

FISHERY ASSESSMENT REPORT TEMPLATE

IFFO RS Programme



FISHERY:	Capelin (<i>Mallotus villosus</i>) - Norway
LOCATION:	Barents Sea and Norwegian Sea (ICES Subdivisions I and II, excluding IIa west of 50W)
DATE OF REPORT:	December 2015
ASSESSOR:	Deirdre Hoare

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Version 1
Issue 5

Report Ref:

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CCM Code:

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IFFO RS FISHERY ASSESSMENT REPORT

For Issue 1, Rev 5 of the IFFO RS Standard

1. APPLICATION DETAILS AND SUMMARY OF THE ASSESSMENT OUTCOME

Name:			
Address:			
Country: Norway		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
Deirdre Hoare	Giles Barlett	3	Surveillance
Assessment Period	2014 - 2015		
1. Scope of Assessment			
		IFFO Global Standard for Responsible Supply – Issue 1.5	
2. Fishery			
		Capelin (<i>Mallotus villosus</i>) - Norway	
3. Fishery Location			
		Barents Sea and Norwegian Sea (ICES Subdivisions I and II, excluding IIa west of 50W)	
4. Fishery Method			
		Purse seine and 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			
9. Recommendation		Maintain approval	

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2. QUALITY OF INFORMATION

Good; primarily government and ICES websites.

3. COMPLIANCE LEVEL ACHIEVED

High

Recommendation

Maintain approval

4. GUIDANCE FOR ONSITE ASSESSMENT

Based on HIGH compliance findings

Based on MEDIUM compliance findings

Based on LOW compliance findings

5. ASSESSMENT DETERMINATION

The Barents Sea capelin stock is subject to a well-managed international fishery primarily conducted by Norway and Russia. Since 2002 it has been subject to a management plan with the objective of maintaining a spawning stock biomass of 200,000t at the end of the fishing season, which occurs at the start of the calendar year (Jan – Apr). So far this management plan appears to have been effective at stabilising what had previously been an extremely variable stock size, and with the exception of 2015 the quota has been set in line with the scientific advice and the management plan. The 2015 TAC was set considerably higher than the ‘headline’ ICES recommendation. However, that recommendation was the result of an estimated adjustment to the outcomes of the 2014 acoustic survey, which was considered by ICES to represent a significant under-estimate of total stock size. An alternative recommendation of 195,000t is considered in the body of the ICES report, along with the statement that “Both of these correction methods are subject to some additional uncertainty which has not been quantified, and neither method provides a strong basis for advice”. For 2016 a fully precautionary approach has been restored to the fishery management with the closing of the fishery. The TAC for 2016 was set at 0t, and so the fishery has been upgraded to high compliance ratings under the sections for precautionary approach and quota-setting. In all other respects, the management of the fishery fulfils the requirements of the IFFO RS standard, and high compliance ratings have been awarded accordingly.

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 RED, MEDIUM Compliance AMBER, HIGH Compliance GREEN**

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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: The capelin fishery continues to be managed within the effective administrative and legal frameworks established for the fishery.

The management of fisheries in Norway falls under the jurisdiction of the Ministry of Trade, Industry and Fisheries. The Directorate of Fisheries acts as the Ministry’s advisory and executive body with the objective to “promote profitable economic activity through sustainable and user-oriented management of marine resources and the marine environment”. The Directorate and Ministry develop and apply fishery laws and regulations through an ongoing administrative process referred to as the regulatory chain (see section B2). This process is largely stakeholder-driven, and includes national and international stakeholder engagement. Final decisions made by the Ministry are based on quota negotiations with other states (90% of Norwegian fish stocks are shared internationally), discussions from the stakeholder meetings, Directorate recommendations, and industry input. Regulations are usually valid for a year at a time, but are also often updated in-year.

The key legal implement at present is the Marine Resources Act (2008). The Act states that its purpose is “to ensure sustainable and economically profitable management of wild living marine resources and genetic material derived from them, and to promote employment and settlement in coastal communities”. The Act also makes explicit the Norwegian commitment to manage fisheries according to the precautionary approach, and to consider the potential impacts of gear on living marine resources. Finally, the Act also outlines the other essential powers described throughout this assessment, including quota-setting, a ban on discarding, licensing, and the prohibition of the use of explosives, poison, and other highly damaging fishing practices.

The main research body within the Norwegian fisheries management framework is the Institute of Marine Research (IMR). The IMR is the largest marine research institute in Norway, and conducts a variety of scientific research in support of the management process. The main task of the IMR is “providing advice to the Norwegian authorities on aquaculture and on the ecosystems of the Barents Sea, Norwegian Sea, North Sea and the Norwegian coastal zone”.

R1 – R5

LEVEL OF COMPLIANCE

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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: <ul style="list-style-type: none"> • All fishery removals • The biology of the species

Determination: There have been no changes in the stock management unit since the 2014 reassessment. The stock unit reflects the current best scientific understanding of the biological stock. H

Capelin in the Barents Sea is defined by ICES as a single biological stock. Discarding and bycatch of capelin in other fisheries are not quantified but assumed by ICES to be negligible. The biology of the stock is largely taken into account during stock assessments – attempts are made to estimate the level of predation, and standard biological characteristics such as growth rate are included in the model. Fishery removals and the biology of the species are generally taken into account, although predation pressure is an unquantified risk. On balance, however, the assessment team considers a high compliance rating appropriate. For more information please refer to the 2014 re-assessment report.

R6

LEVEL OF COMPLIANCE

A3. Management actions should be based on long-term conservation objectives

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: Management actions are based on an international management plan with the objective of maintaining a spawning stock biomass of 200,000t. H

Capelin die after spawning and so the level of fishing permissible in any year is dependent entirely on the size of the incoming year class. The Barents Sea capelin fishery is managed according to an international management plan agreed between Norway and Russia in 2002. The management plan states:

“For capelin, the following harvest rule should be used: The TAC for the following year should be set so that, with 95% probability, at least 200,000 t of capelin (Blim) will be allowed to spawn”

ICES has evaluated this plan and concluded that it is consistent with the precautionary approach. The plan has been adhered to according to the stock assessments carried out by ICES, which estimate the level of fishing which can be permitted and still maintain the 200,000t minimum SSB.

Blim was originally calculated using the value of the 1989 spawning stock biomass, which is historically the lowest SSB to have produced an outstanding year class (see graphs in section B1). SSB in 1989 was estimated to be 100,000t, which is considered a good basis for a limit reference point when abundance of young herring,

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which are predators of capelin, is low. To take into account the variation in herring abundance from year to year, along with other sources of uncertainty, the SSB was doubled to produce the limit reference point used today.

Estimates of SSB in the period before the introduction of the management plan show peaks followed almost immediately by large falls. The only biomass peak since the introduction of the plan has not been immediately followed by such a drop, and although it is too early to know for sure, it does appear that the plan has gone a large way towards stabilising the stock and possibly avoiding the periodical fishery closures which have occurred in the past.

R9 – R11

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: As was the case in the 2014 re-assessment research in support of fishery management exists and appears to be sufficient to enable informed management of the stock.

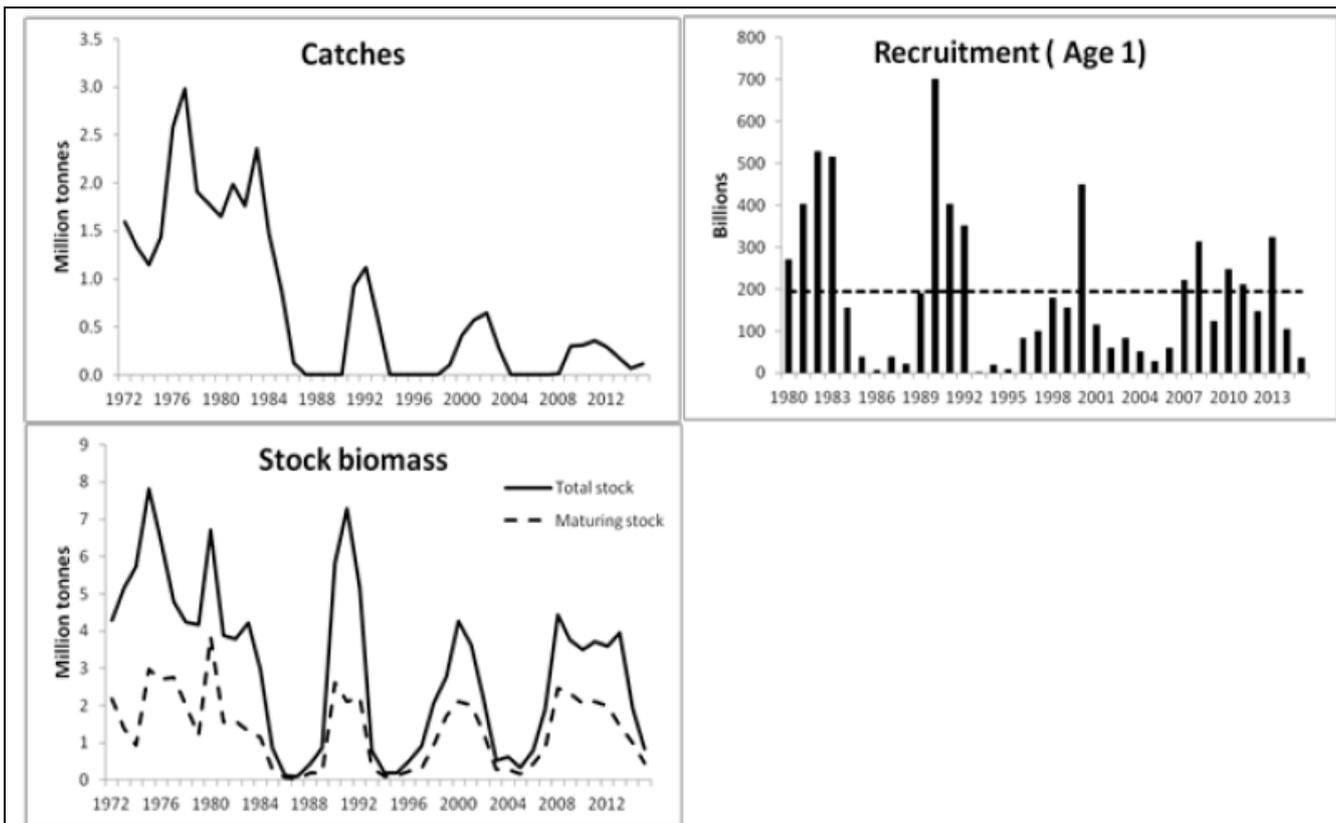
ICES conducts an annual stock assessment of Barents Sea capelin, which is supported by both fishery dependent and fishery-independent data sources.

Fishery dependent

Landings data are available for both Russian and Norwegian vessels. Most of the Norwegian catch is taken by purse seiners, whereas the Russian catch is taken by trawlers. The ICES AFWG is supplied with catch in numbers and age by length, and also the locations of catches. ICES considers discarding and slippage to be negligible.

Fishery independent

A joint Russian-Norwegian trawl-acoustic survey has been conducted in September annually since 1972. The abundance estimate resulting from this survey cruise is considered by ICES to be an absolute estimate of the size of the stock. However, it is recognised that migration during the survey may introduce uncertainty into the results. Natural mortality is estimated using a multi-species model and historical survey estimates. The level of uncertainty in the outputs of the stock assessment appear to be well understood by ICES, which does not report any specific, urgent improvements to the data collection efforts are required.



Barents Sea capelin stock assessment summary. From the ICES advice, October 2015 (R10).

LEVEL OF COMPLIANCE

B2. Best scientific evidence available should be taken into account when designing conservation and management measures.

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: The Norwegian fishery management process continues to include explicit consideration of ICES and IMR advice. There is no evidence that fishery managers are not following scientific recommendations for the fishery.

Scientific research and advice take key positions within the Norwegian fishery management process, ensuring the best and most up-to-date understanding of the stock and the broader ecosystem are always taken into account. Both ICES and IMR advice are factored heavily into management decisions, and in turn the direction and specifics of future research are guided by experiences within the fishery throughout the year.



The regulatory chain of Norwegian fishery management. From the fisheries.no website (R3).

The ICES Arctic Fisheries Working Group (AFWG), which produces the annual capelin advice, strongly recommends the capelin fishery operate only on mature fish during the period from January to April. The fishery currently adheres to this advice, although historically was also conducted in the summer/autumn. Future assessments should ensure that the summer/autumn fishery does not re-open unless the ICES advice changes.

R7

C. THE PECAUTIONARY APPROACH

LEVEL OF COMPLIANCE

C1. The precautionary approach is applied in the formulation of management plans.

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 precautionary approach is applied throughout the assessment of the capelin fishery, with the level of uncertainty directly affecting the conservativeness of management recommendations. The most recent, conservative quota recommendation was adopted by managers leading to an upgrading to high compliance.

Capelin is managed with the objective of maintaining SSB above a precautionary level. The single defined reference point, Blim, is itself based on a precautionary doubling of the historical lowest SSB which produced a good year class. Uncertainty in the acoustic surveys and stock assessments appears to be well understood by ICES, with higher levels of uncertainty leading to more conservative quota advice. The most recent ICES advice,

published in October 2015, reports that the September 2015 acoustic survey had good coverage of the spatial distribution of the capelin stock. ICES has assessed the fishery management plan, described in section A3, and considers it to be in line with the precautionary approach.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	Undefined		
	F_{MSY}	Undefined		
Precautionary approach	B_{lim}	200 kt	Above SSB_{1989} , the lowest SSB that has produced a good year class.	ICES (2001)
	B_{pa}	Undefined		
	F_{lim}	Undefined		
	F_{pa}	Undefined		
Management plan	SSB_{MGT}	Undefined		
	F_{MGT}	Undefined		

Capelin in the Barents Sea, reference points. From the October 2015 ICES advice (R10).

R10-12

D. MANAGEMENT MEASURES

LEVEL OF COMPLIANCE

D1. The level of fishing permitted should be set according to management advice given by research organisations.

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: As in the case of the 2014 re-assessment there is ample evidence that the level of fishing in the Barents Sea capelin fishery generally adheres to the ICES advice, to the extent that the fishery is closed in any year such action is recommended. For 2016 the fishery is to be closed as per scientific advice – therefore a high compliance rating is appropriate.

The total level of fishing permitted across the entire capelin stock is limited by an annual TAC which is divided between Russia and Norway according to bilateral agreement. Since 2000 the TAC has been set precisely in line with the ICES advice, which itself has been based on the international management plan since that plan’s introduction in November 2002 (see section A3). The fishery has been closed entirely whenever the ICES advice has recommended it. Total commercial landings have also generally been within the TAC since this introduction of the management plan, although in 2014 the quota was exceeded by 736t (around 1%). Additionally, some small catches were taken during the 2004-2008 fishery closure for scientific purposes. Historically, capelin in the Barents Sea was subject to both a winter fishery, which targeted schools or pre-spawning capelin, and a summer/autumn fishery on the feeding grounds in the central and northern Barents Sea. Since 2003 the summer/autumn fishery has been closed, and the advice and TACs below refer exclusively to the winter fishery. The 2014 acoustic survey was considered by ICES to have produced a substantial underestimate of the actual stock size, and so ICES applied two potential methods to improve accuracy. The eventual ICES recommendation for the 2015 TAC was 6,000t. However, the quota was set by managers above this level, at 120,000t, but below the alternative recommendation of 195,000t rejected by ICES. For 2016 a

zero TAC was recommended by ICES and it was agreed by Norway and Russia that there should be no fishery for Capelin.

Year	ICES advice	Recommended TAC	Agreed TAC	ICES catch
1987	Catches at lowest practical level	0	0	0
1988	No catch	0	0	0
1989	No catch	0	0	0
1990	No catch	0	0	0
1991	TAC	1000	900	933
1992	SSB > 4–500 000 t	834	1100	1123
1993	A cautious approach, SSB > 4–500 000 t	600	630	586
1994	No fishing	0	0	0
1995	No fishing	0	0	0
1996	No fishing	0	0	0
1997	No fishing	0	0	1
1998	No fishing	0	0	1
1999	SSB > 500 000 t	79*	80	101
2000	5% probability of SSB< 200 000 t	435*	435	414
2001	5% probability of SSB< 200 000 t	630*	630	568
2002	5% probability of SSB< 200 000 t	650*	650	651
2003	5% probability of SSB< 200 000 t	310*	310	282
2004	No fishing	0	0	0
2005	No fishing	0	0	1**
2006	No fishing	0	0	0
2007	No fishing	0	0	4**
2008	No fishing	0	0	12**
2009	5% probability of SSB< 200 000 t	390*	390	307
2010	5% probability of SSB< 200 000 t	360*	360	323
2011	5% probability of SSB< 200 000 t	380*	380	360
2012	5% probability of SSB< 200 000 t	320*	320	296
2013	5% probability of SSB< 200 000 t	200*	200	177
2014	5% probability of SSB< 200 000 t	65*	65	66
2015	5% probability of SSB< 200 000 t	6*	120	115
2016	Zero catch	0		

* Winter–spring fishery.

** Research catch.

ICES advice, international TAC and final landings for Barents Sea capelin, 1987 – 2015. From the ICES advice, October 2015 (R10).

R10-12

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: Norway significantly reduced the number of vessels in all fisheries with the introduction of an individual vessel quota system in the early 1990s.

The law on trawling, which dates back to 1951, prohibits all use of trawls without a license issued by the fisheries authorities. Since then the license has been transformed from a kind of general rights document into several sub-categories where each sub-category grants the right to trawl for identified species only. However,

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the most important reform to license regulation was the introduction of vessel quotas for the coastal fleet in the fishery for Northeast Arctic cod, in the late 1980s. The cod stock was at a serious state and in 1989, the coastal fishery was closed after only three and a half months. Because of this, an individual vessel quota system was established in the coastal fleet. This represented exclusive rights to fish distributed to a limited number of fishermen based on tradition. More than 3000 vessels were excluded from the vessel quota arrangement. This caused upheaval in fishing communities and provoked public debate on fisheries management. Today all fisheries of importance require every vessel to hold a license that allows it to participate in the fishery. Limitations on access to fisheries are critical to management as well as to the economics of the fleet. Other measures of access limitation are certain registration requirements set out in the annual regulation for each fishery. The most common requirements relate to the vessel and/or the owner/master of the vessel. The annual regulation requires the vessel to be listed in the official register of fishing vessels, and similarly require the master of the vessel to be officially registered as a fisherman. These mandatory registrations were introduced in order to reserve fishing rights for professional fishermen and thereby reduce effort. Although effort data for the fishery were not available to the assessment team, it can be assumed that the total effort is effectively limited by the TAC applied to the fishery. There have been no years since 1999 in which total landings substantially exceeded the quota, to the extent that there were no commercial landings in years where ICES recommended fishery closure.

R6, R7, R8

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: As in the 2014 re-assessment there is no evidence to suggest the fishery has a significant direct impact on non-target species or the physical environment. Capelin is recognised as an important component of the regional ecosystem, and its role as such is considered throughout the development of management measures.

Non-target species

In order to limit the catch of fish under the minimum size which may result in increased risk of juvenile fishing mortality, legislation was introduced at the end of the 1990s requiring the use of a sorting grid when fishing with large-mesh trawls in an area north and east of a line drawn in the Barents Sea. This requirement was subsequently extended to cover all fishing with large mesh trawls north of 62°N in the Norwegian economic zone, in the fishery protection zone around Svalbard, and in Svalbard’s territorial waters and internal waters. The Directorate of Fisheries plays a key role in the work of developing and introducing more selective fishing gear, working closely with the fishing gear producing industry and a number of research institutions both in Norway and internationally. In the coming years the directorate intends to continue to develop more selective fishing gear. ICES consider the bycatch of other species to be minimal in the capelin fishery.

Ecosystems

Capelin is known to play a key role in the marine ecosystem and is considered by ICES to be the most important pelagic fish in the Barents Sea. Capelin is the main prey item for Northeast cod and is also important

to herring, several species of marine mammal, and several other commercial species. The potential impacts of cod predation on capelin are considered as a component of the ICES stock assessment model.

PET species

The 2010 Norwegian red list classifies ten species of marine mammals and seventeen of seabirds in the region as Regionally Extinct, Critically Endangered, Endangered or Near Threatened. Blue whale (*Balaenoptera musculus*) and fin whale (*B. physalus*) are classified as endangered in the region, although blue whale numbers are increasing; beluga (*Delphinapterus leucas*) and narwhal (*Monodon monoceros*) are considered to be near threatened and polar bear (*Ursus maritimus*) to be vulnerable and decreasing. Many top predators including harp seals and minke and humpback whales are important capelin feeders. Both harp seal and seabird populations have in the past been affected by low capelin abundances. However, there are no reports of direct impacts of the capelin fishery on any PET species.

Physical environment

Direct effects on habitat and seafloor are typically minimal for pelagic gears, although occasional contact is known to occur and, in these cases, can potentially cause damage to fragile ecosystems (e.g. corals).

R10 – R11

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: Norway continues to have in place a framework of sanctions for violations of laws and regulations, including a blacklist which prevents vessels from fishing in Norwegian waters entirely. H

Norway constantly seeks to regulate its own fisheries sustainably and ensure efficient control of resources both on landing and at sea through the Coast Guard. Moreover, a number of measures have been implemented to deter Norwegian vessels from participating in IUU fishing and to prevent illegally caught fish from entering the Norwegian market. The Norwegian Government’s Plan of Action on Economic Crime has been used in order to enforce measures against Norwegian actors in IUU activities. Norway has also adopted a black-list of vessels involved in IUU fishing since 1994, banning such vessels from fishing in Norwegian waters. Vessels that have taken part in fishing outside quota arrangements in international waters for a stock which is subject to regulations in Norwegian waters, or which contravene any other international regulatory measures in such areas, are blacklisted. The consequences of blacklisting are the refusal of a licence to fish or conduct transshipment in the Norwegian EEZ, and the withdrawal of the ability to be registered as a fishing vessel under the Norwegian flag.

R7, R8

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.
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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.
<p>Determination: A management system for control and enforcement is established and appears to work efficiently.</p> <p>The Norwegian Coast Guard, together with the Directorate of Fisheries and the sales associations, is responsible for control and enforcement in marine fisheries. On average, any ocean-going trawler fishing in Norwegian waters is inspected three or four times a year, with other vessels inspected once or twice. Together these total around 1,800 inspections per year. Around 70% of the Coast Guard’s resources are used on these inspections, with the remainder fulfilling its other responsibilities such as search and rescue and medical response. The priority of inspections is to ensure that fishing has not been conducted in closed areas, and to ensure that catches were made in the zones from which they are reported to have been made. This is aided by the mandatory installation of VMS in all vessels 24m or larger (15m for vessels from the EU). Physical inspection of landings is the responsibility of the Directorate, which in addition to recording catch statistics ensures the correct completion of other monitoring paperwork.</p> <p>R7, R8</p>	

7. REFERENCES Used in ASSESSMENT

- R1 – Ministry of Trade, Industry and Fisheries, About:
http://www.fisheries.no/About/Fisheries_authorities/the_ministry_of_trade_industry_and_fisheries
- R2 – Directorate of Fisheries, About:
http://www.fisheries.no/About/Fisheries_authorities/directorate_of_fisheries
- R3 – Institute of Marine Research, About:
http://www.fisheries.no/About/Research_institutions/Institute_of_Marine_Research
- R4 – IMR information pamphlet: http://www.imr.no/filarkiv/2003/12/Institute_of_Marine_Research.pdf/en
- R5 – Marine Resources Act: <http://www.fiskeridir.no/english/fisheries/regulations/acts/the-marine-resources-act>
- R6- IFFO Norway Capelin re-assessment report 2014: <http://www.iffonet.net/files/iffoweb/approved-raw-materials/whole-fish/norway-capelin-re-assessment-december-2014.pdf>
- R7 – The regulatory chain of Norwegian fisheries management:
http://www.fisheries.no/resource_management/setting_quotas/The-regulatory-chain
- R8 – Norway control and enforcement:
http://www.fisheries.no/resource_management/control_monitoring_surveillance/Control_and_enforcement

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R9 – Norway coast guard duties:

http://www.fisheries.no/resource_management/control_monitoring_surveillance/Exercising_resource_control

R10 – ICES capelin advice, Subareas I and II, October 2015:

<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2015/2015/cap-bars.pdf>

R11 – ICES WKARCT report 2015, Barents Sea Capelin chapter:

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