

FISHERY ASSESSMENT REPORT

IFFO GLOBAL STANDARD FOR RESPONSIBLE SUPPLY OF FISHMEAL AND FISH OIL



DFO-Claude Nozères R6

FISHERY:	Capelin (<i>Mallotus villosus</i>)- ICELAND
LOCATION:	Iceland-E. Greenland-Jan Mayen (ICES Subareas V and XIV and Division IIa west of 5°W)
DATE OF REPORT:	November 2016
ASSESSOR:	Virginia Polonio

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1. APPLICATION DETAILS AND SUMMARY OF THE ASSESSMENT OUTCOME			
Name: Icelandic Association of Fishmeal Manufacturers			
Address:			
Country: Iceland		Zip:	
Tel. No.		Fax. No.	
Email address:		Applicant Code	
Key Contact:		Title:	
Certification Body Details			
Name of Certification Body:		SAI Global (Ireland)	
Assessor Name	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-certification
Virginia Polonio	Deirdre Hoare	2	Reassessment
Assessment Period	2016		
Scope Details			
1. Scope of Assessment		IFFO Global Standard for Responsible Supply – Issue 1	
2. Fishery		Capelin (<i>Mallotus villosus</i>)	
3. Fishery Location		Iceland-E. Greenland-Jan Mayen (ICES Subareas V and XIV and Division IIa west of 5°W)	
4. Fishery Method		Purse seine / pelagic trawl	
Outcome of Assessment			
5. Overall Fishery Compliance Rating		High	
6. Sub Components of Low Compliance		None	
7. Information deficiency		None	
8. Peer Review Evaluation		Approve	
9. Recommendation		Approve	

2. QUALITY OF INFORMATION
Good
3. COMPLIANCE LEVEL ACHIEVED
High
Recommendation
Approve
4. GUIDANCE FOR ONSITE ASSESSMENT
Based on HIGH compliance findings
Based on MEDIUM compliance findings
Based on LOW compliance findings
5. ASSESSMENT DETERMINATION
<p>There have been substantial changes since the initial assessment and the last surveillance in the way in which capelin TACs are calculated.</p> <p>The new way to calculate the TACs and the objective of the HCR for the stock is to leave at least 150,000 tonnes (=Blim) for spawning (escapement strategy). Three TACs are set out during the fishing season. The initial (preliminary), intermediate and final TACs are based on acoustic surveys. a) The initial TAC for the coming fishing season is advised in May based on the autumn survey abundance estimate of immature 1 and 2 year old capelin. b) The intermediate TAC is advised in autumn based on the biomass estimate of maturing capelin. c) The final TAC is advised in January/February based on the biomass estimate of maturing capelin. The initial (preliminary) quota follows a simple forecast that is based on the relation between historic observations of age 1 and 2 juvenile abundance from the acoustic autumn surveys and the corresponding final TACs nearly 1½ year later. This was done in ICES NWWG 2016 to set the initial quota for the fishing season 2016/17. The intermediate and final TACs are set so that there is at least 95 % probability that there will be 150,000 tonnes (=Blim) of mature capelin left for spawning at the spawning time (15 March). Previously, (since early 1980s) the stock was managed according to an escapement strategy, leaving 400 thousand tonnes to spawning (uncertainty of the estimates were not considered).</p> <p>Scientific advice is taken into account, when designing conservation and management measures, in a comprehensive manner. The stock appears to remain in good shape, with the escapement goals continuing to be met and SSB estimates considerably above Blim. The assessment team recommends maintaining the approval of this fishery against the IFFO RS Standard.</p>
HIGH Compliance
A1, A2, A3, B1, B2, C1, D1, D2, D3, E1, E2
MEDIUM Compliance
LOW Compliance

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SUMMARY OF LEVEL OF COMPLIANCE					
	The Management Framework and Procedures	Stock assessment procedures and management advice	Precautionary approach	Management measures	Implementation
Legal and administrative basis	A1				
Fisheries management should be concerned with the whole stock unit	A2				
Management actions should be scientifically based	A3				
Research in support of fisheries conservation and management should exist		B1			
Best scientific evidence available should be taken into account when designing conservation and management measures		B2			
The precautionary approach is applied in the formulation of management plans			C1		
The level of fishing permitted should be set according to management advice given by research organisations				D1	
Where excess fishing capacity exist, mechanisms should be in established to reduced capacity				D2	
Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment				D3	
A framework for sanctions of violation of laws and regulations should be efficiently exists					E1
A management system for fisheries control and enforcement should be established					E2

KEY: Low Compliance: Medium Compliance: High Compliance:

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6. RATIONALE OF THE ASSESSMENT OUTCOME

A. THE MANAGEMENT FRAMEWORK AND PROCEDURE

LEVEL OF COMPLIANCE

A1. *The management of the fishery must include a legal and administrative basis for the implementation of measures and controls to support the conservation of the fishery.*

LOW	An administrative framework that ensures an efficient management of the fishery for its conservation is not established.
MEDIUM	An administrative framework that ensures an efficient management of the fishery for its conservation is somehow established, but there is evidence of not being efficient to ensure the conservation of the stock.
HIGH	A legal and administrative framework that ensures an efficient management of the fishery for its conservation is established and works efficiently toward the conservation of the stock.

Determination: A legal and administrative framework that ensures an efficient management of the fishery for its conservation is established and works efficiently toward the conservation of the stock.

All the fisheries in Iceland are regulated by the Icelandic Fisheries Management Act (no. 116/2006), which states (Art. 1) that the authorities should “contribute to the protection of (exploitable stock in Icelandic waters) and their economic exploitation and thereby ensure secure employment and settlement in the country.” The Act on the utilization of exploitable marine stocks (no. 57/1996) states (Art. 1) that its aim is to contribute to “sustainable utilization which ensures maximum benefits to the Icelandic nation in the long-run.”¹ These Acts make no reference to the precautionary principle. The principle is embedded in some of the international conventions to which Iceland is a signatory (e.g. the OSPAR convention and the United Nations Agreement on the implementation of the provisions of the United Nations convention on the Law of the Sea, 10 December 1982, which relates to the conservation and management of straddling fish stocks and highly migratory fish stocks (in force as of 11 December 2001).

The most recent version of the Fisheries Management Act was published in 2006 and includes:

- A commitment to the conservation and efficient utilization of Icelandic fishery resources (Article 1).
- A commitment to set an annual TAC for each species “for which it is deemed necessary to limit the catch” (Article 3).
- A requirement for all commercial fishers to obtain a general fishing permit; vessels not fishing for an entire 12 month period will have their permit revoked (Article 4).
- An outline of the ITQ quota system (described in more detail in section D2, below) (Article 8).
- An outline of the methodology and responsibility for enforcement and monitoring of fishery regulations (Articles 17 & 18).
- An outline of penalties for transgressions (Articles 24 – 27).

Iceland’s national fisheries science organization is the Marine Research Institute (MRI). The MRI carries out wide ranging and extensive research on the status and productivity of the commercial stocks, and long-term research on the marine environment and the ecosystem around Iceland. For more detail on the legal and administrative framework for fisheries management in Iceland, please refer to the 2013 re-assessment.

R1-R4

LEVEL OF COMPLIANCE

A2. *Fisheries management should be concerned with the whole stock unit over its entire area of distribution and take into account fishery removals and the biology of the species.*

LOW	Fisheries management is not concerned with the whole stock unit over its entire area of distribution and do not take into account any of the matters listed in ‘A1’.
MEDIUM	Fisheries management is concerned with matters listed in ‘A1’ but not entirely. Fisheries, in relation to ‘A1’ statement, should improve to ensure the long term conservation of the marine resource.
HIGH	Fisheries management should be concerned with the whole stock unit over its entire area of distribution and take into account:

¹ No. 57, June 3 1996, accessible (in Icelandic) at <http://www.atvinnuvegaraduneyti.is/media/Skyrslur/Stjorn-fiskveida-2010-endanlegt.pdf>.

	<ul style="list-style-type: none"> • All fishery removals • The biology of the species
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Determination: Fisheries management is concerned with the whole stock unit over its entire area of distribution and takes into account; all fishery removals and the biology of the species.

Capelin in the Iceland/East Greenland/Jan Mayen area is considered by ICES to be a separate stock, and ICES has a good understanding of its distribution and life history. The design of management measures takes extensive account of the biology of the species. For example, as a precautionary measure to protect juveniles, all fishing with pelagic trawl has been banned in the Icelandic waters where juveniles are generally found, either separately or mixed with the adults. Additional temporary localized closures are enacted when high proportions of juveniles are detected in the catch. The timing of the fishery is also designed around protecting juveniles and the spawning stock. Fishery-dependent data include detailed landings information and are used in the formulation of management actions and the production of scientific advice. Discards and bycatch are not included in stock assessments, but based on observer data both are considered by ICES to be negligible.

R1- R2

LEVEL OF COMPLIANCE	
<i>A3. Management actions should be based on long-term conservation objectives</i>	
LOW	Management actions are not based on long term management objectives.
MEDIUM	Management actions are based on long term management objectives. However, the actions are not scientifically formulated.
HIGH	Management actions are based on long term management objectives, and actions are science based.

Determination: At the time of the last surveillance capelin was managed using an escapement strategy. A new harvest rule was proposed by ICES in 2015 whereby an initial quota is set on the basis of immature abundance in the autumn acoustic survey. This initial quota is then revised based on in-season acoustic survey information (intermediate quota) and the results of the autumn and/or winter surveys (final TAC). Long term management objectives remain the basis for management actions which continue to be science based. A high compliance rating remains appropriate.

Since 1980 the TAC has been set in accordance with a 400,000t escapement strategy management plan. In June 1989 Greenland, Iceland and Norway signed an agreement on the division of the TAC between the countries. In 2015 a new methodology for setting a preliminary TAC was developed by the benchmark workshop, WKICE (ICES, 2015a) to replace a method which had remained unchanged since the 1990s. The new stochastic (random processes with probability) harvest control rule also covers the intermediate and final TACs which was adapted from the HCR for Barents Sea capelin.

- The initial TAC for the coming fishing season is advised in May, based on the autumn survey abundance estimate of immature 1 and 2 year old capelin.
- The intermediate TAC is advised in autumn based on the biomass estimate of maturing capelin.
- The final TAC is advised in January/February based on the biomass estimate of maturing capelin.

The method for setting the preliminary TAC is a regression of immature (1-2yrs old) capelin abundance as measured on the autumn acoustic surveys, against a precautionary fishable biomass value. The fishable biomass value is based on the January acoustic survey taking into account catches taken before that survey, subtracting the biomass limit (the minimum mature biomass to be left to spawn) and also subtracting 150Kt for predation. The plot has a trigger level of 50 billion immature capelin which provides a limit level of zero for the initial TAC and a maximum initial TAC of 400Kt if the immature abundance is 127 billion or more (blue dashed line). The final TAC is set at the catch which will generate a SSB which has a 95% probability of being

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above the biomass limit level of 150Kt. This whole strategy, backed by the harvest control rules to set the TAC, is considered by ICES to be precautionary. However ICES has recommended that at some time in the future, once experience of the operation of the new HCR has been gained, assumptions and practical operation of the rule should be evaluated. The ICES working group particularly identified the need for further information on predator/prey relationships and how SSB estimates from autumn and winter surveys should be weighted when final TAC is defined.

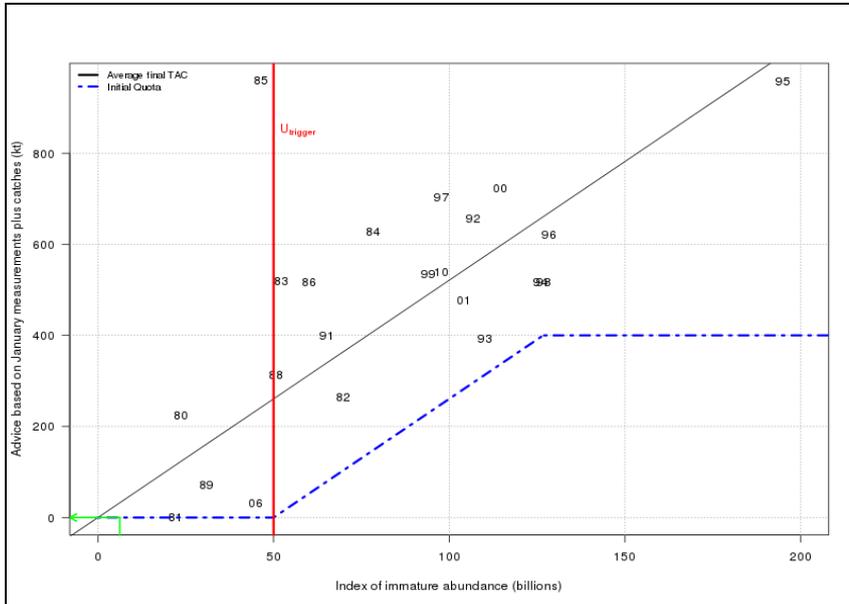


Figure 1. Indices of numbers of immature capelin from autumn surveys against advice (based on acoustic measurements in January plus catches taken before the measurements). The solid line is the ‘Final TAC regression’ representing the ‘best’ guess on the final TAC based on the survey result while the dashed line, taking a precautionary approach, shows the decision rule for advising the initial TAC. (ICES, 2015a).

R1-R2-R5

B. STOCK ASSESSMENT PROCEDURES AND MANAGEMENT ADVICE

LEVEL OF COMPLIANCE

B1. Research in support of fisheries conservation and management should exist.

LOW	Research to support the conservation and management of the stock, non-target species and physical environment does not exist
MEDIUM	Research to support the conservation and the management of the stock, non-target species and physical environment exists, however research programmes could be significantly improved to decrease scientific advice uncertainty.
HIGH	Research to support the conservation and the management of the stock, non-target species and physical environment exist, and existent research is considered most adequate for the long term conservation of the target, non-target and physical environment

Determination: Research to support the conservation and the management of the stock, non-target species and physical environment exist, and existent research is considered most adequate for the long term conservation of the target, non-target and physical environment

ICES conducts an annual stock assessment and the MRI provides advice throughout the year based on the results of ongoing survey efforts. Data from a number of surveys (fishery-independent) and landings data (fishery-dependent) are available to ICES and the MRI, although the results of some non-stock-specific research efforts (such as estimates of bycatch and discarding) do not appear to be made available to ICES. The diagrams below show the most up-to-date estimates for various stock characteristics; for more detail on the

source of these data please refer to the 2013 re-assessment. R1

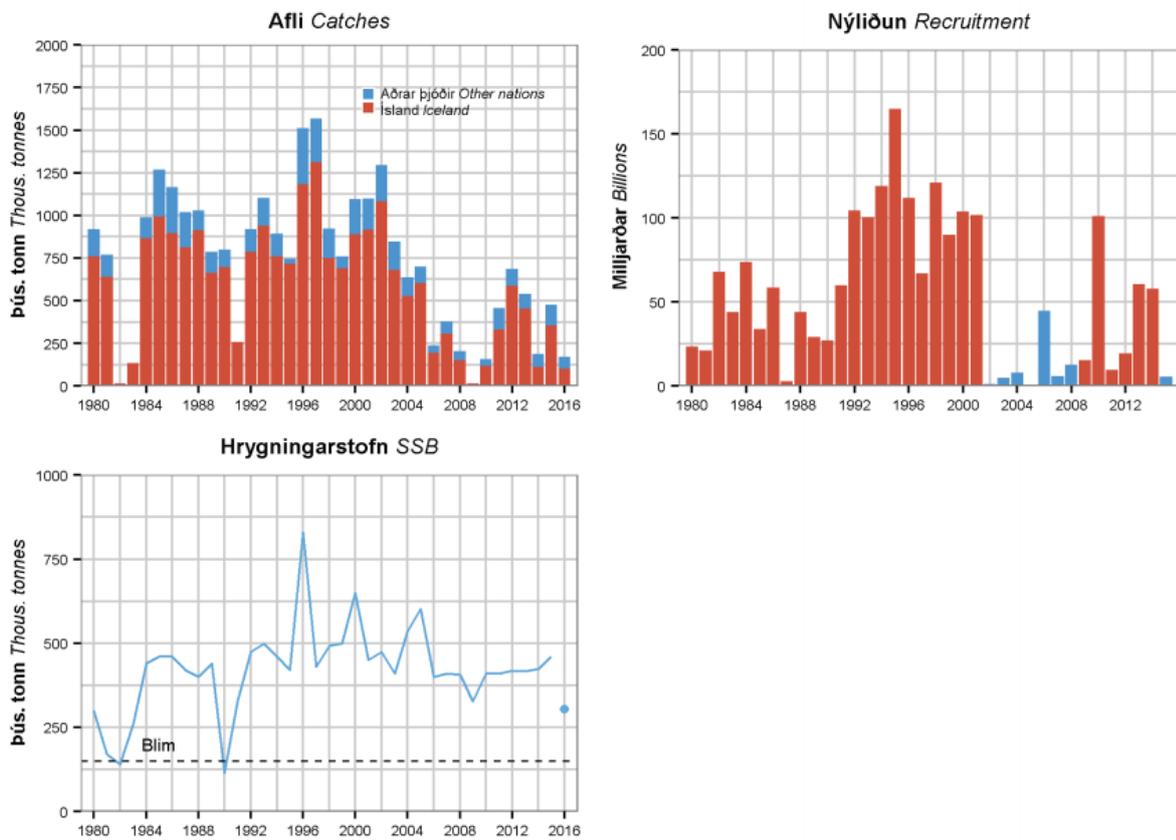


Figure 2. Catch, recruitment-at-age 1 as acoustic index from autumn surveys (blue bars indicate incomplete spatial coverage likely resulting in notable underestimation), and SSB at spawning time (March–April). The SSB value for 2016 (dot) is not directly comparable to historical values because it is based on different assumptions about natural mortality. From the Marine advice 2015/2016.

R2-R3

LEVEL OF COMPLIANCE	
<i>B2. Best scientific evidence available should be taken into account when designing conservation and management measures.</i>	
LOW	Scientific advice is not taken into account when designing conservation and management measures.
MEDIUM	Scientific advice is taken into account, when designing conservation and management measures. However, some areas of discrepancy are identified that could have a significant impact in the long term conservation of the marine environment.
HIGH	Scientific advice is taken into account, when designing conservation and management measures, in a comprehensively manner.

Determination: ICES carried out a benchmark of Icelandic Stocks including Icelandic Capelin, WKICE was set up to provide standards for assessing these stocks. Therefore, lack of transparency is no longer an issue and a high compliance rating is appropriate.

Fishery management decisions are informed by the annual stock assessments conducted by ICES and the MRI, and by in-year advice which is provided by the MRI and updated to reflect survey results. In general, this advice has been followed, to the extent that the fishery was closed entirely in 2008/09, when biomass was estimated to be too low to ensure SSB would be above 400,000t if a fishery took place. In addition to following MRI quota recommendations, a number of technical measures have been implemented in the fishery in line with scientific advice, including minimum mesh sizes and closed areas.

R2-R5	
C. THE PRECAUTIONARY APPROACH	
LEVEL OF COMPLIANCE	
<i>C1. The precautionary approach is applied in the formulation of management plans.</i>	
LOW	The precautionary approach is not applied in the formulation of management plans.
MEDIUM	The precautionary approach is applied, however not all uncertainties are taken into account.
HIGH	The precautionary approach is applied, taking into account uncertainties relating to the dynamic of fish population (recruitment, mortality, growth and fecundity), and the impact of the fishing activities, such as discards and by-catch of non-target species as well as on the physical environment (Habitats).
Determination: The fishery continues to be managed in line with the precautionary approach.	
<p>As mentioned previously the stock has been benchmarked since the time of the previous assessment. ICES has not evaluated the management plan, but states that the escapement target of 400,000t can be “treated as preliminarily precautionary”. There are no other reference points defined for the stock. ICES has recently expressed concern that the natural mortality estimates used in the TAC calculations may be too low, leading to higher TACs than sustainable. In response, the MRI applies a rule which means the initial TAC is set at 0t in any year where it would otherwise be set below 500,000t. Last year’s advice was based on a biomass escapement of 400 kt; this year’s advice is based on an initial TAC set with a very low probability of being higher than the final TAC. A final TAC is set with a >95% probability of SSB being greater than Blim. This represents a precautionary approach as it does not use the lack of an accurate mortality estimate as an excuse for inaction.</p> <p>Members of the ICES North-Western Working Group (NWWG) had previously expressed concern over the lack of transparency in the scientific process by which in-season data are analysed and advice produced (by MRI). The MRI is of the view that the short time period from the end of the surveys that inform the final TAC to spawning time and the closure of the fishery make it impractical to seek advice outside regarding the final TAC from ICES; All data, methodology and results are available for analysis by ICES on a post-hoc basis. In addition, MRI produces summaries of capelin surveys and results, throughout the fishing season, which are made publically available on the MRI website. Web links to examples of update reports from the 2015/2016 capelin fishing season are presented below (in Icelandic):</p> <ul style="list-style-type: none"> ▪ Measurement of the size of the capelin stock in November 2015 (December 7th 2015): http://www.hafro.is/undir.php?ID=19&REF=3&fID=21991&nanar=1 ▪ Measurement of the size of the capelin stock in January 2016 and quotas according to HCR (22nd January 2016): http://www.hafro.is/undir.php?ID=19&REF=3&fID=22230&nanar=1 ▪ Measurement of the size of the capelin stock in February 2016 (18th February 2016): http://www.hafro.is/undir.php?ID=19&REF=3&fID=22430&nanar=1 <p>The ICES NWWG has advised that the fishing season should not begin until October, due to the period of rapid growth observed in the capelin stock during the plankton-rich period of June-late September. Landings before October have been extremely limited in recent years.</p> <p>Neither of the issues outlined above are likely to have a significant impact on the long term conservation of the marine environment.</p>	
R2 – R5	
D. MANAGEMENT MEASURES	
LEVEL OF COMPLIANCE	
<i>D1. The level of fishing permitted should be set according to management advice given by research organisations.</i>	

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LOW	The level of fishing permitted is not set according to management advice given by research organisations.
MEDIUM	The level of fishing permitted is higher than management advice given by research organisations. However, the difference is not considered to have a significant impact of the sustainability of the stock
HIGH	The level of fishing permitted is set according to management advice given by research organisations.

Determination: The level of fishing continues to be set in line with MRI advice, and landings are within scientifically-recommended levels.

In most years, and every year since 2010, the TAC is set in line with the MRI advice, and where it has exceeded the advice historically the difference has been minimal (see table below). Final total landings have consistently been at or below the official quota. The final TAC for the 2015/16 season was set at 173,000t. Final landings were 174,000t, of which Icelandic vessels landed 101,000t.

Vertið Season	Upphafstillaga Rec. initial TAC	Lokatillaga Rec. final TAC	Lokaflamark Final TAC	Afli Íslendinga Catch (Iceland)	Afli annarra þjóða Catch (other)	Afli alls Total catch
2010/11	0	390	390	322	68	390
2011/12	366	765	765	585	162	747
2012/13	0	570	570	464	87	551
2013/14	0	160	160	111	31	142
2014/15	225	580	580	354	163	517
2015/16	53.6	173	173	101	73	174
2016/17	0					

R2-R3

LEVEL OF COMPLIANCE

D2. Where excess fishing capacity exist, mechanisms should be in established to reduced capacity to allow for the recovery of the stock to sustainable levels.

LOW	Mechanisms to allow for recovery of the stock to sustainable levels are not established.
MEDIUM	Mechanisms to allow for recovery of the stock to sustainable levels are somehow established. However there is no evidence of the efficiency of the methods used.
HIGH	Mechanisms are established to reduce capacity to allow for the recovery of the stock to sustainable levels and there are evidences of recovery.

Determination: Annual quotas are the primary mechanism for limiting fishing effort in Iceland.

The main instrument in Icelandic fisheries and fleet management is a system based on Individual Tradable Quota (ITQs), which has been in place in its current form since 1990. During the past 15 years there has been no specific fleet management system in Iceland; fishing licenses are readily available for anyone with a seaworthy vessel, and no decommissioning schemes are in place. Under the ITQ system, each vessel is allocated a certain share of the TAC of the relevant species. Decommissioning occurs indirectly, as companies increase their share of the TAC by buying out vessels and thus receiving the quota attached to those vessels.

R1-R2-R5

LEVEL OF COMPLIANCE

D3. Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment.

LOW	There are no management measures to prevent the impact of the fishing methods and fishing practices on non-target species and the physical environment.
MEDIUM	There are management measures to prevent the impact of the fishing methods and fishing practices on non-target species and the physical environment. However it is not science based.
HIGH	There are management measures to prevent the impact of the fishing methods and fishing practices on non-target species and the physical environment. Measures are based on scientific information.

Determination: The impacts of the fishery on non-target species and the physical environment are minimal.

With some minor exceptions it is required by Icelandic law to land all catches. Consequently, no minimum landing size is in force. To prevent the removal of juvenile and spawning fish Iceland implements various technical measures such as mesh size regulation, real-time, temporary and permanent area closures. Icelandic legislation (557/2007) states that all fishing vessels must keep a Fishery Log-book. Birds and Mammals that

are caught in fishing gear are to be reported and recorded in the Fishery Log-book. ICES states that capelin plays a key role in the marine ecosystem in this area and is by far the most important pelagic fish stock in Icelandic waters. It is not clear to what extent the ecosystem impacts of capelin removals are factored into scientific advice or management decisions.

Therefore, pelagic trawl gear and purse seine gears are not designed to contact the seabed and then they do not impact with the bottom surface being less erosive than other gears. The gear types under evaluation are designed to fish in pelagic habitats and when any interaction happens with the seafloor is exceptional. Direct effects on habitat and seafloor are typically minimal for these gears.

R1

E. IMPLEMENTATION

LEVEL OF COMPLIANCE

E1. There should be a framework for sanctions of violation of Laws and regulations.

LOW	A framework for sanctions of violation of Laws and regulations do not efficiently exist.
MEDIUM	A framework for sanctions of violation of Laws and regulations do exist but do not work efficiently.
HIGH	A framework for sanctions of violation of Laws and regulations exists and is proven to be efficient.

Determination: There is a robust framework in place for sanctioning violations of fishery laws and regulations in Iceland.

Breaches of the law and regulations on fisheries management are subject to fines or revoking of the fishing permit, irrespective of whether such conduct is by intent or negligence. Major or repeated intentional offenses are subject to up to six years imprisonment. If the catch of a vessel exceeds the allowable catch of the said vessel of individual species, the relevant fishing company must obtain an additional catch quota for the relevant species. Penalties are outlined in Articles 24-27 of the Fisheries Management Act, including:

- Violations of the Act shall be prosecuted according to the Criminal Proceedings Act.
- Violations against the Act shall be liable to fines, and cases of serious or repeated deliberate violation shall be liable to imprisonment for up to six years.
- Fines may vary between ISK 400,000 (US\$3,200) and ISK 8,000,000 (US\$65,000), depending on the nature and scope, and whether it represents a repeat offence.

The relatively few cases of illegal landings, small estimated discarding and the number of violations of gear regulations and area closures do demonstrate that the sanctions that are in place and the high probability of being apprehended if engaging in illegal activities do form an effective deterrence.

R1-R2-R5

LEVEL OF COMPLIANCE

E2. A management system for fisheries control and enforcement should be established.

LOW	A management system for fisheries control and enforcement is not established.
MEDIUM	A management system for fisheries control and enforcement is established but do not work efficiently.
HIGH	A management system for fisheries control and enforcement is established and work efficiently.

Determination: Effective fisheries control and enforcement mechanisms are in place in Icelandic fisheries.

Day to day administration and enforcement of the Fisheries Act and related legislation is in the hands of the Directorate of Fisheries, a government body responsible to The Ministry of Industries and Innovation. The Directorate is also responsible for the continuous monitoring of compliance with the Act. The Icelandic Coast Guard, responsible to the Minister of Justice, monitors fishing activities in Icelandic waters, including surveillance of areas closed for fishing and inspection of mesh sizes and other gear related practices. Under a bilateral agreement between Iceland and the European Union (EU), Icelandic inspectors are required on board all EU fishing vessels in Icelandic waters.

There is generally a high degree of compliance with regulations. There is no significant evidence of systematic non-compliance. In cases of non-compliance, a range of penalties can be applied. A minor infringement leads

to a warning and a second offence leads to temporary withdrawal of fishing licenses. Serious offenses are brought to the courts and can lead to prison sentences. Corrective actions are well established, codified, understood and tested. Amongst the information provided to management by fishers is essential logbook and VMS data, provided to the Directorate of Fisheries and to the MRI. This information is checked through weighing of the catch (including all bycatch) in the harbour and review of VMS records. Other information in relation to the species mix/catch composition gained through sampling is further evidence of data that is providing to the management system.

R1

7. KEY STAKEHOLDERS

8. REFERENCES

R1 – IFFO RS Iceland Capelin re-assessment, August 2013:

<http://www.iffo.net/files/iffoweb/approved-rawmaterials/whole-fish/final-iceland-capelin-re-assessment-august-2013ds.pdf>

R2 – MRI Capelin advice:

http://www.hafro.is/Astand/2016/english/capelin_2016.pdf

R3 –ICES Capelin advice for 2014/2015 (May 2015):

<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/cap-icel.pdf>

R4 - IFFO RS Iceland Capelin surveillance October 2015: <http://www.iffo.net/files/iffoweb/approved-raw-materials/whole-fish/capelin-iceland-surveillance-assessment-2015.pdf>

R5 - Report of the Benchmark Workshop on Icelandic Stocks (WKICE) 2015

http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2015/WKICE%202015/wkice_2015_final.pdf

R6 – Image of *Mallotus villosus* <http://www.marinespecies.org/photogallery.php?album=1487&pic=37824>