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SURVEILLANCE NO. 4

Report for the Russian Federation Barents sea cod and haddock fishery

JSC Strelets, JSC Eridan and JSC Taurus

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Objective:
The objective of this report is the fourth surveillance audit of the Russian Federation Barents sea cod and haddock fishery

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Keywords:
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0	26.03.2018	First issue	Anna Kiseleva, John Nichols

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GLOSSARY

Abbreviations & acronyms

ACOM	(ICES) Advisory Committee
AFWG	(ICES) Arctic Fisheries Working Group
BBTU	The Barents and White Sea Territorial Administration of the Federal Fisheries Agency
CAB	Conformity Assessment Body
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPUE	Catch per unit effort
CR	Certification Requirements
EEZ	Exclusive Economic Zone
ETP	Endangered, Threatened and Protected
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FFA	Federal Fisheries Agency of Russian Federation
FPZ	Fishery Protection Zone
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Sea
IMR	Institute of Marine Research, Norway
ISBF	Introduced Species Based Fisheries
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unregulated and Unreported
JNRFC	Joint Norwegian Russian Fisheries Commission
JSC	Joint Stock Company
LTL	Low Trophic Level
MSC	Marine Stewardship Council
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
NAFO	Northwest Atlantic Fisheries Organisation
NAMMCO	North Atlantic Marine Mammal Commission
NEAFC	North East Atlantic Fisheries Commission
NGO	Non - Governmental Organization
OSPAR	Oslo – Paris Convention. The Convention for the Protection of the Marine Environment of the North-East Atlantic.
PI	Performance Indicator
PINRO	Polar Research Institute of Marine Fisheries and Oceanography, Russia
PISG	Performance Indicator Scoring Guideposts
PSC	Port State Control
REZ	Russian Economic Zone
SG	Scoring guidepost
SSB	Spawning Stock Biomass
TAC	Total Allowable Catch
UK	United Kingdom
UNLOSC	United Nations Law of the Sea Conference
UoC	Unit of Certification
VME	Vulnerable marine ecosystems
VMS	Vessel Monitoring System
WWF	World Wildlife Fund
XSA	Extended Survivor's Analysis

Stock assessment reference points

B_{lim}	Minimum biomass below which recruitment is expected to be impaired or the stock dynamics are unknown.
B_{msy}	Biomass corresponding to the maximum sustainable yield (biological reference point); the peak value on a domed yield-per-recruit curve.
B_{pa}	Precautionary biomass below which spawning stock biomass (SSB) should not be allowed to fall to safeguard it against falling to Blim.
$B_{trigger}$	Value of SSB that triggers a specific management action
F	Instantaneous rate of fishing mortality
F_{lim}	Exploitation rate that is expected to be associated with stock 'collapse' if maintained over a longer time (precautionary reference point)
F_{max}	F where total yield or yield per recruit is highest
F_{msy}	F giving maximum sustainable yield
F_{pa}	Precautionary buffer to avoid that fishing mortality at Flim.
MSY	Maximum Sustainable Yield

1 GENERAL INFORMATION

Table 1 General information

<table>
<tr><td>Fishery name</td><td>Russian Federation Barents sea cod and haddock</td></tr>
<tr><td>Unit(s) of Assessment (UoA)</td><td>
UoA 1: Barents Sea cod
<table>
<tr><td>Species:</td><td>Cod (Gadus morhua)</td></tr>
<tr><td>Stock:</td><td>Barents Sea cod</td></tr>
<tr><td>Geographical area:</td><td>ICES Sub-areas I and II. FAO 27. Primarily Norwegian EEZ and Svalbard FPZ</td></tr>
<tr><td>Harvest method:</td><td>Bottom trawl</td></tr>
<tr><td>Management:</td><td>Federal Agency of Fisheries (Russian Federation), Norwegian Ministry of Fisheries and Coastal Affairs (Norwegian EEZ and Svalbard FPZ) Joint Russian-Norwegian Fisheries Commission, NEAFC, PINRO, IMR and ICES.</td></tr>
<tr><td>Client group:</td><td>The clients responsible for coordination of full-assessment for this fishery are JSC Strelets and JSC Eridan .
The client group is represented (per 26.03.2018) by the following ship owners:
• JSC Strelets with vessel Strelets (M-0269)
• JSC Eridan with vessel Korund (M-0245)
• JSC Taurus with vessel Taurus (MK-0411)</td></tr>
<tr><td>Other eligible fishers:</td><td>As defined under section 3.1.7 of Public Certification Report</td></tr>
</table>
UoA 2: Barents Sea haddock
<table>
<tr><td>Species:</td><td>Haddock (Melanogrammus aeglefinus)</td></tr>
<tr><td>Stock:</td><td>Barents Sea haddock</td></tr>
<tr><td>Geographical area:</td><td>ICES Sub-areas I and II. FAO 27. Primarily Norwegian EEZ and Svalbard FPZ</td></tr>
<tr><td>Harvest method:</td><td>Bottom trawl</td></tr>
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	Other eligible fishers:	As defined under section 3.1.7 of Public Certification Report		
Date certified	06 May, 2014	Date of expiry	05 May, 2019	
Surveillance level and type	*Surveillance level 2 :* reduced surveillance *2015: review of information* *2016: off-site surveillance* *2017: off-site surveillance* *2018: on-site surveillance*			
Date of surveillance audit	22 -26 January 2018			
Surveillance stage	1st Surveillance			
	2nd Surveillance			
	3rd Surveillance			
	4th Surveillance	**X**		
	Other (expedited etc)			
Surveillance team	Lead assessor: Anna Kiseleva Assessor(s): John Nichols			
CAB name	DNV GL Business Assurance			
CAB contact details	Address	Veritasveien 1 1322 HØVIK, Norway http://www.dnvgl.com		
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	Email	Anna.Kiseleva@dnvgl.com		
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Client contact details	Address	ul. Shmidta 43, 183038 Murmansk, Russian Federation		
	Phone/Fax	+8152 994-890		
	Email	grekov@uk.msk.ru		
	Contact name(s)	Igor Grekov		

This report contains the findings of the fourth annual MSC Fisheries surveillance audit conducted for the Russian Federation Barents sea cod and haddock fishery during 22 -26 January 2018.
The purpose of this annual Surveillance Report is:

1. To establish and report on any material changes to the circumstances and practices affecting the original complying assessment of the fishery;
2. To monitor any actions taken in response to conditions made in the Public Certification Report for Russian Federation Barents sea cod and haddock fishery;
3. To re-score any Performance Indicators (PI) where practice or circumstances have materially changed during the intervening year, focusing on those PIs that form the basis of Conditions raised.

The primary focus of this surveillance report is to review the changes occurred since the previous year and confirm that the fishery can enter re-assessment. For a complete picture of the fishery, this report should be read in conjunction with the Public Certification Report for Russian Federation Barents sea cod and haddock fishery available for download at www.msc.org.

2 BACKGROUND

2.1 Barents Sea cod stock status

2.1.1 The Fishery

The North East Arctic cod fishery is conducted both with an international trawler fleet and with coastal vessels using traditional fishing gears. Cod is a target species in a mixed fishery taking haddock and saithe as major by-catch species. Two species of redfish, *Sebastes marinus* and *S. mentella*, are also taken as by-catch. Quotas were introduced in 1978 for the trawler fleets and in 1989 for the coastal fleets. In addition to quotas, the fishery is regulated by a minimum catch size, a minimum mesh size in trawls and Danish seines, a maximum by-catch of undersized fish, a maximum by-catch of non-target species, closure of areas having high densities of juveniles and by seasonal and area restrictions. Since 1997 sorting grids have been mandatory for all trawl fisheries in most of the Barents Sea and Svalbard area. From 2011 the minimum mesh size for bottom trawl fisheries for cod and haddock for the whole of the Barents Sea, changed to 130mm. Prior to that it was 135mm in the Norwegian EEZ and 125mm in the Russian EEZ. From 1 January 2011, the minimum landing size was also changed to 44cm in all areas. Previously the minimum size was 42cm in the Russian EEZ and 47cm in the Norwegian EEZ. These changes were part of a harmonisation of the regulations in each EEZ and included changes to the percentage of undersized fish permitted in the catch.

Historically the cod fishery in the north east Arctic was dominated by Norway, the United Kingdom and Russia through to the late 1970s. Following the establishment of 200 nautical mile exclusive economic zones in the early 1980s, the fishery became dominated by Norway and Russia through to the present time. Over the past fifteen years Norway has taken an average of 45% of the catch, Russia 42% and other countries 13%. The total recorded landings of Northeast Arctic cod in 2016 were 849,422t. Norway took 348,949t (41%) and Russia took 394,107t (46.4%) The remaining 12.5% was shared between the Faroe Islands, France, Germany, Greenland, Iceland, Spain and the UK (ICES, 2017a,b).

Figure 1 shows the historical pattern of landings of Northeast Arctic cod over the period 1946 to 2016.
Through to the early 1960s landings generally fluctuated between 600,000 and 800,000 t with the exception of two years, 1955 and 1956 when landings went over one million t to a high of 1.3 million t in 1956. From a subsequent low of 438,000t in 1964 landings rapidly increased to over a million t in 1968 and 1969. Landings then fluctuated but remained above half a million t after which there was a steady decline to less than 300,000t in 1984. After a small and very short recovery landings fell rapidly to the lowest recorded level, in the time series, of 212,000t in 1990. Landings have steadily increased over recent years to reach a peak of 986,449t in 2014 (ICES, 2017b).
In the past there have been reports of unreported catches through discarding etc. However, the assessment working group now consider that the landings data, since 2009, are very close to the actual catches. This assumption is based on an analysis carried out by the Norwegian-Russian group on the estimation of total catch (ICES, 2015a).

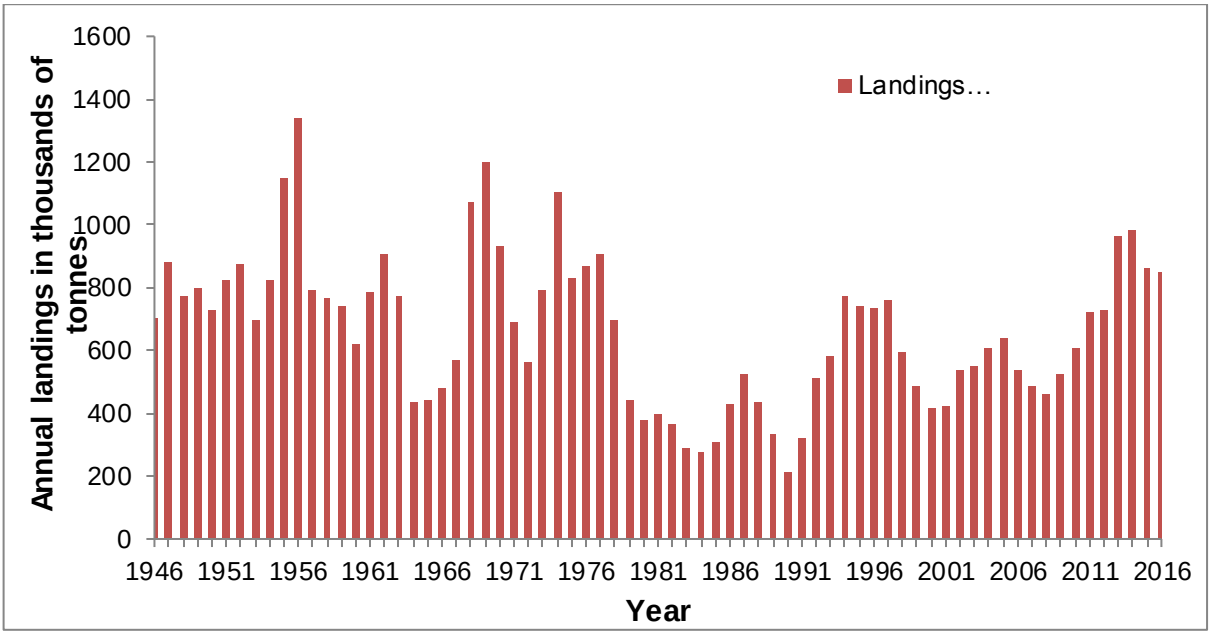

Figure 1: Annual Landings of Northeast Arctic Cod in thousands of tonnes over the period 1946 to 2016 (ICES, 2017b)

The total landings, by each country, of North East Arctic cod in ICES sub-Areas I and II from 2012 to 2016 are shown in Table 2. The total catches include a small quantity of 'others' totalling 15,139t in 2016 which includes unspecified EU catches (ICES, 2017b).

Table 2 Landings of North East Arctic cod (tonnes) by country from ICES sub-Areas I and II from 2012 to 2016. The 2016 figures are provisional (ICES 2017b).

Year	Faroes	France	Greenland	Germany	Norway	Spain	UK	Russia	Iceland	others	Total
2012	17,523	2,841	8,520	8,500	315,739	12,814	11,166	329,943	9,536	11,081	727,663
2013	13,833	7,858	7,885	8,010	438,734	15,042	12,536	432,314	14,734	15,263	966,209
2014	33,298	8,149	10,864	6,225	431,846	16,378	14,762	433,479	18,205	13,243	986,449
2015	26,568	7,480	7,055	6,427	377,983	19,905	11,778	381,778	16,120	9,880	864,384
2016	24,084	7,946	8,607	6,336	348,959	14,640	13,583	394,107	16,031	15,139	849,422

2.1.2 Stock Assessment

At the ICES Inter-Benchmark meeting in April 2017 (ICES, 2017c0 the stock assessment model was changed from XSA to the State-space Assessment Model (SAM) (Nielsen, A.C and C.W. Berg, 2014) . The meeting also recommended a change in the Recruitment Model and the inclusion of a wider age range in the assessment. This resulted in a change in the perception of spawning stock biomass compared to the results of the 2016 assessment (ICES, 2016a). Figure 2 shows the comparison between the estimates of SSB in 2016 using the XSA model and 2017 using SAM. The retrospective differences have gradually increased from +24% in 2012 to +64% in 2016. The major differences have been since 2012 as shown in the text Table below.

	Estimate of SSB in 2016 (XSA)	Estimate of SSB in 2017 (SAM)	% difference
2012	1,910,354t	2,371,480t	+24
2013	2,134,044t	2,692,927t	+26
2014	1,866,445t	2,563,812t	+37
2015	1,383,398t	2,133,633t	+54
2016	1,069,881t	1,769,635t	+65
2017		1,835,962t	

A natural mortality (M) of 0.2 + cannibalism was used in the model. Cannibalism is assumed to only affect natural mortality of ages 3-6 years. In addition, cannibalism was taken into account.

The method used for calculation of the prey consumption by cod described by Bogstad and Mehl (1997) is used to calculate the consumption of cod by cod for use in cod stock assessment. The consumption is calculated based on cod stomach content data taken from the joint PINRO-IMR stomach content database (methods described in Mehl and Yaragina 1992). On average about 9000 cod stomachs from the Barents Sea have been analysed annually in the period 1984—2016.

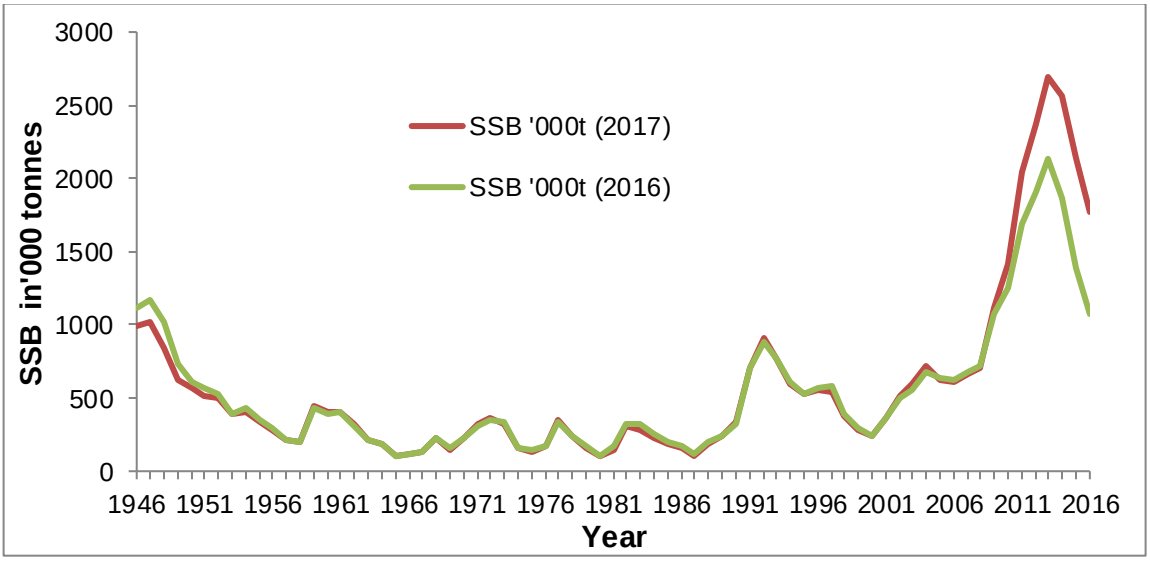

Figure 2 The annual estimates of spawning stock biomass of Northeast Arctic cod over the period 1946 to 2016. The green line is the estimate from the XSA assessment model used up to 2016 and the red line is the estimate in 2017 from the new State-Space Assessment Model (SAM) (ICES, 2017b).

The estimate of spawning stock biomass at spawning time in 2016 was 1,769,635 (1,387,517 / 2,256,988 -/+95% CI). It is estimated to have increased to 1,835,962t at spawning time in 2017 an increase of 66,327tt since 2016 (ICES, 2017b). Figure 2 shows the estimate of SSB dating back to 1946 together with the 95% high and low confidence intervals produced by the new assessment model, up to 2016. The reference points for MSY B trigger / Bpa / Management plan and the biomass limit reference points are also shown (ICES, 2017b).
The retrospective estimate of spawning stock biomass shows that it has not been below the biomass limit level (220kt) since 1988, although the assessment shows that it came very close to Blim in 2000 (239,875t) with the lower 95% CI below Blim. SSB has been above the MSY B trigger/Bpa/ Mgt level (460kt) since 2003. It is currently almost four times that upper reference level (ICES, 2017b)

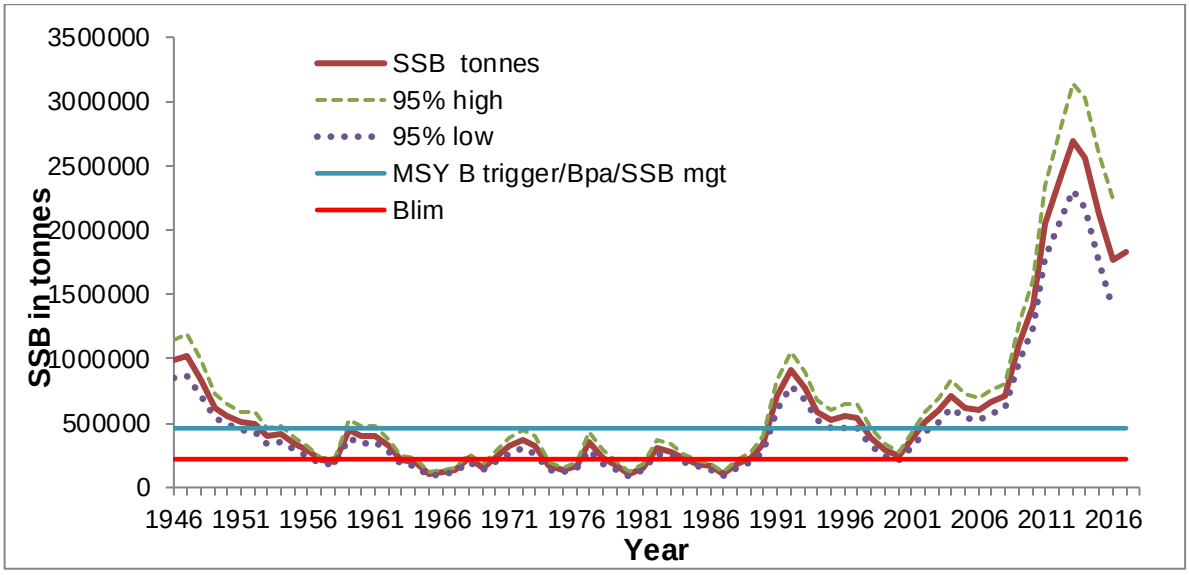

Figure 3 The annual estimate of Spawning stock biomass of Northeast Arctic cod over the period 1946 to 2016 (red line). The upper and lower 95% confidence intervals on the estimates are also shown. The biomass limit reference point and the reference point for MSY B trigger/Bpa and the SSB management level are also shown (ICES, 2017b).

2.1.3 Fishing mortality

Fishing mortality (F), based on ages 5-10yrs in the stock, over the period 1946 to 2016 is shown in Figure 4. The 95% high and low confidence intervals of the estimates are also shown together with the Fmsy/precautionary approach/Fmgt and the Flim reference points. Fishing mortality has been below the management plan / MSY level (F 0.4) since 2008 and has stabilised at around F 0.32 over the past three years. It has not been above the F limit level (0.74) since 2000 (ICES, 2017b).

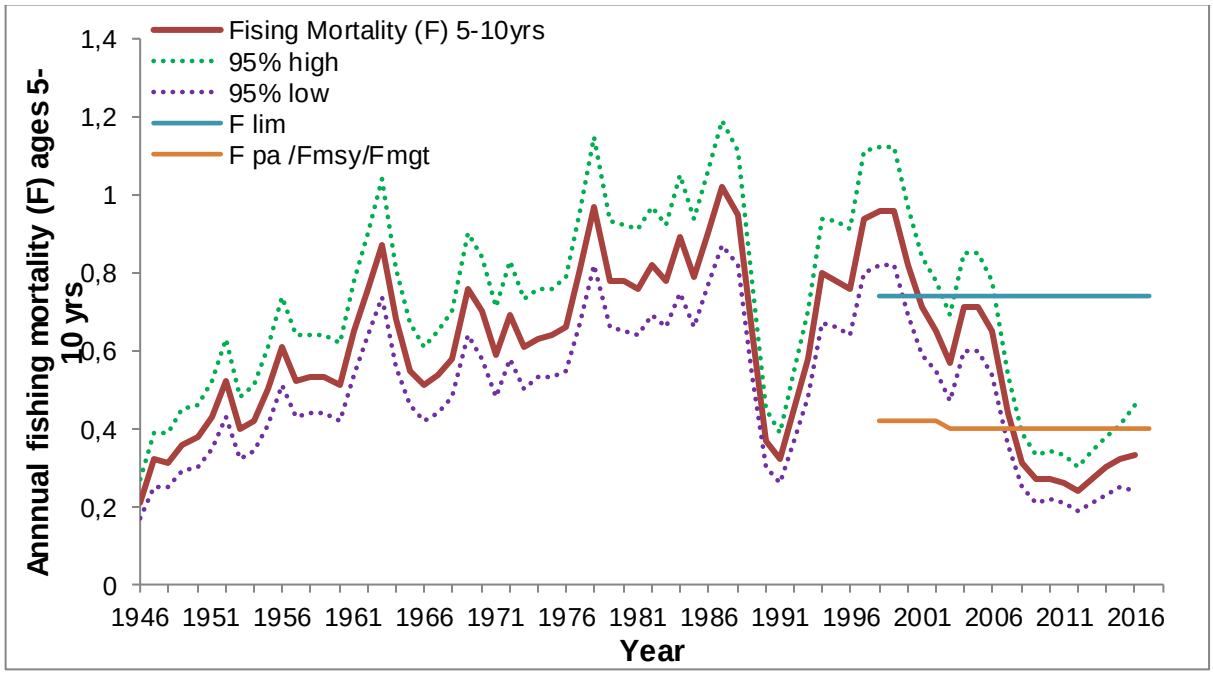

Figure 4 Annual fishing mortality (F), on Northeast Arctic cod, based on ages 5 to 10 years, over the period 1946 to 2016. The 95% confidence limits on the estimates, from the State Space assessment model, are also shown. The current limit (Flim), and the precautionary (Fpa) / maximum sustainable yield (Fmsy) / management (Fmgt) reference levels are also shown (ICES, 2017b).

2.1.4 Recruitment

The annual pattern of recruitment at age three years, over the period 1946 to 2017 is shown in Figure 5. Estimation of recruitment is via a sophisticated modelling procedure using the surveys and which takes into account a number of ecosystem variables including predation and cannibalism. The new SAM stock assessment model provides 95%, high and low confidence estimates which are shown on Figure 5. The pattern of recruitment is a typical fluctuating one for this stock with the last big year classes produced in 2004 and 2005. The 2013 year class (3ysr old in 2016) is one of the lowest in the time series but recruitment is predicted to show a marginal improvement in 2017 (ICES, 2017a,b).

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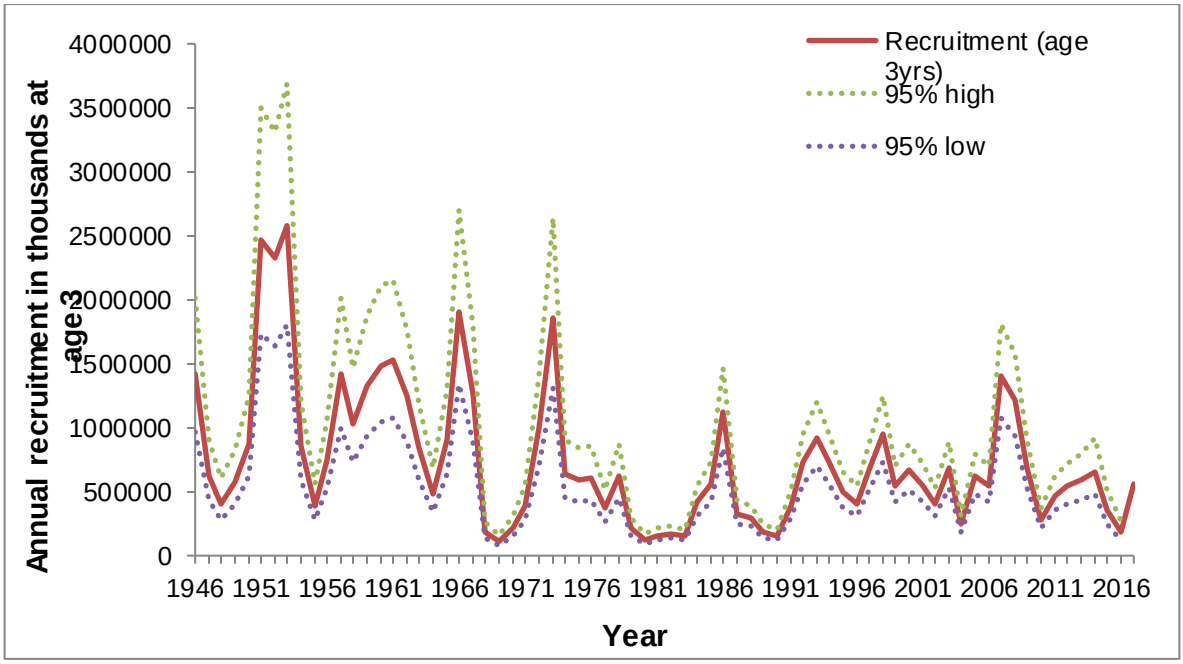

Figure 5 Annual recruitment at age 3 years, of Northeast Arctic cod, over the period 1946 to 2017. The 95% confidence limits on the estimates, from the State Space assessment model, are also shown (ICES, 2017b).

2.1.5 Management advice.

Up to the 2016 fishery the ICES advisory committee (ACOM) continued to advise on the harvest rules resulting from the original JRNFC agreement in 2002 which was first applied for setting quotas in 2004 and evaluated by ICES as precautionary in 2005. In November 2015 a first Workshop was held I Murmansk on Management Plan evaluation of NEA cod and haddock and Barents Sea capelin ICES, 2015c). A second evaluation Workshop, on the same theme, was held in Kirkenes in January 2016 (ICES, 2016b). Following those Workshops Norway and Russia made a request to ICES for the evaluation of alternative harvest control rules for Northeast Arctic cod, haddock and capelin (ICES, 2016c). For cod ICES investigated and evaluated a series of ten harvest control rules including the existing one. ICES concluded that

they were all in accordance with the ICES standard that the annual probability of SSB being below the biomass limit level should be no more that 5%.
A new Management Plan (text Table below) was subsequently agreed by the Joint Russian–Norwegian Fisheries Commission (JRNFC) at their 46th meeting in October 2016. This formed the basis for the agreed TAC for 2017 although ICES continued to provide advice on the basis of the original plan. The ICES advice for the fishery in 2018 was provided on the basis of the new Management plan (ICES, 2017b). ICES advises that when the Joint Russian–Norwegian Fisheries Commission management plan is applied, catches in 2018 should be no more than 712 000 tonnes (F 0.44). This would result in a 21% reduction in SSB in 2019, relative to 2018, to 1,187,128t .Bycatch of coastal cod and golden redfish (Sebastes norvegicus) should be kept as low as possible. Other catch options provided by the ICES advisory committee (ACOM) were for the precautionary approach (Fpa 0.4) and Fmsy (F0.4) which would generate a catch in 2018 of 653,971t and an SSB in 2019 of 1,238,434t (ICES, 2017b).

Advice basis	**Joint Russian–Norwegian Fisheries Commission management plan**
Management Plan	At the 46th meeting of the Joint Russian–Norwegian Fisheries Commission (JRNFC) in October 2016, the previously used management plan was amended, and the current plan is as follows: The TAC is calculated as the average catch predicted for the coming 3 years using the target level of exploitation (Ftr). The target level of exploitation is calculated according to the spawning-stock biomass (SSB) in the first year of the forecast as follows: - if SSB < Bpa, then Ftr = SSB / Bpa × Fmsy; - if Bpa ≤ SSB ≤ 2×Bpa, then Ftr = Fmsy; - if 2×Bpa < SSB < 3×Bpa, then Ftr = Fmsy × (1 + 0.5 × (SSB - 2×Bpa) / Bpa); - if SSB ≥ 3×Bpa, then Ftr = 1.5 × Fmsy; where Fmsy=0.40 and Bpa=460 000 tonnes. If the spawning–stock biomass in the present year, the previous year, and each of the three years of prediction is above Bpa, the TAC should not be changed by more than +/- 20% compared with the previous year's TAC. In this case, Ftr should however not be below 0.30. In 2014, JNRFC decided that from 2015 onwards, Norway and Russia can transfer to or borrow from the following year up to 10% of the country's quota. ICES evaluated this harvest control rule in 2016 (ICES, 2016a) and concluded that it is precautionary.

Figure 6 shows the performance of the management regime in terms of compliance with the ICES advice and subsequently agreed TAC. The 2017 TAC was set according to the new management plan agreed by JNRFC in October 2016.

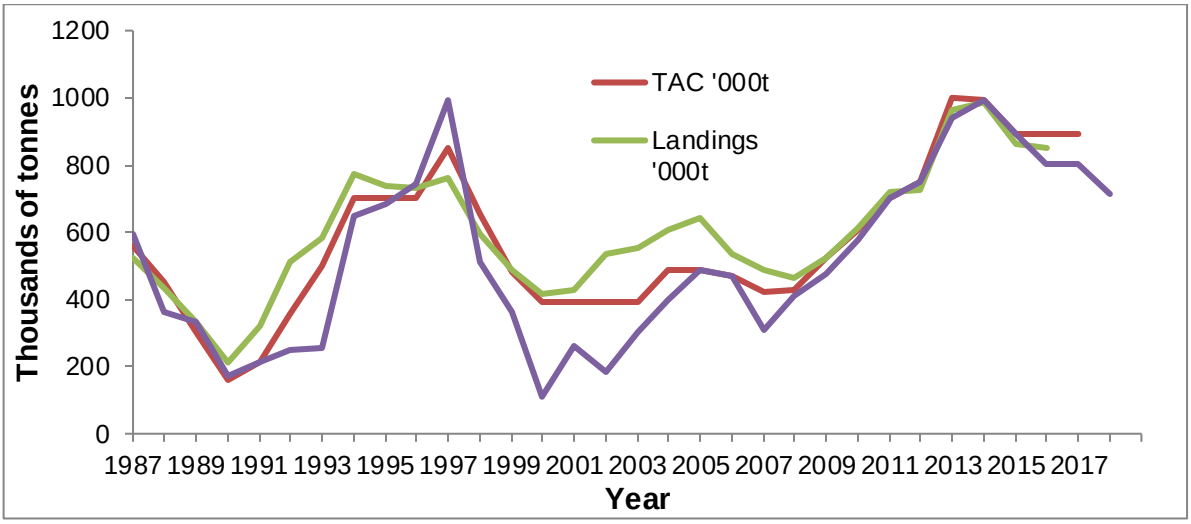

Figure 7 The ICES advised catch, the agreed TAC and the actual landings over the period 1987 to 2016 with the advised catch and ICES advice for 2017 and the ICES advice for 2018 (ICES, 2017b)

2.1.6 Summary of stock status

Figure 8 provides a summary of the stock status relative to all the biological reference points (ICES, 2017b). In terms of the fishing pressure on the stock ICES considers the stock to be harvested sustainably with fishing mortality below the management plan level and below maximum sustainable yield (ICES, 2017b). In terms of the spawning stock status ICES considers the stock to be in full reproductive capacity with SSB above both the management plan and maximum sustainable yield levels (ICES, 2017b)

	Fishing pressure				Stock size			
		2014	2015	2016		2015	2016	2017
Maximum Sustainable Yield	F_{MSY}	✓	✓	✓ Below	MSY $B_{Trigger}$	✓	✓	✓ Above trigger
Precautionary Approach	F_{pa}, F_{lim}	✓	✓	✓ Harvested sustainably	B_{pa}, B_{lim}	✓	✓	✓ Full reproductive capacity
Management plan	F_{MGT}	✓	✓	✓ Below	B_{MGT}	✓	✓	✓ Above

Figure 8 A summary of stock status of NEA cod relative to SSB (2015 to 2017) and Fishing Mortality (2014 to 2016) (ICES, 2017b)

2.2 Barents Sea haddock stock status

2.2.1 The fishery

The demersal fisheries in the Barents Sea are highly mixed, and haddock is fished together with cod (particularly), but also together with saithe. The North East Arctic haddock fishery is mainly a bottom trawl fishery and is generally a by-catch of the much larger cod fishery over the same areas. About 75% of the catch is taken by trawl and the rest by other gears such as longline and gillnet (ICES, 2016a; 2017a). There are some directed trawl and longline fisheries specifically for haddock particularly in years of high fishable stock abundance.

A raft of enforcement measures exist to protect the stock and to ensure sustainability of the fishery. These include minimum landing size, minimum mesh size for trawls and Danish Seines, maximum by-catch of undersized fish, maximum by-catch of non-target species, flexible area closures when large numbers of juveniles occur and other seasonal and area closures. Technical regulations for demersal fisheries were harmonized from January 2011 so that they are now the same in both the Norwegian and Russian EEZs (ICES, 2012). Before 2011 the minimum landing size was 39cm from within the Russian EEZ and 44cm from within the Norwegian EEZ. Up to 2010 the minimum mesh size was 135mm in the Norwegian EEZ and 125mm in the Russian EEZ. From 2011 the minimum landing size is 40cm and the minimum mesh size for the whole of the Barents Sea is 130mm.

Annual quotas have been in place for trawl fisheries since 1978 and Norway sets separate quotas for the trawl fishery and for other gears. There is a total ban on discarding over the whole of the area together with a maximum by-catch of undersized fish.

Illegal and unreported landings have been a problem in this fishery, linked strongly to practices within the cod fishery. The ICES AFWG had no information on the extent of the problem before 2002 (ICES, 2009; ICES, 2010).From 2002 to 2007 the AFWG estimate of landings exceeded the official landings figures by an average of 16% each year and was as high as 25% in 2005.This problem was addressed by more rigorous enforcement measures, including inspections at sea and designated landing points. As a result, the problem was gradually reduced and in 2008 the ICES estimated catch exceeded the official landings by just 4%. Since 2008 the AFWG no longer consider that illegal and unreported landings to be a significant issue (ICES, 2012).

Figure 9 shows the pattern of haddock landings over the period 1950 to 2016 (ICES, 2017d). The historic high catch level of 322,226 t in 1973 divides the time-series into two periods. In the first period, highs were close to 200,000 t around 1956, 1961 and 1968, and lows were between 75,000 and 100,000 t in 1959, 1964 and 1971. The second period showed a steady decline from the peak in 1973 down to the historically low level of 20,945 t in 1984. Afterwards, landings rapidly increased to 155,000 t in 1987 before declining to 27,000 t in 1990. After a steady increase in landings up to 178,000 t in 1996 there was a further decline to 69,000t in 2000. This was followed by a steady increase in landings up to a peak of 315,627t in 2012. Landings in 2016 were 233,416t which was an increase of 38,660t over the previous year.

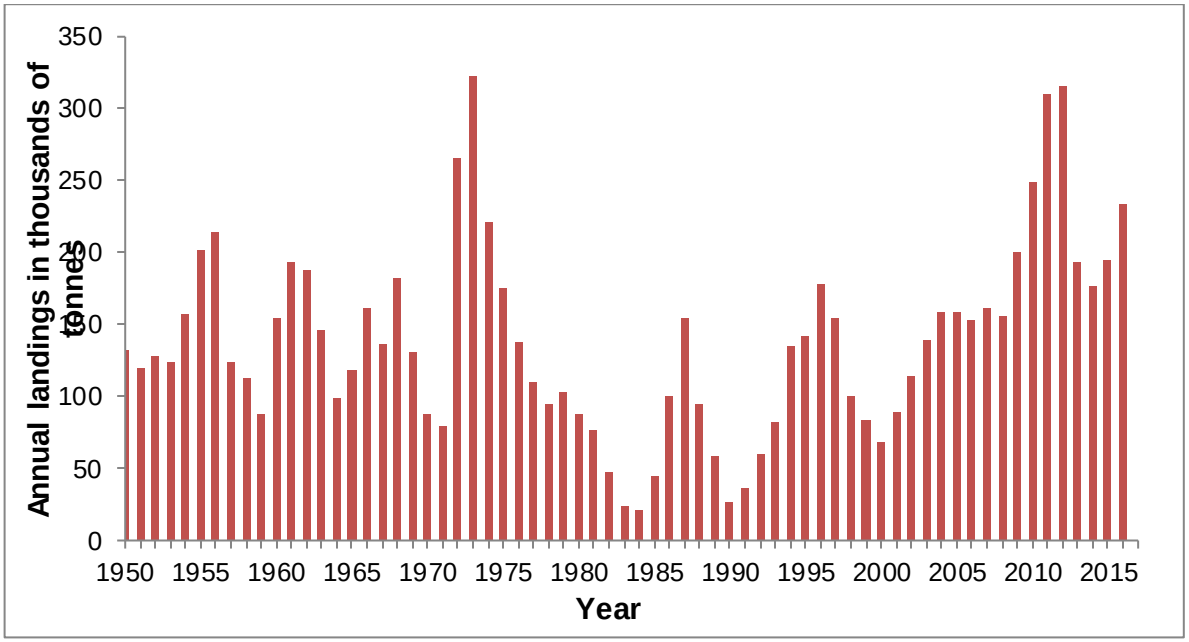

Figure 9 Annual Landings of Northeast Arctic haddock in thousands of tonnes over the period 1950 to 2016 (ICES, 2017d)

The total landings (tonnes) of North East Arctic haddock, by each country, in ICES sub-Areas I and Divisions IIa and IIb from 2012 to 2016 are shown in the text Table below.

Year	Faroes	France	Greenland	Germany	Norway	UK	Russia	Spain	Others	Total
2012	2055	322	3984	1111	159,602	833	143,886	441	3393	315,627
2013	1886	342	1795	500	99,215	639	85,668	439	3260	193,724
2014	1470	198	1150	340	91,306	355	78,725	187	3791	177,522
2015	2459	145	1047	124	95,094	450	91,864	246	3327	194,756
2016*	2560	340	1401	170	108,718	575	115,710	200	3838	233,416

*Provisional figures

2.2.2 Stock Assessment

The benchmark Workshop on Arctic stocks, in 2015 (ICES, 2015b) concluded that for Northeast Arctic haddock the State Space assessment model, SAM (Nielsen, A.C and C.W. Berg, 2014), should replace XSA as the main assessment model. For this stock, XSA has been shown to be very sensitive to the choice of settings, especially use or non use of population shrinkage. SAM is a statistically based and in general more appropriate model which is now widely used for other stocks within the ICES area including the Northeast Arctic cod (ICES, 2015)

The assessment uses:

- Commercial landings data allocated to ages 1–14 from 1950 to 2013. These data come from the ICES database with landings reported by 13 countries including sampled information from Norway, Russia, and Germany.

- Catch in numbers-at-age and weights-at-age are compiled by port sampling program for Norway and by data from fishing vessels for Russia, and applied to the remaining landings by area. Details about how the landings data were derived and processed are described in the stock annexes (ICES, 2015a: ICES, 2017a).
- Four fishery independent survey tuning indices. The Joint Barents Sea winter survey (bottom trawl) and acoustics in the first quarter, the Russian bottom trawl survey in the fourth quarter and the International 0-group survey and joint ecosystem survey in the third quarter.
- Annual maturity data from surveys is collected on the trawl surveys and natural mortalities from cod consumption of ages 1–6 haddock are available from 1984. Cod is the main predator on haddock, and predation by cod on young haddock is included in the assessment as an additional mortality. This is found to improve the assessment. Predation by cod removes on average about the same biomass as the fishery, but predation mainly takes place on ages 1–3, while the fishery starts at age 3.

The SAM assessment therefore includes data both from the fishery and from fishery independent abundance surveys. The fisheries data used in the assessment are derived from the combined fisheries that target NEA haddock.

Figure 10 shows the annual estimates of SSB over the period 1950 to 2016. The high and low 95% confidence interval estimates are also shown. The biomass limit and the maximum sustainable yield (B trigger) and SSB management plan levels are also included.

The SSB at spawning time in 2016 was estimated at 675,068t (95% C: +909,423 / -501,105t). It is predicted to have decreased to 537,865t in 2017. SSB has been above the current MSY B trigger / Management and Bpa level of 80,000t since 1989 and has not been below the biomass limit level of 50,000t during the time series dating back to 1950 (Figure 10). The exceptionally strong year classes of 2004–2006 have contributed to the strong increase in all-time high levels of SSB seen in later years; however, the SSB in 2017 is declining (ICES advice 2017d).

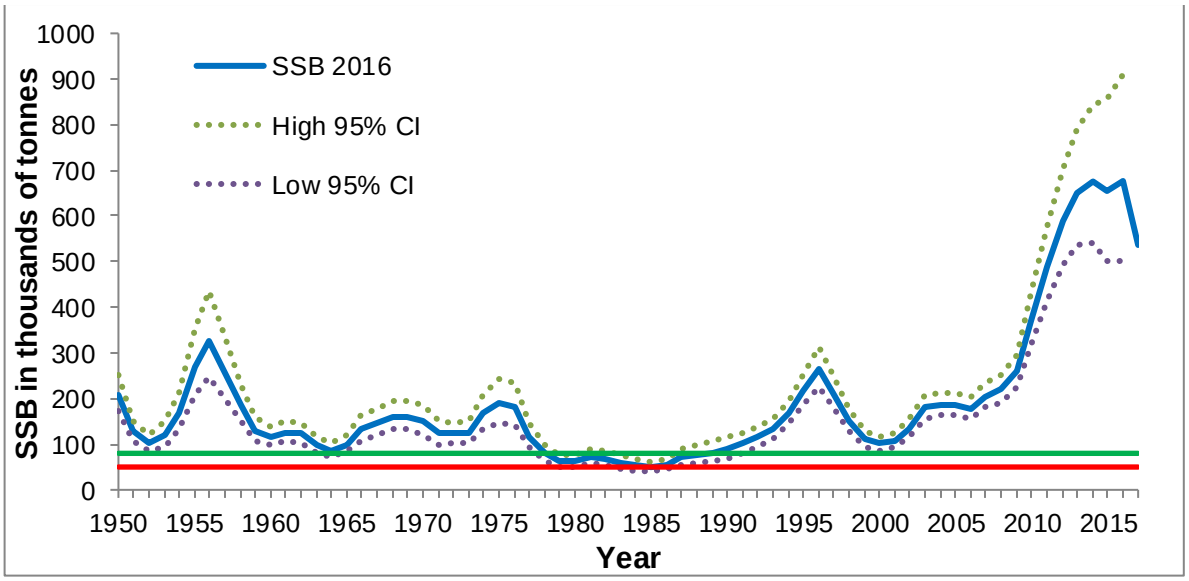

Figure 10 The annual estimate of Spawning stock biomass of Northeast Arctic haddock over the period 1950 to 2016 . The predicted value for 2017 is also included. The upper and lower 95% confidence intervals on the estimates are also shown. The biomass limit reference point and the reference point for MSY B trigger and the SSB management level are also shown (ICES, 2017d).

2.2.3 Fishing mortality

Fishing mortality (F), based on ages 4-7yrs in the stock, over the period 1950 to 2016 is shown in Figure 11. The 95% high and low confidence intervals of the estimates are also shown together with the Fmsy/F management (F0.35), F Precautionary approach (F 0.47 and the Flim (F0.77) reference points.

Fishing mortality in 2016 was F0.2 (95% CI: +0.26 / -0.15). Fishing mortality has been below the management plan / MSY level (F 0.35) since 1984 and below F precautionary approach level (F0.47) since 1980. Fishing mortality has not fallen below the limit level of F0.77 throughout the current time series dating back to 1950 (ICES, 2017d).

The exploitation rate of haddock has been variable. The highest fishing mortalities for haddock have occurred at low to intermediate stock levels and historically show little relationship with the exploitation rate of cod, despite haddock being primarily caught as bycatch in the cod fishery. The more restrictive quota regulations introduced around 1990 have resulted in a more stable pattern in the exploitation rate. The fishing pressure is currently well below Fmsy.

The technical basis for the biological reference points for SSB and F are listed in the ICES advice sheet (ICES, 2017d).

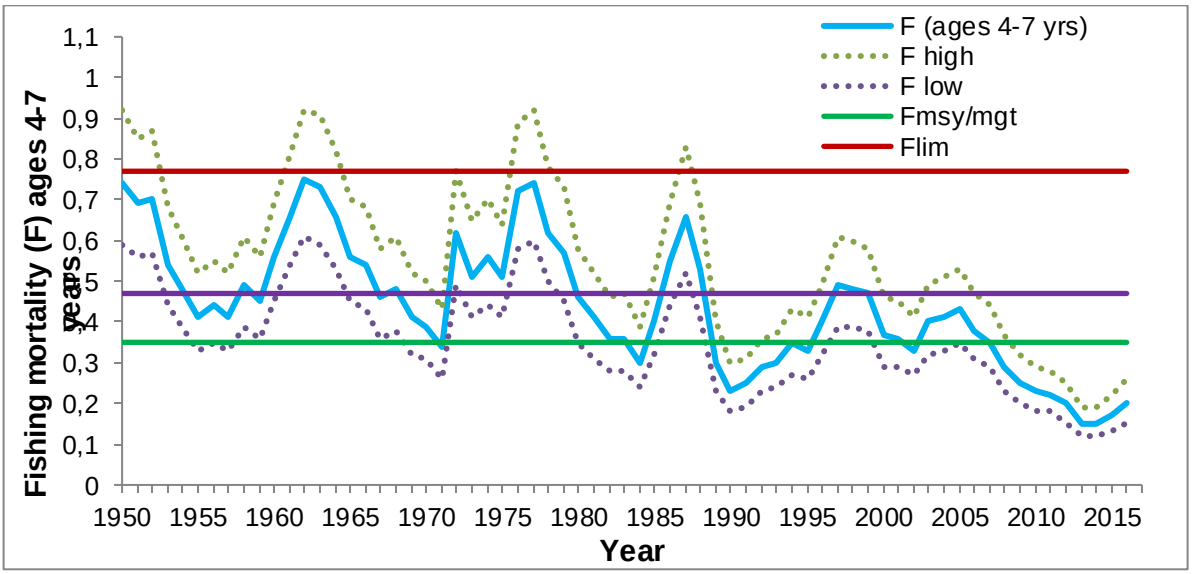

Figure 11 Annual fishing mortality (F), on Northeast Arctic haddock, based on ages 4 to 7 years, over the period 1950 to 2016. The 95% confidence limits on the estimates, from the State Space assessment model, are also shown. The current limit (Flim), and the precautionary (Fpa) / maximum sustainable yield (Fmsy) / management (Fmgt) reference levels are also shown (ICES, 2017d).

2.2.4 Recruitment

Annual recruitment for the NEA haddock stock is based on numbers of 3 years old fish from the assessment. Figure 12 shows the pattern of recruitment to the stock over the period 1950 to 2016 (1947 to 2013 year classes). As noted in section 3.3.2.1 the recruitment pattern is typical of haddock stocks where recruitment can vary by up to two orders of magnitude between very good and poor year classes. This pattern is typified in the recruitment t over recent years where there are strong year classes from 2004 to 2006 followed by a series of average or poor year classes.

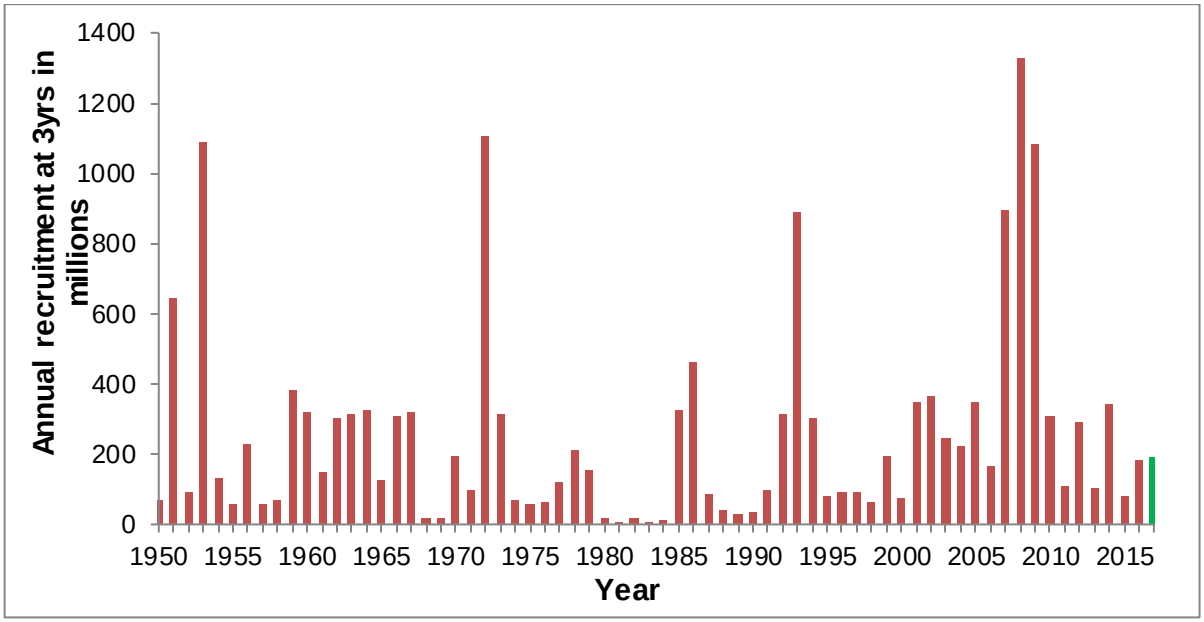

Figure 12 Annual recruitment at age 3 years, of Northeast Arctic haddock, over the period 1950 to 2017. (ICES, 2017d)

2.2.5 Management advice.

Management advice is issued through ICES (2017d) and is delivered annually. The advice is based on the Joint Russian–Norwegian Fisheries Commission management plan (text Table below). The fishing mortality (Fmsy / Fmgt), which provides a predicted catch based on the advice from the plan, is F0.35. The initial ICES advice for the 2016 fishery was revised following a request from Norway and Russia (ICES 2015d). For the fishery in 2017 the predicted catch corresponding to the advice (ICES, 2016d) was 233,000t which was the eventually agreed TAC for 2017. The catch corresponding to the advice for the 2018 fishery is 202,305t. The advice for 2018 (ICES, 2017d) is based on the assumption that catches in 2017 are equal to the TAC (233 000 tonnes), but fishing opportunities for 2016 (TAC plus transfers from 2015) were not fully taken. Parties have transferred the unused part (about 30 000 t) of their haddock quotas in 2016 to 2017, so the out-take in 2017 could be higher than the TAC, although catches equal to the TAC are considered to be more likely (ICES advice, 2017d)

Advice basis	**Joint Russian–Norwegian Fisheries Commission management plan.**
Management plan	The current HCR for haddock is as follows (see details in Protocol of the 46th Session of the Joint Russian–Norwegian Fisheries Commission, 14 October 2011): – TAC for the next year will be set at level corresponding to FMSY. – The TAC should not be changed by more than ±25% compared with the previous year TAC. – If the spawning stock falls below Bpa, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from FMSY at Bpa to F= 0 at SSB equal to zero. At SSB-levels below Bpa in any of the operational years (current year and a year ahead) there should be no limitations on the year-to-year variations in TAC. At the 46th Session of the Joint Russian–Norwegian Fisheries Commission in 2016 it was decided to keep the existing HCR for

	haddock for the next five years. Quota flexibility: In 2014, JNRFC decided that from 2015 onwards, Norway and Russia can transfer to or borrow from the following year up to 10% of the country's quota. ICES evaluated this HCR in 2016 (ICES, 2016a) and concluded that it is precautionary.

Figure 13 shows the performance of the management regime in terms of compliance with the advised and agreed TAC over the period 1987 to 2016. Generally the compliance has been good with the exception of 2014 and 2015 where the landings exceeded the advised catch by around 30,000t.

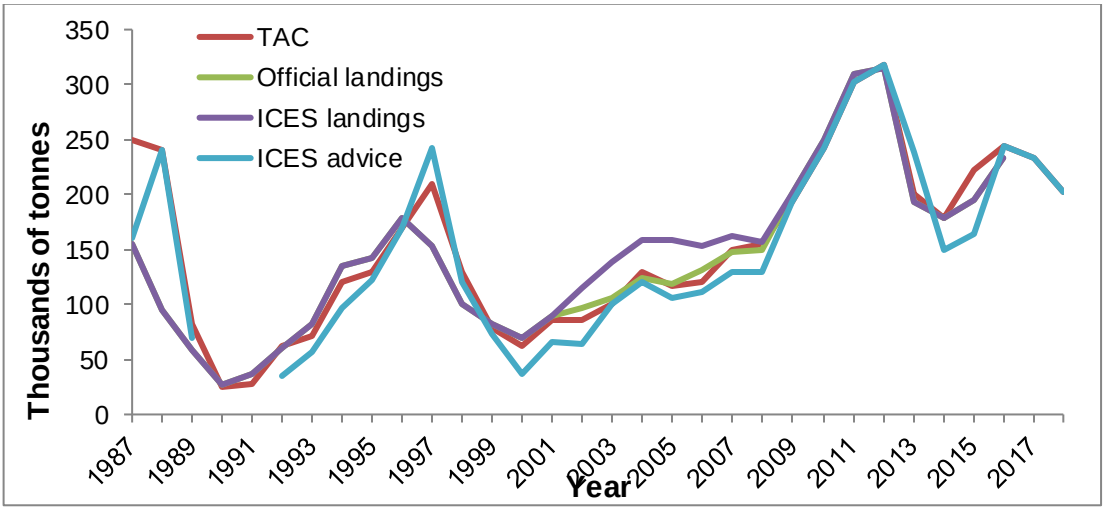

Figure 13 The ICES advised catch, the agreed TAC and the actual landings over the period 1987 to 2016 with the advised catch and ICES advice for 2017 (ICES, 2016d) and the ICES advice for 2018 (ICES, 2017d).

2.2.6 Summary of stock status

The spawning-stock biomass (SSB) has been above MSY $B_{trigger}$ since 1989 and been increasing since 2000 reaching a time series maximum in 2014 of 675,563t (95% CI: 843,617t/540,987t). Fishing mortality (F) was around F_{MSY} from the mid-1990s to 2011, but has declined substantially since then. Recruitment-at-age 3 has been at or above the long-term average since 2000. The very strong year classes 2004-2006 are still dominating the spawning stock; there have been no strong year classes observed since then.

The text able below is the stock status summary from the 2017 ICES advice (ICES, 2017d). ICES considers the stock to be at full reproductive capacity and is being harvested sustainably.

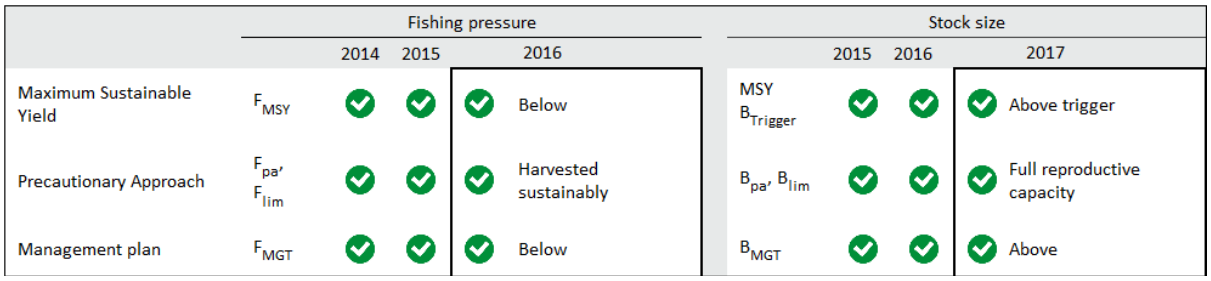

Figure 14 A summary of stock status relative to SSB (2015 to 2017) and Fishing Mortality (2014 to 2016) (ICES, 2017d)

2.3 Impact on the ecosystem

2.3.1 Retained species

The 2014 assessment report concluded that it was highly unlikely that there were any main retained species (comprising >5% of the total catch) taken in the UoCs (other than haddock in the cod UoC, and cod in the haddock UoC). Other retained species included saithe, Greenland halibut, wolffish (Anarhichas spp) and redfish (Sebastes spp).
For this surveillance audit the client has updated the Unit of Certification catch data for all retained species caught in the 2017 fishery. These data are listed in the Table 3 below. The 2017 data show no significant changes from the data in the original assessment. In general, the audit assessment team considers that the client data are representative of the rest of the Russian fleet using demersal trawls to catch cod and haddock due to the nature of fishing operations. Fishing operators in the UoC operate with the similar bottom gear, fish in the same area and under the same rules and legislation, including discard ban. Therefore, they retain mainly the same species.

Table 3 Retained species taken in the client's cod and haddock fishery, Year 2017 Data-source: log-book records.

Retained species (Common names)	Retained species (Latin names)	Total (t)
Cod	***GADUS MORHUA***	**39 804**
Haddock	***MELANOGRAMMUS AEGLIFINUS***	**9 337**
Saithe	***POLLACHIUS VIRENS***	**939**
Spotted catfish	***Anarchichas minor***	**255**
Atlantic catfish	***Anarchichas lupus***	**129**
Northern Wolffish	***Lycichthys denticulatus***	**271**
European Place	***PLEURONECTES PLATESSA***	**6**
Sole	***HIPPOGLOSSOIDES PLATESSOIDES***	**181**
Greenland Halibut	***REINHARDTIUS HIPPOGLOSSOIDES***	**217**
Redfish	***SEBASTES MARINUS (90%), SEBASTES MENTELLA (10%)***	**535**

The 2014 full-assessment report detailed the management measures in place to reduce impact on non-target species. They concluded that the low levels of retained species in the client fishery were due to a number of factors, including:

- the use of large mesh sizes (140+ mm, above the minimum of 135 mm in Norway & 125 mm in Russia –harmonised to 130mm in all areas from 2011);
- discard bans in place for all key species in Norwegian, Svalbard and Russian sectors;
- use of separator grids (compulsory since 1997);
- move on rule / real time closures - to protect juveniles, or in event of high by catch (in Norwegian waters);
- permanently closed area to protect spawning / nursery grounds;
- the high concentrations of cod and haddock on the fishing grounds;
- experienced and knowledgeable skippers and crews, knowing where best to catch target species;
- the good recent availability of target stock quotas (reflecting good stock status), combined with increased trade in quotas reduces the incentive to 'high grade' catches.

Additional Russian fishing regulations for Northern Basin (RUS EEZ/ Barents Sea) include area closures; seasonal closures; a list of species which it is prohibited to target; catch-weighing equipment on board (must be certified, with an accepted "error margin" for declared weight of +/-5%); reporting systems and requirements; by-catch levels for wolffish: max. 45% of total catch in 1 haul/ and max. 45% of landed catch, saithe: max. 49% of total catch in 1 haul/ and max. 49% of landed catch, Greenland halibut: max. 12% of total catch in 1 haul/ and max. 7% of landed catch, and redfish: max. 15% of total catch in 1 haul/ and max. 15% of landed catch. If by-catch is over any of these maximum levels, the vessel shall: release the catch into the sea, despite the condition of the catch, but with minimum

damage possible, change position by a minimum of 5 nm, record this action in the relevant documents and inform relevant authorities. All allowable by-catch must be registered in log-books.

All of these measures remain in place and continue to be effective as evidenced by the retained species data list above.

2.3.2 By-catch species

As reported in the 2014 main assessment report the majority of fishing activity for the assessed fleet takes place in waters under Norwegian jurisdiction. In these waters, under section 15 of the 2009 Norwegian Marine Resources Act, there is a duty to land all catches of commercial species. Section 48 of the regulations includes a listing all species that must be landed. This covers cod and haddock as well as most species either reported for, or potentially relevant to the fishery under assessment, such as saithe, Greenland halibut, redfish and wolffish. When fishing in waters covered by Russian jurisdiction, discarding of by catch is also banned. These strong discard bans covering all waters of the assessed fishery, combined with the initiatives and management measures listed above, should mean that there is no discarding of fish in the fishery under certification. The audit team have reviewed the evidence and consider that this situation remains the same for this surveillance report.

The client has provided information on discarded non-commercial species and organisms (returned alive to the sea) for the three vessels in the UoC for 2017. No changes were identified compare to the previous surveillances. List of species and quantities remains negligible.

2.3.3 Endangered, Threatened and Protected Species (ETP)

Russia is a signatory to a number of conventions on species protection and management, notably the Convention on Biological Diversity (CBD), which sets out a general framework and national strategy. More specific proposals on species protection are made under the regional and global nature conservation conventions, primarily the Convention on International Trade in Endangered Species (CITES), to which Russia is also a signatory.

Russia is not a member of the North Atlantic Marine Mammal Commission (NAMMCO), which provides a mechanism for cooperation on conservation and management for all species of cetaceans (whales and dolphins) and pinnipeds (seals and walruses) in the region. Russia does, however, cooperate as a partner on projects. For example, PINRO are actively involved in the Trans-north Atlantic Sightings Survey to estimate the summer distribution and abundance of cetacean populations in the North Atlantic, in particular in Arctic regions.

For this surveillance audit report the client was asked to provide information on the catches of ETP species by each of the three vessels in the client fleet. In the previous surveillance report there were no records of species discarded or returned to the sea live. The situation was the same for the fishery from 1 January 2016 to 30 June 2017.

The client reports that the situation regarding the by-catch of seabirds has not changed to report since the 2014 main assessment report.

Discarded species (Common names)	Discarded species (Latin names)	Discarded or returned alive to the sea	Strelets (M-0269) t	%	Korund (M-0245) t	%	Taurus (MK-0411) t	%	Total t
common or blue skate	Dipturus batis		0	0	0	0	0	0	0
angel shark	Squatina squatina		0	0	0	0	0	0	0
porbeagle	Lamna nasus		0	0	0	0	0	0	0
other species, if any									
Total			0	0	0	0	0	0	0

2.3.4 Habitat and ecosystem

The original assessment team addressed other potential impacts of the fisheries in relation to areas of high biodiversity value, vulnerable marine ecosystems (VME's) and protected areas. The measures in place to monitor and protect these areas remain in place and there are no changes to report.
There are no other changes to report on the overall ecosystem impact of these fisheries.
No significant changes to report in relation to habitat or ecosystem features or to fishery impacts on them since the 2014 assessment report and subsequent surveillance reports.

2.4 Changes to the management system

There are no material changes to the management of this fishery since the 2014 assessment report. The function, roles and responsibilities including consultation and decision- making processes for management and science of the fishery remains unchanged. Control, surveillance and monitoring remains unchanged and the frequency of the inspection remains nearly the same as in in the assessment report of 2014. Fishermen's compliance with laws and regulations are as good as in previous years. Fishing pattern, gear used, fishing area and fishing season also remain largely unchanged.

2.5 CoC considerations

The status, with regard to the Chain of Custody has remained unchanged since the full assessment as was the case at the last surveillance audit in 2017.
Scope of certification is up to the point of landing and chain of custody for the client vessels commences following the sale of cod and haddock products and identifiable by-products, as specified in the PCR (section 5), at the point of landing (auction, cold/freezer store or processing plant) either directly from the client vessels or via transhipment. Land-based processing plants as well as cold/freezer stores that perform anything more than movement of product must have separate CoC certification.
The client has started production of canned cod liver products on board their vessels. These products are covered by their fishery certificate and can carry MSC logo, subject to logo-licencing agreement with the MSC.

2.6 Catch data

Table 4 TAC and Catch Data for Barents Sea cod

TAC	**Year**	2018	**Amount**	775 000
UoA share of TAC	**Year**	2018	**Amount**	33 475
UoC share of TAC	**Year**	2018	**Amount**	33 475
Total green weight catch by UoC	**Year (second most recent)**	2017	**Amount**	40 684
	Year (most recent)	2018 (per 22.01.18)	**Amount**	1 300

Table 5 TAC and Catch Data for Barents Sea haddock

TAC	**Year**	2018	**Amount**	202 305
UoA share of TAC	**Year**	2018	**Amount**	7 880
UoC share of TAC	**Year**	2018	**Amount**	7 880
Total green weight catch by UoC	**Year (second most recent)**	2017	**Amount**	9 337
	Year (most recent)	2018 (per 22.01.18)	**Amount**	506

2.7 Summary of Assessment Conditions

There are no conditions attached to the certification of these fisheries.

3 THE ASSESSMENT PROCESS

3.1 Scope of the assessment

The MSC Fisheries CR and guidance v2 define the Unit of Certification (UoC) (i.e., the unit entitled to receive an MSC certificate) as follows:

"*The target stock or stocks (= biologically distinct unit/s) combined with the fishing method/gear and practice (including vessel type/s) pursuing that stock and any fleets, groups of vessels, or individual vessels of other fishing operators*."

The fisheries covered by this certification are defined as described in **Table 6** and **Table 7** below. There are no other eligible fisheries and the Unit of Assessment is therefore the same as unit of the certification.

Table 6 UoC – Barents Sea cod fishery

Fishery name:		**Barents Sea cod fishery**
Unit of certification	**Species:**	Cod (Gadus morhua)
	Stock:	Barents Sea cod
	Geographical area:	ICES Sub-areas I and II. FAO 27. Primarily Norwegian EEZ and Svalbard FPZ
	Harvest method:	Bottom trawl
	Management:	Federal Agency of Fisheries (Russian Federation), Norwegian Ministry of Fisheries and Coastal Affairs (Norwegian EEZ and Svalbard FPZ) Joint Russian-Norwegian Fisheries Commission, NEAFC, PINRO, IMR and ICES.
	Client group:	The clients responsible for coordination of full-assessment for this fishery are JSC Strelets and JSC Eridan . The client group is represented (per 09.07.2015) by the following ship owners: • JSC Strelets with vessel Strelets (M-0269) • JSC Eridan with vessel Korund (M-0245) • JSC Taurus with vessel Taurus (MK-0411)
	Other eligible fishers:	As defined under section 3.1.7 of Public Certification Report

Table 7 UoC – Barents Sea haddock fishery

Fishery name:		**Barents Sea haddock fishery**
Unit of certification	**Species:**	Haddock (Melanogrammus aeglefinus)
	Stock:	Barents Sea haddock
	Geographical area:	ICES Sub-areas I and II. FAO 27. Primarily Norwegian EEZ and Svalbard FPZ
	Harvest method:	Bottom trawl
	Management:	Federal Agency of Fisheries (Russian Federation), Norwegian Ministry of Fisheries and Coastal Affairs (Norwegian EEZ and Svalbard FPZ) Joint Russian-Norwegian Fisheries Commission, NEAFC, PINRO, IMR and ICES.
	Client group:	The clients responsible for coordination of full-assessment for this fishery are JSC Strelets and JSC Eridan . The client group is represented (per 09.07.2015) by the following ship owners: • JSC Strelets with vessel Strelets (M-0269) • JSC Eridan with vessel Korund (M-0245) • JSC Taurus with vessel Taurus (MK-0411)
	Other eligible fishers:	As defined under section 3.1.7 of Public Certification Report

3.2 History of the assessments

3.2.1 Summary of the original assessment

The intent of the Russian Federation Barents sea cod and haddock fishery to become MSC certified was announced on 21 March 2013, and the fishery received its certification on 6 May 2014.
Scope of certification is up to the point of landing and chain of custody for the client vessels commences following the sale of cod and haddock products and identifiable by-products, as specified in the PCR (section 5), at the point of landing (auction, cold/freezer store or processing plant) either directly from the client vessels or via transhipment. Land-based processing plants as well as cold/freezer stores that perform anything more than movement of product must have separate CoC certification.
The default assessment tree, set out in the MSC Certification Requirements, version 1.2, was used for the initial assessment. The fishery attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any of the individual MSC Criteria. In the initial certification the scores of the three Principles were:

Table 8 Principle scores – Original assessment:

Principle	Russian Federation Barents sea cod	Russian Federation Barents sea haddock
Principle 1 – Target Species	98.1	91.9
Principle 2 – Ecosystem	87.0	87.0
Principle 3 – Management System	89.9	89.9

The fishery did not achieve a score of below 80 against any scoring indicators, and no conditions were thus set for the fishery following the initial assessment. The assessment team set three recommendations for the fishery, which are presented in full in section 5 of this report.

3.2.2 First annual surveillance – 2015

The first surveillance audit was performed as a remote audit with a review of new information. The surveillance audit was conducted according to MSC CR v1.3. The default assessment tree as set out in the MSC CR v1.2 was used for this surveillance.

The surveillance was announced on the MSC website 24 March 2015 followed by a supporting notice to stakeholders issued by the MSC on the same date. Direct email notification was also sent to the stakeholders previously identified for this fishery, inviting interested parties to contact the audit team.

The document review activities for the fishery were carried out by members of the original assessment team, DNV GL team leader and CoC expert Anna Kiseleva and Independent MSC Fisheries expert John Nichols during week 19 (4-5 May), 2015.

The assessment team gathered input from the various stakeholders, including the Federal Agency for Fisheries of the Russian Federation Barentsevo-Belomorskoe Territorial Departement, Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO) and the client fishery. Details on information submitted by stakeholders in the assessment process can be found in Appendix 1.

3.2.3 Second annual surveillance – 2016

The second surveillance audit was performed as an off-site audit with a review of new information.

The surveillance audit methodology, as defined in the MSC Certification Requirements (CR) (version 2.1) and in the subsequent MSC Guidance for the Fisheries Certification Requirements (version 2.0) were followed in this audit. The default assessment tree as set out in the MSC CR v1.3 was used for this surveillance. The surveillance was announced on the MSC website 7 June 2016 followed by a supporting notice to stakeholders issued by the MSC on the same date. Direct email notification was also sent to the stakeholders previously identified for this fishery, inviting interested parties to contact the audit team.

The document review activities for the fishery were carried out by members of the original assessment team, DNV GL team leader and CoC expert Anna Kiseleva and Independent MSC Fisheries expert John Nichols during 8 -15 July 2016.

The assessment team gathered input from the various stakeholders, including the Federal Agency for Fisheries of the Russian Federation Barentsevo-Belomorskoe Territorial Departement, Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO) and the client fishery. Details on information submitted by stakeholders in the assessment process can be found in Appendix 1.

3.2.4 Third annual surveillance – 2017

The third surveillance audit was performed as an off-site audit with a review of new information.

The surveillance audit methodology, as defined in the MSC Certification Requirements (CR) (version 2.1) and in the subsequent MSC Guidance for the Fisheries Certification Requirements (version 2.0) were followed in this audit. The default assessment tree as set out in the MSC CR v1.3 was used for this surveillance. The surveillance was announced on the MSC website on 14th June 2017 followed by a supporting notice to stakeholders issued by MSC on the same date. Direct email notification was also sent to the stakeholders previously identified for this fishery, inviting interested parties to contact the audit team.

The document review activities for the fishery were carried out by member of the original assessment team Independent MSC Fisheries expert John Nichols and DNV GL team leader and CoC expert Sandhya Chaudhury during 17 -21 July 2017.

3.2.5 Fourth annual surveillance – 2018

The fourth surveillance audit was performed as an on-site audit and coordinated with the re-assessment activities for the same fishery.

The surveillance audit methodology, as defined in the MSC Certification Requirements (CR) (version 2.1) and in the subsequent MSC Guidance for the Fisheries Certification Requirements (version 2.0) were followed in this audit. The default assessment tree as set out in the MSC CR v1.3 was used for this surveillance. The surveillance was announced on the MSC website 18 December 2017 followed by a supporting notice to stakeholders issued by the MSC on the same date. Direct email notification was also sent to the stakeholders previously identified for this fishery, inviting interested parties to contact the audit team.

The surveillance activities for the fishery were carried out by members of the original assessment team, DNV GL team leader and CoC expert Anna Kiseleva and Independent MSC Fisheries expert John Nichols during 22-26 January 2018 in Murmansk, Russia.

The assessment team gathered input from the various stakeholders, including the Federal Agency for Fisheries of the Russian Federation Barentsevo-Belomorskoe Territorial Departement, Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), WWF and the client fishery.

3.3 Harmonisation

3.3.1 Harmonisation 2016

Harmonisation meeting for Barents Sea bottom trawl fisheries took place on 10.03.2016 and was coordinated by the MSC. Following Barents Sea Cod and Haddock fisheries were included into the harmonisation:

- Scapêche and Compagnie de Pêche de St. Malo saithe
- Barents Sea cod, haddock and saithe (Ocean Trawlers)
- Greenland cod, haddock and saithe trawl
- Norway North East Arctic saithe
- UK Fisheries/DFFU/Dogger Bank group saithe
- UK Fisheries/DFFU/Dogger Bank Northeast Arctic cod, haddock and saithe
- Russian Federation Barents sea cod and haddock
- AGARBA Spain Barents Sea cod

- Comapêche and Euronor cod and haddock
- FIUN Barents & Norwegian Seas cod and haddock
- Norway North East Arctic cod and haddock
- Faroe Islands North East Arctic cod and saithe
- Faroe Islands North East Arctic haddock.

Participants:

David Agnew (MSC)	Billy Hynes (Acoura)
Megan Atcheson (MSC)	Lucia Revenga (P2 Assessor - Acoura)
Shaun McLennan (MSC)	Chrissie Sieben (MEC)
Dan Hoggarth (MSC)	Jo Gascoigne (P2 Assessor – MEC)
Stephanie Good (MSC)	Bert Keus Agonus (P2 Assessor - DNVGL)
Sigrun Bekkevold (DNVGL)	Guro Meldre Pedersen (DNVGL)
Andy Hough (P2 Assessor - DNVGL)	Anna Kiseleva (DNVGL)
Virginia Polonio (BV)	Jason Coombes (Acoura)
Macarena Garcia (BV)	Terry Holt (P2 Assessor - DNVGL)

General Conclusions

- MSC introduced the call with some background on harmonisation in the context of V1.3 of the standard. Particular emphasis was placed on the key difference between approaches required for harmonisation against difference Principles. There was also some background provided by MSC on the 14 certified fisheries operating within the Barents Sea, including some of the scoring trends reflected by respective assessments.
- The participants then discussed scoring in their respective fisheries and some of the factors underpinning passes and conditional passes. Some inconsistences were highlighted, in particular with respect to: i) the interpretation of Scoring Guideposts; ii) the evidence used to supporting scoring; iii) the outcomes of scoring and iv) client action plans (content and challenge).
- In general there seemed to be a range of factors impacting each score scenario which are covered in notes below[1]. Whilst changes to scores as a result of the meeting are not certain, the value of the discussion was arguably more about providing consistent rationales to explain differences in scores after harmonisation. Indeed this set of notes in itself may act to provide a source of information for CABs and Assessors to help explain differences in assessments undertaken for Version 1.3 of the standard.
- The MSC team reiterated the implications for fisheries entering new "areas" or in scenarios where there were "material changes" to scores evidenced by new information, including the need to consider at surveillance audits and via expedited audits where necessary.
- The team also touched on changes in Version 2 of the standard and likely harmonisation implications but it was felt that more time was needed/perhaps another session to help prepare CABs and Assessors for transition.

Discussion

PI 2.4.1 Outcome

- Assessors reported they find ambiguity inherent in the language and definitions (e.g. risk probabilities) for the habitat requirements. They rely on expert judgement to assess this PI.
- Scoring tended to focus on VMEs specifically where known. Best practice seems to be to consider each VME individually (as identified in MAREANO or other information source).
- With respect to the information on sensitivity of individual VMEs to trawling - consensus was that this information is available but has not tended to be specifically used (it may be that the assumption is that all VMEs are 'vulnerable' by definition).
- A number of VME and Habitat definitions used including OSPAR papers (e.g. OSPAR, 2010. Background Document for Deep-sea sponge Aggregations. Biodiversity Series, OSPAR, London).

[1] The harmonisation summary note was prepared by the MSC and distributed to all CABs who participated in the harmonisation meeting 10.03.2016.

For Barents Sea main VMEs identified have been corals, sponges and (more recently) Sea pens / 'coral gardens'.

- Factors that may result in different outcome scores for PI 2.4.1:
    - Differences in target species (Saithe fished further south, cod and haddock intermediate latitudes and prawn furthest north)
        - Differences in intelligence available about fishing zone (best information in NEZ, less information in SFPZ although improving, Russian zone a bit unclear (information may exist but be hard to access).
    - Differences in the number of vessels in fleet and type of vessels (size but also what technology they have on board for identifying bottom types and how they use it)
    - Vessel/Operation nationalities. E.g EU vs non-EU fishing activity - this is relevant in the Barents Sea because due to the rules on haddock bycatch for the EU fleet their footprint is more constrained than that of the Norwegian and Russian fleets.
    - Spatial extent of the vessel footprint – do they continuously fish over the same areas or is it widely dispersed.
    - Type of benthos
    - Some CABs use a scoring element approach for different types of habitats (sand, rocky, coral etc), while others do not, even though required by CR v1.3 27.10.7.

PI 2.4.2 Management

- Factors that may result in different scores for PI 2.4.2:
    - Scale is an important consideration – there is generally more certainty that strategies are workable with less vessels (less variables); on the flip side large fleets are also more likely to be impacted by a national management framework (e.g entire Norwegian fleet having to comply with "Move On" rules).
    - Differences in habitat impact management framework (Norway vs Russia vs both). Norway tended to manage fishery impacts in Marine Protected Areas (MPA); Russia does not have clear habitat protections.
    - Differences in approach of the individual client companies (e.g. awareness of VMEs, approach to recording and avoiding, monitoring and updating of their information e.g. via MAREANO).
    - The availability of individual skippers was important – it was key to gauge their attitude as well as their experience of seeing VMEs come up in the trawl - but note that this is variable from fishery to fishery (usually only where a small number of vessels but not always even then).

PI 2.4.3 Information

- Factors that may result in different scores for PI 2.4.3:
    - Differences in the sources of information - coastal state information which is readily available - MAREANO notably; coastal state information which is not readily available e.g. scientific reports in Russian
      - individual vessel / fleet data e.g. on-board recording of VMEs
      - VMS data - easier to get in some cases than others, more often seen on the site visit than provided in reports; difficulties in obtaining highlighted
- Other important considerations (whilst not necessarily impacts on scoring, useful context for developing the standard).

Fisheries found it hard to "prove a negative" – there seemed to be scenarios where if interactions with sensitive habitats were not recorded, NGO's tended to speculate that those fisheries were not complying with monitoring requirements.

3.3.2 Harmonisation 2017-2018

No additional group harmonisation efforts were deemed necessary since harmonisation process described under section 3.3.2. There are no other material differences in assessment outcomes between this fishery and overlapping fisheries, apart from the ones addressed under section 3.3.2.

4 RESULTS

Table 9 – Recommendation 1

Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	2.4.2: There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.	*SG80 Sia: NA/general recommendation* *Rational:* Bottom trawl gear has the potential to cause habitat damage. Though the available information suggests that this is 'highly unlikely' in this fishery, due mainly to the way in which the fishery operates, management and mitigation efforts should be tailored accordingly.	**80**
Recommendation	*There are a number of potential approaches to further reduce the likelihood of serious or irreversible harm to habitats, and the clients are encouraged to actively pursue:* • *the possibility to switch to lighter / less impacting fishing gears, such as semi-pelagic gears for targeting demersal species or other models of trawls/parts of gear which can reduce the impact on benthos.* • *collect information on fishing patterns relative to habitat areas to help explore potential for further strategic closed areas – or fishing areas where lighter gears are possible.* • *continue using the navigation systems in order to completely avoid areas with sponges and corals.*		
Progress on recommendation Year 1	***Progress: on target.*** *The client has reported that they attempted to implement a new fishing gear in order to protect benthos, more specifically, they tried to use pelagic boards with the bottom trawl. The results showed that even though the pelagic doors are less traumatic for the sea bottom, they give such a small catchability rate compared to the usual bottom trawl gear, it represented an unacceptable economic impact on their fishing operations.* *Client is however committed to evaluate other possibilities in order to further reduce the likelihood of serious or irreversible harm to habitats.*		
Progress on recommendation Year 2	***Progress: On target.*** *In order to reduce impacts on the habitats the client took several steps:* *Step 1:* *The client fishery together with the* Barents Sea cod, haddock and saithe (Ocean Trawlers) fishery and FIUN Barents & Norwegian Seas cod and haddock fishery entered into an agreement to reduce the impact on the habitats by adopting the following measures: • Develop and implement the common registration system for benthos by-catch • Provide training to the crew on how to use this registration system • Use annually updated VME maps during fishing operations in order to avoid VMEs		

	• Agree on how fishing should be conducted within VME areas which are not currently regulated by national legislation of Norway and Russia and establish thresholds for benthos by-catch in these areas Step 2: The client fishery together with other MSC certified fisheries in Russia has contracted PINRO to develop a model of a bottom trawl gear which will minimise impact on the sea bottom. The delivery date is set to 20.12.2017. Step 3: The Russian fishing industry, including the client, have agreed that from the 2016 season the catching sector will not expand their Cod fishing activities with trawl gear into the new areas where regular fishing has not taken place before. This is a precautionary measure which will be voluntarily enforced by the client fleet until the knowledge about the new areas is improved and regulations on fishing activities in these areas are implemented by the authorities.
Progress Year 3 and 4	The North east Arctic ecosystem, in particular the habitat types, is probably one of the most comprehensively mapped and understood in the world. The fisheries in this area are also among the best regulated in the world. This has been achieved by international cooperation over many years but, in particular, through the joint Russian / Norwegian initiatives of the JRNFC. The Norwegian MAREANO project has provided comprehensive data on the distribution of habitat types and the identification of Vulnerable Marine Ecosystems (VMEs) As a consequence the potentially harmful impact of extensive bottom trawling is now well managed and improving all the time. For the last two surveillance audits the client has provided a comprehensive dossier on all the related activities over the past two years. There has been a number of workshops to review current information on habitat types and trawling impact. These workshops have been sponsored by both Russian and Norwegian Industry and the JRNFC with scientists and industry representatives attending. The driving force for these workshops has been the MSC certification process with many certified fisheries impacting on the North East Arctic ecosystem. A Workshop in Oslo in April 2016, attended by MSC representatives, was targeted at industry and scientists looking forward beyond the ecosystem requirements for Principle 2 in CR version 1.3 to the more rigorous requirements of CR version 2.0. The Workshop also addressed the implications of Climate change and the potential extension of fishery activity northwards as the ice cap recedes. In that context the client has provided a document (see Appendix 1: Industry Group Agreement to Cod fishery in the northern part of North-East Atlantic, (FAO area 27, ICES division IIb2 and Ib*)) which commits the industry that from the 2016 fishing season the catching sector will not expand their cod fishing activities with trawl gear into those areas where regular fishing has not taken place before. The client has provided information on action to further investigate the impact of bottom trawl gear and reduce any detrimental effects. In particular there is a paper by Soklov, K. from the Polar marine research Institute of marine fisheries and oceanography (PINRO), Murmansk, Russia. Titled - Bottom Trawlings and Benthic Community in the Barents Sea. This was presented as part of the Oslo Workshop mentioned above and provides considerable detail on the distribution of trawling in relation to habitat types and closed areas within the Russian EEZ. The client has also provided evidence of action in relation to improving the performance of bottom trawls in relation to their potential for detrimental habitat effects. This evidence comes for the Workshop in Oslo in April 2016 in the form of a slide presentation on the 'Actual Direction of improvement of Bottom Trawl Construction (see Appendix 1) and progress was reviewed and

	confirmed during the stakeholder meeting with PINRO during January 2018. We conclude that the client has provided ample evidence of relevant activity over the past years to address the ongoing requirements of the Recommendation. It is now obvious to the team that these issues are of concern to the industry, both in Russia and in Norway and that together they are addressing them. Undoubtedly the requirements of their MSC certifications has highlighted the need and in that context it is gratifying to note that they are already addressing and pre-empting the more rigorous requirements within Principle 2 of CR Version 2.0.
Status of recommendation	**Closed**

Table 10 – Recommendation 2

Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	3.1.2: The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	*SG80 Sia: NA/general recommendation* *Rational: The consultation process provides opportunity for all interested and affected parties to be involved; cf. information on the public chambers at different levels in a) and b) of this SG. Meetings are publicly announced and all interested parties can attend, including NGOs and the media. However, this stops short of management authorities encouraging and actively facilitating their effective engagement.*	**90**
Recommendation	*The client shall facilitate the communication between NGOs and organisations involved in the fishery management system.*		
Progress on recommendation Year 1 and Year 2	***Progress: on target.*** *The client actions in regards to this recommendation included following:* *- they took part in several MSC seminars;* *- They signed an agreement with WWF on cooperation and mutual sharing of information;* *- They consulted WWF on processing technology for by-catch and fish offal;* *- In cooperation with PINRO research institute, they developed processing instructions for vessels on the size of catches and trawling time to preserve the best quality of raw fish;* *- They are currently working on a project to set up several MSC training workshops for their vessel's officers in cooperation with the Murmansk Technical State University*		
Progress Year 3 and Year 4	**Progress: on target.** The client's commitment to facilitating communication between organisations involved in the fishery is substantiated by the number of workshops attended in the period since the second surveillance audit. MSC workshop in Oslo 05.04.2016 MSC seminar in Murmansk 08.12.16 MSC seminar in Moscow 24.03.17 MSC seminar in Murmansk 22.06.17 3 first mates from client vessels attended a MSC seminar in Murmansk on		

	08.12.16. In November 2016 the client participated with the industry in an agreement that commits the industry to not expand their cod fishing activities with trawl gear into those areas where regular fishing has not taken place to be effective from the 2016 fishing season.
Status of recommendation	**Closed**

Table 11 – Recommendation 3

Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	PI 2.2.3 **Information on the nature and the amount of by-catch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage by-catch.** **PI 2.3.3** **Relevant information is collected to support the management of fishery impacts on ETP species including: Information for the development of the management strategy; Information to assess the effectiveness of the management strategy; and Information to determine the outcome status of ETP species.** **PI 2.4.3** **Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types.**	*SG80 Sia: NA/general recommendation* *Rational: The vessels currently in the UoC have previously completed MSC logbooks under another Certificate, in which information on catches of ETP species, discarded by catch and other indicators of interactions with benthos and habitat is recorded that is not found in skippers' logbooks or landings declarations. This information is important when environmental and ecosystem impacts are being evaluated.*	**2.2.3: 90** **2.3.3: 80** **2.4.3: 90**
Recommendation	*The client shall continue to use or implement the use of MSC logbooks, specifically to collect information on ETP species, discards and habitat interactions.*		
Progress on recommendation Year 1	***Progress: on target.*** *The client continues to use MSC logbooks and to collect information on ETP species, discards and habitat interactions. Relevant data collection is reported in Section 3.2 of this report*		

Progress on recommendation Year 2	***Progress: On target.*** *The client continues to use MSC logbooks and to collect information on ETP species, discards and habitat interactions. Relevant data collection is reported in Section 3.2 of this report.* *The client fishery together with the* Barents Sea cod, haddock and saithe (Ocean Trawlers) fishery and FIUN Barents & Norwegian Seas cod and haddock fishery entered into an agreement to reduce the impact on the habitats by adopting the following measures: • Develop and implement the common registration system for benthos by-catch • Provide training to the crew on how to use this registration system • Use annually updated VME maps during fishing operations • Agree on how fishing should be conducted within VME areas which are not currently regulated by national legislation of Norway and Russia and establish thresholds for benthos by-catch in these areas
Progress Year 3 and 4	The client continues to use MSC logbooks and to collect information on ETP species, discards and habitat interactions. Discarding of all key species is banned in Russian and Norwegian waters. The discard bans are rigorously enforced and this together with the management measures ensures that there is no discarding of fish in this fishery. The audit team have reviewed the evidence and consider that this situation remains the same for this surveillance report. The client has provided data on all by catch species discarded (returned alive to sea) for the three vessels in the UoC. The information provided covers the whole period 1 January 2016 to 31 December 2017. For ETP species the client has reported that there are no records of any species caught and discarded or returned alive to the sea. This information covers the three vessels for the period 1 January 2016 to 31 December 2017 and is reported in section 2.3.3 of this report. The client also reports that the situation regarding the by-catch of seabirds has not changed since the 2014 main assessment report. The last surveillance report described the agreement involving the client fishery and other companies to reduce the impact on the habitats by adopting a series of measures. These measures have remained in place. There are no significant changes to report in relation to habitat or ecosystem features or to fishery impacts on them since the original 2014 assessment report. The use of MSC logbook is fully adopted on board of all client vessels and recommendation is closed.
Status of recommendation	**Closed**

5 CONCLUSION

5.1 Barents Sea cod

The Principle scores for this fishery have not changed since the last surveillance and the certification.

The fishery continues to be within the scope of the MSC fisheries standard (MSC FCR v2.0 § 7.4) according to the following determinations (MSC FCR v2.0 § 7.4):

- The target species is a fish and the fishery does not use poisons or explosives;
- The fishery is not conducted under a controversial unilateral exemption to an international agreement;
- The client or client group does not include an entity that has been successfully prosecuted for a forced labour violation in the last 2 years;
- The fishery has mechanisms for resolving disputes and disputes do not overwhelm the fishery;
- The fishery is not enhanced or based on an introduced species.

Table 12 Conclusion

Fishery	Status of certification	Comment
Barents Sea Cod	**Certified. Re-assessment is on-going.**	The assessment team therefore concludes that the MSC Certificate for this fishery shall remain active and that fishery can proceed to the re-assessment.

5.2 Barents Sea haddock

The Principle scores for this fishery have not changed since the last surveillance and the certification.

The fishery continues to be within the scope of the MSC fisheries standard (MSC FCR v2.0 § 7.4) according to the following determinations (MSC FCR v2.0 § 7.4):

- The target species is a fish and the fishery does not use poisons or explosives;
- The fishery is not conducted under a controversial unilateral exemption to an international agreement;
- The client or client group does not include an entity that has been successfully prosecuted for a forced labour violation in the last 2 years;
- The fishery has mechanisms for resolving disputes and disputes do not overwhelm the fishery;
- The fishery is not enhanced or based on an introduced species.

Table 13 Conclusion

Fishery	Status of certification	Comment
Barents Sea haddock	**Certified. Re-assessment is on-going.**	The assessment team therefore concludes that the MSC Certificate for this fishery shall remain active and that fishery can proceed to the re-assessment.

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APPENDICES

Appendix 1 Stakeholder submissions

Relevant stakeholders have been identified and consulted remote during this annual surveillance. No material changes have been identified since the initial certification of the fishery and last surveillance audit.

Appendix 2. Revised Surveillance Program

Since the second surveillance, the fishery follows assessment process defined in MSC FCR v2.0 and FCR v2.0 requirements to surveillance.

Since the fishery had no conditions attached to the certification and the assessment team were able to carry out the assessment activities and information gathering remote, the reduced surveillance option (Surveillance level 2) was adopted and Surveillance level 2 programme was established as follows:
2015: review of information
2016: off-site surveillance
2017: off-site surveillance
2018: on-site surveillance.

The timing of the fourth surveillance audit was moved 3.5 months ahead of the certificate anniversary date in order to align the annual surveillance activities with the re-assessment activities and stakeholder consultancy scheduled for this fishery during 22-26 January 2016.

Appendix 3. List of member vessels

Owner	Vessel name	Registration number
JSC Strelets	Strelets	M-0269
JSC Eridan	Korund	M-0254
JSC Taurus	Taurus	MK-0411

About DNV GL

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