



**Surveillance Report  
Pelagic Freezer Trawler Association  
Atlanto-Scandian Herring Trawl Fishery**

Certificate No.: **MML-F-061**

**Moody Marine Ltd.**

August 2011

**Authors:**

J. Andrews, J. Nichols

**Moody Marine Ltd.**  
Moody International Certification  
Merlin House  
Stanier Way  
Wyvern Business Park  
Derby. DE21 6BF  
UK  
Tel: +44 (0) 1332 544663  
Fax: +44 (0) 1332 675020

**1.0 GENERAL INFORMATION**

**Scope against which the surveillance is undertaken:** MSC Principles and Criteria for Sustainable Fishing as applied to the PFA North East Atlantic Mackerel Pelagic Trawl Fishery

**Species:** *Clupea harengus*

**Area:** ICES Divisions IIa & IIb.

**Method of capture:** Pelagic Trawl

<b>Date of Surveillance Visit:</b>	July 2011			
<b>Initial Certification</b>	<b>Date:</b> 07/07/2010		<b>Certificate Ref:</b> MML-F-061	
<b>Surveillance stage</b>	<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3<sup>rd</sup></b>	<b>4<sup>th</sup></b>
<b>Surveillance team:</b>	<b>Lead Assessor:</b> J. Andrews <b>Assessor(s):</b> J. Nichols			
<b>Company Name:</b> <b>Address:</b>	Pelagic Freezer-Trawler Association P O Box 72 2280 AB RIJSWIJK The Netherlands			
<b>Contact 1</b>	Gerard van Balsfoort			
<b>Tel No:</b> <b>Fax No:</b> <b>E-mail address:</b>	+ 31 (0) 70 3369602 + 31 (0) 70 3993004 <a href="mailto:gbalsfoort@pelagicfish.eu">gbalsfoort@pelagicfish.eu</a>			

## **2.0 RESULTS, CONCLUSIONS AND RECOMMENDATIONS**

### **Background**

This is the first annual “Surveillance Audit” for the MSC-certified PFA Atlanto-Scandian Herring Trawl Fishery. This fishery was certified according to Marine Stewardship Principles in July 2010 after an assessment of the fishery that commenced in 2009.

There were no conditions of certification for this fishery, and thus no client Action Plan for it.

### **Assessment process**

The assessment process for this audit followed that set out in the MSC Fisheries Certification Methodology.

Notice of a surveillance audit scheduled for July 2011 was announced on the MSC website on 2<sup>nd</sup> June 2011, with a supporting notice to stakeholders issued by the MSC on that date. Direct e-mail notification was also sent to the stakeholders that had previously been identified for this fishery in June 2011, inviting interested parties to contact the audit team.

The audit team visited IJmuiden on the 11<sup>th</sup>-13<sup>th</sup> July 2011. Separate meetings were held with the client and with IMARES, the Dutch Government’s fisheries science advisors. Additional information was requested from the client and provided to the surveillance team on 26<sup>th</sup> August 2011.

The purpose of these meetings and the assessment was:-

1. To review any changes in the management of the fishery, including stock evaluation, regulations, and changes in key management or scientific staff
2. To evaluate the progress of the fishery against any Conditions of Certification raised during the Main Assessment

The assessment was carried out by interviewing the client and inspecting their records to determine compliance with conditions. Where necessary, the assessment team retained records to demonstrate compliance. Further confirmation of compliance was provided by IMARES, who also provided the team with a comprehensive account of stock status and recent changes to the management regime for this fishery.

## **RESULTS, CONCLUSIONS & RECOMMENDATIONS**

### **Results**

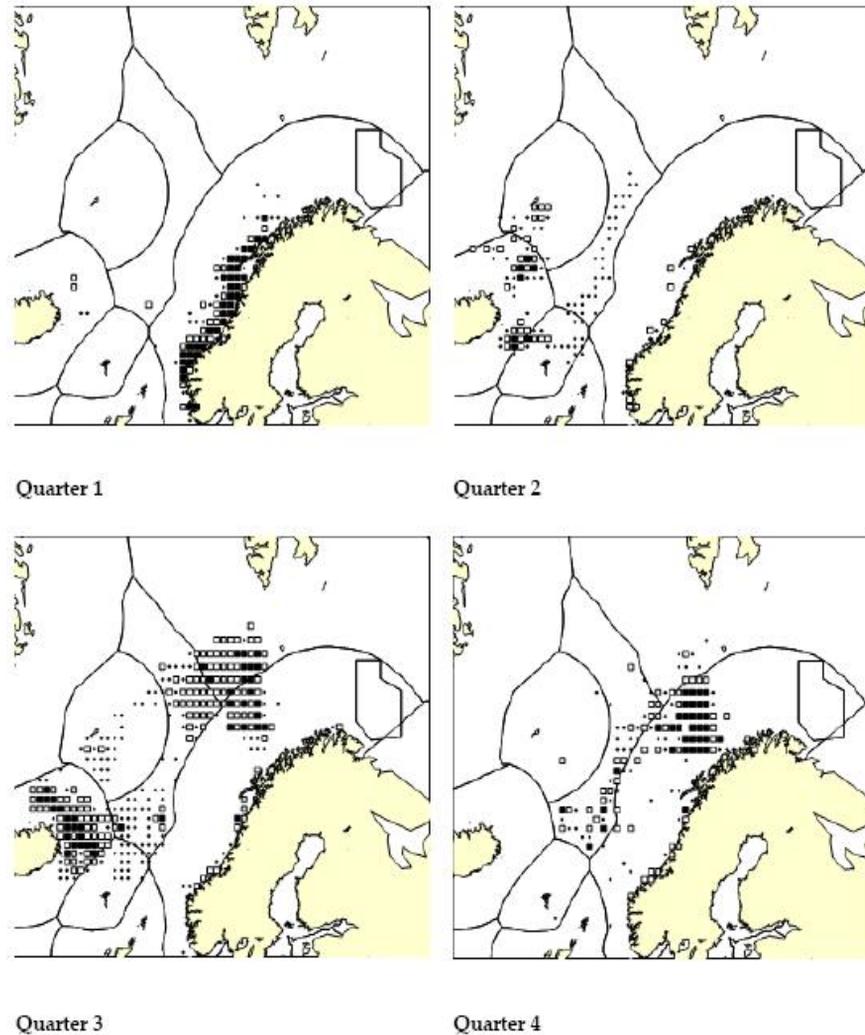
During this first surveillance audit, the audit team assessed the status of the target stock and compliance with the management regime, as well as progress with the recommendations of certification. The results of the team's findings are set out in the tables below.

The assessment team also checked the current composition and performance of the fleet in the unit of certification. The vessels in the Unit of Certification are listed in Table 1 overleaf. The team obtained landings and discard data for each vessel, and confirmed the number of observer trips aboard each vessel. Summary data are shown in Table 1 for reasons of commercial confidentiality.

**Table 1:** Listing the vessels belonging to the PFA, showing herring catches by those vessels with access to the PFA Atlanto-Scandian Herring Trawl Fishery certificate in 2010, and showing the overall herring catch and discard rates from these vessels. The client has provided the assessment team with data for the herring catch and discard rates from these vessels. This information has commercial value, and has been withheld from this report.

Company	Vessel name	Registration
<b><i>Dutch Members of PFA</i></b>		
<b>Jaczon BV</b>	Afrika	SCH-24
	Zeeland	SCH-123
	Wiron 5	SCH-22
	Wiron 6	SCH-23
<b>Parlevliet &amp; van der Plas BV</b>	Annie Hillina	KW-170
	Dirk Diederik	KW-172
<b>W. van der Zwan BV</b>	<del>Franziska</del>	SCH-54
	Ariadne	SCH-303
	Oceaan IV	SCH-333
	W. van der Zwan	SCH-302
<b>Cornelis Vrolijk's Visserij Maatschappij BV</b>	Frank Bonefaas	SCH-72
<b><i>UK Members of PFA</i></b>		
Interfish Ltd	Wiron 1 + Wiron 2	PH-110 + PH 220
North Atlantic Fishing Company Ltd	Cornelis Vrolijk Fzn	H-171
	Atlantic Princess	H-90
<b><i>German Members of PFA</i></b>		
Doggerbank Seefischerei GmbH	Helen Mary	ROS-785
<b><i>French Members of PFA</i></b>		
France Pélagique s.a.r.l	Sandettie	FC-716999
	Prins Bernhard	FC-716900
	Scombrus	FC-716630
<b><i>Irish member of PFA</i></b>		
Jaczon Ireland Ltd	Johanna Maria	SO-117
<b><i>Lithuanian Members of PFA</i></b>		
UAB Atlantic High Seas Fishing Company	Margiris	KL-749
<b>TOTAL CATCH</b>		
	Herring landed	35,693t
	Herring discarded	13t

Item	Comments																																																				
1	<b>Stock status</b>																																																				
<b>Observations</b>	<p><b>Management Unit</b></p> <p>Atlanto-Scandian herring also known as Norwegian Spring Spawning herring occurring in the North East Atlantic within the Exclusive Economic Zones (EEZ's) of Norway, Russia, Iceland, EU and Faroe Islands. Also within the Jan Mayen Fisheries Zone and Svalbard Fisheries Protection Zone and in International waters.</p> <p><b>Monitoring of Stock Status</b></p> <p>The total landings in 2009 increased from 2008 by 142,000t to 1,687,371t. Figure 1 shows the total annual landings over the period 1985 to 2009. The main catches were taken by Norway (1,016,675 t), Russia (210,105 t), Iceland (265,279 t), EU (106,284 t), and Faroe Islands (85,098 t). (ICES, 2010). The pattern of the fishery in each quarter in 2009 is shown in Figure 2. The fishery in general follows the migration of the stock closely as it moves from the wintering and spawning grounds along the Norwegian coast to the summer feeding grounds in the Faroese, Icelandic, Jan Mayen, Svalbard, and international areas. In the last two years there has been a continuing westerly trend of the fishery in the south-west area with high catches in the Iceland / Faroe zone in a summer fishery targeted at the larger older fish. Comprehensive details of the fishery by each participating country are given in the ICES working group report (ICES, 2010). The Working Group (ICES, 2009) noted an unaccounted mortality within the total international fishery and concluded that underreporting probably exists. It was not possible to assess the magnitude of these extra removals from the stock. Taking into account the large catches taken in recent years, the relative importance of such additional mortality is probably low. Therefore, no account has been taken of possible under-reporting since the 1993 assessment. Before 1994, when the stock and the quotas were much smaller, an estimated amount of unreported catch was added to the catch data used in the assessment.</p> <div data-bbox="409 1043 1322 1541"> <table border="1"> <caption>Data for Figure 1: Annual landings of Norwegian spring spawning herring (in '000 tonnes)</caption> <thead> <tr> <th>Year</th> <th>Annual Landings ('000 tonnes)</th> </tr> </thead> <tbody> <tr><td>1985</td><td>150</td></tr> <tr><td>1986</td><td>220</td></tr> <tr><td>1987</td><td>120</td></tr> <tr><td>1988</td><td>130</td></tr> <tr><td>1989</td><td>100</td></tr> <tr><td>1990</td><td>100</td></tr> <tr><td>1991</td><td>100</td></tr> <tr><td>1992</td><td>100</td></tr> <tr><td>1993</td><td>220</td></tr> <tr><td>1994</td><td>450</td></tr> <tr><td>1995</td><td>900</td></tr> <tr><td>1996</td><td>1200</td></tr> <tr><td>1997</td><td>1420</td></tr> <tr><td>1998</td><td>1200</td></tr> <tr><td>1999</td><td>1200</td></tr> <tr><td>2000</td><td>1200</td></tr> <tr><td>2001</td><td>750</td></tr> <tr><td>2002</td><td>800</td></tr> <tr><td>2003</td><td>780</td></tr> <tr><td>2004</td><td>780</td></tr> <tr><td>2005</td><td>1000</td></tr> <tr><td>2006</td><td>950</td></tr> <tr><td>2007</td><td>1250</td></tr> <tr><td>2008</td><td>1550</td></tr> <tr><td>2009</td><td>1687</td></tr> </tbody> </table> </div> <p><b>Figure 1</b> Annual landings of Norwegian spring spawning herring in thousands of tonnes over the period 1985 to 2009.</p>	Year	Annual Landings ('000 tonnes)	1985	150	1986	220	1987	120	1988	130	1989	100	1990	100	1991	100	1992	100	1993	220	1994	450	1995	900	1996	1200	1997	1420	1998	1200	1999	1200	2000	1200	2001	750	2002	800	2003	780	2004	780	2005	1000	2006	950	2007	1250	2008	1550	2009	1687
Year	Annual Landings ('000 tonnes)																																																				
1985	150																																																				
1986	220																																																				
1987	120																																																				
1988	130																																																				
1989	100																																																				
1990	100																																																				
1991	100																																																				
1992	100																																																				
1993	220																																																				
1994	450																																																				
1995	900																																																				
1996	1200																																																				
1997	1420																																																				
1998	1200																																																				
1999	1200																																																				
2000	1200																																																				
2001	750																																																				
2002	800																																																				
2003	780																																																				
2004	780																																																				
2005	1000																																																				
2006	950																																																				
2007	1250																																																				
2008	1550																																																				
2009	1687																																																				



**Figure 2** Total reported catches of Norwegian spring-spawning herring in 2009 by quarter. Grading of the symbols: black dots less than 300 t, open squares 300–3000 t, and black squares > 3000 t.(from ICES 2010)

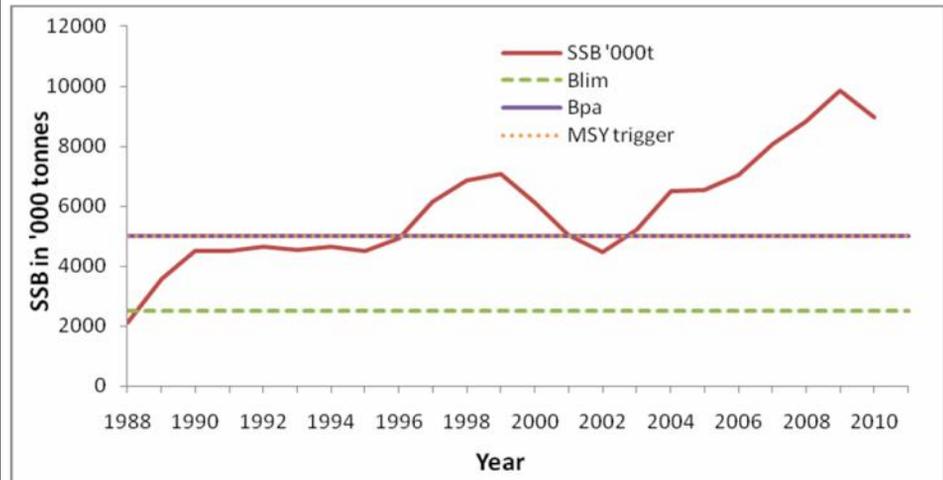
The Working Group has no comprehensive data to estimate possible discards of the herring although it is noted that the practice is illegal in the Norwegian, Russian and Faroese fleets. Although some discarding, through slippage, which is not considered to be discarding in Norway, is known to occur in this fishery, it is considered to be very low and not a problem in relation to assessment of the stock. The Norwegian coastguard reported few observations of slippage during their sea and aerial monitoring of the fishery in 2009. The low levels of discarding have been confirmed by recent estimates from a sampling programme carried out by some EU participants in the fishery. Estimates from the Netherlands sampling programme in 2008 and 2009 indicate discarding levels of about 2% by weight.

The stock assessment relies heavily not only on the reliability of the catch data but also on adequate biological sampling of various parameters from the fishery. The international fishery is well sampled with 94% of the catch covered by the biological sampling programme in 2009.

#### **Stock assessment**

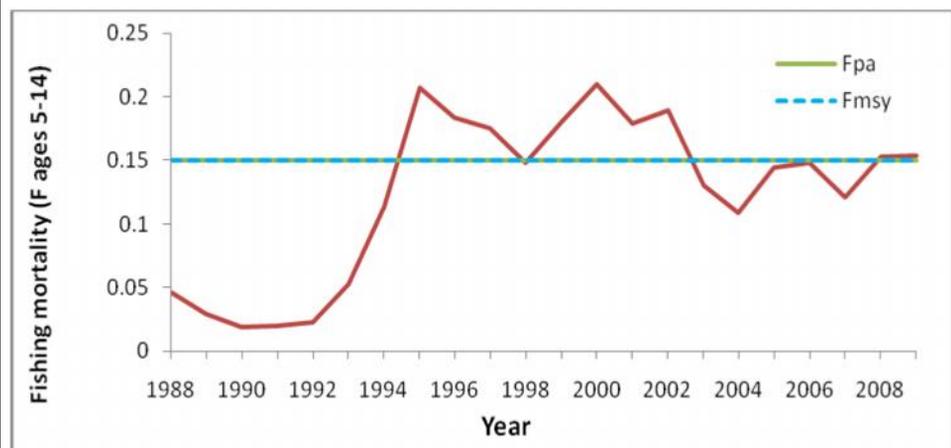
The assessment in 2010 was an update assessment run according to the benchmark assessment in 2008. The spawning stock biomass in 2010 is estimated at 8.9 million tonnes which is considerably lower than the predicted value of 12.2 million tonnes in the previous year's assessment (Figure 3). This reduction is almost entirely attributable to low abundance indices, of

all age groups, from the May ecosystem survey over the feeding areas in the Norwegian Sea. This survey has also resulted in a considerable reduction in the estimate of SSB in 2009 from 13.3 million tonnes to 9.8 million tonnes in the 2010 assessment. This scenario does generate some uncertainty in the assessment as it cannot be determined whether the extent of the decline in SSB is the result of survey measurement problems or whether it does represent a real decline in stock abundance.



**Figure 3** Spawning stock biomass of Norwegian spring spawning herring over the period 1988 to 2009. The precautionary biomass levels of Blim, Bpa and Bmsy trigger are also shown.

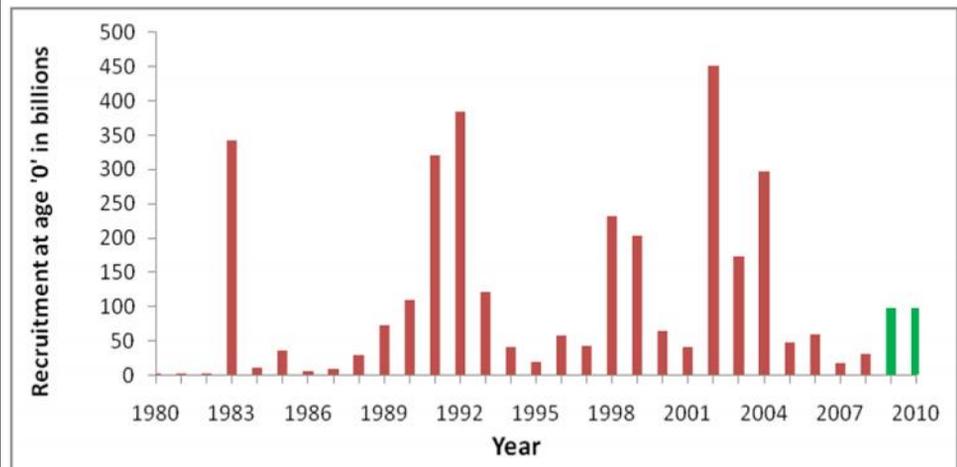
Fishing mortality based on ages 5 to 14 in the stock has fluctuated between 0.1 and 0.154 since 2003 and is estimated at 0.154 in 2009. Target level of F 0.15 which is the value of both Fpa and Fmsy. Current levels of F are marginally above the target fishing mortalities defined in the management plan (Figure 4).



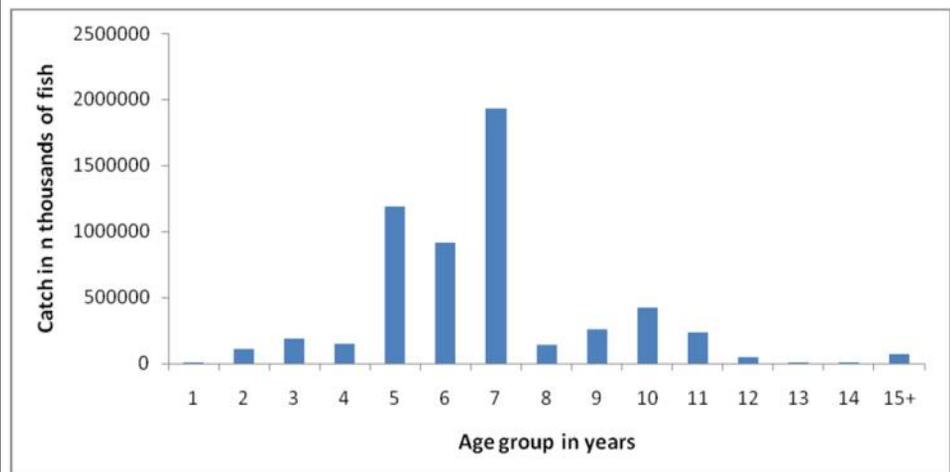
**Figure 4.** Annual fishing mortality (F) on Norwegian spring spawning herring, ages 5-14, over the period 1988 to 2009. Fpa and Fmsy levels are also shown.

The stock is considered to be within safe biological limits and well above target reference points (MSY B trigger and Bpa) set at 5 million tonnes (Figure 3). In the past decade, the productivity of the stock has been high and contains a number of good year classes. Figure 5 shows the annual recruitment over the period 1980 to 2008 as numbers of recruits aged '0' in the stock. In the last 12 years, four large year classes have been produced (1998, 1999, 2002 and 2004). However, the available information indicates that year classes produced since 2004 have been below average. The current age structure in the landings in 2009 is shown in Figure 6 which clearly indicates a

stock containing reasonable numbers of fish above the age of maturity (5+).



**Figure 5.** Annual recruitment of Norwegian spring spawning herring as billions of fish at age '0' over the period 1980 to 2008 with the geometric mean values for 2009 and 2010



**Figure 6.** Catch in numbers at age, in thousands of fish, in 2009. The influence of the big year classes in 2002 and 2004 and the above average year class in 2003 can be clearly seen.

### Management Objectives

EU, Faroe Islands, Iceland, Norway, and Russia agreed in 1996 to implement a long-term management plan for Norwegian spring-spawning herring. The management plan was part of the international agreement on total quota setting and sharing of the quota during the years 1997–2002 (The Coastal States Agreement). The plan consists of the following elements:

- 1 ) Every effort shall be made to maintain a level of Spawning Stock Biomass (SSB) greater than the critical level (B<sub>lim</sub>) of 2 500 000 t.
- 2 ) For the year 2001 and subsequent years, the Parties agreed to restrict their fishing on the basis of a TAC consistent with a fishing mortality rate of less than 0.125 for appropriate age groups as defined by ICES, unless future scientific advice requires modification of this fishing mortality rate.
- 3 ) Should the SSB fall below a reference point of 5 000 000 t (B<sub>pa</sub>), the fishing mortality rate, referred under Paragraph 2, shall be adapted in the light of scientific estimates of the conditions to ensure a safe and rapid recovery of the SSB to a level in excess of 5 000 000 t. The basis for such an adaptation should be at least a linear reduction in the fishing mortality rate from 0.125 at B<sub>pa</sub> (5

000 000 t) to 0.05 Blim (2 500 000 t).

4) The Parties shall, as appropriate, review and revise these management measures and strategies on the basis of any new advice provided by ICES.

ICES considers that the objectives of this agreement are consistent with the precautionary approach.

The targets defined in the management plan are consistent with high long-term yield and has a low risk of depleting the production potential. The current long-term management plan is considered to be consistent with the precautionary approach.

#### Management Advice

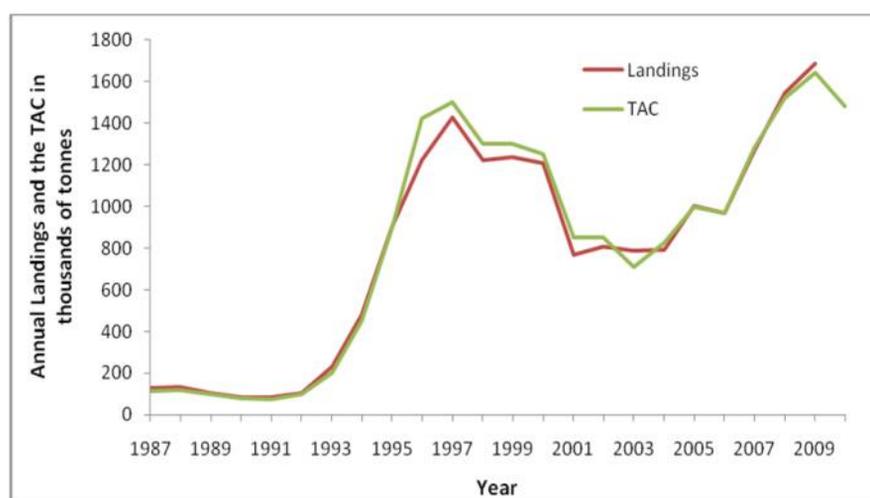
In 2009 ICES stated that “Based on the most recent estimates of SSB (in 2009) ICES classifies the stock as having full reproductive capacity. Based on the most recent estimate of fishing mortality (in 2008) ICES classifies the stock as being harvested sustainably. SSB in 2009 is well above MSY B trigger and Bpa (5.0 million tonnes) and is estimated as one of the highest in the time-series (Figure 3). The stock contains a number of good year classes. In the last 10 years, four large year classes have been produced (1998, 1999, 2002 and 2004). However, the available information indicates that year classes after 2004 have been of low abundance (Figure 5).

A long term management plan (above), agreed by the Coastal States is operational. The management plan implies maximum catches of 1 483 000 t in 2010, which is expected to leave a spawning stock of 10.8 million tonnes in 2010. The ICES considers that the current long-term management plan is consistent with the precautionary approach. The estimate of SSB in 2010 from the assessment is 9.9 million tonnes.

The agreed national shares of the TAC for 2009 and 2010 are given in the Table below.

Countries	% share	TAC 2009 (tonnes)	TAC 2010 (tonnes)
Norway	61	1,002,230	904,630
Iceland	14.51	238,399	215,183
Russian Federation	12.82	210,633	190,121
EU	6.51	106,959	96,543
Faroes	5.16	84,779	76,523

The performance of the fishery in relation to the agreed annual TACs (Figure 7) has been very good over the period 1987 to 2009 with landings rarely exceeding the agreed TAC and then only by a very small amount.



**Figure 7.** Annual landings and the annual TAC, in thousands of tonnes, for the Norwegian spring spawning herring, over the period 1987 to 2009 including the TAC for 2010.

	<p>The advice for the fishery in 2011 provides a number of options based on different approaches set out below.</p> <p>Following the ICES MSY framework implies that fishing mortality be reduced to 0.15, resulting in landings of 1.17 million tonnes in 2011. This is expected to lead to an SSB of 6.60 million tonnes in 2012.</p> <p>Fishing mortality is at FMSY, therefore the transition scheme towards the ICES MSY framework is not appropriate.</p> <p>Following the Precautionary Approach principle the fishing mortality in 2011 should be no more than Fpa (0.15) corresponding to landings of less than 1.17 million tonnes in 2011. This is expected to maintain SSB above Bpa (5.0 million tonnes) in 2012.</p> <p>Following the long term management plan agreed by EU, Faroe Islands, Iceland, Norway, and Russia implies a TAC of 0.988 million tonnes in 2011 and a fishing mortality of F 0.125. This is expected to lead to an SSB of 6.77 million tonnes in 2012.</p> <p><b>The TAC agreed by the coastal states for the fishery in 2011 was 988,000t</b> which is based on the management plan and consistent with a fishing mortality of F 0.125 which is below Fmsy of 0.15.</p> <p>The national allocations for the 2011 TAC are:</p> <table border="1"> <thead> <tr> <th>Countries</th> <th>% share</th> <th>TAC 2011</th> </tr> </thead> <tbody> <tr> <td>Norway</td> <td>61</td> <td>603,000t</td> </tr> <tr> <td>Iceland</td> <td>14.51</td> <td>143,000t</td> </tr> <tr> <td>Russian Federation</td> <td>12.82</td> <td>127,000t</td> </tr> <tr> <td>EU</td> <td>6.51</td> <td>64,300t</td> </tr> <tr> <td>Faroese</td> <td>5.16</td> <td>51,000t</td> </tr> </tbody> </table> <p><b>Summary</b> In spite of some uncertainty in the assessment of this stock, there is no doubt that it is currently in a good state and that it is lightly exploited. It is classified by ICES as having full reproductive capacity and being harvested sustainably. The estimate of the spawning-stock biomass in 2010 is well above Bpa and MSY B trigger. An agreed management plan is in place and this has been favourably reviewed by ICES.</p>	Countries	% share	TAC 2011	Norway	61	603,000t	Iceland	14.51	143,000t	Russian Federation	12.82	127,000t	EU	6.51	64,300t	Faroese	5.16	51,000t
Countries	% share	TAC 2011																	
Norway	61	603,000t																	
Iceland	14.51	143,000t																	
Russian Federation	12.82	127,000t																	
EU	6.51	64,300t																	
Faroese	5.16	51,000t																	

Item	Comments
<b>3</b>	<b>Conditions of Certification</b>
<b>Observations</b>	There were no conditions of certification for this fishery.

Item	Comments
<b>4</b>	<b>Certification Recommendations</b>
<b>Recommendations (original narrative)</b>	<p>The assessment team made four recommendations in its initial certification of this fishery. These recommendations are not mandatory requirements of certification, but address some areas where the performance of the fishery against the MSC standard could be improved.</p> <p>The recommendations are:-</p> <ol style="list-style-type: none"> <li>1. In response to ICES current concerns about the status of redfish stocks, the PFA should try to keep the by-catches of redfish as low as possible in this fishery, and ideally should refrain from participation in the directed pelagic redfish fishery.</li> <li>2. The score awarded for the performance indicators relating to effects on ETP species could be improved if the PFA adopted a formal and comprehensive strategy for managing impacts on all ETP species that is above national and international requirements for protecting these species; and also adopted a strategy for gathering quantitative information about these species.</li> <li>3. The score awarded for Performance Indicators 1.2.2, 1.2.3 and 1.2.4 would be improved if the extent and effect of slippage was better understood. New enforcement measures, such as the use of CCTV on fishing vessels, may improve understanding of this issue and should be supported.</li> <li>4. All bycatches of salmon in the Atlanto-Scandian herring fishery should be officially reported even if only one or a few fish are caught. NASCO and ICES can only evaluate the impact of high seas fisheries on the wild salmon stocks if this information becomes available.</li> </ol>
<b>Observations</b>	<p>Progress with these recommendations was discussed with the client during the site visit, and is summarised below:-</p> <ol style="list-style-type: none"> <li><b>1. Redfish</b> The PFA fleet has not participated in the redfish fishery in the past 12 months.</li> <li><b>2. ETP species</b> Records of ETP species capture (including null records where no ETP species were caught) are submitted by all PFA vessels at the end of each fishing trip.  The assessment team inspected records for all fishing trips for the Atlanto-Scandian Herring fishery by PFA vessels in the past 12 months. No ETP species interactions were reported.</li> <li><b>3. New monitoring measures</b> The PFA has been involved in discussions with the Dutch Government about the introduction of CCTV monitoring equipment. It is probable that trials will be carried out shortly as part of an EU pilot scheme to test this approach to monitoring.</li> <li><b>4. Salmon bycatch</b> There have been no reports of any salmon bycatch in the fishery since certification.</li> </ol>
<b>Conclusion</b>	Progress has been made in all of the areas considered by these recommendations.

<b>Item 7</b>	<b>Any complaints against the certified operation; recorded, reviewed and actioned</b>
	<p>A complaint has been made to Moody Marine, concerning cooperation by certain member companies of the PFA with fishery observers.</p> <p>These concerns have been discussed by the PFA management, IMARES and the Dutch Government. A revised sampling programme has been agreed between these parties, and 15 observer trips have been scheduled for 2011.</p> <p>The assessment team has discussed this observer programme with IMARES and the PFA during this surveillance audit.</p> <p>Moody Marine will monitor progress with the implementation of the revised observer programme. If further complaints are made or if there is evidence that the programme is not being implemented, the assessment team may need to carry out an expedited audit of the fishery and review the scoring of relevant Performance Indicators and the status of the fishery.</p>
<b>Item 8</b>	<b>Any relevant changes to legislation or regulation.</b>
	No significant changes to the legislation or regulation have arisen since the certification of the fishery.
<b>Item 9</b>	<b>Any relevant changes to management regime.</b>
	There have been no changes to the management regime that are relevant to this fishery since its certification.
<b>Item 10</b>	<b>Annual Catch Data</b>
	<p>MSC Policy Advisory 22 requires the submission of catch data for the fishery. The relevant information for this fishery is set out below:-</p> <p>Total TAC for the most recent fishing year: 1,483,000t</p> <p>Unit of Certification share of the TAC: 1,483,000t</p> <p>Client share of the TAC: 2.4% of the total TAC and 37% of the EU share in the TAC.</p> <p>Total greenweight<sup>1</sup> catch in the past two years: 2009: 26,534t 2010: 35,693t</p>

<sup>1</sup> "Greenweight" is not a term in common use in Europe. It is understood to mean the whole live weight of the fish or shellfish caught, prior to any processing (such as gutting) at sea. The term is used in the New Zealand Fisheries Act 1996. Where processed fish are landed, conversion factors may be used to calculate the greenweight.

Item 11	Overall Conclusions
	<ol style="list-style-type: none"> <li>1. The Atlanto-Scandian Herring stock is currently in a good state and is lightly exploited. It is classified by ICES as having full reproductive capacity and being harvested sustainably.</li> <li>2. The client is making progress to address the issues identified in the four Recommendations of certification.</li> <li>3. MSC Certification should continue with audits annually.</li> </ol>

**Information Sources:****Meetings**

1. Interview with Dr Mark Dickey-Collas, IMARES, 12<sup>th</sup> July 2011
2. Meeting with Gerard van Balsfoort, Chair, Pelagic Freezer Trawler Association, IJmuiden, 12<sup>th</sup> July 2011

**Reports etc**

ICES 2010. Herring in the Northeast Atlantic (Norwegian spring-spawning herring). October 2010. ICES Advice Book 9, 89-98. Available from <http://www.ices.dk/committe/acom/comwork/report/2010/2010/her-noss.pdf>

**Standards and Guidelines used:**

1. MSC Principles and Criteria for Sustainable Fishing
2. MSC Fishery Certification Methodology Version 6. September 2006
3. TAB Directives - all