Now, with improved age information in particular, the stock is assessed using a model able to combine more sources of information into a single assessment. This has primarily brought ling into line with other quota species.</p> <p>There has been no review of the overall strategy with respect to ling. Therefore, SG100 is not met.</p>		
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?	Not relevant	Not relevant	Not relevant
	Justification	Shark is not the target species.		
References		<p>ICES. 2014a. Advice basis. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 1, Section 1.2.</p> <p>ICES. 2014b. Report of the Benchmark Workshop on Deep-sea Stocks (WKDEEP), 3–7 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM: 44.</p> <p>ICES. 2014c. Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP), 4–11 April 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM: 17.</p>		
OVERALL PERFORMANCE INDICATOR SCORE:				80
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.2.2

PI 1.2.2		There are well defined and effective harvest control rules in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	
	Met?	Y	N	
	Justification	The harvest control rule is based on calculating the TAC corresponding to F_{MSY} in the latest stock assessment model. At least this part of the harvest control rule is well-defined and is clearly consistent with the overall MSY-based harvest strategy. However, to what extent exploitation might be reduced as the limit reference point is approached is not clear. The		

PI 1.2.2		There are well defined and effective harvest control rules in place		
		<p>existence of the trigger biomass reference point indicates that an appropriate action is intended and would likely be further reductions in TAC below F_{MSY}, but what would be done is not defined.</p> <p>The clear target exploitation levels required and delivered by the harvest control rules, together with the intention to reduce exploitation below the trigger point, meet the SG60. However, the lack of a well-defined response should the stock fall below the trigger reference point prevents the SG80 being met.</p>		
b	Guide-post		The selection of the harvest control rules takes into account the main uncertainties.	The design of the harvest control rules takes into account a wide range of uncertainties.
	Met?		Y	N
	Justification	<p>The uncertainties associated with the harvest control rule have been considered. The selection of F_{MSY} rather than B_{MSY} to set target fishing levels recognizes uncertainty in future recruitment which is impossible to predict. The target reference point was defined based on stochastic simulations, which took into account recruitment uncertainty among other things. This meets SG80.</p> <p>However, the harvest control rule assumes a relatively high precision in stock biomass estimates which is perhaps optimistic. The 1,400t difference between the trigger and the limit reference point is based on observation error only, so that it is possible that the stock status could pass from being above the trigger to below the limit from one benchmark assessment to the next without any opportunity for a management response in between. The HCR has been tested against recruitment variation, but otherwise, a wide range of uncertainties have not been tested through simulation or other means. Because the HCR only accounts for a limited range of uncertainty, the SG100 is not met.</p>		
c	Guide-post	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
	Met?	Y	Y	Y
	Justification	<p>The main tool used to implement the harvest control rule is the TAC, based on the stock assessment and target fishing mortality.</p> <p>For the TAC to be effective, accurate catch monitoring is required. All fish landed are weighed on authorized scales, at harbour and inside the fish processing factory and the information on each landing of each vessel and the purchaser(s) of the catch is stored in a centralized database maintained by the Directorate and is available in real time on the Internet (www.fiskistofa.is). Discards and other incidental mortality are considered to be very low, and the accuracy of the landings statistics is generally considered acceptable. The information from the stock assessment indicates that the limits placed on the catch have been able to achieve the target exploitation rate. This meets SG80.</p> <p>Until the 2011/12 season, catches exceeded both MRI's and ICES advice and the TACs. The likely reasons are insufficient allowance for foreign catches and quota transfers between species. Currently, the SSB is very high due to good past recruitment, so the TAC has also been set high. Catches have broadly remained the same since 2007/08, so the TAC has increased to be in line with the catch rather than catches being reduced to within the TAC. Within the context of multispecies fisheries, opportunities to reduce the catch of a single species relative to other species are more limited, which may limit effectiveness of TACs in controlling exploitation. However, the available evidence indicates that the TAC system has</p>		

PI 1.2.2		There are well defined and effective harvest control rules in place
		so far been effective for all species where it has been applied. Given the same system is being applied to ling, evidence clearly shows it should be effective in controlling exploitation for ling as well, meeting SG100.
References		<p>ICES. 2014a. Advice basis. <i>In</i> Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 1, Section 1.2.</p> <p>ICES. 2014b. Report of the Benchmark Workshop on Deep-sea Stocks (WKDEEP), 3–7 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM: 44.</p> <p>ICES. 2014c. Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP), 4–11 April 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM: 17.</p>
OVERALL PERFORMANCE INDICATOR SCORE:		75
CONDITION NUMBER (if relevant):		2

Evaluation Table for PI 1.2.3

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide-post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Y	Y	N
	Justification	<p>Based on the available evidence, the 2014 benchmark stock assessment meeting decided to assess ling in Va as a separate unit stock. This had been reviewed previously at working group meetings and the limited evidence available led to more precisely defined stock units within the NE Atlantic, of which ling in Va is one. Research is being conducted using molecular genetics which could lead to further revisions, but the unit has been adequately defined for its management.</p> <p>Changes in stock productivity are not very well understood, but they are well monitored. The 2007-2010 increase in recruitment is possibly due to changes in bottom water temperature, which has been increasing on the western and northwestern part of the shelf since 2000. Recruitment has increased the range for species such as ling, tusk, anglerfish and lemon sole. There is no strong hypothesis for the low recruitment since 2010.</p> <p>The information on the fishing fleet is complete through the licensing and registration information and catches are well recorded. There is also good spatial, environmental and life history information sufficient to support the harvest strategy, and to meet SG80.</p> <p>Although there is environmental information available which is not directly related to the harvest strategy, information on stock structure and productivity is not comprehensive, so SG100 is not met.</p>		
b	Guide-	Stock abundance and fishery removals are	Stock abundance and fishery removals are	All information required by the harvest control rule is monitored

PI 1.2.3		Relevant information is collected to support the harvest strategy		
	post	monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Y	Y	Y
	Justification	<p>Approximately 67% of the annual landings in Division Va are caught in a mixed fishery by longliners and the remainder as a bycatch, mainly by trawlers that primarily target cod. Discards are estimated to be less than 1% for the longline fishery and are considered negligible. Catches have increased substantially in the last decade as population biomass has increased. Total catch in 2013 was 11,657t with 67% longline, 30% trawl, and 3% gillnet and Danish seine.</p> <p>There are two surveys: the Icelandic spring survey (started in 1985 to 500m depth) and the Icelandic autumn survey (started in 1996, but extended down to 1200m in 2000). There is a strong correlation between the surveys, but the catchability in the autumn survey is low, making it a less reliable index. Therefore, only the spring survey is used as an abundance index in the stock assessment.</p> <p>Weight, length and age data are sampled from the survey and the three main commercial fleet catches (longline, trawl and gillnet). All boats operating in Icelandic waters have to maintain a logbook record of catches in each haul/set.</p> <p>All data required for the stock assessment, and therefore estimation of the quantities used in the harvest control rule, are available. This meets the SG80.</p> <p>Furthermore, the data are monitored sufficiently frequently for a quarterly time step (rather than annual) and data are considered accurately measured. There is a good understanding of inherent uncertainties in the data, so that the uncertainties are explicitly included as part of the assessment and in the management of the uncertainty. The inherent uncertainties in all the data are fairly extensively described in working group report and the stock annex 4.3 (ICES 2014c). This includes discussions of potential impact of these uncertainty on any stock assessment and management actions, and whether current approaches are robust to these uncertainties. Among other ways, the assessment is tested using a specialised “bootstrap” which applies a re-sampling design consistent with known data errors. The short and longterm stochastic projections are used to assess management robustness. This meets SG100.</p>		
c	Guide-post		There is good information on all other fishery removals from the stock.	
	Met?		Y	
	Justification	<p>Catches are assumed to be equal to landings and the figures to be reliable. All catches are taken in Iceland, recorded by the DF and are restricted to particular licensed landing sites and subject to landing regulations in Iceland. Information is collected on a daily basis by the Directorate of Fisheries in Iceland. Estimates of discards of ling indicate low levels of discarding (<1% by weight or numbers). The management regime has put in place strong disincentives for discarding which are thought to be effective. This meets SG80.</p>		
References		<p>ICES. 2014a. Advice basis. <i>In</i> Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 1, Section 1.2.</p> <p>ICES. 2014b. Report of the Benchmark Workshop on Deep-sea Stocks (WKDEEP), 3–7</p>		

PI 1.2.3	Relevant information is collected to support the harvest strategy	
	February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM: 44. ICES. 2014c. Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP), 4–11 April 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM: 17. Reglugerð um vigtun og skráningu sjávarafla 224/2006 (http://www.reglugerd.is/reglugerdir/allar/nr/224-2006)	
OVERALL PERFORMANCE INDICATOR SCORE:		90
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 1.2.4

PI 1.2.4	There is an adequate assessment of the stock status		
Scoring Issue	SG 60	SG 80	SG 100
a	Guide-post	The assessment is appropriate for the stock and for the harvest control rule.	The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.
	Met?	Y	N
	Justification	<p>The assessment used as the basis for scientific advice and to set the TAC is an analytical age and length structured model ("Gadget" model), that uses the March Icelandic groundfish survey and the data from commercial catches. This stock assessment was "benchmarked" in 2014, when a new analytical assessment was adopted (ICES, 2014b). In contrast, before 2013, the advice was based on the ICES approach to data-limited stocks.</p> <p>The assessment is appropriate for the stock and harvest control rule. The Gadget software ("Globally applicable Area Disaggregated General Ecosystem Toolbox") can be used to model fish populations and marine ecosystems. It consists of an extensive set of data comparison and optimization routines. The software can be used to model multi-area, multispecies (including predation) and multi-fleet fisheries, but is used for ling as a single species model. In the ling model, the longline, trawl, gillnet and the survey are modelled as separate fleets, with separate selectivities, but in single area, single species fishery. This meets the SG80.</p> <p>Beyond adapting standard life history parameters, the model does not take account of any special features of the biology of the species or the fishery. This could take the form of more detailed fleet or population structures adapted to this specific population. For the current more generic model, SG100 is not met.</p>	
b	Guide-post	The assessment estimates stock status relative to reference points.	
	Met?	Y	
	Justification	This stock applies the ICES MSY approach, which is founded on estimates of appropriate MSY reference points. Fishing mortality and SSB are estimated for the most recent years by the stock assessment, and these are evaluated relative to the MSY reference points.	

PI 1.2.4		There is an adequate assessment of the stock status		
c	Guide-post	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Y	Y	N
	Justification	<p>The main sources of uncertainty have been identified. The stock assessment model simulates sampling and other errors through a “bootstrap” procedure. Analytic retrospective analysis has also been carried out, which indicated that there is a downward revision of biomass (SSB and harvestable) in 2009 to 2013 and subsequently an upward revision of fishing mortality, while final year estimates of recruitment are highly uncertain. Uncertainties are reported in the stock assessment. This meets SG80.</p> <p>While uncertainty is taken into account, it is not reported in management advice, as in, for example, decision tables or risk projections. Therefore, the assessment is not evaluating stock status relative to reference points in a probabilistic way, so SG100 is not achieved.</p>		
d	Guide-post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			N
	Justification	<p>The assessment was tested and shown to be robust during the benchmark meeting. Testing included analyses of basic uncertainties and alternative configurations, and the assessment is robust to these. However, the range of alternative hypotheses that have been tested appear limited. In addition, the external reviewer reported that it was not possible to conduct and review a thorough sensitivity analysis of the model to different assumptions or input data during the benchmark meeting due to a lack of time. No other software, such as Stock Synthesis, was used. Therefore, SG100 was not met.</p>		
e	Guide-post		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?		Y	Y
	Justification	<p>The stock assessment undergoes standard review as required by ICES. This consists primarily of internal peer review through the working group process (WKDEEP and WGDEEP), meeting SG80. In addition, there is a brief report from an external peer reviewer at the benchmark meeting, which is appropriate for the size and scale of the fishery, so SG100 is also met.</p>		
References		<p>ICES. 2014a. Advice basis. <i>In</i> Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 1, Section 1.2.</p> <p>ICES. 2014b. Report of the Benchmark Workshop on Deep-sea Stocks (WKDEEP), 3–7 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM: 44.</p> <p>ICES. 2014c. Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP), 4–11 April 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM: 17.</p>		
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				

Appendix 1.3 Conditions and Client Action Plan

Two conditions were set for the ISF Iceland ling fishery with regards to the limit reference point and the harvest control rule. The client has consulted the Marine Research Institute (MRI) on conditions 1 and 2, as well as the Ministry of Industries and Innovation (MII) on condition 2. The assessment team considered all relevant documentation from the Client, the MRI and the MII, and has accepted the Client Action Plan. Written client and stakeholder submissions are available for review in Appendix 3.1.

The MRI has in general confirmed its commitment to work with ISF on conditions. Although the current limit reference point is in line with the ICES framework, the MRI confirmed that these limits will be revisited during the next benchmark assessment. Although no date has been set, this is likely to be 2019. In addition, the MII has confirmed its policy for developing longterm management plans and harvest control rules for fish stocks and that ling was definitely a candidate for such plan. In addition the client group has confirmed its commitment to ensure adequate resources for work on conditions.

Table A1.3.1: Condition 1

Performance Indicator	PI 1.1.2 Limit and target reference points are appropriate for the stock
Score	75
Rationale	<p>The established limit reference point was estimated as 8,100t based on the lowest estimated biomass in the time series since 1982 (B_{loss}). Setting the limit RP at the B_{loss} point assumes that the recruitment during this period was not at risk. There is evidence that the current high SSB has not brought about an increase in recruitment, but that recent high recruitment is likely the result of changing environmental conditions affecting several species and that this high recruitment has led to the current high biomass levels. The long term recruitment that might be expected under the current management regime ($F_{MSY}=0.24$) is unclear.</p> <p>The stochastic simulations used to estimate long term equilibrium yields under different fishing mortalities suggested that the maximum yield, under the recruitment assumptions, was 5,306t (95% confidence interval 4776-6059t) and F_{MSY} was estimated to be 0.24 year⁻¹ (95%CI 0.22-0.28). The spawning stock at MSY (B_{MSY}) was estimated at 29,959t (95%CI 18801-32408). The biomass estimates from the simulation remain uncertain, and have not been adopted as the basis for target or limit reference points for biomass. Nevertheless, they suggest the current limit reference point may not be set at a precautionary level consistent with MSC requirements. The default precautionary limit reference point suggested by MSC guidance would be 0.5 B_{MSY} (CR1.3 CB2.3.3), which would be closer to 15,000t rather than 8,100t as currently set.</p> <p>It is not clear that the limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity. Fishing mortalities to 1982-2010 were on average 2.5 times the current F_{MSY} target, while the limit reference point is less than 50% of the lower 95% confidence limit of the B_{MSY} estimated from stochastic simulations, so SG80 is not met.</p>
Condition	A limit reference point needs to be defined such that it is above the point where there is significant risk of impairing reproductive capacity. This might be achieved by providing scientific evidence within 4 years that the B_{loss} , or an alternative higher biomass, being used as the limit reference point is sufficiently precautionary consistent with MSC requirements.
Milestones	It is recognised that re-evaluation of the reference point may require another benchmark assessment. Therefore timing for setting a new reference point, or

	<p>justifying the current reference point, may need to fit into the ICES stock assessment cycle.</p> <p>Year 3: Evidence is available indicating reassessment of the current limit reference point. Score 75.</p> <p>Year 4: Justification is provided for the current or new point that it is precautionary, so that if the stock is at or above this point, there is a low risk of recruitment impairment. Score 80.</p>
Client action plan	<ol style="list-style-type: none"> 1. Year 1 and 2: Engage with the MRI in improving sustainable fisheries of Iceland. The client group shall engage with the MRI and outline an approach to meeting the conditions imposed by the MSC Certification Requirements. Specifically, evaluating the rationale for the current limit reference point for ling fisheries, and subsequently re-evaluate the reference point, as needed. And, if needed, consider internal options to evaluate scientific evidence that the current Bloss is sufficiently precautionary and consistent with the MSC requirements. Internal options can include client initiated co-operation between the fishing industry and the MRI (e.g. hire an outside consultant, cooperate with the University of Iceland, and/or implement new practices among ISF members). Further, the client group aims to establish a basis for developing improved strategies for the management of resources utilized by ISF vessels. ISF will record the process and maintain a log of all interactions where the action plan is being discussed and carried out in cooperation with all parties, e.g. MRI, MII, and Directorate of Fisheries, Universities, independent consultants and ISF members. 2. Year 3 (year 4 of saithe): ISF shall ensure that options developed in year 2 are evaluated in year three as possible changes to the limit reference point have been modified or proven as precautionary. Consult with all members of the client group and MRI if needed on proposed options. Among the options considered are to hire an outside consultant, cooperate with the University of Iceland, and implement new practices among ISF members. ISF will record the process and maintain a log of all interactions where the action plan is being discussed and carried out in cooperation with all parties, e.g. MRI, MII, and Directorate of Fisheries, Universities, independent consultants and ISF members. 3. Year 4 (year 5 of saithe): Follow up on implementation of a new reference point if needed, developed in year 3 and continue engagement with the MII and the MRI to follow up on strategies and plans developed as a result of outcomes in year 1 and options evaluated in year 3. Implementation may need to fit with ICES stock assessment cycle. ISF will record the process and maintain a log of all interactions where the action plan is being discussed and carried out in cooperation with all parties, e.g. MRI, MII, and Directorate of Fisheries, Universities, independent consultants and ISF members. <p><u>CAB assessment of progress:</u> The CAB will assess progress of the condition by reviewing evidence supplied by the client and interviews with all parties involved as needed.</p>
Consultation on condition	Consultation with the MRI

Table A1.3.2: Condition 2

Performance Indicator	PI 1.2.2 There are well defined and effective harvest control rules in place
Score	75
Rationale	The harvest control rule is based on calculating the TAC corresponding to F_{MSY} in the latest stock assessment model. At least this part of the harvest control rule is well-defined and is clearly consistent with the overall MSY-based harvest strategy.

	<p>However, to what extent exploitation might be reduced as the limit reference point is approached is not clear. The existence of the trigger biomass reference point indicates that an appropriate action is intended and would likely be further reductions in TAC below F_{MSY}, but what would be done is not defined.</p> <p>The clear target exploitation levels required and delivered by the harvest control rules, together with the intention to reduce exploitation below the trigger point, meet the SG60. However, the lack of a well-defined response should the stock fall below the trigger reference point prevents the SG80 being met.</p>
Condition	<p>A well-defined harvest control rule should be put in place that is consistent with the harvest strategy and defines how the exploitation rate will be reduced as the stock approaches the limit reference point. Evidence should be provided that the HCR is precautionary within 4 years.</p> <p>It should be noted that this condition is strongly linked to condition 1.</p>
Milestones	<p>It is recognised that changes to the harvest control rule may require another benchmark assessment. Therefore timing may need to fit into the ICES stock assessment cycle.</p> <p>Year 3: Evidence is available indicating reassessment of the harvest control rule. Score 75.</p> <p>Year 4: A new harvest control rule is adopted that reduces exploitation as the limit reference point (see condition 1) is approached. Score 80.</p>
Client action plan	<ol style="list-style-type: none"> Years 1 and 2: Engage with MRI and MII for establishing a harvest control rule (HCR) including how the exploitation rate will be reduced as the stock approaches the limit reference point. The client group shall engage with the MRI and outline an approach to meeting the conditions imposed by the MSC Certification Requirements. Specifically, evaluating a possible HCR, including evaluation of a limit reference point as set out in Condition 1 above. The client group aims to establish a basis for developing improved strategies for the sustainable management of resources utilized by ISF vessels. ISF will record the process and maintain a log of all interactions where the action plan is being discussed and carried out in cooperation with all parties, e.g. MRI, MII, and Directorate of Fisheries, Universities, independent consultants and ISF members. Year 3 (year 4 of saithe): Follow up on results of engagement in year 1 and 2 regarding a harvest control rule. The client group promotes the necessity for a harvest control rule, ensuring reduced exploitation rates as the stock approaches a limit reference point. The client will conduct an evaluation of a harvest control rule, either through MRI or internal options as set out above. The actions in year 3 are dependent on outcomes in previous years. If a clear and precautionary HCR is implemented by the MII in previous years, there is no need for further actions. If not, ISF will seek support within the client group to further look for alternatives to develop and adopt a precautionary HCR. ISF will record the process and maintain a log of all interactions where the action plan is being discussed and carried out in cooperation with all parties, e.g. MRI, MII, and Directorate of Fisheries, Universities, independent consultants and ISF members. Year 4 (year 5 of saithe): Implement measures developed and evaluated in year 3. This may need to fit into ICES assessment cycle. ISF will record the process and maintain a log of all interactions where the action plan is being discussed and carried out in cooperation with all parties, e.g. MRI, MII, and Directorate of Fisheries, Universities, independent consultants and ISF members. <p><u>CAB assessment of progress:</u> The CAB will assess progress of the condition by reviewing evidence supplied by the client and interviews with all parties involved as needed.</p>
Consultation on condition	<p>Consultation with MRI and MII</p>

Appendix 2: Peer Review Report

Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes	Conformity Assessment Body Response
<p>Justification:</p> <p>The scores of each PI and the overall scoring are appropriate. In the scoring of most SIs, The justifications were well articulated and sound. However, in the case of PI 1.1.1, there is a concern with the justification of SIb. It is argued that BTRIGGER is the lower boundary of BMSY. However, BTRIGGER is more correctly the upper boundary of BLOSS, assumed to be BLIM. BTRIGGER is not biomass consistent with fishing at FMSY. A change in the rationale is required. Notwithstanding this, the score of this PI is appropriate.</p>		See below for response to PI 1.1.1.

<i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i>	Yes	Conformity Assessment Body Response
<p><u>Justification:</u></p> <p>Both conditions 1 and 2 follow the general intent of the MSC guidelines on conditions, with the proviso that it would be useful to add a phrase to each condition stating the general timeframe for its completion e.g. 'within four years ...'. It is important not to be too prescriptive in writing conditions and these conditions are consistent with this guidance.</p>		A phrase has been added as suggested, but the timing was already defined in the milestones.

If included:

<i>Do you think the client action plan is sufficient to close the conditions raised?</i>	Yes	Conformity Assessment Body Response
<p><u>Justification:</u></p> <p>The client action plan associated with each condition appears to be well designed to ensure that within four years, PIs 1.1.2 and 1.2.2 will rescored at 80. It would be useful to add to each milestone, as per MSC guidelines, the resulting PI score. Other than this, the milestones and CAP are good.</p>		PI scores have been added.

General Comments on the Assessment Report (optional)

No comments recieved

Performance Indicator Review

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification	Conformity Assessment Body Response
1.1.1	YES	NO	NA	<p>Sla scores 100 (agreed). Given the uncertainty in B_{LIM}, it would be useful to score this SI as if B_{LIM} was not available and the MSC default (50% B_{MSY} = 15 kt) were used. Estimates of uncertainty in 2014 SSB (55 kt) can be inferred from GADGET runs conducted during the 2014 benchmark. Assuming a CV of 21% in 2014 SSB implies a lower 95% CI of 36.1 kt which is still above the MSC default B_{LIM} of 15 kt.</p> <p>Slb scores 80 (agreed but with a change in rationale). It is stated that $B_{TRIGGER}$ defines the lower boundary of the MSY region. While this is the policy intent of this reference point, in this case, $B_{TRIGGER}$ is based upon B_{PA} which in turn is based upon an uncertain B_{LIM}. It is more appropriate to score this SI in relation to the estimate of B_{MSY} (30 kt) available. 2014 SSB (55 kt) is well above this RP. An argument could be made to score Slb at 100 as the lower 95% CI of 2014 SSB (36.1 kt), again assuming a 21% CV, is just above median B_{MSY}. However, the uncertainty in SSB achieved at F_{MSY} mitigates</p>	In general, we agree with the reviewer on the technical points raised. However, while there is an estimate of MSY, it is not “established” as a management based reference point as required for CR1.3, which references a “target reference point”, not MSY. The argument used by the reviewer is more consistent with CR2.0. So we agree with the comments technically, but we are not convinced this is the correct CR1.3 methodology. However, we note that this interpretation does not change the score, and have therefore incorporated these points into the justification text.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification	Conformity Assessment Body Response
				<p>against this.</p> <p><i>The overall score (90) of PI 1.1.1 is appropriate.</i></p>	
1.1.2	YES	YES	YES	<p>Sla scores 80 (agreed). In the rationale, it would be useful to include some of the text of SIb here on the analyses undertaken to estimate the RPs. For instance, F_{MSY} is based upon stock simulations incorporating both recruitment and yield per recruit dynamics.</p> <p>SIb does not score 80 (agreed). Perhaps the salient point is that SSB has never been close to B_{MSY} due to high F. Until the mid 2000s, recruitment was low compared to the estimates for the late 2000s. The latter could be related to increasing SSB. On the other hand, the estimates since 2012 are likely due to environment. So there is, as stated uncertainty in recruitment expected at F_{MSY}. It could be argued that the stock has recovered from B_{LOSS} although some formal analysis to confirm B_{LIM} is required.</p> <p>SIc scores 80 (agreed). It is important to emphasize that $B_{TRIGGER}$ is based on B_{PA} which is turn is based on B_{LIM} and not associated with B_{MSY}. While the estimates of B_{MSY} associated with</p>	Text has been added to the justification as suggested, although it should be noted that more detailed explanations are within the main text of the report.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification	Conformity Assessment Body Response
				<p>F_{MSY} are uncertain, they are still useful in the scoring of PI 1.1.1.</p> <p>The overall score of PI 1.1.1 (75) is appropriate.</p>	
1.1.3					
1.2.1	YES	YES	NA	<p>Sla scores 80 and not 100 (agreed) although during 2007 – 2010, TACs were set above the advice and there were TAC overruns. The situation more recently appears to have changed, which should be highlighted in the justification. The lack of design in this response is good reason not to score 100.</p> <p>Slb scores 80 and not 100 (agreed) and is well justified. It is certainly too early to score this SI at 100 with more experience on the strategy required.</p> <p>Slc scores 60 (agreed) while Sld does not score 100 (agreed).</p> <p>The overall score of PI 1.2.1 (80) is appropriate.</p>	No comment.
1.2.2	YES	YES	YES	<p>Sla scores 60 but not 80 (agreed). There is a generally understood HCR (MSY approach) but</p>	No comment.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification	Conformity Assessment Body Response
				<p>the specifics on actions in relation to BTRIGGER and BLIM are missing.</p> <p>Sib scores 80 but not 100 (agreed). The difference (1.4 kt) between BLIM and BPA (BTRIGGER) implies a CV of about 8% which does seem low. Estimates of terminal year SSB uncertainty from the GADGET benchmark suggest CVs in the order of 21%. This would imply a BTRIGGER (assuming BLIM = 8.1 kt) of about 12.3 kt.</p> <p>Sic scores 100 (agreed).</p> <p>The overall score (75) of PI 1.2.2 is appropriate.</p>	
1.2.3	YES	YES	NA	<p>Sla scores 80 but not 100 (agreed). Certainly, the higher score would need more inquiry on the impact of environment on recent stock conditions.</p> <p>Sib scores 100 (maybe). There is good understanding of uncertainty in the information but it is less obvious that there is good understanding of the robustness of the assessment and management to this uncertainty. For instance, the sources of the retrospective pattern were explored in the 2014 benchmark but it is not obvious how these influenced</p>	Text has been added to Sib explaining more clearly why there is good understanding of the robustness of the assessment and management to uncertainty.

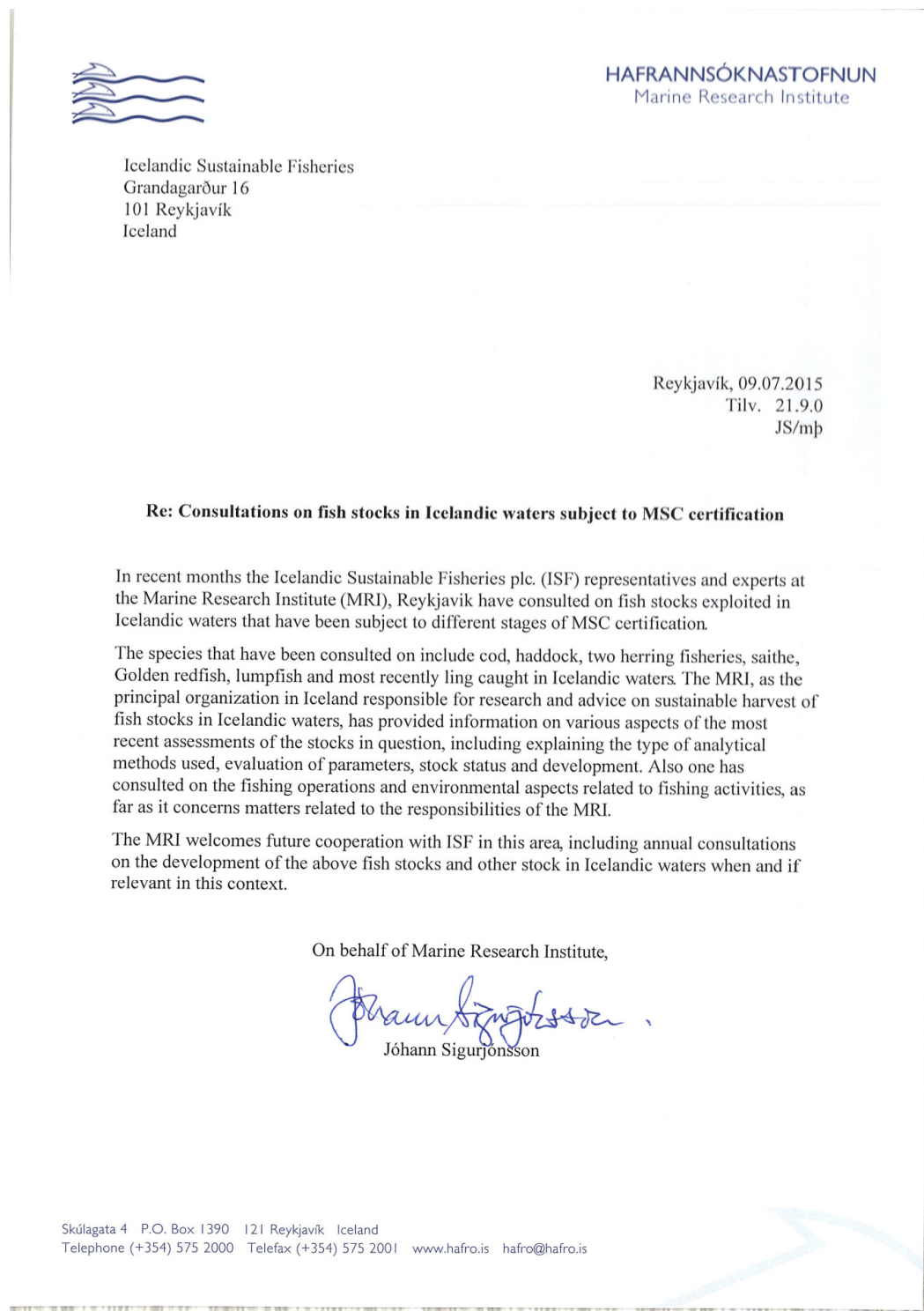
Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification	Conformity Assessment Body Response
				<p>management. More justification is required to score SIb at 100.</p> <p>SIc scores 80 (agreed). As this SI applies to non UoC catch, it would be worthwhile mentioning that it is mainly the Norwegian and Faroes catch that is handled by the Icelandic Coast Guard and reported to the Directorate of Fisheries.</p> <p>The overall score (90) of PI 1.2.3 is appropriate with more justification for SIb required.</p>	
1.2.4	YES	YES	NA	<p>SIa scores 80 but not 100 (agreed). It would assist justification of the SIa score to highlight why GADGET is specifically appropriate for ling. If length – based processes are important, then it is a good model. Otherwise, an age-structured model with proportions at age rather than length is also good.</p> <p>SIb scores 60 (agreed).</p> <p>SIc scores 80 but not 100 (agreed). The retrospective pattern is a concern, particularly given possible survey catchability changes noted in WGDEEP 2010.</p> <p>SId does not score 100 (agreed). Certainly, these does not appear to have been much in the way of alternative explorations and sensitivity</p>	GADGET is both age based, but can model length structures well. Whether this is useful in any particular assessment depends on the response of the population to fishing and whether length changes. The ability of the assessment in theory to model changes in size-at-age is positive even if does not apply in this case. However, this is not a technical review and we do not have evidence that GADGET is specifically appropriate for ling, hence the SIa scores 80, as agreed.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification	Conformity Assessment Body Response
				<p>analyses.</p> <p>Sie scores 100 (ageed). It should be noted that the benchmark reviews are intended to provide external review.</p> <p>The overall score (85) of PI 1.2.4 is appropriate.</p>	

Appendix 3 Stakeholder submissions

Appendix 3.1: Stakeholder Submissions Regarding Conditions

Appendix 3.1.1: Letters from the Marine Research Institute





Iceland Sustainable Fisheries
Grandagarður 16
Reykjavík

Reykjavík, 06.07.2015
Tilv. 21.9.1/LAN
JS/mp

Ref: MSC LING CERTIFICATE – request for information

With reference a letter dated 4 July 2015 ISF had 2 numbered points with several questions regarding Ling in Icelandic waters (ICES sub-Division Va). The Marine Research Institute has addressed those questions/concerns and we hope it can be helpful in your evaluation.

1. Limit target reference points for the stock

Is there scientific evidence that Bloss (Limit reference point) is above a point where there is significant risk of impairing reproductive capacity of the ling stock? If not are there plans to evaluate the current Bloss as sufficiently precautionary.

- At ICES working group on deep water stocks (WKDEEP) in 2014 a working document describing the derivation of reference points, including Bloss, was presented. In this analysis the Bloss was considered to be a conservative approximation of Blim as the estimated values of recruitment and spawning stock biomass prior 2003 did not suggest impaired recruitment. The working document notes that the relatively high number of recruits in the years between 2003 and 2010 may be linked to environmental factors, not changes in the spawning stock biomass and in the last years recruitment appears to have stabilized to similar levels as in the pre-2003 period. Similar increase has also been observed in other species in Icelandic waters that are on the northern fringe of their distribution range. For further details see Elvarsson & Thordarsson (2014 – Appendix to this letter).

Are there any plans to implement or evaluate an alternative higher Bloss (or limit reference point) if evidence cannot be provided that the current Bloss is precautionary?

- The current reference point of Blim and Bpa are based on the distribution of Bloss, reviewed during the WKDEEP-2014 benchmark, and are accepted for use in the ICES framework. The definition of reference points will be revisited during next ICES benchmark review but the date for such meeting has not been set.

2. Harvest control rules

Skúlagata 4 P.O. Box 1390 121 Reykjavík Iceland
Telephone (+354) 575 2000 Telefax (+354) 575 2001 www.hafro.is hafro@hafro.is

Does the harvest strategy for ling include actions to limit exploitation rate in the case that the ling approaches the limit reference point (Bloss)? If not, would the MRI be willing to consider/evaluate such actions?

- The advice rule for ling follows the general strategy of ICES outlined in Anon (2013). This approach considers Bpa, as defined during the benchmark, as the point when, where spawning stock biomass is reduced below Bpa, the fishing mortality should be reduced linearly as a function of the spawning stock biomass.

How can ISF collaborate with and/or assist the MRI to evaluate the current/alternative Bloss and consider appropriate actions in the case of the stock declining towards Bloss?

- As actions have been taken by the Ministry of Industries and Innovation to constrain TAC according to MRI advice and the fact that the advisory rule by MRI includes reduced fishing mortality when the stock declines below Bpa, MRI is of the opinion that no further actions need to be taken at this stage.

Yours sincerely,



Jóhann Sigurjónsson
Director General

Attachment: Appendix (Elvarsson, B. & Thordarson, G. (2014))

References:

Anon (2013). General context of ICES advice. Available at http://ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/1.2_General_context_of_ICES_advice_2013_June.pdf

Elvarsson, B. & Thordarson, G. (2014) Defining reference points for the Gadget assessment of Ling in Va. WKDEEP working document 2. *The document is attached as appendix to this letter.*

Appendix 3.1.2: Letter from the Ministry of Industries and Innovation



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 3.1.3: Letter from Iceland Sustainable Fisheries ehf.



Vottunarstofan 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 wolfish 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.

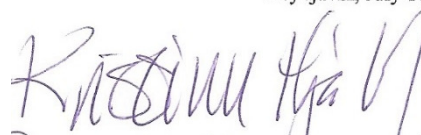
In developing, implementing and evaluating any measures and strategies pertaining to the fisheries certified and under assessment, ISF will:


- 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.
- Co-operate with MRI in evaluations of measures and strategies to determine whether they are effective and whether any improvements are possible.
- Develop options with MRI where necessary for reasonable measures within the fishery to mitigate risks to habitat and stocks where this is effective.
- Implement any agreed measures to reduce risk to habitat and by catch.
- Implement any agreed supporting tasks, including benthic by catch and impact monitoring within ISF client Group.
- Maintain with MRI documentation of measures and strategies and any information on any evaluations.
- 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.

Reykjavik, July 16th 2015


Project Manager ISF


Project Manager ISF

Appendix 3.1.4: Comments Received on the Public Comment Draft Report

Technical Oversight received from the MSC

Ref	Type	Page	Requirement	Reference	Details	PI
17366	Guidance	22	If the eligibility date is set before the certification date, the CAB shall inform the fishery that any fish harvested after the eligibility date and sold or stored as under-assessment fish shall be handled in conformity with relevant under-assessment product requirements in the MSC Chain of Custody Standard.	FCR-7.6.2 v.2.0	It is the CABs responsibility to ensure the client is aware of the rules for under assessment product, as defined within 5.6 of the MSC Chain of Custody Standard. These include that under assessment fish cannot be sold outside of the client group. Please note this communication is needed at the stage when you define the unit of assessment, as per clause 7.4.11.2.	
<p>CAB Response</p> <p>On the 20th of March 2015 the CAB had discussion with client to confirm the scope of the fishery, including the defining of the unit of assessment, during which the eligibility date and its implications were discussed. Due to unconfirmed findings from informal queries made at a later date, indicating that for a fishery subject to expedited assessment the eligibility date should be otherwise, Tún put this question to MSC's Interpretation Log, yielding the following results:</p> <p><i>As per section 7.6 'Determination of eligibility dates', the eligibility date can be either - the date of the certification of the fishery (7.6.1.1); or the publication date of the first Public Comment Draft Report (7.6.1.2). As an expedited/scope extension requires the production of its own PCDR (PE3.1c) and subsequent certification (PE4.3.2), the eligibility date would be directly related to the expedited/scope extension and not the 'certified' fishery from which the expedited/scope extension is being undertaken.</i></p> <p>Tún subsequently confirmed, in a memo to the client dated 20 May 2015, its previous decision that the nominated Eligibility Date for the ISF Iceland Ling Fishery will be the date of the publication of the first PCDR. The memo also stressed that "any fish from the ISF Iceland Ling fishery, harvested after that date and sold or stored as under-assessment fish, shall be handled in conformity with relevant under-assessment product requirements in the MSC Chain of Custody Standard." Furthermore, the specific requirements of section 5.6 of the standard pertaining to sale of under assessment fish have been highlighted in a note to the fishery.</p> <p>The eligibility date of 27 August 2015, together with a note on the above, have been added to section 5.1 of the report.</p>						

Ref	Type	Page	Requirement	Reference	Details	PI
17367	Minor	23	The CAB shall determine if the systems of tracking and tracing in the UoA are sufficient to ensure all fish and fish products identified and sold as certified by the UoA originate from the appropriate Unit of Certification (UoC). The CAB shall document the risk factors outlined in the "MSC Full Assessment Reporting Template", identifying any areas of risk for the integrity of certified products and how they are managed and mitigated.	FCR-7.12.1.3 v.2.0	For the cold storage facilities in a Third Country there could be the possibility of certified and non-certified fish of the same species being handled. The report suggests that at auctions Ling from within the UoC may be handled together with Ling from foreign vessels that are not within the UoC. In both these cases the risks and mitigation measures or traceability systems, to ensure all fish sold as certified is from the UoC, are not documented in the report.	
<p>CAB Response</p> <p>Cold storage facilities in a Third Country:</p> <p>From the report: <i>"Fish from eligible fishing vessels, whole and/or semi-processed, landed at any officially approved landing site (harbour) and/or sold via (first sale) fish auction and/or kept in cold store facilities in Iceland or in a Third Country, may therefore enter into further certified chain of custody and be eligible to carry the MSC eco-label, provided these are sold through a registered sharing partner of the fishery certificate, i.e. shareholder of the Iceland Sustainable Fisheries Ltd. "</i></p> <p>In the event that eligible vessels are landing ling in foreign ports, there is a possibility that certified and non-certified ling could be simultaneously handled, e.g. in cold storage facilities, prior to entry into chain of custody. Although not common, this is a possibility, especially of fish gutted on ice, delivered in boxes or tubs. Provided these carry identification traceable to the delivery and vessel, traceability back to unit of certification is ensured, since all vessels are obliged to report to Directorate of Fisheries landings in foreign ports by type of species, fishing gear, area and quantities. Furthermore, the DF issues catch certificates required for landing of fish into Third Country.</p> <p>Substantial amount of fish is landed and traded via auction. The possibility may rise that ling from vessels within the UoC and ling from foreign vessels outside the UoC may be simultaneously handled at auctions. The majority of foreign vessels fishing ling under bilateral agreement in Iceland do not land their catch in Iceland, but are required to report all details of catches by species, quantity, area, gear type and vessel to the Icelandic Directorate of Fisheries. However, if such vessels were to land fish anywhere in Iceland, information are recorded by by official weighmasters upon landing, in the same manner as for all Icelandic vessels and can thus be traced back to species, quantity, area, gear and vessel. Icelandic regulation require fish from foreign vessels to be kept and processed separate from all other fish throughout the chain of custody.</p> <p>At first point of sale, i.e. entry into chain of custody, the tracing of the fish back to UoC will require verification by the buyer and it's CoC CAB.</p>						

Table 6 of the assessment report (pp. 23-24) has been amended to outline the risks associated with co-mingling of certified and non-certified ling in foreign ports and at auctions.

17368	Guidance	23			A link to the list of vessels within the UoC would also be a useful addition to the report.	

CAB Response:

A list of vessels and their quotas can be found here: <http://www.fiskistofa.is/veidar/aflaheimildir/uthlutadaflamark/> (see „Úthlutun til skipa 2015/2016“). This link was added to the report.

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Appendix 4: Surveillance Frequency

Taking into account the conditions set for the certification of ling, as well as the action plan and milestones for meeting those, the team applied Table G13 of the MSC Guidance to Fisheries Certification Requirements (see **Table 10** and

Table 13 below) to determine the surveillance level for the ISF Iceland ling fishery. The team concluded that the fishery 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. Therefore the team proposes surveillance level 2. However, since the fishery is an extension of the scope of another larger fishery (ISF Iceland saithe), surveillance level of the two should be harmonised as of the first joint surveillance expected to be conducted in the autumn of 2016. It is recognized that the joint surveillance level will ultimately be determined by the fishery requiring the higher level of surveillance.

Table 10: Surveillance level rationale for the ISF Iceland ling expedited fishery

Year	Surveillance activity	Number of auditors	Rationale
Year 1 (Year 2 of saithe)	Review of information	2 auditors	<p>The first two years of the CAP involves engagement with the MRI and MII to re-evaluate the current limit reference point or consider alternative options for evaluation (see conditions). The re-evaluation also needs to fit in with the ICES stock assessment cycle where ling is evaluated by the WGDEEP group biennially⁷. Therefore management advice strategy is not expected to change during year 1. Therefore a review of information would be adequate to verify if there has been any major change in the fishery. All relevant fisheries management documents and data are available online through the MRI, the DF, and MII websites.</p> <p>NOTE: This surveillance is expected to coincide with the 2nd surveillance of the ISF Iceland saithe fishery. While stipulated here as a review, it may therefore be conducted on-site depending on surveillance level and activities of the ISF Iceland saithe fishery.</p>
Year 2 (Year 3 of saithe)	Off-site Surveillance Audit	1 auditor (P1 expert)	<p>See above. New ICES advice is expected to be available and can be discussed with relevant parties remotely. Electronic forms of communication such as video/teleconferencing is widely available throughout Iceland. All parties can easily be contacted by e-mail and all relevant documents can be obtained online or electronically.</p> <p>NOTE: May be subject to change depending on surveillance level and activities of the ISF Iceland saithe fishery (see above).</p>
Year 3 (Year 4 of saithe)	On-site Surveillance Audit and re-certification assessment	2 auditors	<p>During year 3, work on the limit reference point and a Harvest Control Rule shall be underway (see conditions 1 and 2).</p> <p>Re-assessment of saithe and therefore of ling (if certified) as well, will commence as of September 2018.</p> <p>ICES advice and a benchmark assessment is expected in 2019 and may not be complete at the initiation of re-assessment.</p> <p>NOTE: May be subject to change depending on</p>

⁷ <http://www.ices.dk/community/groups/Pages/WGDEEP.aspx>

			<i>surveillance level and activities of the ISF Iceland saithe fishery (see above).</i>
Year 4	N/A	N/A	N/A

Table 11: Timing of Surveillance audits for ISF Iceland ling

Year	Anniversary date of certificate*	Proposed date of surveillance audit **	Rationale
Year 1	September 2016 (saithe certificate)	September 2016	Scientific advice to be released in June 2016.
Year 2	September 2017 (saithe certificate)	September 2017	Scientific advice to be released in June 2017.
Year 3	September 2018 (saithe certificate)	September 2018	Scientific advice to be released in June 2017. ICES benchmark expected in 2019. Re-assessment under way from September 2018*.
Year 4	N/A	N/A	N/A
NOTES: *) The ISF Iceland ling may not achieve certification until October/November 2015, while the certificate of which it is an extension was certified in September 2014. **) May be subject to change depending on surveillance level and activities of the ISF Iceland saithe fishery.			

Table 12: ISF Iceland ling Fishery Surveillance Program

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 2	Review of information	Off-site surveillance audit	On-site surveillance audit / Re-assessment	N/A since the fishery is an extension of scope of another fishery

Table 13: Evaluation of the ability to conduct surveillance audits remotely using Table G13.

	Ability to verify remotely is low (low)	Ability to verify remotely is high (higher)	CAB evaluation (high)
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 publicly, 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 mangamement 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 appropriate to determination	Information from electronic monitoring of position, observer data, logbooks, fisher interviews,	Where Information from electronic monitoring of position, observer data, logbooks, fisher	The Directorate of Fisheries publish 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>

	Ability to verify remotely is low (low)	Ability to verify remotely is high (higher)	CAB evaluation (high)
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 ling 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>

Appendix 5 Objections Process

No objections were lodged against Determination and Final Report for this assessment.