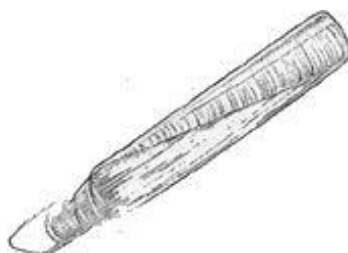


MSC SUSTAINABLE FISHERIES CERTIFICATION

On-Site Surveillance Visit - Report for DFA Dutch North Sea Ensis Fishery



4th Surveillance Audit

November 2016

Certificate Code	F-ACO-0092
Prepared For:	CPO Nederlandse Vissersbond UA
Prepared By:	Acoura Marine
Authors:	Rod Cappell, John Hambrey & Julian Addison



Assessment Data Sheet

Fishery name	DFA Dutch North Sea Ensis		
Species and Stock	Dutch coastal waters razor shell stock (<i>Ensis directus</i>)		
Date certified	30 th October 2012	Date of expiry	29 th October 2017
Surveillance level and type	Normal - Onsite		
Date of surveillance audit	9 th - 10 th November 2016		
Surveillance stage (tick one)	4th Surveillance	✓	
Surveillance team	Lead assessor: Rod Cappell Assessor(s): John Hambrey and Julian Addison		
CAB name	Acoura Marine		
CAB contact details	Address	6 Redheughs Rigg Edinburgh EH12 9DQ	
	Phone/Fax	0131 335 6662	
	Email	fisheries@acoura.com	
	Contact name(s)	Billy Hynes	
Client contact details	Address	Ecopark 42 8305 BK Emmeloord Netherlands	
	Phone/Fax	31 (0)527 698 151	
	Email	djtberends@vissersbond.nl	
	Contact name(s)	Mr Derk Jan Berends	

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1 Introduction

1.1 Scope of Surveillance

This report outlines the findings of the 4th Annual Surveillance of the DFA Dutch North Sea Ensis fishery. The scope of the certified fishery and therefore of this surveillance is specified in the Unit of Certification set out below:

UoC 1

Species:	Razor shell (<i>Ensis directus</i>)
Geographical area:	ICES Area IVc within the Netherlands EEZ
Method of capture:	Shellfish suction dredge: using airlift and suction pump
Stock:	Dutch coastal waters razor shell stock
Management System:	A management plan has been drawn up for the fishery for the years 2005-2008, followed by yearly fishing plans during the period 2009-2013 and the current fishing plan for 2014-2018. The first management plan was presented to the Ministry of Agriculture, Nature and food quality (LNV – now EL&I) and the fishing plans are now part of the wider ranging co-management strategy as described in Policy Decision 'Ruimte voor een Zilte Oogst', setting out the national shellfish management policy 2005-2020.
Client Group:	Signatories to the CPO Nederlandse Visserbond UA Ensis Fishery Management Plan

1.2 Aims of the Surveillance

The purpose of the annual Surveillance Report is fourfold:

1. to establish and report on whether or not there have been any material changes to the circumstances and practices affecting the original complying assessment of the fishery;
2. to monitor the progress made to improve those practices that have been scored as below "good practice" (a score of 80 or above) but above "minimum acceptable practice" (a score of 60 or above) – as captured in any "conditions" raised and described in the Public Report and in the corresponding Action Plan drawn up by the client;
3. to monitor any actions taken in response to any (non-binding) "recommendations" made in the Public Report;
4. to re-score any Performance Indicators (PIs) where practice or circumstances have materially changed during the intervening year, focusing on those PIs that form the basis of any "conditions" raised.

Please note: The primary focus of this surveillance audit is to assess changes made in the previous year. For a complete picture, this report should be read in conjunction with the Public Certification Report for this fishery assessment which can be found here:

https://fisheries.msc.org/en/fisheries/dfa-dutch-north-sea-ensis/@_assessments

1.3 Certificate Holder Details

Nederlandse Visserbond
Ecopark 42
8305 BK Emmeloord

Netherlands

Contact: Mr Derk Jan Berends

Tel. +31 (0)527 698 151

Email: djtberends@vissersbond.nl

Surveillance Process

1.4 Findings of the original assessment

As a result of the assessment, a number of conditions of certification were raised by the assessment team, and maintenance of the MSC certificate is contingent on the DFA Dutch North Sea Ensis moving to comply with these conditions within the time-scales set at the time the certificate was issued.

1.5 Surveillance Activity

1.5.1 Surveillance team details

This on-site surveillance visit was carried out by Rod Cappell with involvement remotely by John Hambrey (P2) and Julian Addison (P1). The Team Leader was Rod Cappell.

Assessment team leader: Rod Cappell

Primarily responsible for assessment under Principle 3

Rod Cappell is an experienced, qualified MSC auditor with over 15 years of industry experience, including 10 years as project leader and project manager. Fisheries & aquaculture industry analysis;

- Port infrastructure and regeneration: feasibility & business planning for port infrastructure investment.
- Coastal management: development & implementation of coastal and marine spatial planning.
- Economic appraisal & environmental economics: Economic and socio-economic analysis, options appraisal & Cost Benefit Analysis.
- Fisheries policy, legislation and management: Provision of policy research, legislative review and development of fisheries management plans.
- Sector planning: industry development, strategic reviews and plans.
- Environmental Assessment: experienced practitioner and project manager for Environmental Impact Assessment, SEA, and Appropriate Assessment & MSC certification.
- Aquaculture: strategic and technical development of sustainable aquaculture.
- Fish processing & marketing: investigations into global seafood trade including price analysis, eco-labelling, certification and use of Life Cycle Assessment.
- Project & public expenditure design & evaluation: programme design and ex-ante, mid-term and ex-post monitoring and evaluation.

Expert team member: John Hambrey

Primarily responsible for assessment under Principle 2

Dr John Hambrey has a first degree in Natural Sciences (University of Cambridge) and a Ph.D in natural resource management (University of Stirling). He has built up more than 30 years' experience as a consultant, advising government, international agencies and the private sector on fisheries and aquaculture development and management, and natural resource/environmental management more generally. Clients have included FAO, the World Bank, the Department for International Development, Marine Scotland, English Nature, Scottish Natural Heritage, Danida, NORAD, several NGOs and the private sector. John has been a major contributor to international guidance on environmental assessment in the aquatic environment, environmental risk analysis, and the ecosystem approach to aquaculture and fisheries.

Projects have been undertaken relating to economic and environmental impact assessment, analysis of impacts on ecosystems and ecosystem services, and development of best practice and codes of conduct.

Relevant project experience includes for example: Evaluation of the Code of Conduct for Responsible Fisheries for FAO; facilitation of a series of workshops on the reform of the Common Fisheries Policy; development of environmental indicators for fisheries and aquaculture for the Kiev Report (European Environment Agency); development of environmental impact and environmental quality indicators for Scottish Natural Heritage and the Scottish Government; advice to a group of major supermarket

retailers on sourcing responsibly produced shrimp; and analysis of the environmental and economic impacts of fisheries conservation measures for English Nature. More detailed examples can be found on www.hambreyconsulting.co.uk.

Expert team member: Julian Addison

Primarily responsible for assessment under Principle 1

Dr Julian Addison is an independent fisheries consultant with 30 years' experience of stock assessment and provision of management advice on shellfish fisheries, and a background of scientific research on shellfish biology and population dynamics and inshore fisheries. Until December 2010 he worked at the Centre for Environment, Fisheries and Aquaculture Science (Cefas) in Lowestoft, England where he was Senior Shellfish Advisor to Government policy makers, which involved working closely with marine managers, legislators and stakeholders, Government Statutory Nature Conservation Organisations and environmental NGOs. He has experienced shellfish management approaches in North America as a visiting scientist at DFO in Halifax, Nova Scotia and at NMFS in Woods Hole, Massachusetts. For four years he was a member of the Scientific Committee and the UK delegation to the International Whaling Commission providing scientific advice to the UK Commissioner. He has worked extensively with ICES and was Chair of the Working Group on the Biology and Life History of Crabs, a member of the Working Group on Crangon Fisheries and Life History and a member of the Steering Group on Ecosystems Function. He has recently completed or is currently undertaking MSC full assessments for the Newfoundland and Labrador snow crab fishery, the Ireland and Northern Ireland bottom grown mussel fisheries, both the Estonia and Faroe Islands Barents Sea cold water prawn fisheries, the Nephrops fishery in the Skagerrak and Kattegat, the Swedish shrimp fishery in the Skagerrak and Norwegian Deep and the Eastern Canada offshore lobster fishery. He has also undertaken various MSC pre-assessments and surveillance audits and has carried out peer reviews of MSC assessments in both Europe and North America of lobster, cold water prawn, razorfish, cockle and scallop fisheries. Other recent work includes a review of the stock assessment model for blue crabs in Chesapeake Bay, USA, and an assessment of three Alaskan crab fisheries under the FAO-based Responsible Fisheries Management scheme.

1.5.2 Date & Location of surveillance audit

Onsite surveillance was conducted across 9th and 10th of November 2016 in Leiden & Emmeloord, Netherlands.

1.5.3 Stakeholder meetings

Meetings were held with the client representative at Nederlandse Visserbond and with the IMARES (now Wageningen Marine Research) staff responsible for ensis stock assessment, Karin Troost. Consultation with a senior inspector at the control authority, Nederlandse Voedsel- en Warenautoriteit (NVWA), Lanert Schrader.

1.5.4 What was inspected

The main documentation inspected was the most recent stock assessment survey conducted by IMARES (Wageningen Marine Research) and maps showing the Ensis vessels fishing activity over the past year.

1.5.5 Stakeholder Consultation

A total of 73 stakeholder organisations and individuals having relevant interest in the assessment were identified and consulted during this surveillance audit. The interest of others not appearing on this list was solicited through the postings on the MSC website.

1.6 Surveillance Standards

1.6.1 MSC Standards, Requirements and Guidance used

This surveillance audit was carried out according to the MSC Fisheries Certification Requirements FAM 1.3 using process v2.0

1.6.2 Confirmation that destructive fishing practices or controversial unilateral exemptions have not been introduced

No indication was given or suggested during the surveillance audit to suggest that either of these practices is in evidence for this fishery

2 Updated Fishery Background

2.1 Changes in the management system

There are no major changes to the management system since the previous year 3 surveillance. The Dutch Fisherman's Association, DFA, (De Nederlandse Vissersbond) operates two Producers Organisations (PO) with approximately 225 fishermen in the North Sea and Wadden Sea being organised in the CPO Nederlandse Vissersbond UA which owns the *Ensis directus* fishery. The DFA has a separate shellfish section, and all Ensis fishermen are members of the CPO Nederlandse Vissersbond.

The *Ensis directus* fishery under assessment takes place entirely within Dutch coastal waters, where only Dutch registered fishing vessels are licensed to fish for Ensis. There are now 6 out of 8 Ensis fishing licenses active (in recent years only 4 were active) and some vessels have been replaced with newer vessels. All Ensis fishing vessels operate under the MSC certificate.

License conditions include Real Time Closures (RTC) if high levels of *Spisula* by-catch occurs.

A new VMS system was installed on Ensis vessels in 2016 (in addition to that mandatory system under the CFP for vessels longer than 12 metres). The system is more accurate, pinging more frequently and with the ability to monitor speeds. This is to inform the NGOs as well as the vessels themselves. 500m/hour is the agreed fishing speed in the fishing plan, but this is less than the current regulation.

2.2 Changes in relevant regulations

In 2014 a five year license was issued taking it up to 2018. The precautionary quota of 8,000 tonnes remains and had previously been divided into 2,500 tonnes for the North and 5,500 tonnes in Voordelta in the South.

A letter sent by the management authority, MinEZ changed the license to remove this split as vessels are opting to move between the areas. In 2015 there was increased fishing effort in the northern area (Noordzeekustzone) and the sub-quota of 2,500 tonnes in the Noordzeekustzone has been lifted, although there has been no change in the overall quota of 8000 tonnes.

The Ministerial Decree implementing temporarily and permanently closed areas in Natura 2000 area Voordelta has been amended with effect of 1 November 2016. The areas that are closed for all activities in the winter period in order to reduce disturbance for Black scoters have been enlarged and part of the area Bollen van het Nieuwe Zand is now closed year round. The measures have been motivated by the fact that in recent years the largest large part of the Black scoters present in the area were found outside the protected areas.

December 2016 saw a new agreement for closed areas in the Natura 2000 area Noordzeekustzone (VIBEGII), but this should not affect the Ensis fishery (it is more of an issue for shrimp trawlers).

NVWA, the control authority responsible for monitoring and enforcement of Ensis vessels fishing activities reported no plans for regulatory or enforcement changes (L Schrader, NVWA, pers. comm.).

2.3 Changes to personnel involved in science, management or industry

IMARES, the Dutch state scientific advisors are now called Wageningen Marine Research, but there is no change in remit.

2.4 Changes to scientific base of information including stock assessments

A large research project was undertaken to inform the Port of Rotterdam expansion by Deltares. This provides extensive baseline information for the area and advocating mitigation measures that include closing areas of seabed to bottom trawling (Deltares, 2014). The baseline information is useful background information for this surveillance and the upcoming re-assessment.

There is an interest in developing pulse technology for use in the Ensis fishery and some experimental fishing has been undertaken by scientific bodies working with industry.

A real time closure (RTC) of the Ensis fishery has been proposed for the protection of black scoter (*Melanitta americana*) but scientific advice from IMARES (Wageningen Marine Research) suggested that this would be very difficult to implement because the annual stock survey assesses only the whole

stock and not individual beds, and because the birds are opportunistic feeders and can move quickly between areas.

Update of stock assessments

Razor shell stock biomass and its distribution are estimated annually through the use of independent research surveys carried out by IMARES (Wageningen Marine Research). The stock surveys use a regular grid of stations and the allocation of sampling stations is stratified using population density results from surveys conducted in earlier years. Whilst the formal minimum landing length as set by the Dutch authorities is 10 cm, although in practice fisherman generally only land razor shells of 12 cm length and above. IMARES (Wageningen Marine Research) surveys distinguish between razor shells over and below the minimum landing size of 10 cm, and stock estimates are calculated for sub-commercial and commercial sized razors. Stock biomass is calculated using the shell width – weight isometric relationship estimated for this stock. The total biomass is estimated by summing the biomass obtained in each individual sample and extrapolating it to the overall surveyed fishing ground. IMARES (Wageningen Marine Research) has reviewed the survey methodology and concluded that the assessment approach is still relevant to the stock. Changes to the methodology are planned for next year which should further refine the stock estimate.

Landings of razor shells in 2015 increased to 5604 tonnes which is significantly higher than in previous years but still well below the current TAC of 8000 tonnes (Table 2.4-1). In the previous four years, the majority of the landings (approximately 70%) came from the three vessels fishing the southern area of the fishery (Voordelta and Vlake van de Raan) with only one vessel fishing the northern area of the fishery (Noordzeekustzone). There were significant changes to the fleet in 2015 with two additional vessels joining the fleet, so that 6 out of the 8 licenses are now active. This increase in the number of vessels coincided with low catches in the Voordelta in 2015, so the fleet moved north to fish more regularly in the Noordzeekustzone, with the result that approximately 60% of the landings in 2015 were from the Noordzeekustzone. In 2016, two of the vessels have moved back to fishing in the Voordelta, but there is still higher fishing effort in the Noordzeekustzone than observed over the previous ten years.

The results of the 2016 IMARES (Wageningen Marine Research) survey were presented by Karen Troost at the surveillance audit with the permission of Ministry of EZ, although at that time the survey results had not been formally published. The decline in the stock observed in 2015 was continued in 2016 with the total stock size in numbers in 2016 being only half of the observed stock size in 2015 and very much lower than in the previous five years (Table 2.4-2). Whilst there are natural fluctuations in annual stock size, the low stock numbers in 2015 may have been partially attributable to a major die-off of small Ensis which were washed up on beaches, particularly in the southern area of the stock (Bert Keus, pers. comm.) In 2015 almost 90% of the total stock (in numbers) was under 10 cm length, a similar proportion to that observed on average over the last four years. However in 2016, only 70% of the stock is under 10cm length, and so the most likely reason for the low stock numbers in 2016 is low recruitment. Table 2.4-2 also provides an estimate of the maximum and current exploitation rates of the adult stock over 10 cm in length. The maximum exploitation rate assumes that the full TAC of 8000 tonnes is landed, whereas the current exploitation rate is calculated using the observed landings and the estimate of the adult stock above 10 cm. Even assuming that the full TAC is landed every year, the maximum exploitation rate of the adult stock in numbers has been between 2% and 5% over the last 10 years, and the actual exploitation rate in each year from 2006 to 2014 was less than 2%, and even with the highest recorded landings observed in 2015 coupled with low stock numbers, the actual exploitation rate was still only 3.17% (Table 2.4-2). The fishery for Ensis is therefore currently exploiting only a very small proportion of the stock in numbers, and the estimates of exploitation rate would be even lower if the total stock size (not just individuals > 10 cm) was used in the calculation.

At previous surveillance audits the assessment team noted that for IMARES (Wageningen Marine Research) surveys, the calculation of exploitation rates and the management of the fishery were previously based upon numbers of Ensis and not weight of Ensis, and noted that stock estimates would be more appropriately presented in terms of biomass rather than numbers. In addition the assessment team reiterated their recommendation from the first annual surveillance audit in 2013 that discarded Ensis should be taken into account when calculating exploitation rates.

The IMARES (Wageningen Marine Research) survey now provides stock biomass estimates (Table 2.4-3). The survey results show that in terms of biomass, the stock size had been fluctuating around 450,000 tonnes from 2010 to 2014, but declined to 377,000 tonnes in 2015 and declined further to 292,000 tonnes in 2016, although the stock of Ensis > 10 cm was similar in 2016 to 2015 (Table 2.4-3).

Commercial size Ensis comprised around 55% of stock biomass from 2010 to 2014, declined to 43% in 2015, but increased to 57% in 2016 (Table 2.4-3). The trend in stock biomass by size confirms the likelihood that the low stock biomass observed in 2016 is due to a decline in recruitment.

The Client also now provides exploitation rates based upon stock biomass and including discarded Ensis. The average discard rate observed during five bycatch surveys was 28.5% by numbers, although the rate varied from 15.5% to 41.8%. These observed discard rates may be an underestimate as some individuals will be discarded through the meshes in the upper side of the dredge, so the Client based the calculation of exploitation rates on a discard rate of 40%. This discard rate is likely to be highly precautionary because the discard surveys have previously estimated discard rate by numbers and not by weight, and if in future the discard rate is calculated in terms of weight, the value is likely to be very much lower because the current calculations include the small matchstick-size Ensis that are present in very large numbers.

Based on a discard rate of 40%, the average exploitation rate by weight from 2010 to 2013 was 2.31% (Table 2.4-4). The exploitation rate increased to 3.31% in 2014 due to the large increase in landings, and with a further increase in landings in 2015 coupled with a decline in stock size, the exploitation rate by weight increased to 5.78%. However even if the full TAC of 8000 tonnes had been landed in 2015 (and assuming a highly precautionary discard rate of 40% by weight), the exploitation rate would still only have been around 8% in a year of low stock biomass.

In summary, current landings are still well below the TAC, and exploitation rates of the adult (> 10cm) stock biomass have been lower than 3.5% in all recent years except for 2015 when it increased to 5.78%. Exploitation rates of the total stock have been even lower. It can be concluded therefore that the fishery has minimal impact currently on the overall stock.

Table 2.4-1. Observed landings of razor shells (tonnes fresh weight) from 2006 to 2015. (* The landings for 2015 include 115 tonnes harvested from outside the Natura 2000 sites). (Source: Client).

Year	Noordzeekustzone	Voordelta and Vlake van de Raan	Total
2006	606	1317	1923
2007	483	1768	2251
2008	539	1789	2328
2009	356	2441	2797
2010	420	3181	3601
2011	1017	2711	3728
2012	1194	2191	3385
2013	1280	2575	3854
2014	1514	3470	4984
2015	3397	2092	5604*

Table 2.4-2. Total stock size (in millions) from 2006 to 2016, proportion of large and small razor shells and maximum and current exploitation rates of adult (>10cm) stock for the overall Dutch coast. Calculations are carried out assuming an average weight per animal landed of 25 g, i.e. landings of 8000 tonnes (the current TAC) would be equivalent to landing 320 million razor shells. (Source: IMARES, Wageningen Marine Research, stock surveys)

Year	Total stock size (nos. in millions)	Proportion <10cm	Proportion >10cm	Maximum E (%)	Current E (%)
2006	37,358	0.82	0.18	4.87	1.17
2007	70,075	0.89	0.11	4.27	1.20
2008	65,756	0.85	0.15	3.35	0.98
2009	26,571	0.74	0.26	4.61	1.61
2010	135,530	0.89	0.11	2.23	1.00
2011	96,410	0.84	0.16	2.12	0.99
2012	97,488	0.88	0.12	2.83	1.20
2013	72,447	0.83	0.17	2.65	1.28
2014	137,233	0.92	0.08	2.79	1.74
2015	53,653	0.87	0.13	4.53	3.17
2016	27,102	0.70	0.30	3.93	N/A

Table 2.4-3. Stock estimates in tonnes for both <10 cm and >10 cm razor shells from IMARES (Wageningen Marine Research) surveys for the period 2010-2016. (Source: IMARES, Wageningen Marine Research, stock surveys)

Year		Small <10 cm	Commercial >10 cm	Total
2010		211.800	266.700	478.500
2011		251.500	307.300	558.800
2012		175.300	230.800	406.100
2013		165.800	253.300	419.000
2014		202.500	251.100	453.600
2015		215.700	161.500	377.200
2016		127.000	165.200	292.200
Average		192.800	233.700	426.490

Table 2.4-4 Exploitation rates as percentage of adult stock fresh weight over the period 2010-2015 assuming a discard rate of 40%. (Source: Client).

Year		Biomass >10 cm	Landings	Landings + discards	Exploitation Rate (%)
2010		266.700	3601	6002	2.25
2011		307.300	3728	6213	2.02
2012		230.800	3385	5642	2.44
2013		253.300	3854	6423	2.54
2014		251.100	4984	8307	3.31
2015		161.500	5604	9340	5.78
2016		165.200	N/A	N/A	N/A

2.5 Any developments or changes within the fishery which impact traceability or the ability to segregate between fish from the Unit of Certification (UoC) and fish from outside the UoC (non-certified fish)

There were no changes to the UoC which could impact traceability.

2.6 TAC and catch data

Table 2.6-1 TAC and Catch Data

TAC	Year	2015	Amount	8,000t
UoA share of TAC	Year	2015	Amount	100%
UoC share of TAC	Year	2015	Amount	100%
Total green weight catch by UoC	Year (most recent)	2015	Amount	5,604t
	Year (second most recent)	2014	Amount	4,984t

2.7 Summary of Assessment Conditions

Table 2.7-1 Summary of Assessment Conditions

Condition number	Performance indicator (PI)	Status	PI original score	PI revised score
1	1.2.2	Closed year 3	75	80
2	1.2.3	Closed year 3	75	80
3	2.2.2	Closed year 2	60	80
4	2.2.3	Closed year 3	65	80
5	2.4.3	Closed year 1	75	80
6	3.1.2	Closed year 1	75	80

3 Results

3.1 Condition 1

Performance Indicator(s) & Score(s)	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
	1.2.2	SI a: Well-defined harvest rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	75
Condition	Define explicit harvest control rules within the management plan to ensure that the exploitation rate is reduced as limit reference points are approached.		
Milestones	<p>Year 1: Review the fishing plan with the objective of including well defined harvest control rules Resulting score: 75</p> <p>Year 2: Include harvest control rules within the reviewed management plan Resulting score: 80</p>		
Client action plan	<p>During the first year of certification options for the development of a harvest control rule that is responsive to the size of the stock will be discussed with scientist, relevant stakeholders and the fishing companies involved. In the second year of certification a harvest control rule that is controlling exploitation rate and includes limit reference points will be included in the revised management plan</p>		
Progress on Condition [Year 4]	<p>At the 1st surveillance audit in 2013, the Client reported that a harvest control rule (HCR) had been proposed to the licence holders of the four vessels within the CPO Nederlandse Vissersbond which are currently fishing for Ensis as follows: <i>"The fishery shall be limited by the sector to a maximum of no more than 10 % of the total stock in numbers. This percentage will be defined as 10 % of the stock assessed by IMARES in the year previous to the fishery."</i> The Client agreed that a modified version of this proposed HCR explicitly including a reduction in TAC if the exploitation rate exceeds 10% should be incorporated into the new 5 year management plan. The assessment team also noted that there was significant discarding of sub-commercial sized razor shells in this fishery and recommended that the discards should be taken into account when calculating the exploitation rate, i.e. total removals from the fishery (not just landings) should be used in the calculation of exploitation rate.</p> <p>At the 2nd surveillance audit in 2014 the assessment team reiterated its recommendation that the calculation of exploitation rate should take account of discarded Ensis and that the HCR should be formulated in terms of adult stock size in weight rather than numbers. The Client therefore proposed a revised HCR as follows: <i>"The fishery will be limited to a maximum exploitation rate of 20 % of the weight of the adult stock size as estimated by IMARES in the year previous to the year of fishing. The exploitation rate will take account of a precautionary estimate of discard rate of 40 %.</i> <i>If the TAC of 8000 tons plus estimated discards exceeds 20 % of mature stock size the TAC will have to be reduced so that maximum catches equal 20 % of the adult (>12 cm) stock in weight.</i> <i>The calculation will thus be TAC in Year t+1= adult (>12 cm) stock in Year t x 0.2 x (1- discard rate).</i> <i>When a discard rate of 0.4 is used the threshold stock size below which the TAC would have to be reduced would be (8000/(0.6)) x5 = 66,666 tonnes.</i></p>		

	<p><i>For example, at a stock size of 50,000 tonnes the TAC would be $50,000 \times 0.2 \times 0.6 = 6000$ tonnes.</i></p> <p>At the time of the 2nd audit, this harvest control rule had not yet been incorporated into the management system, and so the year 2 milestone was not met and work on this condition was therefore behind target. However the new 5 year licence from 2014 based on the Nature Conservation Act contains a condition that stock assessment data are reported and fishing percentages calculated every year when the IMARES survey data are published. If there are large changes in the exploitation rate, then action can be taken. At the time of the 2nd audit, this revised HCR had not yet been agreed, but the Client reported that there would be a meeting of the CPO Nederlandse Vissersbond in February 2015 on the Ensis fishery at which the proposed HCR would be discussed. After agreement the new HCR will be included in the annual fishing plan(s).</p> <p>At the 3rd surveillance audit, the Client reported that the harvest control rule described above has been discussed in a meeting of CPO Nederlandse Vissersbond on 23 June 2015. The minutes of the meeting confirm that it was agreed that this HCR will be included in the annual fishing plan and has been incorporated into the Ensis management plan. The year 2 milestone has therefore been met and this condition was closed at year 3 surveillance audit. PI 1.2.2 was rescored at 80.</p>
Status of condition	<i>Closed in year 3</i>

3.2 Condition 2

Performance Indicator(s) & Score(s)	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
	1.2.3	Slc: There is good information on all other fishery removals from the stock	75
Condition	<p>Collect information on the amount of razor shells discarded from the overall catch in order to allow for estimation of total removals from the stock.</p> <p>The estimation of the proportion of razor shells discarded should identify whether the proportion of razor shells discarded is significant as regards to stock size. If this is the case razor shell discards should be monitored on a regular basis.</p>		
Milestones	<p>Year 1: Collect information on the proportion of razor shells that are discarded. Resulting score: 75</p> <p>Year 2-3: Make available results and analysis, together with determination of whether the proportion of razors discards is significant as regards to total stock size. If this is the case develop an annual monitoring program.</p> <p>Resulting score: 80</p>		
Client action plan	<p>An independent scientific research organisation or scientist will be contracted to estimate the proportion of razor shells that are discarded in the first year of certification. The results will be presented to the team at the first surveillance visit. During the second and third year of certification the estimation of discard levels will be continued. The results of first three years of monitoring will be analysed across years and vessels and discussed with the relevant stakeholders. The results will be presented to the team at the third surveillance visit. In case the amount of razor shells discarded is regarded significant in relation to the total razor shell stock, discards will be monitored on an ongoing basis.</p>		

**Progress on
Condition [Year
4]**

At the 1st surveillance audit, the Client presented a survey of bycatch in the razor shell fishery carried out by De Heijer Producties. The survey showed that 33% of catch in the *Ensis directus* fishery consisted of razor shells under the official minimum landing size of 10cm and damaged razor shells (Den Heijer Producties, 2013). A second bycatch survey was due to take place soon after the surveillance audit.

The assessment team noted that the discard rate in this fishery for Ensis is significant and that this information should be incorporated along with landings data into the calculation of total removals from the fishery so that a more accurate estimate of exploitation rate in the fishery can be calculated.

At the 2nd surveillance audit, the Client provided a summary of five discard surveys undertaken by De Heijer Producties in 2013 and 2014. Discard rates averaged 28.5% with individual surveys varying between 15.5% and 41.8%. Based on the observed variation between surveys, and considering that discard rates may be underestimates because some Ensis will be discarded through meshes in the upper side of the dredge, the Client based further analysis of exploitation rates on a precautionary discard rate of 40%. This discard rate is likely to be highly precautionary because the discard surveys have estimated discard rate by numbers and not by weight, and the current calculations include the small matchstick-size Ensis that are present in very large numbers. The assessment team recommended that future discard surveys estimate discard rates based on weight rather than numbers. It should also be noted that these discard rates are based on the proportion of the catch that is less than the minimum landing size of 10 cm and the proportion that is >10 cm. However in practice fisherman mainly land razor shells of 12 cm length and above, and IMARES surveys distinguish between razor shells over and below 12 cm, and stock estimates are calculated for sub-commercial and commercial sized razors. The assessment team recommends therefore that future discard surveys calculate discard rates based on the 12 cm threshold so that estimates of adult stock sizes from surveys and discard rates are aligned.

The discard rate in this fishery for Ensis is clearly significant and in relation to developing an annual monitoring programme, the Client confirmed that bycatch/discard surveys will continue throughout the period of certification until 2017, and that the contractor will be instructed to plan discard trips to further investigate temporal and spatial variations in discard rates.

At the 3rd surveillance audit, the Client reported that discussions had taken place with IMARES in relation to aligning the threshold size for discards / commercial size razors in the discard surveys (10cm length) and IMARES stock surveys (12cm). IMARES reported that in fact they use a threshold of 16mm width, rather than a length-based threshold, and recent analysis of data from 2007 and 2008 suggest that 16mm width may correspond to 11cm length. It was agreed that the Client will supply IMARES with extra samples so that they can do extra measurements and produce an updated length-width relationship. The discard surveys will continue to use the 10 cm threshold, until IMARES has produced a revised width-length relationship.

The results of the discard monitoring were discussed at the meeting of CPO Nederlandse Vissersbond on 23 June 2015. It was noted that the percentages of bycatch differ considerably and that one discard trip per vessel provides only a snapshot of the variable discard rate. It was therefore agreed that each vessel should be monitored 5 times a year and that a proposal for this intensified monitoring should be drafted.

A proposal was subsequently presented and accepted at the meeting of CPO Nederlandse Vissersbond at 17 September 2015. It is proposed to conduct 5 discard trips per vessel per year. Since there are 5 vessels (YE118 started recently) in the fishery in 2015 and as a sixth vessel will start in 2016 this brings the total number of trips to 30. Monitoring was planned to start in November 2015.

	The plan to undertake discard trips across all fishing areas throughout the year means that the Year 2-3 milestone has been met, and this condition was therefore closed and rescored at 80.
Status of condition	<i>Closed year 3</i>

3.3 Condition 3

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.2.2	<p>SlA: There is a partial strategy in place, if necessary, that is expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.</p> <p>(As there is no partial strategy, Slb and Slc also do not meet the SG80.)</p>	60
Condition	<p>Develop management measures that specifically refer to issues in relation to bycatch (discards) species and introduce on-going means to monitor, manage and reduce (where necessary) levels of bycatch.</p> <p>In the case where management measures are considered unnecessary, this decision should be based on information across all grounds targeted on a fleet basis.</p>		
Milestones	<p>Year 2: Make available results of discard monitoring and analysis, together with determination of whether management measures are necessary. Resulting score: 2.2.2: 60</p> <p>Year 3: Development and implement management measures, where necessary. Resulting score: 2.2.2: 80</p>		
Client action plan	<p>An independent scientific research organisation or scientist will be contracted to estimate discard levels in the razor shell fishery. The results will be presented to the team at the first surveillance visit. During the second and third year of certification the estimation of discard levels will be continued. The results of first three years of monitoring will be analysed and discussed with the relevant stakeholders. The results will be presented to the team at the third surveillance visit. In case discards are regarded significant in relation to the populations of by-catch populations discards will be monitored on an ongoing basis and management measures will be implemented if necessary.</p>		
Progress on Condition [Year 4]	<p>At the 1st surveillance audit, the Client Action Plan presented the results of the 2013 survey on discard levels. This survey, together with the 2011 survey undertaken to inform the original assessment, indicate bycatches of species that are generally abundant in the southern North Sea and not at particular risk from interactions with fisheries. While generally consistent, there are some subtle differences between the datasets from 2011 and 2013. Notably, sea potatoes were caught in 2011, but not 2013; this is likely to be due to the location of survey, with both carried out in the southern part of the fishery, but the 2013 survey was carried out in the northern end of the south region. The importance of having initial coverage of all the fishing areas is recognized and therefore it was recommended that future bycatch monitoring be undertaken in the northern fishing zone, thereby allowing data on bycatch from all areas in the fishery.</p>		

	<p>In terms of consultation on the condition, the client intends to provide bycatch sampling reports to the North Sea Foundation and to hold a symposium in 2014 where discards will be on the agenda.</p> <p>At the 2nd surveillance audit, the Client presented two more reports on discard levels. The reports confirm previous conclusions that there are by-catches of species that are generally abundant in the southern North Sea and not at particular risk from interactions with fisheries. The proportion of bycatch was fairly low but quite variable (between 0.1 and 12% by number) as were the main species caught. In practice fishermen tend to move on from areas where there is a high proportion of dead shells and or bycatch.</p> <p>On the basis of the results of these surveys, fishing patterns, and overall fishing intensity, the client has determined that there is no need for specific management measures to address excessive or sensitive bycatch. The Year 2 and Year 3 milestones had therefore been met, and this condition was closed at the 2nd surveillance audit. PI 2.2.2 was therefore rescored at 80.</p>
Status of condition	<i>Closed in year 2</i>

3.4 Condition 4

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.2.3	<p>Slc: Information is adequate to support a partial strategy to manage main bycatch species.</p> <p>Sld: Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy)</p>	65
Condition	<p>Develop management measures that specifically refer to issues in relation to bycatch (discards) species and introduce on-going means to monitor, manage and reduce (where necessary) levels of bycatch.</p> <p>In the case where management measures are considered unnecessary, this should be demonstrated through routine monitoring based on information across all grounds targeted on a fleet basis</p>		
Milestones	<p>Year 1: Develop and implement routine monitoring of bycatch (discards) Resulting score: 65</p> <p>Year 2: Make available results and analysis, together with determination of whether management measures are necessary. Resulting score: 80</p>		
Client action plan	<p>At the 1st surveillance audit, the Client Action Plan presented the results of the 2013 survey on discard levels. This survey, together with the 2011 survey undertaken to inform the original assessment, indicate bycatches of species that are generally abundant in the southern North Sea and not at particular risk from interactions with fisheries. While generally consistent, there are some subtle differences between the datasets from 2011 and 2013. Notably, sea potatoes were caught in 2011, but not 2013; this is likely to be due to the location of survey, with both carried out in the southern part of the fishery, but the 2013 survey was carried out in the northern end of the south region. The importance of having initial coverage of all the fishing areas is recognized and therefore it is recommended that future bycatch monitoring be undertaken in the northern fishing zone, thereby allowing data on bycatch from all areas in the fishery.</p>		

	In terms of consultation on the condition, the client intends to provide bycatch sampling reports to the North Sea Foundation
Progress on Condition [Year 4]	<p>At the 2nd surveillance audit, the Client presented two more reports on discard levels. While progress has been made therefore in terms of two additional sample surveys, and a determination that (at least in the short term) there is no need for additional management measures relating to bycatch, there was still a lack of clarity at the 2nd surveillance audit on the response to the second part of the condition: "routine monitoring based on information across all grounds targeted on a fleet basis".</p> <p>At the 3rd surveillance audit the Client reported that the CPO Nederlandse Visserbond has agreed (June 2015) to implement a more comprehensive and routine bycatch (small Ensis, broken Ensis, and other species) monitoring plan. This will extend sampling to all fishing areas and on all vessels (5 samples / vessel.) A supporting protocol has been developed for sampling, monitoring and reporting procedures. This will not only allow for a better understanding of the effects of the fishery, but will also allow for assessment of possible impact in changes in the fishing plan (e.g. in relation to towing speed) that may be introduced.</p> <p>The milestones had therefore been met, and this condition was closed at this 3rd surveillance audit. PI 2.2.3 was therefore rescored at 80.</p>
Status of condition	<i>Closed year 3</i>

3.5 Condition 5

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.4.3	SIb: Sufficient data are available to allow the nature of the impact of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.	75
Condition	Produce maps of spatial extent, timing and location of fishing operations including overlay with habitat base maps including locations of SACs.		
Milestones	<p>Year 1: Provide evidence of mapping of spatial extent, timing and location of fishing operations including overlay with habitat base maps including locations of SACs.</p> <p>Resulting score: 80</p>		
Client action plan	VMS data showing the spatial extent of the fishery will be collected. An overlay map showing VMS fishing tracks, closed areas and SACs and bottom habitats will be produced and presented to the team at the first surveillance audit.		
Progress on Condition [Year 4]	At the 1st surveillance audit, a map indicating the distribution of the Ensis fishery in 2012 was provided to the assessment team. The figure presented the fishing areas identified by IMARES expert judgment. The areas did not represent the actual surface fished but indicated where fishing activity was predominantly aggregated. The map represented fishing areas targeted by 3 vessels in the south-west of the Netherlands, but for reasons of confidentiality the map was not reproduced in this surveillance report. Fishing areas targeted		

	<p>in the North could not be published by IMARES due to confidentiality as only one vessel operates in this area.</p> <p>VMS data for vessels targeting Ensis in 2010 and a map indicating fishing grounds targeted across 2001-2005 were also provided. Effort in 2010 was focused on similar areas to that shown for 2012. Effort in 2004-2005 was also within a similar location. Although the fishery operated within the habitat conservation area in 2001-2003, effort no longer occurs in this area.</p> <p>A series of maps were provided to allow determination of the risk posed by the fishery to different habitat types and sensitive areas including:</p> <ul style="list-style-type: none"> » SACs; » Closed areas; » Mussel bed distribution; » Cockle bed distribution; » Seabed habitat; and » Biomass macrofauna. <p>These maps, together with the VMS data from 2012, 2010 and 2001-2005 have significantly improved the information for the Habitats Information component. Information is now considered adequate to determine the risk posed to habitat types by the fishery and the effectiveness of measures to manage impacts on habitat types. While the condition stipulated that the VMS data should be overlaid upon the above maps, the detail provided clearly allows identification of the potential risk of the fishery, and further assessment is not warranted. The Year 1 milestone had therefore been met, and this condition was closed at the 1st surveillance audit. PI 2.4.3 was therefore rescored at 80 in year 1.</p>
Status of condition	<i>Closed in year 1</i>

3.6 Condition 6

Performance Indicator(s) & Score(s)	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
	3.1.2	Slc: The consultation process provides opportunity for all interested and affected parties to be involved.	75
Condition	Implement mechanisms to ensure that relevant stakeholders are consulted in fisheries management decision making processes.		
Milestones	<p>Year 1: Develop a mechanism to ensure that relevant stakeholders are consulted in the fisheries management decision making process. Score: 75</p> <p>Year 2-5: Implement a mechanism in which all relevant stakeholders are consulted in fisheries management decision making processes. Score: 80</p>		
Client action plan	Prior to the annual application for a fishing permit under the Nature Conservation Act the North Sea Foundation will be consulted about the next year annual fishing plan. Client will also ensure that relevant stakeholders will be consulted in case of changes in the management system of the razor shell fishery.		
Progress on Condition [Year 4]	At the 1st surveillance audit further information and an example licence from 2013 were provided to the surveillance team, which demonstrated that numerous stakeholders, including NGOs (Nordzee Foundation, WWF, Greenpeace, etc.) are consulted on the licence application and any responses are appended to the licence.		

	<p>An appropriate mechanism to ensure all relevant stakeholders are consulted is therefore already in place.</p> <p>The assessment team considered that this condition had been met at the 1st surveillance audit and the condition was therefore closed, and PI 3.1.2 was re-scored at 80.</p>
Status of condition	<i>Closed in year 1</i>

4 Conclusion

4.1 Summary of findings

The assessment team confirms that the fishery should remain certified.

With no open conditions at this fourth surveillance audit, the fishery can enter-re-assessment.

5 References

Den Heijer Producties, 2013. Bycatch sampling in the Dutch fishery for razor shells *Ensis directus*. Report for Nederlandse Vissersbond, November 2013.

Den Heijer Producties, 2014. Bycatch sampling in the Dutch fishery for razor shells *Ensis directus*. Report for Nederlandse Vissersbond, October 2014

Visplan Ensisvisserij 2014-2018

WOT schelpdiermonitoring in de Nederlandse kustzone in 2016 K.J. Perdon, K. Troost, M. van Asch en J. Jol Rapport C093/16 October 2016 (Incorporates Ensis stock survey)

Deltares, 2014. PMR Monitoring natuurcompensatie Voordelta Eindrapport 1e fase 2009-2013 1200672-000 dr. T.C. Prins, drs. G.H. van der Kolff, dr.ir. A.R. Boon, J. Reinders MSc., ir. C. Kuijper, drs.ing. G. Hendriksen, ir. H. Holzhauer, dr. V.T. Langenberg, dr. J.A.M. Craeymeersch, dr. I.Y.M. Tulp, drs. M.J.M. Poot, ir. H.C.M. Seegers, drs. J. Adema

Appendix 1 – Re-scoring evaluation tables (if necessary)

None – all conditions closed in prior surveillances.

Appendix 2 - Stakeholder submissions (if any)

None

Appendix 3 - Surveillance audit information (if necessary)

N/A

Appendix 4 - Additional detail on conditions/ actions/ results (if necessary)

N/A

Appendix 5 - Revised Surveillance Program (if necessary)

No changes to the surveillance program were deemed necessary

Table 5.1: Fishery Surveillance Program

Surveillance Level	Year 1	Year 2	Year 3	Year 4
6	Completed	Completed	Completed	On-site surveillance audit & re-certification site visit.