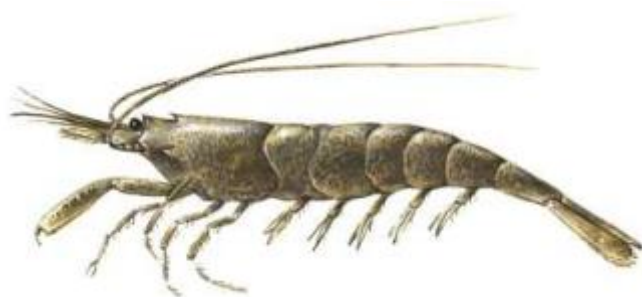


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## North Sea Brown Shrimp



## 2<sup>nd</sup> Surveillance Report

July 2020

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Fishery client	Danish Fishermen Producer Organisation (DFPO), German Brown Shrimp Steering Group GbR & Cooperative Fishery Organisation (CVO)
Assessment Type	Second Surveillance



## Assessment Data Sheet

Fishery name	North Sea Brown Shrimp	
Species and Stock	Brown Shrimp ( <i>Crangon crangon</i> ) North Sea Continental Brown Shrimp	
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## Glossary

Acronym	Definition
BSMP	Brown Shrimp Management Plan
CAB	Conformity Assessment Body
CAP	Client Action Plan
COFAD	Consultants for Fishery, Aquaculture and Regional Development
CPUE	Catch per unit effort
CUC	Control Union Certifications
CVO	Coöperatieve Visserij Organisatie
DCF	Data Collection Framework
DFPO	Danish Fishermen Producer Organisation
DFS	(Dutch) Demersal Fish Survey
DTU Aqua	Technical University of Denmark, National Institute of Aquatic Resources
DYFS	(German) Demersal Young Fish Survey
EC	European Commission
EEZ	Exclusive Economic Zone
ETP	Endangered, Threatened and Protected (species)
EU	European Union
F	Fishing mortality
Fmax	Fishing mortality at which the maximum landings can be achieved
GDPR	General Data Protection Regulation
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Sea
IRC	International Research Cooperation
LO	Landings obligation
LPUE	Landings Per Unit Effort
LWK	Landwirtschaftskammer Niedersachsen
MCS	Monitoring, Control and Surveillance
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NGO	(Environmental) Non-Governmental Organisation
NSAC	North Sea Advisory Council
NSBS	North Sea Brown Shrimp

Acronym	Definition
PCR	Public Certification Report
PI	Performance Indicator
PO	Producer Organisation
PSA	Productivity Susceptibility Analysis
PWG	Project Working Group
QSR	Quality Status Report
RTC	Real Time Closures
SC	Steering Committee
TAC	Total Allowable Catch
UoA	Unit of Assessment
UoC	Unit of Certification
VME	Vulnerable Marine Ecosystem
VMS	Vessel Monitoring System
WGCRAN	(ICES) Working Group on Crangon Fisheries and Life History
WWF	World Wide Fund For Nature

# 1 Executive Summary

The 2<sup>nd</sup> surveillance audit for the North Sea Brown Shrimp fishery was conducted by a team of 3 off-site auditors who held Skype meetings remotely with the client representatives and stakeholders. The meetings were provisionally planned to be held on-site in Copenhagen, but due to travel and social distancing restrictions imposed during the COVID-19 pandemic, it was necessary to hold the meetings remotely (in accordance with the [MSC COVID-19 derogation](#) issued March 25<sup>th</sup> 2020). A total of 100 stakeholders having relevant interest in the assessment were identified and consulted by the CAB during this surveillance audit. The interest of other stakeholders was solicited through the postings on the MSC website and through LR updates.

The following was inspected during the audit:

- The scientific base of information and stock assessment
- Changes to the fishery and its management, e.g. legislation and regulations
- Changes and updates on ecosystem issues
- Changes to personnel involved with the science, management and industry
- Any changes that might affect traceability within the fishery and conformity with regulations
- Compliance with the fishery monitoring, control and surveillance system
- Progress against conditions and recommendations

## 1.1 Confirmation of scope

The fishery was considered to be “in scope” for MSC certification during its initial assessment. The surveillance team made enquiries during this audit to confirm that the fishery remains in scope.

## 1.2 Destructive fishing practices

The client confirmed that no destructive fishing practices (explosives or poisons) are used in this fishery.

## 1.3 Controversial unilateral exemptions

No indication was given during the site visit that the fishery is subject to any controversial unilateral exemptions.

## 1.4 Forced labour

The assessment team confirmed that fishery operators have not been prosecuted for any violations against forced labour laws. The client has submitted a Declaration on Forced and Child Labour to the MSC as required by §7.4.4.2 *et seq* of FCP v2.1.

## 1.5 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 on the MSC website here: <https://fisheries.msc.org/en/fisheries/north-sea-brown-shrimp/@assessments>

## 1.6 Summary of findings

No significant changes in the fishery and its management have been found. The UoC as set out below remains unchanged. The audit team found no information that would warrant re-scoring of performance indicators. All seven conditions were found to be on target and remain open following the surveillance audit.

The audit team conclude that the fishery meets the requirements of the MSC Standard, and that **MSC Certification should continue with annual audits.**

The Unit of Certification (UoC) for this fishery is described below.

<b>Species:</b>	Brown shrimp ( <i>Crangon crangon</i> ); it is also known as 'Noordzee garnalen' in the Netherlands, 'Nordseekrabben' in Germany and 'Hesterejer' or 'Sandrejer' in Denmark
<b>Stock:</b>	North Sea Continental Brown Shrimp
<b>Geographical area:</b>	North Sea (FAO Statistical Area 27/ ICES Area IVb and IVc)
<b>Harvest method:</b>	Brown shrimp lightweight beam trawl, with bobbin/roller groundrope. 20 mm minimum mesh. 10 m maximum beamlength.
<b>Client Group:</b>	Danish Fishermen PO (DFPO) German Brown Shrimp Steering Group GbR Coöperatieve Visserij Organisatie (CVO)
<b>Other Eligible Fishers:</b>	The small number of active vessels which are not currently members of the respective POs and may join under the terms of the management plan.

## 2 Report Details

### 2.1 Surveillance information

Table 1. Surveillance Information

1	Fishery name	
	North Sea Brown Shrimp	
2	Surveillance level and type	
	Surveillance Level 6, off-site surveillance audit Change in surveillance type due to MSC COVID-19 Derogation	
3	Surveillance number	
	2nd Surveillance	X
4	Proposed team leader	
	<p><b>Julian Addison – P1</b></p> <p>Dr Julian Addison is an independent fisheries consultant with over 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.</p> <p>He has also worked as a visiting scientist at DFO in Halifax, Nova Scotia and at NMFS in Woods Hole, Massachusetts where he experienced shellfish management approaches in North America. 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 most recently 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.</p> <p>He has extensive experience of the MSC certification process primarily as a P1 team member but also as a P2 team member and team leader. He has undertaken over 30 MSC full assessments of crustacean and mollusc fisheries worldwide which use a wide range of stock assessment methodologies and fishing gears. He has also undertaken MSC pre-assessments in Europe, North America, Asia and Australia and over 60 annual surveillance audits and technical reviews. He is a member of the MSC Peer Review College and has carried out peer reviews of MSC assessments worldwide of a wide range of fish and shellfish fisheries.</p> <p>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.</p> <p>Julian has passed MSC training and has no Conflict of Interest in relation to this fishery. Julian has completed the MSC RBF training in the past 5 years. Full CV available upon request.</p>	
5	Proposed team members	

### **Gudrun Gaudian – P2**

Gudrun Gaudian is an experienced marine ecologist and taxonomist, including coastal and marine surveys, EIA's for coastal development and tourism, and research projects in tropical and temperate seas. Work experience also includes coastal and marine management issues, such as identifying sustainable coastal development projects, as well as addressing conservation issues, including selection and planning of marine parks and reserves, sustainable utilisation of natural resources and community-based management programmes. Projects have been undertaken in temperate, polar and tropical marine regions.

Since 2010 Dr Gaudian has been working on fisheries certification applying the Marine Stewardship Council standard for sustainable fisheries, primarily as Principle 2 assessor, both as Team Leader and Team Member. Other relevant work carried out includes pre-assessments, fisheries improvement plans, peer reviews and MSC workshops.

Furthermore, Dr Gaudian holds an LLM degree in Environmental Law and Management, giving a deeper understanding of law and policy dealing with such relevant issues as the Common Fisheries Policy, water and waste management, and international environmental law including EU environmental policy and Law of the Sea.

Gudrun has passed MSC and ISO training and has no Conflict of Interest in relation to this fishery. Full CV available upon request.

### **Paul Knapman – P3**

Paul is an independent consultant based in Halifax, Nova Scotia, Canada. Paul began his career in fisheries as a fisheries officer in the UK, responsible for the enforcement of UK and EU fisheries regulations. He then worked with the UK government's nature conservation advisors as their Fisheries Programme Manager, responsible for establishing and developing an extensive programme of work with fisheries managers, scientists, the fishing industry and NGOs, researching the effects of fishing and integrating nature conservation requirements into national and European fisheries policy and legislation.

Paul was appointed Head of the largest inshore fisheries management organisation in England, with responsibility for managing an extensive area of inshore fisheries on the North Sea coast. The organisations responsibilities and roles included: stock assessments; setting and ensuring compliance with allowable catches; developing and applying regional fisheries regulations; the development and implementation of fisheries management plans; acting as the lead authority for the largest marine protected area in England.

Paul moved to Canada in 2005 and established his own consultancy providing analysis, advisory and developmental work on fisheries management policy in Canada and Europe. He helped draft the management plan for one of Canada's first marine protected areas, undertook an extensive review on IUU fishing in the Baltic Sea and was appointed as rapporteur to the European Commission's Baltic Sea Regional Advisory Council.

Paul began working on MSC assessments in 2008 and in 2012 became head of a Conformity Assessment Body focusing on MSC fisheries and chain of custody assessments. Paul returned to fisheries consultancy in 2015 and continues to work on MSC assessments. He has been involved as a lead assessor, team member and technical advisor/reviewer for more than 60 different fisheries in the MSC programme.

Paul has passed MSC training and has no Conflict of Interest in relation to this fishery. Full CV available upon request.

## **6 Audit/review time and location**

Off-site, 25 to 27 May 2020

## **7 Assessment and review activities**

All relevant information and progress on 7 conditions

## 2.2 Background

The Unit of Certification (UoC) covers Dutch, German and Danish vessels catching brown shrimp (*Crangon crangon*) in the North Sea using a lightweight beam trawl. The UoC also covers some Belgian vessels which are members of Dutch Producer Organisations (POs). The fishery operates primarily within 12 nautical miles from the coast of Denmark, Germany and the Netherlands, and approximately 65-70% of the total North Sea fleet are German and Dutch vessels. Most German vessels are smaller than 20 m in length with engine power of around 200 kW, whereas 60% of the Dutch fleet are larger than 20 m with engine powers greater than 200 kW. However, the maximum permitted engine power of shrimp trawlers within the 12-mile zone is 221 kW as defined originally under EU Council Regulation 850/98 and now superseded by Regulation (EU) 2019/1241. Under the Brown Shrimp Management Plan, the number of vessels and combined kW in each national fleet (Netherlands, Germany and Denmark) shall not exceed the level officially registered by the authorities in each country on 1 January 2015. A full updated list of all vessels in the UoC is given in Appendix 4.6. The client has developed a full fleet inventory including overall length of vessel, gross tonnage, engine power, beam width and gear weight. The inventory is updated on an annual basis to identify potential increases in fishing effort through technological advances.

Brown shrimps have traditionally been targeted using bottom trawls with small mesh sizes ranging from 16-26 mm which means that sub-commercial sized shrimps (<50 mm) and immature female shrimps (length at 50% maturity is 55 mm) are caught in the fishery. The use of sieve or veil nets which avoid the capture of larger bycatch fish species is obligatory as set out originally under EU Council Regulation 850/98 and now superseded by Regulation (EU) 2019/1241. Sieve nets are cone-shaped nets inserted into standard trawls which direct unwanted by-catch to an escape hole in the body of the trawl (Revill and Holst, 2004). The escape hole may be covered with an 80 mm mesh to allow the capture of commercial size fish. Following capture, the shrimps are sieved on-board, and small, non-commercial-sized shrimps and other bycatch species are discarded. The catch is then boiled aboard the vessel prior to landing. The catch undergoes a further sieving process ashore ensuring that only shrimps with a carapace width greater than 6.8 mm (45-50 mm total length) are retained as set out in EU Regulation 2406/96.

Historically the Crangon fishery was considered to be unmanaged. A cap on licences / capacity and some technical measures (e.g. minimum mesh size, use of sieve nets to reduce bycatch) had been implemented but there was no quota on landings or restrictions on overall fishing effort in place. Regulation of the Crangon fishery was not considered necessary for two main reasons. Firstly, natural mortality of commercial size shrimps (>50mm), primarily through predation, was previously considered to be significantly higher than fishing mortality and therefore management of the exploitation rate in the fishery was not considered necessary. Secondly, low landings were observed in 1977, 1984 and in particular in 1990, but on each occasion, landings returned to average levels in the following year, providing evidence that recruitment was not impaired following a poor year. However, with the decline in predator abundance, new research suggesting that fishing mortality had become the principal component of total mortality in the stock (except in years of high whiting abundance), and evidence from comparison of estimated observed fishing mortality with  $F_{MSY}$  proxies calculated from yield-per-recruit models that the population was growth-overfished, there were increasing calls for the introduction of a management regime for Crangon.

Following a workshop convened to investigate the necessity for management of Crangon stocks (ICES, 2013), ICES advised that management incorporating a reduction in fishing effort would be beneficial because of the currently observed growth overfishing, would lessen the environmental impact of the fishery, and in the long-term management would be advisable if main predator stocks such as whiting and cod recover. ICES advised that the development of a harvest control rule (HCR) based on a comparison of the most recent commercial landings per unit effort (LPUE) data with pre-defined trigger levels (based on previous LPUE data) was the most appropriate approach for this short-lived species for which a conventional age-based stock assessment is not possible. ICES also advised that Crangon should be taken into account within the framework of ICES advice regarding North Sea mixed fisheries because of the significant bycatch of other species in the small-meshed net Crangon fisheries, and in relation to multispecies interactions because future recovery of gadoid populations could have an impact on shrimp population dynamics. Whilst there are no EU-wide or national management plans based on this advice, the fishing industry through the Producer Organisations (POs) in the Netherlands, Germany and Denmark have developed a Brown Shrimp Management Plan, which sets out the management objectives for the fishery and the regulations and governance structures under which all vessels in the UoC operate.

## 2.2.1 Changes in management system

There were no reported changes in the Brown Shrimp Management Plan (BSMP) v1.1 or significant changes in the operation of the fishery.

As reported in last year's [audit report](#) Belgian vessels have joined the MSC certificate through their membership of Dutch Producer Organisations (POs) – Delta Zuid and Urk. The clients confirmed that 7 Belgian registered vessels had actively fished in 2019.

The Steering Committee (SC) for the BSMP has met 4 times since the last audit to discuss the MSC certification and management related issues. Minutes of the meeting were provided to the audit team. Key points of discussion and follow up action included:

- The outcome of the first MSC surveillance audit and retro-active action required to ensure milestones are met;
- Differences between the working approach and cost of the independent control agencies – Control Union Certifications (CUC) and Landwirtschaftskammer Niedersachsen (LWK);
- Control and compliance of the fleets;
- Re-establishment of a Brown Shrimp Focus Group of the North Sea Advisory Council (NSAC) – 5 meetings of which have taken place in 2020, as of June 2020.

A consortium of environmental NGOs provided a detailed submission to the audit team in relation to the brown shrimp fishery and highlighted a number of management related issues that required follow up with the client group and the provision of additional information and supporting evidence. The full submission and audit team response are provided in Appendix 4.2 to this report, and the key points that are raised are also summarised in bold text below and considered within this and other sections of the report:

- **A derogation has been allowed in the Netherlands that allows use of the 'letter box' as an alternative to the sieve net.**

The CVO representative provided correspondence with the Dutch authorities requesting a derogation to use the 'letter box' in order to reduce the amount of algae caught in the shrimp trawl during certain months of the year when algae is more prevalent. The Dutch authorities initially granted a derogation to allow use of the 'letter box' as an alternative to the sieve net for the months of June, July and August in the Waddenzee. This was subsequently extended until 27<sup>th</sup> September 2019. This is in full compliance with the BSMP:

*BSMP Article C3.1 - Trawls used by the participating vessels fishing for brown shrimp must at any time contain – even if exemptions are allowed by national authorities – a sieve net with a maximum opening of 70 mm or a sorting grid with a maximum of 20 mm between the bars or an alternative measure that is qualified to reduce bycatch rates<sup>1</sup>. All measures have to be placed in accordance with the national law and specifications that follow from EU technical rules (850/98 or later versions).*

- **Stakeholders report increased fishing intensity in Natura 2000 sites and say the indicative benchmark hours set by the Dutch government for fishing within Natura 2000 sites have been exceeded and, furthermore, a large part of the Dutch fleet is fishing at speeds higher than previously estimated.**

In September 2019 the Dutch fishing industry challenged the way the benchmark fishing hours had been calculated for Natura 2000 sites. It was confirmed by the Directorate General for Nature, Fisheries and Rural Area an error had been made and Wageningen Marine Research was assigned to review and re-calculate the number of fishing hours. This analysis is presented in Hintzen, N. 2019. *Garnalenvisserij in Natura 2000 Gebieden* Wageningen Marine Research Report c100/19. In order to review the report, the audit team used Google Translate.

The report concludes that the total benchmark hours for 2015 were approximately 246,366 hours (see [Table 2](#)). The results of the study have informed a revision to the indicative benchmark hours meaning that increased fishing hours are now reflected in the fishing permits (also known as the Wnb licence) issued under the Nature Conservation Act. It should be noted that the indicative benchmark hours stated in the Wnb-license are meant to serve as a level/indicator for monitoring and in the Wnb-license it is not stated that these hours are meant to serve as a maximum. The total hours fished in 2016 was 292,029 hours which exceed the 2015 benchmark

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<sup>1</sup> (emphasis added by audit team):



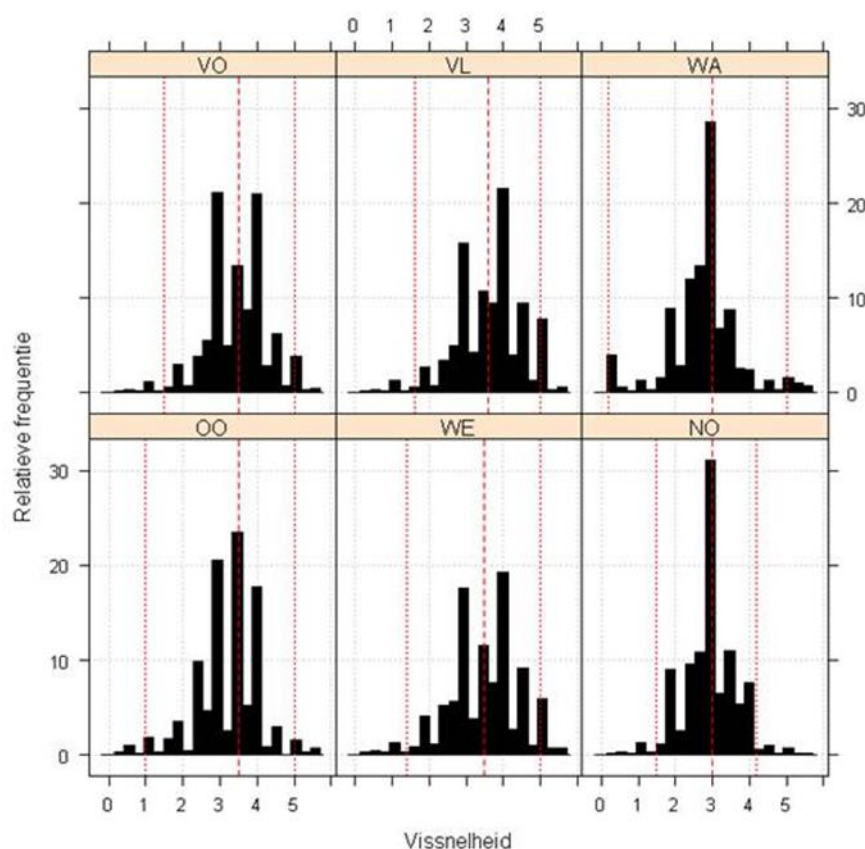
total hours, but in the most recent years for which full data were available, 2017 and 2018, the total hours fished were 228,241 and 213,036 hours respectively, confirming that in these years the 2015 benchmark hours were not exceeded.

**Table 2.** Estimate of fishing hours within *Natura 2000* sites by the Dutch brown shrimp fishery, based on a fixed speed profile between 0.1 and 5.5 knots. The calibration year (2015) is italicised. (Source: Hintzen, 2019)

	2013	2014	2015	2016	2017	2018	2019*
<b>Oosterschelde (OO)</b>	0	73	292	2127	1518	523	55
<b>Westerschelde (WE)</b>	2578	1807	3594	6401	6618	4375	676
<b>Noordzee kustzone (NO)</b>	117503	150305	<i>120873</i>	150855	88361	108486	51129
<b>Voordelta (VO)</b>	18016	18607	25565	28067	28918	16112	7117
<b>Vlakte van de Raan (VL)</b>	3622	3276	3644	4659	4418	4268	1248
<b>Waddenzee (WA)</b>	88694	79770	92398	100820	98408	79272	28602

\* Tot en met augustus 2019

The assessment team queried the CVO client representative in relation to assigning towing speeds of up to 5.5 knots for shrimp vessels, as most shrimp vessels would normally tow at lower speeds. CVO went back to the author of the report to confirm the rationale for using a towing speed as high as 5.5. knots. The author confirmed that the average towing speed is in the range 2.5 - 3.5 knots. The point where steaming occurs is considered to be 5.5 knots. Towing speed was shown to vary between locations (Figure 1) which is likely a result of difference in tidal flow and sea bed type.



**Figure 1.** Estimated towing speeds for the shrimp trawl fishery within Dutch *Natura 2000* sites. VO = Voordelta; VL = Vlakte van de Raan; WA = Waddenzee; OO = Oosterschelde; WE = Westerschelde; NO = Noordzee kustzone. (Source: Hintzen, 2019).

- **The EU Commission published a report, “Study on engine power verification by member States” (Roos Diesel Analysis B.V. June 2019). The report looked at the engine power verification systems in 15 Member States. In addition, physical power verifications were conducted onboard 68 fishing vessels in 14 Member States. The report concluded that most Member States have implemented an ineffective verification system, or no verification system at all. The measured engine power exceeded the certified engine power during 51% of the verifications, and for 16% of the inspected vessels there were secondary indications of non-compliance with engine power restrictions. Improvements of both the certification and verification system are necessary to increase the accuracy of registered engine power.**

The audit team note that engine power was explicitly dealt with during the initial assessment of the fishery and reported in detail within the [Public Certification Report](#).

The audit team reviewed the EU Commission Report and submitted supplementary questions to the client group members after the site visit. The audit team asked if any shrimp vessels are identified in the report; what measures are in place to monitor engine power in the shrimp fishery; and, as a result of the report, have national authorities changed or plan to change how they monitor engine capacity?

Each client group member consulted with their respective national authorities and the following summarises their responses or information provided in their response – in some instances, Google Translate was used by the audit team:

Germany – One of the three beam trawlers mentioned in the study was a shrimp trawler. All three vessels were re-checked by the German-approved engineering company (RINA Services S.p.A.). These checks concluded that the variance was relatively small (<10%) and could be justifiably explained, e.g. the original inspection/certification was several years ago and it was found that performance-related parts of the engine linkage were worn due to general use and the performance changed slightly over time. All three vessels were recalibrated and recertified.

No changes have been made to the national control rules, the principle still applies that the engine performance for new and technically modified engines must first be certified before the vessel is allowed to fish.

The EU Commission has used this study as an opportunity to discuss the issue of engine-power at a Member State level, and has started the process with the aim of improving control of engine power in the Member States. These proposals would be included in the EU Control Regulation and are positively supported by Germany.

Denmark - The only vessel that was checked in Denmark was a shrimp trawler and no non-compliance was found. DFPO was informed at a meeting with the Danish Fisheries Agency on the 13<sup>th</sup> of May 2020 that there would be an increased focus on engine power and this would likely be carried out in the second half of 2020.

Netherlands – In December 2019, a Member of Parliament submitted written questions to the Minister of the Directorate General for Nature Fisheries and Rural Area in relation to the EU Commission study. The following is taken from the response to the questions.

The Food and Consumer Product Safety Authority (NVWA), the Inspectorate Living Environment and Transport (ILT) and the Netherlands Enterprise Agency (RVO) conduct physical checks on vessel engines, including the power output, sealing and checking the presence and condition of seals on engine components that play a role in engine performance. An Engine Power Working Group was established in 2016 and recommendations from this group have been implemented, including sealing of engine parts, certification logs, designation of four specialist companies to measure, monitor and seal engines and periodic coordination with relevant authorities to ensure compliance.

Technical development has meant mechanical regulation of engine performance has moved toward electronic control systems and these systems are more difficult to monitor and, as yet, there is no ability to ‘electronically seal’ these units. The Dutch authorities have argued at a European level for the introduction of a system whereby engine power is continuously monitored, however this system does not yet exist for fishing vessels. In the meantime, the Netherlands has established a [NEN standardisation process](#) for developing such a system with the aim of identifying the requirements and marketability and operational practicality.

The study report makes several recommendations to the EU Commission, all of which are expected to be included in the future revision of the EU Control Regulation and its implementation by Member States.

## 2.2.2 Changes in relevant regulations

The client group provided links to a number of updated laws and regulations directly related to or that might have a consequence for inshore fisheries within the respective Member States. However, according to the client group none of these updated laws and regulations are expected to have an impact on the brown shrimp fishery.

### Denmark

[Promulgation of the Fisheries and Fish Farming Act \(Fisheries Act\)](#) - The purpose of the Act is to ensure protection of living resources in salt and fresh water and ensure commercial and recreational fishing and related industries are conducted on a sustainable basis.

[An Executive Order on Regulation of Fisheries](#) - The Order includes the requirement for all EU Member State vessels to comply with reporting provisions of the catch composition, the ability for the Danish Fisheries Agency to close / suspend fishing by Danish vessels when TACs or fishing effort have been fished or exhausted.

[An Executive Order on Keeping Logbooks](#) - The Order sets out obligations for the completion of paper or electronic logbooks for all Danish fishing vessels regardless of vessel length.

### Germany (Lower Saxony):

[Restrictions in the Coastal Waters of Lower Saxony](#) - Permitting requirements of inshore fishing fixed and mobile gears and minimum sizes for specified fish species.

[Amendment to the Lower Saxony Fisheries Act](#) - Describing the access rights for anyone authorised to fish.

### Netherlands

[Nature Conservation Act \(Amended\)](#) - An updated version of the Act as of 1<sup>st</sup> January 2020.

[Fisheries Act \(Amended\)](#) - an updated version of the Act as of 1<sup>st</sup> January 2019.

[Implementation Scheme for Fishing](#) - a regulation to simplify various regulations for sea fishing.

### European Union (EU)

[Technical Regulation](#) – An updated version of the Conservation of Fisheries Resources and the Protection of Marine Ecosystems Technical Measures.

## 2.2.3 Changes to personnel involved in science, management or industry

Phillip Oberdörffer made a welcome return to work and continues to represent the German interest (MSC-GbR) in the tripartite client group.

Daphne de Groot left her position at CVO and Eugene Kitsios was appointed to represent Dutch interest in the tripartite client group. During the course of the audit it was noted that Eugene was leaving his position in mid-June and his position would be temporarily filled by Durk van Tuinen (CVO).

## 2.2.4 Changes to scientific base of information, including stock assessments

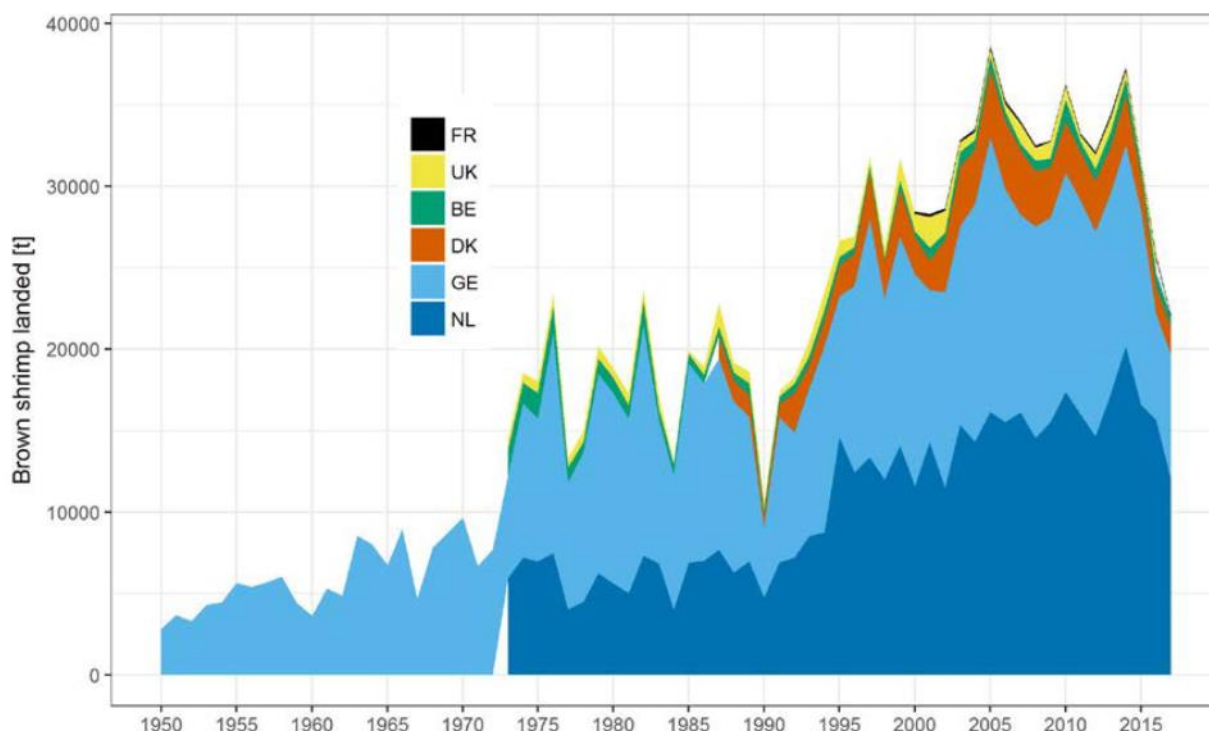
The brown shrimp fishery is managed through EU regulations, national measures and through the Brown Shrimp Management Plan, which sets out details of the harvest strategy including harvest control rules (HCRs), an ecosystem approach to management of the fishery, and the regulations applying to the fishery. In relation to the shrimp stock, the main goal of the harvest strategy is to ensure that each cohort is harvested in such a manner as to avoid both recruitment and growth overfishing. To minimise the likelihood of recruitment overfishing the harvest strategy is one of “constant escapement”, i.e. to ensure that sufficient female shrimps in each cohort survive to generate sufficient egg production for future recruitment. The key tool to allow this to occur when cohorts are small is the reduction of fishing mortality to allow females to grow larger which coupled with an exponential relationship between egg production and shrimp size ensures that recruitment does not fail. In addition to avoiding any likelihood of recruitment overfishing, the Brown Shrimp Management Plan stipulates increases in mesh size so that the maximum yield can be achieved for each individual cohort, i.e. to avoid growth over-fishing.

From the mid-1990s onwards, total annual landings of brown shrimp in the North Sea had increased significantly, and from 2003 to 2014 landings were consistently over 30,000 tonnes with the German and Dutch fleets accounting for more

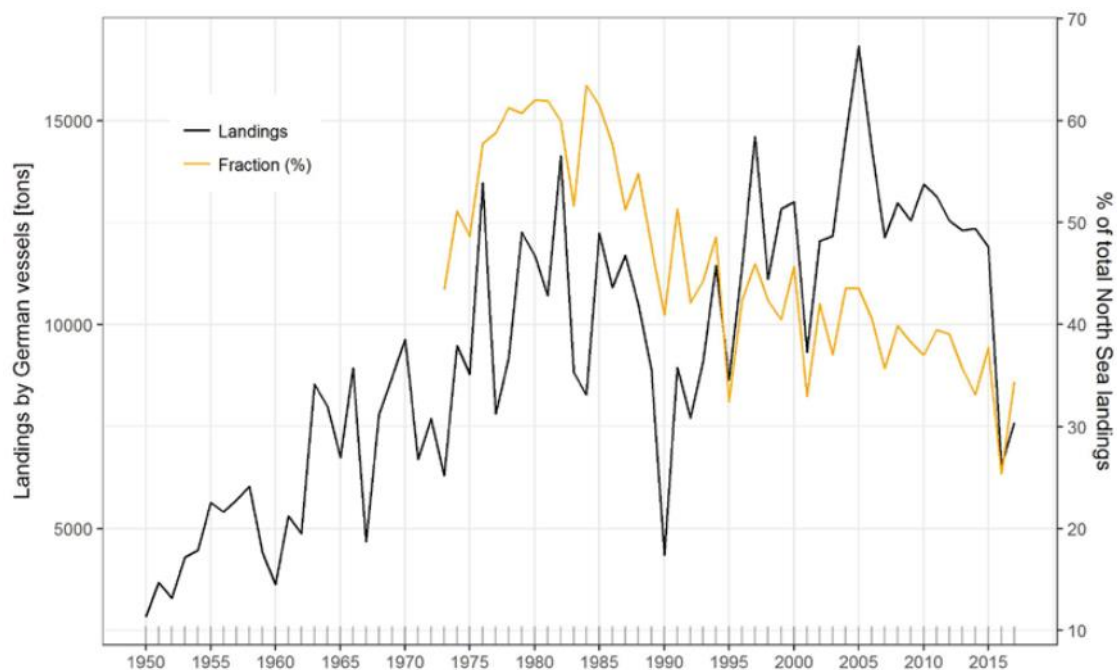


than 80% of the overall landings (Figure 2). However recent landings have been much less stable. In 2014 total landings were over 37,000 tonnes, but then landings decreased significantly with approximately 22,000 tonnes landed in the North Sea as a whole in 2017 (ICES, 2018). Prior to 2016, landings had not been below 30,000 tonnes since 2002. Observed landings declined relatively more in Germany than the other countries with the German share of total landings declining to around 33% in 2017 (Figure 3). Monthly catch rates of shrimps expressed as landings per unit effort (LPUE), which are a more reliable estimate of abundance than landings *per se*, were also much lower in 2016 and 2017 in Germany, Netherlands and Denmark (Figure 4). Shrimp abundance was clearly lower across the fishery in 2016 and 2017 than in recent years. The data provided in Figures 2 to 4 are synthesised on an annual basis by the ICES Working Group on Crangon Fisheries and Life History (WGCRAN), but the audit team noted that there have been no further WGCRAN reports published with updated figures since last year's surveillance audit.

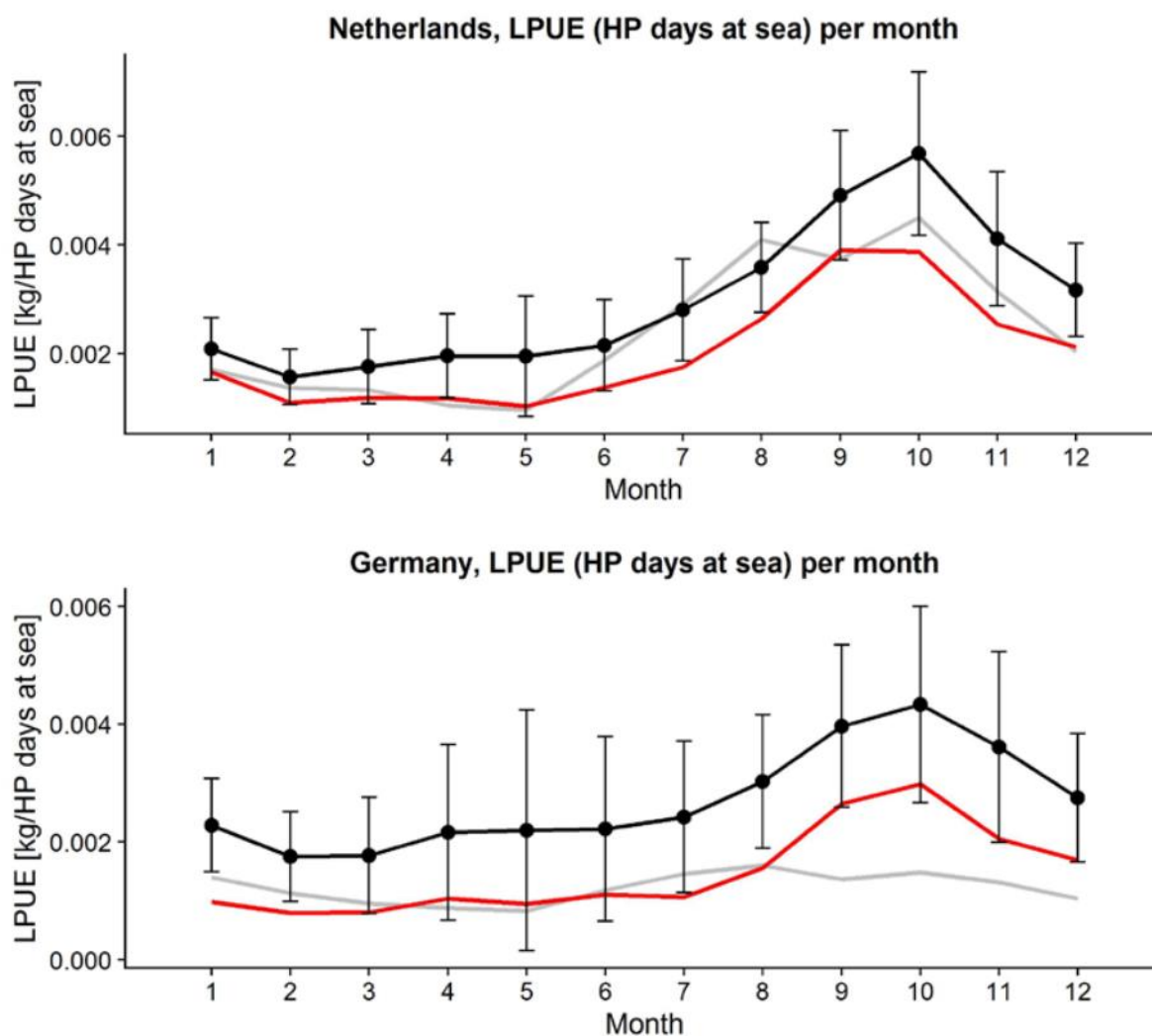
Since 2017 the Clients reported that landings had been very high. After fishing started very cautiously in 2018, catch rates increased substantially during the main autumn fishery (Figure 5) such that total landings in 2018 were 47,000 tonnes which is approximately 1.5 times the average annual landings since the mid-1990s. The shrimp fishing season runs from July to June in the following year and therefore it is more appropriate to consider LPUE across the fishing season instead of by calendar year. The high catch rates in autumn 2018 persisted through into early 2019 (Figure 5) suggesting that the low abundance as inferred from the catch rates observed in 2016 and 2017 had no adverse impact on future recruitment. The primary explanation for observed low catch rates in 2016 and 2017 was high predation rates on young, small shrimp due to a very large invasion of young whiting. Landings were relatively low in spring 2019 because processors had remaining supplies from the very high landings in autumn 2018 and therefore processors restricted landings and prices were also low. Catch rates in the new fishing season in autumn 2019 were at average levels (Figure 5), although there were still some market problems due to the high landings in the 2018/19 season and therefore prices in autumn 2019 remained low. Market conditions improved in spring 2020, but then the fishery was directly impacted by the COVID-19 pandemic. The impact includes reduced fishing, loss of markets (restaurants and wholesale outlets being shut), reduced processing capacity (due to spacing of staff requirements to reduce the risk of transmission), and a bottleneck in the shrimp peeling factories in Morocco. From mid-March 2020 fishing was reduced with many of the fleet staying in harbour (Client interview 25<sup>th</sup> May 2020), and for those vessels still fishing, the Producer Organisations (POs) in Netherlands and Germany have reacted to reduced demand by controlling supply through restricting the number of hours that each vessel is permitted to fish per week. Similarly in Denmark the processors restricted either the weight of landings by each vessel or the hours that each vessel may fish. At the time of the surveillance audit, these restrictions were still in place. The EU is providing financial support to the fishers for a limited period of time, but implementation of this support is regulated at national level. These restrictions imposed during the COVID-19 pandemic make it difficult to fully assess stock status from the 2019/20 fishing season.

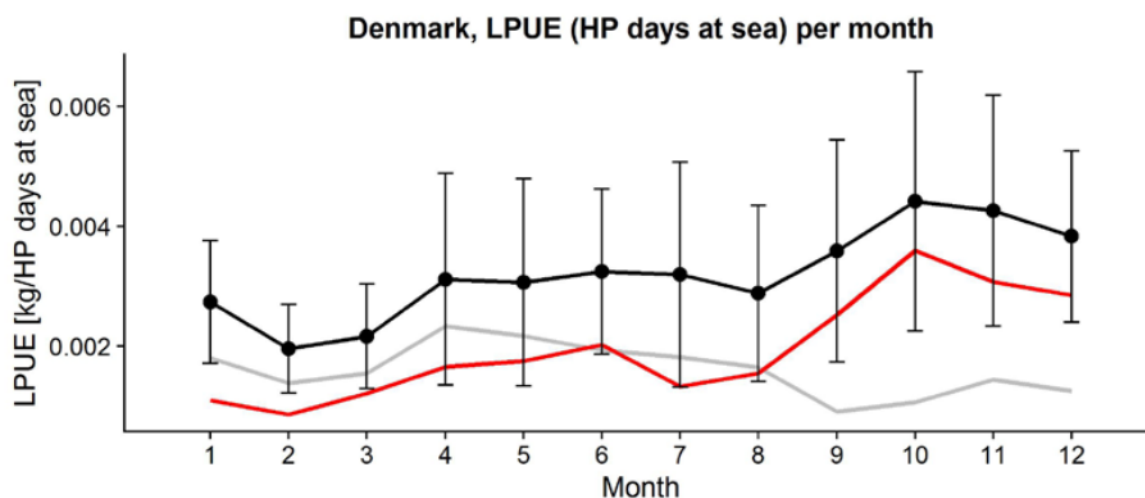


**Figure 2.** Total landings in tonnes of consumption brown shrimp (*Crangon crangon*) from the North Sea from 1950 to 2017 by country. (Data for UK in 2017 is lacking.). (Source: ICES, 2018)

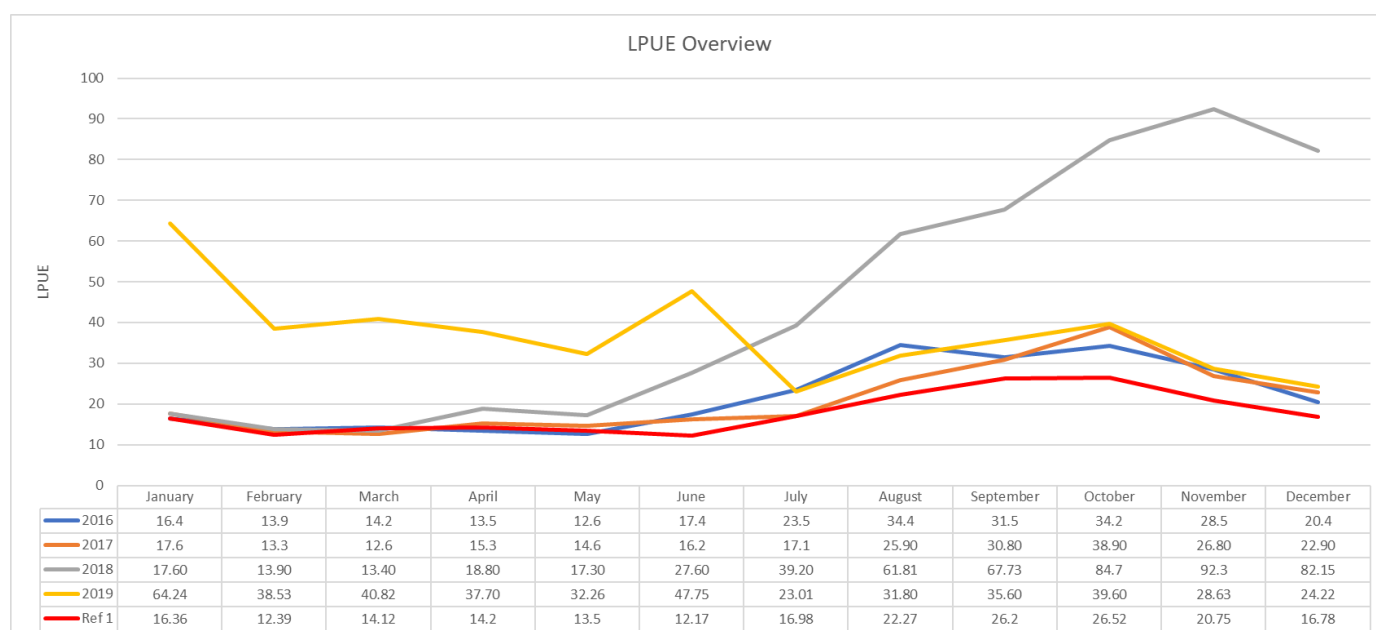


**Figure 3.** Landings of brown shrimp (tonnes) by German vessels over the period 1950 to 2017 (black line) and as a percentage of total landings in the North Sea (yellow line). (Source: ICES, 2018)





**Figure 4.** Monthly landings of brown shrimp per unit effort (LPUE) in kg per horsepower days at sea per country (Netherlands, Germany and Denmark). Black lines indicate the 10 year average (2008–2017) and standard deviation for each nation. Grey and red lines indicate the values for 2016 and 2017 respectively. (Source: ICES, 2018)



**Figure 5.** Monthly LPUE trends for 2016 to 2019 emphasising the very high LPUE observed in autumn 2018 and spring 2019. The figure also provides LPUE reference point 1 for each month – if observed LPUE drops below this first reference point then effort reductions are triggered under the HCRs. (Source: Clients)

Landings per unit effort (LPUE) data (expressed as kg per hour at sea) are used as an indicator of the status of the stock. The key management strategy is that in years when the size of the recruiting shrimp cohort is low such that LPUE falls below a predetermined precautionary level, fishing effort is reduced to ensure that there is no likelihood that recruitment would be impaired. Observed monthly average LPUE data for all vessels collected from electronic log books and auction data are compared with pre-determined reference values of LPUE. The reference values are based upon the average of the monthly LPUE values observed in 2002 (a poor year) and 2007 (a good year). A series of 5 reference values are defined as a percentage of this average monthly LPUE. The lowest reference point (no. 5) is set at 50% and is considered to be equivalent to a limit reference point. The upper reference point (no. 1) is set at 70% and is considered to be a threshold above which management wishes the fishery to remain. If observed LPUE in any month drops below reference value 1, then the number of hours per week that each vessel may fish is reduced in line with the harvest

control rules, in this case a maximum of 72 hours at sea per calendar week. The management action is activated very quickly within a fishing season if LPUE drops below the reference values. LPUE data are collected for a calendar month, analysed within a week of the end of the month, and fishers are advised by the end of that week if the number of fishing hours in the upcoming week must be reduced based on the HCR.

As described in last year's surveillance audit report (Lloyd's Register, 2019), under the agreed HCRs the low LPUE had triggered reductions in fishing effort twice in 2016, once in 2017 and once in early 2018. However, catch rates of shrimps in 2018, particularly in the main autumn fishery and through into 2019, have been very high, despite the low LPUE in April 2018 which triggered a reduction in fishing effort. The Clients reported that there had been no further triggering of effort reductions due to low observed LPUE in 2018 and 2019 (see observed monthly LPUE and reference point 1 shown in Figure 5). This is as expected as there have been low levels of fishing effort due to restrictions on fishing days in response to high levels of supplies of processed shrimp following the peak landings in late 2018, and the inevitable restrictions in fishing effort caused by the COVID-19 pandemic.

Since the implementation of the HCRs within the Brown Shrimp Management Plan and since the certification of the fishery, there has been continued evaluation of the robustness of the LPUE reference points primarily through the ICES Working Group on Crangon Fisheries and Life History (WGCRAN) and a study initiated at the University of Hamburg. The study concluded that the fishery needs to establish a standardized protocol for calculating LPUE values that are compared with reference levels, that the current level of reference values is probably too low as the HCR kicked in on only two occasions in 2016, a year with extreme low stock size and high fishing effort, and that a spatial component could be included in the HCR in order to prevent additional fishing mortality in areas with low shrimp abundance. As could be expected from the implementation of a new approach to managing fishing effort, there have been some inconsistencies across countries in the way in which LPUE estimates have been calculated and how effort reductions have been triggered. The Clients are continuing to work to ensure consistency across areas of the fishery.

Whilst WGCRAN did meet in 2019, no report has yet been published. At this year's surveillance audit, two members of the Working Group informed the audit team that a key development from the 2019 WGCRAN meeting was the use of VMS data to provide standardised indices of fishing effort for the various national fleets. However as noted in the last year's surveillance audit report, the recently introduced EU General Data Protection Regulation (GDPR) had resulted in problems in accessing all relevant VMS records and also in publication of analysis of fishing effort data based upon VMS records. Members of WGCRAN continue to work on this issue, and to further investigate other issues such as regionalisation of LPUE reference points. The 2020 WGCRAN meeting is due to be held in August 2020. The Clients reported that LPUE reference points are also to be discussed at future Brown Shrimp Focus Group meetings of the North Sea Advisory Council (NSAC).

In addition to the triggering of reductions in fishing effort to minimise the potential for both growth and recruitment overfishing, under the Brown Shrimp Management Plan the cod end mesh size has been increased from 20 to 22 mm in May 2016 with a further increase to 24 mm in May 2019. This increase in mesh size to the current 24 mm contrasts starkly with a mesh size of 16 mm permitted under EU regulations.

The potential benefits of an increased mesh size have been evaluated through a series of recent projects. Last year's surveillance audit report described a study by the University of Hamburg which evaluated differences in size compositions between the catches using 22mm and 24 mm cod end mesh sizes. At this year's surveillance audit, an updated and expanded version of the report was provided to the audit team (Friese and Temming, 2019). The study used Dutch, German and Danish vessels fishing with parallel beam trawls which had a 22 mm mesh cod end attached on one side and a 24 mm mesh cod end on the other side. Sieving fractions by weight below the 6.8mm sieve were higher using a 22 mm cod end mesh in comparison with those for a 24 mm mesh, but sieving fractions above the 6.8mm sieve were higher using a 24 mm mesh, although the results were not significant. The revised report contained comparisons with data collected under the German component of the EU Data Collection Framework (DCF). The percentages of undersized and commercial shrimp in the mesh size study collected by a German fisherman in 2018 fit well with the percentage compositions in 2018 in the German DCF data. Friese and Temming (2019) report that while the direct comparison of the 22 mm and the 24 mm mesh revealed only a very small reduction in the share of undersized shrimp, the DCF data show that significant progress towards higher percentages of commercial and lower percentages of undersized shrimp has been made since 2016.

Under the Brown Shrimp Management Plan, the mesh size is due to be increased to 26 mm in May 2021, or if the benefits of such an increase in mesh size are not considered to be likely to be significant, then alternative measures must be introduced to reduce the level of fishing mortality. The Clients informed the audit team that the Steering Committee (SC) will evaluate alternative approaches, and a decision on whether to increase the mesh size or implement alternative measures will be made in May 2021. WGCRAN continues to evaluate the benefits of increased mesh size including whether density dependent growth effects might counteract benefits of higher survival of small shrimps, and whether biomass estimates are likely to increase more with effort reductions than with mesh size increases.



As described above the principal indicator of stock status is LPUE, and the HCR ensures that fishing effort is reduced swiftly mid-fishing season if LPUE drops below trigger levels. In addition to the monitoring of in-year LPUE, other indicators have been developed by WGCAN members to describe stock status which were summarised in last year's surveillance audit report. These included the development of a yield-per-recruit model which allows comparison of observed fishing mortality (F) with model-derived F<sub>max</sub>, observations on the fraction of large shrimps caught in the Dutch Demersal Fish Survey (DFS) and the German Demersal Young Fish Survey (DYFS) and the use of data from the autumn young fish surveys to obtain a depth and area-stratified swept-area estimate of shrimp biomass (Tulp *et al.*, 2016). In the absence of any reports from the 2019 WGCAN meeting, and the 2020 meeting not due to be held until August 2020, no further updates on these approaches were available to the audit team this year.

## 2.2.5 Updates on ecological background information

As noted above, the COVID-19 pandemic, resulting in strict lock-down measures in many countries worldwide starting in the early part of 2020, has had a direct impact on the North Sea Brown Shrimp fishery. From a Principle 2 point of view, reduced fishing translates directly into reduced ecological impact of the fishery. It has not been possible to establish at the audit whether this reduced fishery impact on ecological processes is measured in some way (NB researchers are also constrained by the lockdown).

Regular updates on the ecological background and particular ecological research of the Waddensee area can be found in the Quality Status reports (QSR) generated as part of the Waddensee secretariat, Trilateral Waddensee cooperation (<https://www.waddensea-secretariat.org/trilateral-wadden-sea-cooperation>). The German website provides further detailed information relevant to the German Waddensee (<https://www.nationalpark-wattenmeer.de/alle/misc/qualitatsstatusbericht-2017/4566>).

Bycatch reduction devices: In Denmark and Germany the vessels are only allowed to use the sieve net, or in the case of Germany a sorting grid may also be allowed following the results of ongoing tests. Currently no German vessel is using a sorting grid. The use of the sieve net is part of the national legislation in all three member states. The Thünen Institut in Rostock is currently testing a sieve mat. This is a piece of net with 50-60 mm mesh opening attached at the top rope and the ground rope, blocking the whole entrance of the net and preventing bigger animals from entering the net. It is assumed that this set-up achieves equal selectivity as the sieve net and is much easier to clean off algae. Testing of this device is not yet finished and the relevant authorities would in any case have to give approval for its use as a bycatch reduction device.

It was reported by the Dutch client that extensive algal growth in the summer leads to clogging up of the sieve net. Therefore, permission has been sought and granted from the Dutch Ministry of Fisheries to temporarily replace the sieve net with the letter box during that time period. The letter box can be used as an alternative to the sieve net in the Waddensee in the months June, July and August, with an extension to this period being possible by officially made request. The use of the letter box is also stated in the Wnb-license. Currently, there are other innovations being researched in the Netherlands, such as a sorting grid, sieve-mat and a modified bobbin rope (a presentation of this research has been given by Pieke Molenaar at the IRC shrimp meeting<sup>2</sup> 4<sup>th</sup> May 2020 (Pieke Molenaar: Dutch Innovations on Brown Shrimp trawling; ppt presentation IRC shrimp meeting 4<sup>th</sup> May 2020). This is ongoing research, and has yet to be concluded, evaluated and published (Client information 25<sup>th</sup> May 2020).

Bycatch management, including ETPs: The North Sea Brown Shrimp fishery is under *de minimis* for the Landing Obligation (LO), whereby each member state is obliged to set up a sampling scheme to obtain further data on the bycatch percentage of TAC species in the catches. In the North Sea Brown Shrimp fishery each member state has set up their own sampling scheme as a joint set-up could not be agreed. The different sampling schemes were discussed by scientists at an international level during an IRC Shrimp meeting that took place 2<sup>nd</sup> to 3<sup>rd</sup> of July 2019 in the Netherlands. At the 4<sup>th</sup> May 2020 IRC meeting, research was presented on bycatch monitoring within the IRC shrimp fishery, conducted through Wageningen Marine Research (Beier, 'Bycatch monitoring within the IRC shrimp project; ppt presentation, IRC 4<sup>th</sup> May 2020). Monitoring of bycatch included both TAC species as well as ETP species, with the aim of this project being to evaluate the practicality and efficacy of establishing this kind of monitoring project. This research project was started in 2019 and is ongoing. Results are limited to date and have not yet been evaluated, and the project reach was curtailed by the coronavirus pandemic (Client interview 26<sup>th</sup> May 2020).

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<sup>2</sup> IRC – International Research Cooperation, established as part of the management of the NSBS fishery; participants include NSBS fishery coordinators and managers, researchers and eNGOs, from NL DK and D, giving presentations and resulting discussions; meetings are held twice a year, in spring and winter;

Currently all vessels are obliged to record all ETP bycatch, following a list of the more commonly encountered ETP species. The ETP protocol is available to all fishers both in digital and paper format, a copy is on all vessels, and fishers can either return data-forms in paper format or by e-mail (Client information May 2020). The client stated (Client interview 25<sup>th</sup> May 2020) that fishers are becoming better at recognising and recording ETP species, and that compliance is improving, including the recording of '0' when there are no catches or interactions with ETP species. From a practical point of view, on board processing of the catch is speedily executed (to maintain quality), leaving little time for the fishers to sort through the layers of catch for possible ETP species (Client information, 25<sup>th</sup> May 2020). The Danish vessels have the wheelhouse guide including 7 mammal species, 13 shark species, 13 ray species, 6 fish species, 30 bird species and 9 species of coral and sponges, which are obviously not all relevant to the brown shrimp fishermen (this guide has been developed over several years as part of other demersal MSC certified fisheries). Danish fishermen have the opportunity to register via three options: on-board registration sheet in paper (all brown shrimp fishermen use this), an excel sheet and over a system called VDEC. The registrations are to be handed in every three months, and it is the fisheries administration which ensures this is done, and they transfer all data to digital format. It is part of the Danish fishery Code of Conduct which means that fishers are obliged to hand in the data, or they can be removed from the Danish MSC list.

There have been proposals by the eNGOs to increase the numbers of ETP species on the list, to include all eventualities. The development of a definitive list of ETP species to record as part of the bycatch is ongoing, with the aim to find a working compromise between as much detail as possible and practicality on board fishing vessels. A number of practical suggestions are being considered by the fisheries managers and eNGOs, such as for example establishing a reference fleet, whereby a number of the more eager and cooperative fishers participate in such data collection and are compensated accordingly. (Client interviews 25<sup>th</sup> May 2020, NGO interviews 26<sup>th</sup> May 2020). Such a reference fleet scenario is under discussion in Germany, where 25 vessels which are already doing the bucket sampling for the Landing Obligation could be involved in this (eNGO interviews 26<sup>th</sup> May 2020).

An app is in development, similar to the one used in Danish demersal fisheries, to record ETP species. This app would also allow photographs to be taken and recorded, together with location information. It is envisaged to roll out such a recording tool across the fleet from 2021 (Client information May 2020; NGO information May 2020).

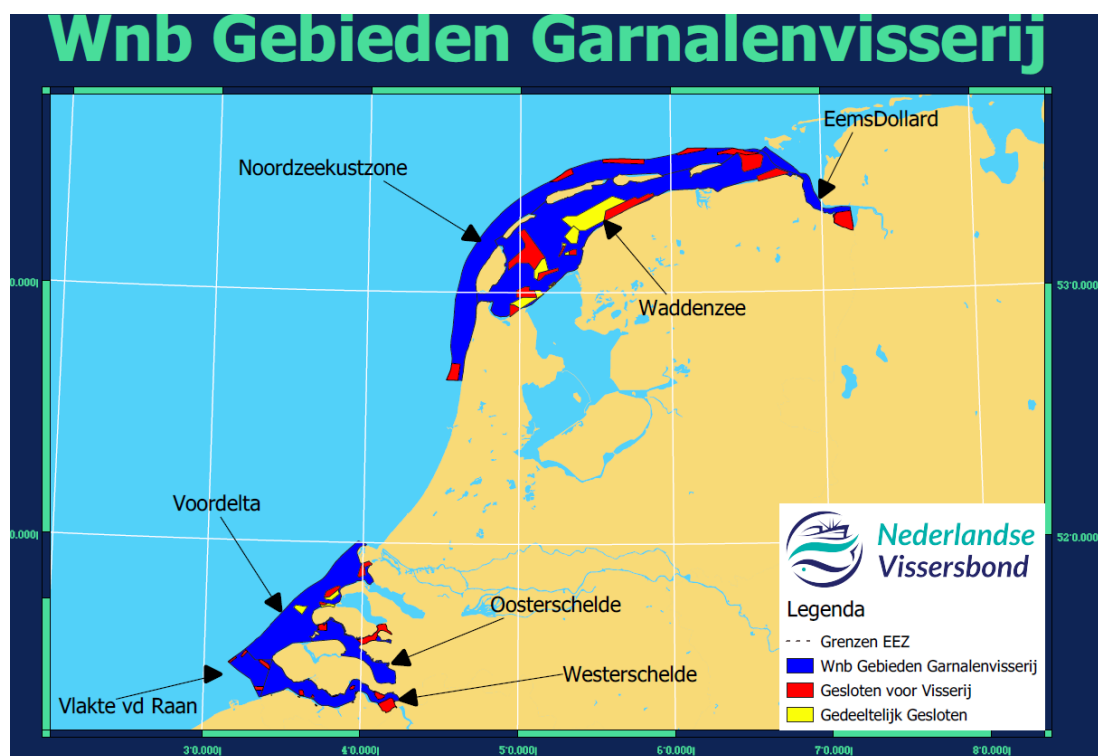
Habitat: The Waddensee QSR: Subtidal habitats (Dec 2017)<sup>3</sup> provided the latest information on habitat mapping programmes in the three member states concerned. One of the observations was: "The most famous and undoubted example of a biogenic reef in the subtidal of the Wadden Sea is the reef-like construction of the polychaete *Sabellaria spinulosa*. The last proofs of *Sabellaria* reefs are from the early 1990s, since then no *Sabellaria* reefs have been detected".

There have been no new closed areas implemented since the fishery was certified. In Germany, within the national park of Schleswig-Holstein, there continues to be only one no take zone, as described in the original assessment. One has to bear in mind that this is not a restricted area, thus entering the area is allowed, which means any presence of vessels can be seen from the VMS pings, but it does not mean that they are automatically fishing in that area (Client information May 2020). This will likely be the same for the N2000 sites in the German EEZ, although the management plans have not yet been implemented as they have to be accepted by all affected member states and the EU-commission (Client information, May 2020). It is planned to increase the VMS ping rate to control the vessels when approaching those areas and they will have to keep a speed of at least 6 knots while they cross a N2000-site (Client information, May 2020). A general restriction on towing speed inside N2000 sites has never been discussed in Germany. In any case, all these measures will not enter into force before the management plans are accepted and implemented. As this is an international process and different member states have different interests in the areas it is a time-consuming process. The client clarified that there is no plan to increase the VMS ping rate in general. The pings are transmitted via satellite which is expensive. Currently, in Germany, the ping rate is every 2hrs, which will be reviewed when the management of areas changes; the latest plan by BLE is to increase the ping rate to every 10 minutes when the vessel is approaching a N2000 area (this is from National Ministry within EEZ). In the Netherlands and in Denmark ping rates vary from every 30 minutes to every 2 hours.

The following map (Figure 6) was provided by the Dutch client at the surveillance audit (May 2020) and provides a visual overview of the current situation in the Netherlands. Some of the closed to fishing areas are reference areas for research, and these are known to fishers.

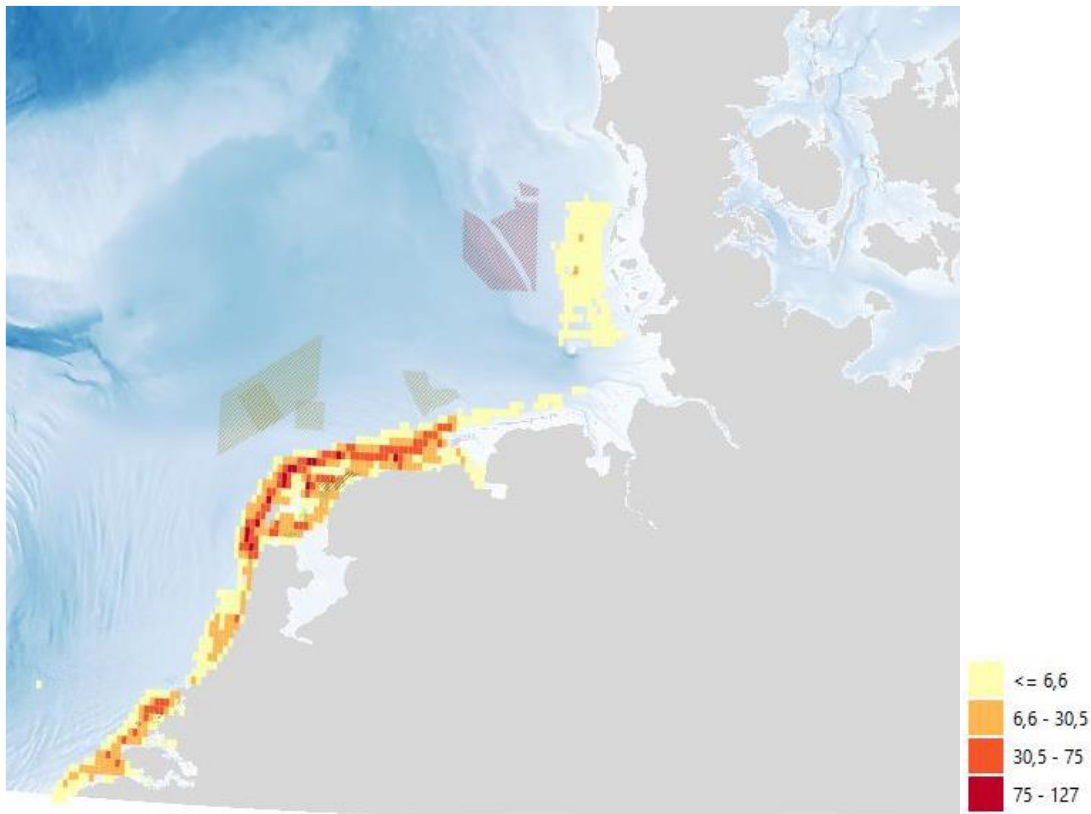
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<sup>3</sup> Vorberg R., Glorius S., Mascioli F., Nielsen P., Reimers H.-C., Ricklefs K. & Troost K. (2017) *Subtidal habitats*. In: Wadden Sea Quality Status Report 2017. Eds.: Kloepper S. et al., Common Wadden Sea Secretariat, Wilhelmshaven, Germany. Last updated 21.12.2017. <https://qsr.waddensea-worldheritage.org/reports/subtidal-habitats> (accessed 20th June 2020)

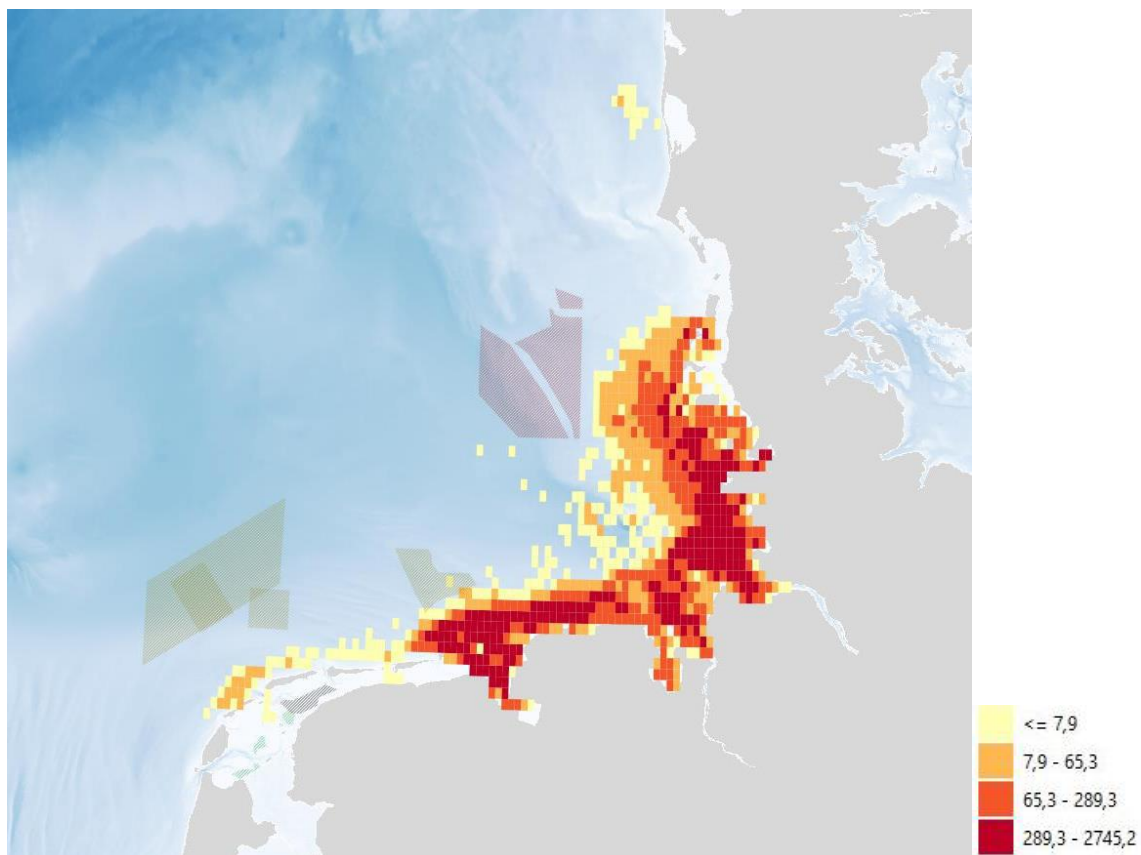


**Figure 6.** Closed areas for fishing (red) and partially closed areas (yellow) within the brown shrimp fishery areas (blue) in the Netherlands. (Source: Client information May 2020)

The client provided fishing intensity maps of the Dutch (Figure 7), German (Figure 8) and Danish (Figure 9) Brown Shrimp vessels, based on fishing hours and VMS positions, for 2019. It has to be pointed out that because of data protection legislation in the member states it is not possible to pinpoint individual vessels.

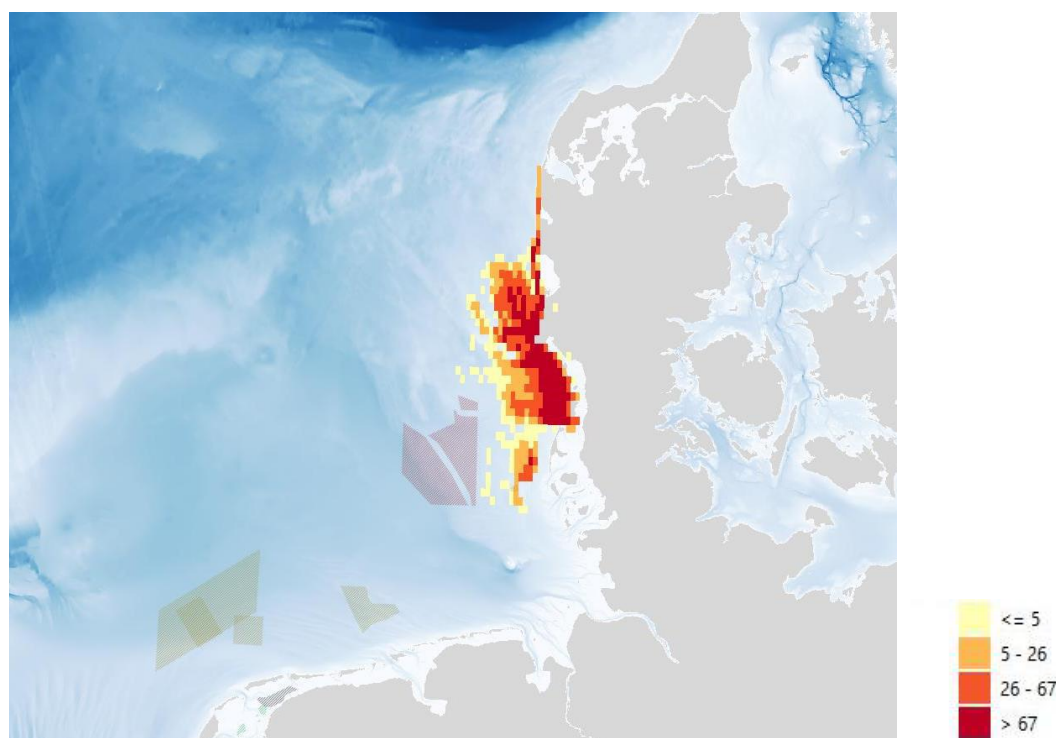


**Figure 7.** Fishing intensity (in fishing hours) map for Dutch Brown shrimp vessel in 2019. (Source: Client information May 2020)



**Figure 8.** Fishing intensity (in fishing hours) for German Brown shrimp vessel in 2019. (Source: Client information May 2020)





**Figure 9.** Fishing intensity (in fishing hours) for Danish Brown shrimp vessel in 2019 (Source: Client information May 2020)

All three fishing intensity maps above show a number of angular areas in different colours:

Areas indicated with restrictions or possible future restrictions are:

✓	Closed during Breeding Season	✓	Permanently Closed (with exception for a few local vessels)
✓	Closed from dec 15 - apr 1	✓	Possible Future Closure
✓	Closed from May 15 - Sept 15	✓	Proposed Year-round exclusion of all mobile bottom-contacting gears
✓	Closed in August	✓	Proposed Year-round exclusion of any kind of fisheries
✓	Closed nov 1 - may 1	✓	Year-round exclusion of all mobile bottom-contacting gears
✓	Closed nov 1 - apr 1		
✓	Fisheries at Mussel Banks Prohibited		

The client provided an update on a number of research projects, which were discussed in the first surveillance audit:

**CranImpact** – no update, the COVID-19 pandemic has caused a delay, there has been no decision yet for further meetings; the first field season was last year, 2019, the field experiments showed that it is very difficult to navigate vessels into position; it is hoped that possible first results from the project will be available by the end of 2020; eNGOs are part of the advisory body for this project.

**FishNet** – no update available at this stage.

**CranMan:** Georg Respondek is the PhD student on this project, working together with Axel Temming and Julia Friese of the University of Hamburg; researching into management options for shrimp. This PhD study includes research on mesh size changes 22/24mm which is a direct result of this MSC certification of North Sea Brown Shrimp.

## 2.2.6 Changes to Traceability

No changes were reported in the fishery that would change or compromise traceability.

## 2.3 Version Details

**Table 3. Fisheries program documents versions**

Document	Version number
MSC Fisheries Certification Process	<b>Version 2.1</b>
MSC Fisheries Standard	<b>Version 2.01*</b>
MSC General Certification Requirements	<b>Version 2.4.1</b>
MSC Surveillance Reporting Template	<b>Version 2.01</b>

\*default assessment tree

## 3 Results

### 3.1 Surveillance results overview

The condition deadlines and milestones are subject to a 6-month extension in accordance with Covid-19 Derogation 27 March 2020.

#### 3.1.1 Summary of conditions

**Table 4. Summary of conditions**

Condition number	Condition	Performance Indicator (PI)	Status at SA2	PI original score	SA1 2019	SA2 2020
1	The Client shall ensure that by the fourth surveillance audit evidence exists that the harvest strategy is achieving its objectives even if it has not been fully tested.	1.2.1	<b>On target</b>	<b>75</b>	<b>75</b>	<b>75</b>
2	The Client shall ensure that by the fourth surveillance audit there is adequate information to measure trends and support a strategy to manage impacts on ETP species.	2.3.3	<b>On target</b>	<b>70</b>	<b>70</b>	<b>70</b>
3	The Client shall ensure that by the fourth surveillance audit there is	2.4.2	<b>On target</b>	<b>75</b>	<b>75</b>	<b>75</b>

	some quantitative evidence that the UoA complies with its management requirements and with protection measures afforded to VMEs by other MSC UoAs / non-MSC fisheries, where relevant.					
4	The client shall ensure by the fourth surveillance audit that information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.	2.4.3	On target	75	75	75
5	The client shall ensure by the fourth surveillance audit that:  1. There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.  2. Information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	3.2.2	On target	70	70	70
6	The client shall ensure by the fourth surveillance audit that: 1. A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. 2. Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence. 3. Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	3.2.3	On target	60	60	60
7	The client shall ensure by the fourth surveillance audit the fishery-specific management system is subject to regular internal and occasional external review.	3.2.4	On target	70	70	70

### 3.1.2 Total Allowable Catch (TAC) and catch data

Table 5. Total Allowable Catch (TAC) and catch data

TAC	Year	<b>2019</b>	Amount	<b>N/A</b>
UoA share of TAC	Year	<b>2019</b>	Amount	<b>N/A</b>
UoA share of total TAC	Year	<b>2019</b>	Amount	<b>N/A</b>
Total green weight catch by UoC	Year (most recent)	<b>2019</b>	Amount	<b>21,005 tonnes</b>
Total green weight catch by UoC	Year (second most recent)	<b>2018</b>	Amount	<b>35,291 tonnes</b>

### 3.1.3 Recommendations

The original assessment in 2017/18 included a number of Recommendations, designed to highlight how the management or operation of the fishery could be enhanced and contribute to ongoing efforts to ensure the long-term sustainability of the fishery. Recommendations do not impose a mandatory requirement nor are they auditable. However, they do act as a marker for future audits and assessments and may highlight actions that will ensure information or evidence of good management remain current and continue to meet MSC requirements.

1. In addition to the current technical measures, the Client should at a future review, evaluate the potential benefits of seasonal or real time closures (RTCs) (PIs 1.2.1, 2.1.2, 2.2.2 and 2.3.2).

Update at SA1 – 2019: The potential benefits of seasonal or real time closures have been evaluated and considered not to be practical in this fishery. The result of this evaluation will be included in the next review.

Update at SA2 – 2020: Whilst previously the potential of seasonal or real time closures were viewed not to be practical in regards to control and monitoring, the Steering Committee has discussed such potential closures again, and have not yet ruled out such closures.

2. Consideration be given to developing a fishery-independent survey approach to monitoring monthly LPUE patterns in relation to reference values in preference to the current approach of monitoring commercial LPUE (PI 1.2.2).

Update at SA1 – 2019: Such an approach has been considered for the fishery through for example the use of a research vessel. The approach was deemed impractical for a fishery with such a wide geographical distribution and with seasonal variations in LPUE, and therefore the use of monitoring commercial LPUE data was deemed the most effective approach.

Update at SA2 – 2020: The client group has revisited this topic several times through the Steering Committee, and WGCAN is continually reviewing the use of LPUE reference points. The over-riding view is that monitoring commercial LPUE remains the most practical approach to monitoring monthly LPUE trends in a fishery with such wide geographical distribution and seasonal trends.

3. Standardised LPUE data should be collected across all national fleets (PI 1.2.3).

Update at SA1 – 2019: In 2017, a standardized LPUE time-series of higher accuracy for the Netherlands with horse power days calculated based on hours at sea was generated for the data from 2010 onwards.

Update at SA2 – 2020: In 2019 WGCRAN investigated the use of VMS data to provide standardised indices of fishing effort for the various national fleets. However as noted in the last year's surveillance audit report, the recently introduced EU General Data Protection Regulation (GDPR) had resulted in problems in accessing all relevant VMS records and also in publication of analysis of fishing effort data based upon VMS records. WGCRAN continues to develop this approach.

4. Robust estimates of the level of small shrimp discarded in relation to mesh size increases should be presented on an annual basis (PI 1.2.3).

Update at SA1 – 2019: Some data was presented by the Client at the surveillance audit through work contracted to University of Hamburg, and there is ongoing work on this issue within scientific institutes that attend ICES WGCRAN.

Update at SA2 – 2020: In relation to the EU's Landings Obligation (LO), bucket sampling of catches on board vessels will provide new data on the level of small shrimps that are discarded.

5. The brown shrimp stock assessment should undergo regular full external peer review either through the ICES Review Group process or through commissioned peer reviews (PI 1.2.4).

Update at SA1 – 2019: No progress.

Update at SA2 – 2020: No progress on commissioning an external peer review of the brown shrimp stock assessment.

6. The Client is encouraged to design and implement bycatch reduction technology which can be used during those times when algae clog up existing devices. (PI 2.1.2/ PI 2.2.2)

Update at SA1 – 2019: Research is being conducted into gear design to reduce unwanted catches (see experiments by DTU Aqua on sorting grid vs mesh size).

Update at SA2 – 2020: Research on gear design is continuing. The Thünen Institut in Rostock is currently testing a sieve mat. This is a piece of net with 50-60 mm mesh opening attached at the top rope and the ground rope, blocking the whole entrance of the net and preventing bigger animals from entering the net. It is assumed that this set-up achieves equal selectivity as the sieve net and is much easier to clean off algae. Testing of this device is not yet finished and the relevant authorities would in any case have to give approval for its use as a bycatch reduction device.

7. The design and collection of improved catch composition data across all three countries is encouraged, so that bycatch data can be compared and trends noted; i.e. harmonized Dutch and German (and Danish) sampling programmes and methods.

See also ICES WGCRAN 2015:

*Future considerations for [both] monitoring programmes are:*

1. *We need to find profound methodologies to raise shrimp discard data to fleet level, for example by increasing the sampling coverage and/or by the introduction of a statistically sound sampling scheme.*
2. *Protocols on board need to be optimized. There is a need for a better estimation of different catch fractions.*

Update at SA1 – 2019: This issue has been raised repeatedly at SC meetings, and the client is in the process of introducing a harmonised data collection programme between Germany and The Netherlands. The first platform meeting for this project was scheduled to take place in July 2019, to sort out protocols for data collection and adapt procedures for observers to follow.

Update at SA2 – 2020: As described previously, different monitoring programs have been set up in relation to the *de minimis* exemption. Although the programs are not the same, the data are being gathered and should be comparable, so bycatch of TAC species can be evaluated. In addition, there are ongoing discussions on the possibility of a reference fleet type system (Client and eNGO information May 2020).

8. A Productivity Susceptibility Analysis (PSA) is conducted on all those species for which no reference points are available. PSA is a semi-quantitative and rapid risk assessment tool that relies on the life history characteristics of a stock (i.e., productivity) and its susceptibility to the fishery in question. This would constitute a risk analysis for each species, calculating an individual score for each species (see also Patrick *et al.* 2009). In the case of this

fishery, where so many species are involved, the client should provide such a list of PSA scores for each bycatch species, as part of the regular bycatch analysis (PIs 2.2.3).

Update at SA1 – 2019: This issue has been discussed at SC meetings and has yet to be started.

Update at SA2 – 2020: Daphne de Groot has left CVO, and she was to do this analysis. The client group is considering how to best do this now.

9. The Client is encouraged to implement greater spatial awareness of fishing vessels regarding areal closures, including voluntary closures and temporary closures due to the seasonal presence of protected bird species. (PI 2.3.1 indirect effects).

Update at SA1 – 2019: No update.

Update at SA2 – 2020: The VMS maps available to the fishery management give an indication of the spatial distribution of fishing effort. From these, when zooming in, the fishery management can evaluate spatial awareness with regards to any areal closures.

10. The Client is encouraged to evaluate the possibility of areal management of the fishery, i.e. – fishing in certain areas only, such as particular tidal basins for example. Aspects of this have been investigated in Schulte *et al.* (2015) (PI 2.4.2)

Update at SA1 – 2019: The SC has discussed such an approach, but no significant progress to date.

Update at SA2 – 2020: As last year.

11. Future iterations of the management plan include an explicit statement that the precautionary approach, as defined by MSC, will be adopted within the decision-making process (PI 3.2.2).

Update at SA1 – 2019: No changes have been made to the Management Plan with respect to the precautionary approach.

Update at SA2 – 2020: Same as last year

12. In the interest of transparency and to allay concerns some stakeholders have expressed about the effective implementation of the management plan, the following additional information is made publicly available (PI 3.2.2):

- Any non-compliance of the management plan and action taken including penalties/sanctions;
- Maps showing the location of all closed areas and overlays of VMS or AIS data; and,
- Monthly sieveage and LPUE reports.

Update at SA1 – 2019: No update.

Update at SA2 – 2020: The client group has discussed a common website, but discussions on data protection law and maintenance of such a website has left the discussions on this dormant for now. However, most of this should be evident from the annual surveillance reports that are publicly available through the MSC website.

## 3.2 Conditions

### 3.2.1 PI 1.2.1 Condition 1

Performance Indicator	PI 1.2.1 There is a robust and precautionary harvest strategy in place
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Score	75
Justification	<p><b>SI (b) SG80 - The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.</b></p> <p>At present there is good evidence that large numbers of small shrimps are being harvested before they reach an optimum size, and that landings per recruit could be significantly increased. The Management Plan incorporates a strategy for improving the landings per recruit through incremental increases in the minimum mesh size, but such measures have yet to be fully implemented. Whilst the Management Plan includes a strategy for ensuring that too many small shrimps are not discarded, this relates primarily to minimum commercial size not to optimum yield size. So the harvest strategy is working as far as the minimum commercial size is concerned as catches are sieved on board, and then also sieved at the processing factories, but from a stock management viewpoint the strategy does not appear to be working as the mesh size is too low and sieving still lands shrimps that are too small.</p> <p>Within the Management Plan, the limits on fishing effort include a limit on the number of licences, a limit on the number of days fishing and on engine power, but it is clear that there is still scope within the Management Plan for fishing effort to increase through, for example, some vessels fishing more days than they had fished previously, or through “technological creep”. A full inventory of all vessels should be maintained and updated on an annual basis to allow the identification of any systematic changes in fishing vessels or gear or fishing behaviour which could increase efficiency and would therefore require the revision of the current LPUE reference points. In addition, outside the Management Plan there appear to be a number of dormant licences, and it is not clear that total fishing effort has been fully capped.</p> <p>The assessment team concluded therefore that the harvest strategy has yet to achieve its objectives because the current mesh size allows the capture of too many small shrimps (resulting in growth overfishing of individual cohorts) and there is the potential for an increase in fishing effort both within the Management Plan and through the activation of dormant licences.</p>
Condition	The Client shall ensure that by the fourth surveillance audit evidence exists that the harvest strategy is achieving its objectives even if it has not been fully tested.
Milestones	<p><b>At the first audit:</b> The Client will provide evidence that demonstrates the mesh size has been increased from 20 to 22 mm, that the total fishing effort has been estimated and that the scope for any increase in total fishing effort has been fully investigated both within and outside the Management Plan. This should include a full fleet inventory which will provide a baseline for measuring any future increases in fishing effort due to “technological creep”.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim score: 75</p> <p><b>At the second audit:</b> The Client will provide evidence that the mesh size has been increased from 22 to 24 mm. If the mesh size has not been increased, the Client should demonstrate that alternative management measures have been introduced that control fishing effort and ensure that fishing mortality (F) is being brought in line with Fmsy proxies. The Client should also provide evidence that any changes in total fishing effort have been estimated and that, if necessary, options for capping the total fishing effort have been evaluated. The fleet inventory should have been updated and the Client should report on any potential increases in fishing effort due to “technological creep”.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim score: 75</p> <p><b>At the third audit:</b> The Client will provide evidence that benefits of the previous mesh size increases have been fully evaluated. If the mesh size has not been increased, the Client should demonstrate that any alternative management measures that have been introduced to control fishing effort have been fully evaluated. The Client should also provide evidence that any changes in total fishing effort have been estimated and that, if necessary, mechanisms for capping the total fishing effort have been agreed. This should include any potential increases in fishing effort due to “technological creep” identified during an updating of the fleet inventory.</p>

	<p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim score: 75</p> <p><b>At the fourth audit:</b> The Client will provide evidence that the mesh size has been increased to 26 mm and that the mesh size is now at a level that ensures that growth overfishing does not occur. If the mesh size has not been increased to 26mm, the Client should demonstrate that alternative management measures have been introduced that control fishing effort and ensure that fishing mortality (F) is being brought in line with Fmsy proxies such that growth overfishing does not occur. The Client should also provide evidence that any changes in total fishing effort have been estimated and that, if necessary, mechanisms for capping the total fishing effort have been implemented. This should include any potential increases in fishing effort due to “technological creep” identified during an updating of the fleet inventory.</p> <p>It is considered that the successful completion of this and previous milestones will demonstrate that evidence exists that the harvest strategy is achieving its objectives even if it has not been fully tested. This will result in a rescoring of this PI to at least 80.</p>
Client action plan	<p>Model calculations and analysis of length distribution indicate that growth overfishing takes place in the shrimp-stock. An increase in average size would make the stock less vulnerable because bigger females produce more eggs. Additionally, catching shrimps at a bigger size would possibly result in higher catches with less effort. Model calculations within the CRANNET project indicate a mesh opening of 26 mm as an optimum.</p> <p>Counteracting the catch of shrimps below commercial size is approached by the MSY-strategy described in the management plan. Legally the minimum mesh size for the shrimp fishery is 16 mm. From January 1<sup>st</sup> 2016, after implementation of the management plan, the minimum mesh size is 20 mm and from May 1<sup>st</sup> 2016 onwards the minimum mesh size is 22 mm. Stock effects due to the mesh size increase will be monitored by the Institute of fishery science from the University of Hamburg.</p> <p>If the predicted benefits can be proven by monitoring the fleet will increase the mesh size in steps of 2 mm until a mesh opening of 26 mm is reached in 2020.</p> <p><b>Surveillance 1:</b> The Group will provide a report from the independent control showing the results of the on-board controls with focus on the mesh size measurements.</p> <p>Next to that the Group will provide a full fleet inventory of all vessels that fish on brown shrimp and take part in the management plan. The parameters mentioned by ICES in its advice of 2014 (see attachment) shall be used as indicators for this fleet inventory. Additionally, the Group will provide a report from the University of Hamburg with intermediate results of the scientific monitoring and a presentation of the development of fishing effort (hours at sea per year) over the last years including an estimation of possible/dormant effort increase.</p> <p><b>Surveillance 2:</b> The Group will provide a report from the independent control showing the results of the on-board controls with focus on the mesh size measurements.</p> <p>Additionally, the Group provides a report of the scientific monitoring with an evaluation of the effects of the increased mesh size to 22 mm. Depending on the results of the monitoring the fishery will show evidence that a shift to a mesh size of 24 mm from 1<sup>st</sup> May 2018 onwards has taken place. If this shift hasn't taken place, based on the results of the monitoring, other possible measures to bring fishing mortality in line with Fmsy will be provided. Any of these alternative measures will be backed up by scientific advice.</p> <p>Moreover, an updated fleet inventory will be produced focussing on potential increases in fishing effort due to “technological creep”.</p> <p><b>Surveillance 3:</b> The Group will provide a report from the independent control showing the results of the on-board controls with focus on the mesh size measurements.</p> <p>The Group will provide a scientific report with results from the monitoring of the effect of the mesh size increase to 24 mm or the effect of the alternative measures. If this report indicates a significant increase in fishing effort the Group will present appropriate measures to counteract this development based on scientific advice.</p>



	<p>Moreover, an updated fleet inventory will be produced focussing on potential increases in fishing effort due to “technological creep”.</p> <p><b>Surveillance 4:</b> The Group will provide a report from the independent control, showing general compliance with the rules of the management plan. This includes compliance with the 26 mm mesh size. If the mesh size has not been increased to 26 mm the Group will provide a scientifically backed report that alternative management measures have been taken to control fishing effort and that demonstrate that fishing mortality is brought in line with Fmsy proxies showing that growth overfishing is no longer indicated.</p> <p><b>Intended Outcome:</b> At the 4<sup>th</sup> surveillance audit the Group will provide evidence that fishing mortality is reduced to a level where sustainable harvesting is guaranteed, and the harvest strategy is achieving its objectives.</p>
Progress on Condition (SA1 - 2019)	<p>Under the Brown Shrimp Management Plan the cod end mesh size has been increased from 20 to 22 mm in May 2016 with a further increase to 24 mm in May 2019. Various studies have also been commissioned to evaluate the potential benefits of increasing the mesh size including investigating whether density-dependent growth could counter-balance any benefits gained from the increase in mesh size.</p> <p>A study by the University of Hamburg used log book data to review changes in fishing effort in recent years (Friese <i>et al.</i>, 2019). Whilst fishing effort increased sharply between 2011 and 2012 in all fleets, since 2012 the total yearly fishing effort remained relatively constant with inter-annual variations of -7% to +5% in the German fleet, -9% to +10% in the Dutch fleet and -24% to 20% in the Danish fleet. The study did however identify potential significant latent effort in the fishery and recommended that total fishing effort is monitored on an annual basis.</p> <p>The client has developed a full fleet inventory including overall length of vessel, gross tonnage, engine power, beam width and gear weight. The inventory will be updated on an annual basis to identify potential increases in fishing effort through technological advances.</p> <p>The Client has therefore met all the elements of the first year milestone for this condition.</p> <p>Status: on target.</p>
Progress on Condition (SA2 – 2020)	<p>Under the Brown Shrimp Management Plan the cod end mesh size was increased from 22 mm to 24 mm in May 2019. A study by Friese and Temming (2019) investigated changes in size composition of the catch using Dutch, German and Danish vessels fishing with parallel beam trawls which had a 22 mm mesh cod end attached on one side and a 24 mm mesh cod end on the other side. Sieving fractions by weight below the 6.8mm sieve were higher using a 22 mm cod end mesh in comparison with those for a 24 mm mesh, but sieving fractions above the 6.8mm sieve were higher using a 24 mm mesh, although the results were not significant. The report contained comparisons with data collected under the German component of the EU Data Collection Framework (DCF). The percentages of undersized and commercial shrimp in the mesh size study collected by a German fisherman in 2018 fit well with the percentage compositions in 2018 in the German DCF data. Friese and Temming (2019) report that while the direct comparison of the 22 mm and the 24 mm mesh revealed only a very small reduction in the share of undersized shrimp, the DCF data show that significant progress towards higher percentages of commercial and lower percentages of undersized shrimp has been made since 2016.</p> <p>Independent inspection of vessels by Control Union Certifications (CUC) and Landwirtschaftskammer Niedersachsen (LWK) did find a number of infringements of the 24mm mesh size in 2019 by vessels in the Brown Shrimp Management Plan.</p> <p>A study in 2019 identified potential significant latent effort in the fishery, and the Steering Committee has begun evaluating options for capping the total fishing effort. Following the oversupply of shrimps in autumn 2018 which necessitated processors restricting fishing days of vessels in 2019, and the impact of COVID-19 on fishing effort in 2020, there has been no requirement in the last two years for capping fishing effort.</p> <p>At the surveillance audit, the Clients provided an updated fleet inventory. The only significant change has been the more widespread use of onboard automatic cookers. This development is not considered</p>

	<p>to have increased fishing efficiency or fishing effort, and therefore it is highly unlikely this development will have contributed to any technological creep in the fishery.</p> <p>The Client has met all the elements of the second year milestone for this condition.</p>
Status	On target

### 3.2.2 PI 2.3.3 Condition 2

Performance Indicator	<p>PI 2.3.3 Relevant information is collected to support the management of UoA impacts on ETP species, including:</p> <ul style="list-style-type: none"> <li>• Information for the development of the management strategy;</li> <li>• Information to assess the effectiveness of the management strategy; and</li> <li>• Information to determine the outcome status of ETP species.</li> </ul>
Score	70
Justification	<p><b>SI (b) SG80 - Information is adequate to measure trends and support a strategy to manage impacts on ETP species.</b></p> <p>Although observer reports are available for all three countries involved in this fishery, information provided on bycatch species, including ETP species, for all three countries was difficult to evaluate and compare across countries. There was detailed observer information, but information available for this assessment was limited to a descriptive summary report and table of catch estimates (Observer report Netherlands and Germany: Steenbergen <i>et al.</i> 2015); Denmark provided their observer report in a different format using proportions of total catch. For the German and Dutch fisheries, catches and discards were available for the observer sampling programme 2009-2012. This represents less than 1% of days-at-sea sampled, so sampling errors are relatively high. The observer data provide standard deviations for catches, which are very high for some of the bycatch (Steenbergen <i>et al.</i> 2015), and therefore estimates will be skewed, but for ETP species standard deviation was low, as these species occurred in few hauls. The observer data provided by Denmark covers 2014.</p> <p>Although there is some quantitative information available, it is not adequate to measure trends and support a strategy to manage impact on ETP species. SG80 is not met.</p>
Condition	<p>The Client shall ensure that by the fourth surveillance audit there is adequate and harmonised information across all three jurisdictions to measure trends and support a strategy to manage impacts on ETP species.</p>
Milestones	<p>The Brown Shrimp fishery has been the subject of a number of scientific projects regarding bycatch estimation and mitigation, including by default ETP species. Although the overall results of these projects are similar, the data are collected under different protocols and circumstances. This means that the impact on ETP species is difficult to assess.</p> <p>The Brown Shrimp Cooperative MSC Group will work across at least the three countries (and if possible all countries in the fishery) to provide harmonized quantitative data on ETP species bycatch. Consultations with the national authorities responsible for the on-board observer programs running in the course of the Data Collection Framework (DCF) of the European Commission (EC) will harmonize and expand the collection of quantitative bycatch data. In addition, the Group's own scientific research and monitoring program will provide new information including seasonal trends.</p> <p><b>Surveillance 1:</b> The Group will provide evidence of working together with the competent institutions in all three countries responsible for the on board observer programmes running in the course of the Data</p>

	<p>Collection Framework (DCF) of the European Commission (EC) to achieve harmonized quantitative bycatch data, including ETP species, formatted so that catch fractions for each species can be calculated. In order to fulfill requirements to a quantitative sampling based on total catches the Group considers additional sampling activities in consultation with national authorities and representatives of the ICES WGCAN. Interim score: 70</p> <p><b>Surveillance 2:</b> The Group will provide first harmonized quantitative bycatch data on ETP species and first results of the additional monitoring program if applicable. Interim score: 70</p> <p><b>Surveillance 3:</b> The Group will provide updated harmonized quantitative bycatch data on ETP species and analyzed results of the Group's monitoring program if applicable. The Group will provide evidence that there is quantitative information available to adequately assess the impact on ETP species with respect to their status and trends. Interim score: 70</p> <p><b>Surveillance 4:</b> The Group will provide further updated harmonized quantitative bycatch data on ETP species and analyzed results of the Group's monitoring program if applicable. The Group will provide further evidence that there is quantitative information available to adequately assess the impact on ETP species with respect to their status, and assessing trends, so that a strategy can be supported to manage impacts on ETP species. Score: 80</p>
Client action plan	<p>The Brown Shrimp fishery has been the subject of several scientific projects regarding bycatch estimation and mitigation. Many of these have included ETP species to the extent that they were present in the sampled hauls, but the data were collected under different protocols and circumstances. This means that comparison or aggregation is not possible.</p> <p>As bycatches of ETP species by definition are rare, the mandatory DCF discard sampling does not have adequate coverage to monitor these in any meaningful way. Therefore, the Group has implemented registration of all bycatches of ETP species on the participating vessels. These data will be analyzed across the fleet and presented at the surveillances.</p> <p>In addition to ETP registration, the fishery will work together with the national research institutes and the competent authorities to improve and harmonize the bycatch monitoring not only for ETP species but also for all bycatch species as stated by the CAB in recommendation 7. The goal is to have statistically comparable and consistent bycatch data for all three nations that allows the detection of trends for all species. The Group will report about progress on the annual surveillance audits.</p> <p>The fishery will also implement a protocol to record which bycatch reduction device is deployed (if not a sieve net) with each haul when any ETP species is registered under the Fisheries ETP registration program. The joint working group established under a signed agreement with NGOs will look into the potential of recording of information on bycatch reduction devices under the mandatory logbook for the Fishery.</p> <p>The fishery will also work with the joint working group to review the ETP species list, wheelhouse guide and process for recording ETP species with the intention of making it more comprehensive within the first year of certification.</p> <p><b>Surveillance 1:</b> The Group will provide ETP species data from the first year of registration and provide evidence of a close cooperation with the competent institutions in all three countries to improve bycatch sampling for all species.</p> <p><b>Surveillance 2:</b> The Group will provide updated ETP and other bycatch species data and preliminary analysis of the data.</p> <p><b>Surveillance 3 &amp; 4:</b> The Group will provide updated ETP species data and analyzed results for all bycatch species. ETP species will be subject (if necessary) to a PSA analysis to ascertain the level of risk the fishery poses to these species.</p> <p><b>Intended Outcome:</b> At the 4<sup>th</sup> surveillance audit the Group will provide evidence that there is adequate information available to measure trends and support a strategy to manage impacts on all bycatch including ETP species.</p>

Progress on Condition (SA1 - 2019)	<p>The International Research Cooperation Shrimp (IRC shrimp) project was established in October 2018, to look, amongst other issues, at the bycatch recording issues, including ETPs, harmonised across all three countries participating in this fishery (Client information pack 4<sup>th</sup> June 2019; Beilage 0 and 18a).</p> <p>For the Netherlands and Germany a data collection system is being set up and the current one has been cancelled. A project is being put in place to harmonise bycatch data collection and information and analysis. This sampling programme will be set up over 3 years and tested, discards will be monitored. The first platform meeting is scheduled to be held in July 2019 to discuss the protocol and adapt procedures for observers to follow.</p> <p>The client provided the preliminary compiled spreadsheets on ETP encounters by species, per season, and by country (NL, D, DK). The data are collected with enough detail to note seasonality. The audit team noted that the data on rays and sharks were not identified to species level. Although encounters with ray or shark species are rare, and identification of juvenile rays and sharks to species level is difficult, the audit team emphasised that identification to species level would significantly increase the value of the data.</p> <p>Status: on target</p>
Progress on Condition (SA2 - 2020)	<p>The ETP registrations from the North Sea Brown Shrimp fishing fleet divided by POs were provided to the assessment team, together with analysis of the data to date. The POs are in communication with the NGO Consortium in reviewing the ETP list to see if changes should be made (minutes of those meetings were provided to the assessment team as part of the surveillance audit). Bycatch of smaller shrimps and ETP species have further been discussed at IRC Shrimp meetings. Discussions between NGOs and POs on the extent of the ETP species list are ongoing. The most recent meeting was held 4<sup>th</sup> May 2020, which also focused on current gear innovation projects and research in the North Sea Brown Shrimp fishery (minutes and presentations from these meetings were available to the assessment team). The sampling data of bycatch for the <i>de minimis</i> exemption are not yet available, partly due to the project being curtailed due to the coronavirus pandemic. There are discussions between the fishery, researchers and eNGOs on the possibility of introducing a reference fleet style sampling system.</p>
Status	On target

### 3.2.3 PI 2.4.2 Condition 3

Performance Indicator	PI 2.4.2 There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.
Score	75
Justification	<p><b>2.4.2 (d) SG80 - There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs / non-MSC fisheries, where relevant.</b></p> <p>The shrimp fishery is governed by standard EU fisheries rules outlined above (i.e. Plaice box, net size, sieve net, log-books, VMS etc.), and this applies to all shrimp vessels, including Belgian and French and those not part of the PO. These vessels also have to comply with marine protected area legislation and rules, such as not fishing in closed areas, for example. Furthermore, they are not allowed to fish near mussel beds, nor would it be in their interest, as it damages the gear. The shrimp fishery does not fish over seagrass beds, as these are either located in too shallow and/or intertidal areas, or within the no-access zone in Danish waters. The location of <i>Sabellaria</i> reefs has been mapped and thus the few locations are known.</p>

	<p>Observer programmes and inspection programmes, as stipulated by EU fisheries regulations, are used to check the location and behaviour of the shrimp fishery, for both MSC shrimp fisheries and non-MSC fisheries.</p> <p>Considering that all shrimp fishers fishing in the Wadden Sea have to comply with EU fisheries rules as well as national and regional protected area management rules, there should be sufficient evidence to meet SG80. However, a recent report by WWF, looking at VMS plots in the German Wadden Sea area, found that although on the whole there is evidence that closed areas are avoided (Kuechly <i>et al.</i> 2016), they non-the-less highlighted the observation that shrimp fishing had been taking place in the Hörnumtief no-take-zone (Schleswig Holstein). The information presented could not differentiate whether it was one fisher only, and it is not clear what enforcement action was taken. A field research experiment conducted by Glorius <i>et al.</i> (2015), to assess the effects of shrimp fishing, was affected by fishers fishing through the plots, despite a voluntary agreement not to (Client pers. comm.). This questions the ability of the vessels to identify closed areas or research areas temporarily closed to fishing (even if voluntary).</p>
Condition	<p>The Client shall ensure that by the fourth surveillance audit there is some quantitative evidence that the UoA complies with its management requirements and with protection measures afforded to VMEs by other MSC UoAs / non-MSC fisheries, where relevant.</p>
Milestones	<p><b>At the first audit:</b> The client group will provide evidence of working together to establish harmonised map presentation across all three countries and improve awareness of fishers as to the importance of protected areas including Natura 2000 sites and areas closed to fishing (no take zones). Interim Score: 75</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI.</p> <p><b>At the second audit:</b> The client will provide evidence of the results of working together to implement a harmonised programme to collect and analyse quantitative information of vessel positions and highlight any compliance issues.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 75</p> <p><b>At the third audit:</b> The client will provide evidence that a harmonised programme of relevant and clear information on vessel positions has been established across all fisheries including compliance checks and, if necessary, follow up action.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 75</p> <p><b>At the fourth audit:</b> The Client shall provide evidence that there is some quantitative evidence that the UoA complies with its management requirements and with protection measures afforded to VMEs by other MSC UoAs / non-MSC fisheries, where relevant.</p> <p>It is considered that the successful completion of this and previous milestones will result in a rescoring of this PI to at least 80.</p>
Client action plan	<p>As outlined in the Management Plan (section E3), the VMS data of all participating vessels will be monitored each year and presented in a harmonized format. In order to ensure that protected areas are indeed protected, the Group will provide the participating vessels with data layers of no-take-zones and other closed or restricted areas that can be directly imported into their on-board plotters.</p> <p>To improve the overall understanding of the ecosystem impact of the brown shrimp fishery, the client group will support a German/Danish research project on the habitat impact of the fishery and has entered into a signed agreement to undertake a close cooperation with the NGO consortium in this project.</p> <p>While analyzing the spatial distribution of the fishery the client group will evaluate the possibilities of areal management of the fishery as advised by the CAB in recommendation 10 (i.e. fishing in certain areas only, such as particular tidal basins for example) with a view on how the purpose of the protected areas can be fulfilled. This will include monitoring the extent of shrimp fishing in tidal basin closures</p>



	<p>implemented under the blue mussel fishery Framework Agreement in the Schleswig-Holstein National Park.</p> <p>The client group will report on the research project and the evaluation of the possibilities of an areal management on the yearly surveillance audits. If the results of the above mentioned German/Danish research project indicate that fishing in certain areas only can facilitate the recovery of VME (Vulnerable Marine Ecosystems) and other important habitats, the Fishery will collaborate with the NGOs and the National Park administrations to develop a phased-in approach for a plan to begin the implementation of a representative network of concurrent closures within 5-years.</p> <p>Compliance with spatial regulations is inherently the job of the relevant authorities who have implemented the closures. The Group is not able to monitor and take action on individual vessels that may breach these regulations, as it only has legal access to anonymized VMS data. In the unlikely event of systematic non-compliance with closures, the Group can and will however take action at fleet level: information, warning of the consequences for the fleet, peer pressure etc.</p> <p><b>Surveillance 1:</b> Aggregated VMS data across the three countries will be presented to the surveillance team as well as other stakeholders through the NSAC and the Joint Working Group. Data layers for on-board plotters will have been provided to the participating vessels. Progress will also be reported on the implementation of the habitat impact research project.</p> <p><b>Surveillance 2:</b> Updated VMS data will be presented to the surveillance team as well as other stakeholders through the NSAC and the Joint Working Group, along with analysis of the results. Compliance issues will also be reported. Data layers for on-board plotters will be updated as appropriate. Progress will also be reported on the implementation of the habitat impact research project.</p> <p><b>Surveillance 3 &amp; 4:</b> Updated VMS data will be presented to the surveillance team as well as other stakeholders through the NSAC and the Joint Working Group, along with analysis of the results. Compliance issues will also be reported. Data layers for on-board plotters will be updated as appropriate. Results to date will be reported from the habitat impact research project and any anticipated actions resulting from this project.</p> <p><b>Intended Outcome:</b> At the 4th surveillance audit the Group will provide some quantitative evidence that the UoA complies with its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC-fisheries, where relevant.</p>
Progress on Condition (SA1 – 2019)	<p>Addressing Conditions 3 and 4 has been included in the International Research Cooperation (IRC) Shrimp work objectives. The IRC Shrimp has placed plans to improve cooperation between the countries involved, including the relevant scientific institutions, regarding VMS data and data layers, so that vessel locations can be better compared and evaluated with respect to closed areas. It is considered to also use these merged maps for enforcement (Client information 4<sup>th</sup> June 2019; Beilage 18b). The client provided VMS plots for all three countries (see Section 3.2.5 of this report). However, in the light of recent regulatory changes (GDPR came into force in May 2018) it may pose some administrative problems to gaining access to such VMS data in the future – as the regulation is not interpreted the same in each country.</p> <p>Status: on target</p>
Progress on Condition (SA2 – 2020)	<p>Addressing Conditions 3 and 4 is included in the International Research Cooperation (IRC) Shrimp work objectives.</p> <p>The maps of fishing intensity for the three fleets were provided to the assessment team, and those for 2019 are shown in Section 2.2.5 of this report. The Brown Shrimp Focus Group under NSAC (North Sea Advisory Council) has only recently been set up (January 2020), the distribution of the fishery has not yet been the focus of the group, as can be seen from the minutes seen by the assessment team. Hence the fishing intensity information has not yet been presented to stakeholders through the NSAC, although it has been shared with NGOs in the NGO Consortium, and will be on the agenda at future meetings.</p> <p>As mentioned last year, on-board plotters have been provided to part of the fleet. The reasons for not delivering plotters to all vessels are that not all fishermen use the same system onboard the vessel, and due to legal obligations by the fishermen to not fish in closed areas it is the fisher's responsibility to ensure that this information is correct. For the Danish fishermen, this means that all updates and links</p>

	<p>to regulations can be found on DFPO's own website which the fishermen are obliged to check. Compliance checks with the respective ministries have shown that there have been no infringements in closed areas during 2019 (Client information May 2020; letters from respective authorities seen by assessment team). Since the 1<sup>st</sup> January 2017, it is mandatory for all Dutch shrimp fishers to use a black box on their vessel. The black box aims to register if a vessel is either sailing or fishing and can be used to investigate the fishing hours in for example Natura 2000 areas. The black box system can also aid within Production Plans, to control the number of fishing hours, for example. However, in 2018 the Netherlands Food and Consumer Product Safety Authority conducted research into the black box systems 'Dekimo' and 'Alphatron'. The findings showed that the black box systems can accurately record the location of vessels, but determining whether a vessel is sailing or fishing is not always registered correctly. In addition to this, the systems can be sensitive to errors. Based on these findings, there are ongoing efforts to technically improve the black box system. Just as with the VMS data, the black box data have privacy concerns. The data currently go to the PO of the respective shrimp fisher and the Netherlands Food and Consumer Product Safety Authority.</p> <p>In Germany, within the national park of Schleswig-Holstein, there continues to be only one no take zone, as described in the original assessment. One has to bear in mind that this is not a restricted area, thus entering the area is allowed, which means any presence of vessels can be seen from the VMS pings, but it does not mean that they are automatically fishing in that area (Client information May 2020). This will likely be the same for the N2000 sites in the German EEZ, although the management plans have not yet been implemented as they have to be accepted by all affected member states and the EU-commission (Client information, May 2020). It is planned to increase the VMS ping rate to control the vessels when approaching those areas and they will have to keep a speed of at least 6 knots while they cross a N2000-site (Client information, May 2020). A general restriction on towing speed inside N2000 sites has never been discussed in Germany. In any case, all these measures will not enter into force before the management plans for N2000 are accepted and implemented. As this is an international process and different member states have different interests in the areas it is a time consuming process. The client clarified that there is no plan to increase the VMS ping rate in general. The pings are transmitted via satellite which is expensive. Currently, in Germany, the ping rate is every 2hrs, which will be reviewed when the management of areas changes; the latest plan by BLE is to increase the ping rate to every 10 minutes when the vessel is approaching a N2000 area (this is from National Ministry within EEZ). In the Netherlands and in Denmark ping rates vary from every 30 minutes to every 2 hours.</p> <p>Pursuant to the control regulation (EU 1224/2009) all vessels of 15 m or more must have an activated AIS system on board. The control authorities use the AIS system to spot the vessels at sea but in Germany they have to ask the authority for shipping safety for records of the AIS and therefore they prefer to use the VMS data where the fishery control agencies have full access (Client information May 2020).</p>
Status	On target

### 3.2.4 PI 2.4.3 Condition 4

Performance Indicator	PI 2.4.3 Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.
Score	75
Justification	<p><b>2.4.3 (b) SG80 - Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</b></p> <p>Although VMS maps and vessel logs are available for all shrimp fishing vessels to show where they fish and when, the information was not available to the assessment team in a format that allowed cross comparison across all three countries within a particular time period to assess the intensity of the use</p>

	of the fishing gear over the main habitat areas (for example, some areas are fished more frequently than others).
Condition	The client shall ensure by the fourth surveillance audit that information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.
Milestones	<p><b>At the first audit:</b> The client group will provide evidence of working together to establish harmonised VMS presentation across all three countries and improve information on spatial extent of gear interaction with habitat, and on the intensity per area.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 75</p> <p><b>At the second audit:</b> The client will provide evidence of the results of working together to implement a harmonised programme to collect and analyse quantitative information of vessel positions and present the initial results showing location and intensity.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 75</p> <p><b>At the third audit:</b> The client will provide evidence that a harmonised programme of relevant and clear information on vessel positions has been established across all fisheries showing location and fishing intensity and this information has been provided to fishery managers.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 75</p> <p><b>At the fourth audit:</b> The client will provide evidence that information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p> <p>It is considered that the successful completion of this and previous milestones will result in a rescoring of this PI to at least 80.</p>
Client action plan	<p>As outlined in the Management Plan (section E3), the VMS data of all participating vessels will be monitored each year and presented in a harmonized format. The anonymized and aggregated VMS data allow to assess the location and intensity of use of the fishing gear.</p> <p><b>Surveillance 1:</b> Aggregated VMS data across the three countries will be presented to the surveillance team as well as other stakeholders through the NSAC. Data layers for on-board plotters will have been provided to the participating vessels.</p> <p><b>Surveillance 2:</b> Updated VMS data will be presented to the surveillance team as well as other stakeholders through the NSAC, along with analysis of the results. Compliance issues will also be reported. Data layers for on-board plotters will be updated as appropriate.</p> <p><b>Surveillance 3 &amp; 4:</b> Updated VMS data will be presented to the surveillance team as well as other stakeholders through the NSAC, along with analysis of the results. Compliance issues will also be reported. Data layers for on-board plotters will be updated as appropriate.</p> <p><b>Intended Outcome:</b> At the 4th surveillance audit the Group will provide evidence that information is adequate to allow for identification of the main impacts on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p>
Progress on Condition (SA1 - 2019)	<p>As for Condition 3 (PI 2.4.2)</p> <p>Status: on target</p>



Progress on Condition (SA2 - 2020)	<p>As for Condition 3 (PI 2.4.1).</p> <p>In addition, Cran-Impact is a collaborative project between the Thünen Institut and the University of Hamburg evaluating the impact of the shrimp fishery on benthic communities, following a gradient from unfished to fished areas (<a href="https://www.thuenen.de/de/sf/projekte/auswirkungen-der-garnelenfischerei-auf-den-meeresboden-cranimpact/">https://www.thuenen.de/de/sf/projekte/auswirkungen-der-garnelenfischerei-auf-den-meeresboden-cranimpact/</a> and <a href="https://www.thuenen.de/en/sf/news-and-service/news/detail/News/pilot-study-phase-accomplished-in-cranimpact/">https://www.thuenen.de/en/sf/news-and-service/news/detail/News/pilot-study-phase-accomplished-in-cranimpact/</a>). The project also looks at the physical and biological effects, and a synthesis of this will also apply to the Waddensea with regards to sediments. Started in 2018 the project is due to last until 2022. However, due to the coronavirus pandemic there are going to be some delays.</p>
Status	On target.

### 3.2.5 PI 3.2.2 Condition 5

Performance Indicator	PI 3.2.2 The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.
Score	70
Justification	<p><b>SI (a) SG80 - There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</b></p> <p>The national authorities and, in the case of Germany regional authorities too, have policy and fisheries control and enforcement units that have established internal and external decision making processes that result in measures and strategies to support the management of the brown shrimp fishery and deliver the objectives established by their respective fisheries and nature conservation acts, e.g. regular internal and external (between member states) control and enforcement meetings to review and re-direct effort as a result of any identified compliance issues (see section 3.7.6).</p> <p>The Brown Shrimp Management Plan identifies a Steering Committee as the main decision-making body. Their decision-making process requires a consensus of the three Committee members (or their deputy).</p> <p>The Steering Committee receives support as necessary from a "Working Group". The membership of the group is not specified in the Management Plan, this will be established depending on the subject being considered by the Committee (Oberdoerffer, 2016, pers comm, 4 March).</p> <p>Decisions such as the incremental increase in mesh size and the implementation of the harvest control rules will contribute to the overarching objective of the management plan.</p> <p>It is therefore considered that there are decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives so meeting the SG 60.</p> <p>The MSC CR guidance says, "established" decision-making processes should be understood to mean that there is a process that can be immediately triggered for fisheries-related issues, the process has been triggered in the past and has led to decisions about sustainability in the fishery. These processes may or may not be formally documented or codified under an official statute.</p> <p>Using the MSC guidance, it is not possible to say that there are "established" decision-making processes owing to the short period of time within which the Management Plan has been operational. The Management Plan was adopted on 1st December 2015 and came into force on 1st January 2016. The decision-making process has not yet been triggered and so for this reason the SG 80 is not met.</p> <p><b>SI (d) SG 80 - Information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings</b></p>

	<p><b>and relevant recommendations emerging from research, monitoring, evaluation and review activity.</b></p> <p>Through interview and correspondence during the information gathering phase of this assessment, national authorities considered they responded to information requests on the fishery's performance and management and provided explanations for any actions, or lack of action, associated with findings and recommendations from research, monitoring, evaluation and review activity. Stakeholders interviewed, in general, considered this to be the case. However, as part of the ENGO consortium submission, the assessment team was provided with correspondence from an industry representative to Dutch regulatory authorities requesting a response to their concerns of breaches to the weekend fishing restrictions. Responses were not apparently forthcoming and, on follow up by the assessment team to see how this issue was dealt with, no response was received by the time of completing this draft report.</p> <p>With respect to the implementation of the management plan, information on the fisheries performance and management action is made available to the harvesters via PO newsletters and their websites. PO representatives are also very active in communicating and corresponding with their members. There is a commitment to their membership to provide explanations for any actions or lack of action associated with findings and relevant recommendations from research, monitoring evaluation and review activity.</p> <p>There is an explicit commitment within the management plan for the Brown Shrimp Cooperative MSC Group to present results of any scientific evaluation and monitoring of progress and changes to the plan to the NSAC, i.e. where non-fishing key stakeholder groups are represented, and have already participated in discussions related to the management of this fishery.</p> <p>It is too early into the adoption and implementation of the management plan to have evidence that access to information is available to all stakeholders, so while the fishery meets the SG 60 it does not achieve the SG 80.</p>
Condition	<p>The client shall ensure by the fourth surveillance audit that:</p> <ol style="list-style-type: none"> <li>1. There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</li> <li>2. Information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</li> </ol>
Milestones	<p><b>SI (a) SG80 - There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</b></p> <p><b>At the first audit</b> the client will provide evidence in the form of a written report and minutes of meetings showing the decision-making process and how it relates to measures and strategies to achieve the fishery-specific objectives. For example, the management plan says "...there will be an annual evaluation by a scientific institute on whether the plan is delivering on its objectives, including (but not necessarily limited to) reaching the target of high long-term sustainable yields, avoiding recruitment overfishing, minimizing unwanted by-catch", the client is required to show the decision making process resulting from this review and any other key decisions made in the period prior to the first audit.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 70</p> <p><b>At the second audit</b> the client will provide evidence in the form of a written report and minutes of meetings showing the decision-making process and how it relates to measures and strategies to achieve the fishery-specific objectives. This will include the decision-making process resulting from the annual review of the management plan, the outcome of the advice received on the effectiveness of mesh size increase that is scheduled in 2018 and any other key decisions made in the period prior to the second audit.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 70</p> <p><b>At the third audit</b> the client will provide evidence in the form of a written report and minutes of meetings showing the decision-making process and how it relates to measures and strategies to achieve the</p>

fishery-specific objectives. This will include the decision-making process resulting from the annual review of the management plan, and any other key decisions made in the period prior to the third audit.

This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 70

**At the fourth audit** the client will provide evidence in the form of a written report and minutes of meetings showing the decision-making process and how it relates to measures and strategies to achieve the fishery-specific objectives. This will include the decision making process resulting from the annual review of the management plan, and the outcome of the advice received on the effectiveness of mesh size increase that is scheduled in 2020 (this is based on the assumption that there will have been a mesh increase in May 2018).

It is considered that the successful completion of this and previous milestones will demonstrate that there are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. This will result in a rescoring of this PI to at least 80.

**SI (d) SG80 - Information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.**

**At the first audit** the client will provide documentary evidence that shows:

- The number and type of information requests on the fishery's performance and management action that have been made since the certification of the fishery;
- The information that was provided in response to these requests; and,
- The explanations that were provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.

In reviewing this evidence the audit team should take into account reasonable timelines and complexity of request.

This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI.

**At the second audit** the client will provide documentary evidence that shows:

- The number and type of information requests on the fishery's performance and management action that have been made since the certification of the fishery;
- The information that was provided in response to these requests; and,
- The explanations that were provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.

In reviewing this evidence the audit team should take into account reasonable timelines and complexity of request.

This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI.

**At the third audit** the client will provide documentary evidence that shows:

- The number and type of information requests on the fishery's performance and management action that have been made since the certification of the fishery;
- The information that was provided in response to these requests; and,
- The explanations that were provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.

In reviewing this evidence the audit team should take into account reasonable timelines and complexity of request.

This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI.

	<p><b>At the fourth audit</b> the client will provide documentary evidence that shows:</p> <ul style="list-style-type: none"> <li>• The number and type of information requests on the fishery's performance and management action that have been made since the certification of the fishery;</li> <li>• The information that was provided in response to these requests; and,</li> <li>• The explanations that were provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</li> </ul> <p>It is considered that the successful completion of this and previous milestones will demonstrate that the client provides information on the fishery's performance and management action on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity. This will result in a rescoring of this PI to at least 80.</p> <p>NB – Four annual milestones have been set. It is considered that this will ensure that requests for information on the performance and management action and explanations provided for any actions or lack of action associated with findings and relevant recommendations is established in the normal working practices associated with the management plan.</p>
Client action plan	<p>The management of the Brown Shrimp fishery implemented by the Group only started in 2016, and it is therefore natural that decision making processes are not long-standing. By agreeing, adopting and enforcing the Management Plan, the Group has however already shown its decision-making ability, and its commitment to uphold the principles of the plan.</p> <p>One of these principles is the transparency and mutual dialogue with other stakeholders, particularly through the NSAC as outlined in the plan (section F).</p> <p><b>Surveillance 1 - 4:</b> The Group will provide a summary of decisions taken since certification or last audit (including the related minutes of meetings). This includes decisions taken on the basis of the results of the scientific monitoring program and its advice relating to the objective of achieving high long-term sustainable yield.</p> <p>The Group will also provide a summary of the information or other requests received and the responses, including explanations of actions taken (or not).</p> <p>The Group will present stakeholders (in the NSAC) with the scientific monitoring, an overview of sanctions, sievage and LPUE data, as well as a summary of decisions taken, changes to the management plan, etc.</p> <p><b>Intended Outcome</b></p> <p>At the 4th surveillance audit the client will provide evidence that there are:</p> <ul style="list-style-type: none"> <li>• Established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives;</li> <li>• The client provides information on the fishery's performance and management action on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</li> </ul>
Progress on Condition (SA1 - 2019)	<p><b>PI 3.2.2 SI(a)</b></p> <p>As set out in the Management Plan, the Steering Committee (SC), aided by a Project Working Group (PWG), are responsible for decision-making with respect to the matters following from the Management plan.</p> <p>Representatives from the PWG were present at this audit site visit and provided supporting information before and after the site visit with respect to this condition. A document, (SC meetings since certification) reports that the Steering Committee met on 7 occasions between January 2018 and April 2019 and, additionally met at least twice via Skype. As of August 2018, the minutes of meetings have been re-structured such that decisions and actions have been explicitly included so that they can be better tracked and also demonstrate the decision-making process and how it relates to measures and</p>

	<p>strategies to achieve the fishery-specific objectives.</p> <p>An example of the minutes for a SC meeting (21<sup>st</sup> February 2019) was also provided to the audit team and they clearly show the discussion and the decision-making process in relation to, amongst other things, actions toward meeting the MSC conditions of certification, research on measures to reduce fishing mortality and calculating LPUE and reference values.</p> <p>The minutes also show that representatives undertaking research in support of the management plan were present, participated in the discussions and that their input was considered in the decision-making process.</p> <p>The list of decisions and actions taken by the SC since August 2018 were provided to the team in the document, "SC meetings since certification".</p> <p>The audit team note that the year 1 milestone mis-quoted the Management Plan with respect to an annual evaluation by a scientific body. Section D of the Management Plan actually says:</p> <p>"The Brown Shrimp Cooperative MSC Group will acquire scientific advice from a relevant scientific institution every year to enable an evaluation of whether the management plan is delivering on its objectives, including (but not necessarily limited to):</p> <ul style="list-style-type: none"> <li>• Reaching the target of high long-term sustainable yields,</li> <li>• Avoiding recruitment overfishing,</li> <li>• Minimizing unwanted by-catch."</li> </ul> <p>So, it is incorrect for the audit team to expect, "an annual evaluation by a scientific institute on whether the plan is delivering on its objectives". The team will, however, expect to see an evaluation of whether the management plan is delivering on its objectives during the course of this certification's audit cycle.</p> <p>The milestone for this part of the condition is therefore considered to have been met.</p> <p><b>PI 3.2.3 SI(d)</b></p> <p>The condition relates to accountability and transparency of the fishery specific management system and decision making. The intent is to see how information, with respect to the performance of the fishery and its management, is made available if requested by stakeholders.</p> <p>The client provided minutes of meetings of the "Joint Working Group, North Sea Brown Shrimp Fishery" which is a client group / ENGO working group that has been established in direct response to the MSC certification of the fishery. It is through this forum that the client group has been able to document and respond to requests in relation to the fishery, the fishery management plan or research being undertaken to support the management plan.</p> <p>The client confirmed that no other direct requests were made from stakeholders outside of the Joint Working Group.</p> <p>The milestone for this part of the condition is therefore considered to have been met.</p>
Status	On target
Progress on Condition (SA 2 - 2020)	<p>Since last year's surveillance audit, the Steering Committee (SC) has met four times (13.06.19, 26.09.19, 12.12.19 and 20.02.20). Minutes from the SC meetings are provided to the audit team. The main aim of these meetings has been to deal with MSC and management related issues. Due to the Corona Virus outbreak, the latest SC meeting scheduled for the 23<sup>rd</sup> of April 2020 was cancelled. A key point that should have been addressed at this meeting was a review of the inspection set up, as discussions of having just one control body needs to be explored further.</p> <p>As informed last year the NSAC focus group had been 'closed' for several years. To ensure international information sharing, the IRC Shrimp Project was set up to involve stakeholders in a common discussion (meeting minutes provided to audit team). However, since then the focus group under the NSAC has been reinstated, and to date, there have been four meetings held in this group. Minutes from these meetings are provided to the audit team and appear on the <a href="#">NSAC website</a>.</p>
	As set out in the Management Plan, the Steering Committee (SC), aided by a Project Working Group



	<p>(PWG), are responsible for decision-making with respect to the matters following from the Management plan.</p> <p>The minutes for the four SC meetings were provided to the audit team and they clearly show the discussion and the decision-making process in relation to, amongst other things, actions toward meeting the MSC conditions of certification.</p> <p>Minutes of the the IRC Shrimp Project were provided and the NSAC Brown Shrimp Focus Group has been re-established, minutes of those meetings were also provided.</p> <p>The minutes for all these meetings enable the client group to demonstrate how they respond to requests in relation to the fishery, the fishery management plan or research being undertaken to support the management plan, thereby meeting the expected outcome of this year's milestone.</p>
Status	On target

### 3.2.6 PI 3.2.3 Condition 6

Performance Indicator	PI 3.2.3 Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.
Score	60
Justification	<p><b>SI (a) SG 80 - A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.</b></p> <p>A monitoring, control and surveillance (MCS) system has been implemented in the fishery through national administrations and through the implementation of the tri-lateral management plan.</p> <p>The national administrations include resources and systems to support the MCS of the fishery as set out in section 3.7.6. The national authorities consider the fishery to be a low risk with relatively few and minor instances of non-compliance. Evidence shows non-compliance is dealt with accordingly through official warnings, fines and endorsement of fishing licenses depending on the severity of the offence.</p> <p>Implementation of the management plan requirements is supported by an independent control agency, Landwirtschaftskammer, based in Germany. The agency provides a full-time inspector who is responsible for monitoring and reporting on compliance of the plan. An independent consultant based in the Netherlands working 3 days a week supports the inspector. They only monitor the management plan requirements. These relate to:</p> <ul style="list-style-type: none"> <li>• Hours/days fished;</li> <li>• Beam length;</li> <li>• Weight of fishing gear;</li> <li>• Mesh size;</li> <li>• Use of specified sieve net/sorting grid;</li> <li>• On-shore sieve dimensions;</li> <li>• Quantity of sieveage, i.e. the brown shrimp that falls through the shore sieve;</li> <li>• Data collection, including ETP species info.</li> </ul> <p>The plan commits to inspection of at least 20% of the vessels working to the plan in each country being inspected annually – using membership figures as of April 2016 that would be at least 6 Danish vessels and 38 vessels in Germany and the Netherlands, respectively. Each member PO is to be inspected at least once a year; and sieving stations at least twice a year.</p> <p>Inspections follow a protocol to ensure standardised and comparable inspections of POs and member fleets. A process for penalising any infringements of the plan requirements are also set out in the</p>



management plan along with an Annex that describes the penalties.

Inspection reports are provided every 3 months to the Steering Committee.

The assessment team observed an inspection of a sieving station and inspection of a vessel during the site visit in Büsum, Germany. The team also received copies of sievage station and vessel inspection reports.

Infringements are reported on PO websites. The assessment team were provided with access to a secure section of the CVO website open only to CVO members, which shows infringements of management plan requirements going back to 2013, i.e. prior to implementation of the existing management plan.

All the infringements related to vessel sievage values in excess of 15%. Initial infringements result in warning letters sent by the POs. Subsequent infringements result in fines. The website clearly shows fines against particular vessels, including an instance of a repeat infringement and increased fine. It is unclear if the naming and potential shaming of vessels provides an added deterrent.

A MCS system clearly exists and is implemented within the brown shrimp fishery. Information provided by the national authorities and the tri-lateral management group provides a reasonable expectation that they are effective, thereby meeting the SG 60.

Given the relatively short period of time the existing management plan has been in place the assessment team were unable to conclude that an ability to enforce relevant management measures and strategies has been demonstrated. Therefore, the SG 80 is not met.

**SI (b) SG 80 - Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.**

The national authorities impose sanctions on vessels in breach of national and/or EU regulations. Sanctions range from warnings and administrative fines to formal prosecution. Non-compliance may be dealt with through an administrative or judicial system, depending on the severity of the infringement. The member states implement a points system, in accordance with EU Regulation 1224/98, whereby infringements result in fines and points against a license. On reaching a maximum number of points the vessels fishing license is suspended. The suspension of a fishing license is a very effective deterrent by the authorities.

The assessment team did not hear or see evidence that showed inconsistency in the application of national or EU regulations. The national administrators highlighted the low level of non-compliance within the fishery as an indicator that sanctions were effective.

With respect to the management plan, an Annex sets out sanctions applied to non-compliance with the requirements of the plan. Failure to meet requirements is reported by independent inspectors to POs. Failure of a PO to act is reported by the independent inspectors to the Steering Committee who then take action against the PO.

Access to the CVO website showed that, since implementation of the plan, penalties had been imposed on a number of vessels due to excessive sievage levels.

The assessment team concludes that sanctions to deal with non-compliance exist and there is evidence that they are applied, thereby meeting the SG 60.

Evidence was not available to demonstrate that sanctions are consistently applied or provide an effective deterrent with respect to the implementation of the management plan requirements, e.g. 15% sievage values. Therefore, SG 80 is not met.

**SI (c) SG 80 - Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.**

National administrations confirmed that the fishery generally complies with EU and national regulations and that this is reflected in the relatively low level limited of action being taken against infringements.

With respect to providing information of importance to the management of the fishery, logbooks and landing declarations for vessels over  $\geq 10$  m has to be submitted within 48 hours of landing and electronic logbook transmission for vessels  $\geq 12$  m (Council Regulation 1224/2009) have to be transmitted every 24 hours.

Vessels operating under the current management plan have done so since the beginning of 2016, information provided by the independent inspectors indicates general compliance with the management

	<p>plan requirements. Information of importance with respect to the management plan includes recording ETP species interactions. At the time of the site visit no interactions had been reported.</p> <p>The assessment team concludes that fishers are generally compliant with the management system and there is evidence, when required, that fishers provide information of importance to the effective management of the fishery. The SG 60 is therefore met. The SG 80 is not met, as the fishery management plan has not been in place long enough to provide evidence to demonstrate fishers comply with the management plan.</p> <p><b>SI (d) SG80 - There is no evidence of systematic non-compliance.</b></p> <p>The late submission/transmission of logbooks or estimating catches within the 10% permitted tolerance is not uncommon but it is not considered to be a systematic problem by the national administrations with respect to EU regulations. There were no national regulations that were regularly breached in a systematic way.</p> <p>With respect to the management plan, there was evidence that sieveage levels beyond the 15% maximum was a more common transgression by fishers, however, the number of vessels and the small number of repeat offenders is not considered to provide evidence of systematic non-compliance.</p> <p>Comments received from the regional authorities responsible for managing fisheries operating within the jurisdiction of the Schleswig-Holstein Länder, indicate that there are concerns about a small number of vessels systematically fishing in areas closed to fishing within the National Park. Similar comments were raised by the ENGO consortium. While the assessment team were not provided with evidence of non-compliance, e.g. a successful prosecution of this infringement, this is a concern and the assessment team reasons measures should be put in place to provide re-assurance that client group member vessels do not fish in closed areas.</p> <p>Therefore, the SG 80 is not met.</p>
Condition	<p>The client shall ensure by the fourth surveillance audit that:</p> <ol style="list-style-type: none"> <li>1. A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.</li> <li>2. Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.</li> <li>3. Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</li> <li>4. Shrimp fishing by client group vessels does not take place within areas closed to fishing.</li> </ol>
Milestones	<p><b>SI (a) SG80 - A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.</b></p> <p><b>SI (b) SG80 - Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.</b></p> <p><b>SI (c) SG80 - Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</b></p> <p><b>SI (d) SG 80 - Shrimp fishing by client group vessels does not take place within areas closed to fishing</b></p> <p><b>At the first audit</b> the client will provide a written report showing the management measures, strategies and rules that are enforced under the management plan; the number of inspections (vessels, sieveage stations, POs); what was inspected; the findings and any follow up action, including any penalties/sanctions that were imposed.</p> <p>The client will also present evidence of appointing an appropriately qualified, independent organisation to review, assess and report on:</p>

	<ul style="list-style-type: none"> <li>the ability of the management plans monitoring, control and surveillance (MCS) system to enforce the management measures, strategies and/or rules (including concerns about shrimp fishing in closed areas);</li> <li>how sanctions to deal with non-compliance have been applied and whether they provide an effective deterrent;</li> <li>whether fishers comply with the management system, including, when required, providing information of importance to the effective management of the fishery.</li> </ul> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 65</p> <p><b>At the second audit</b> the client will provide a written report showing the management measures, strategies and rules that are enforced under the management plan (including how the client group are addressing concerns about shrimp fishing in closed areas); the number of inspections (vessels, sieve stations, POs); what was inspected; the findings and any follow up action, including any penalties that were imposed.</p> <p>The client will provide a written report showing the interim results of the independent review and assessment of the MCS mechanisms.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 65</p> <p><b>At the third audit</b> the client will provide a written report showing the management measures, strategies and rules that are enforced under the management plan (including how the client group are addressing concerns about shrimp fishing in closed areas); the number of inspections (vessels, sieve stations, POs); what was inspected; the findings and any follow up action, including any penalties that were imposed.</p> <p>The client will provide a written report showing the results and conclusions of the independent review and assessment of the management plans MCS mechanisms. If any deficiencies or recommendations are highlighted within the report the client will present an action plan to address them.</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 65</p> <p><b>At the fourth audit</b> the client will provide a written report showing the management measures, strategies and rules that are enforced under the management plan (including how the client group are addressing concerns about shrimp fishing in closed areas); the number of inspections (vessels, sieve stations, POs); what was inspected; the findings and any follow up action including any penalties that were imposed.</p> <p>If any deficiencies or recommendations were made within the independent review and assessment of the management plans MCS mechanisms the client will present a written report showing how they were addressed.</p> <p>It is considered that the successful completion of this and previous milestones will demonstrate that:</p> <ul style="list-style-type: none"> <li>A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules including closed areas.</li> <li>Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.</li> <li>Evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</li> </ul> <p>This will result in a rescoring of this PI to at least 80.</p>
Client action plan	<p>The Group is convinced that independent enforcement of the Management Plan is necessary to ensure compliance across all 400 vessels. The Management Plan also sets specific targets for the level of controls for each type of inspection (vessel, sieving station, PO).</p> <p>To further strengthen the credibility of the control system, the Group will contract an external independent review.</p>

**Surveillance 1:** The Group will provide a summary report of inspections, levels of (non-)compliance and sanctions since the start of the Management Plan.

The Group will also provide evidence that an appointment has been made with an appropriate external body capable of reviewing the efficacy of the control system in delivering the goals of the Management Plan, including fishing in closed areas.

**Surveillance 2:** The Group will provide a summary report of inspections, levels of (non-)compliance and sanctions since last audit, including how they have addressed concerns about shrimp fishing in closed areas. Moreover, the Group will provide interim findings of the external review and assessment of the MCS mechanisms.

**Surveillance 3:** The Group will provide a summary report of inspections, levels of (non-)compliance and sanctions since last audit, including how they have addressed concerns about shrimp fishing in closed areas.

Additionally, the Group will provide the results of the external review of the control system, as well as an action plan to deal with any deficiencies found.

**Surveillance 4:** The Group will provide a summary report of inspections, levels of (non-)compliance and sanctions since last audit, including how they have addressed concerns about shrimp fishing in closed areas.

The client will report on changes made to the system on the basis of the review and subsequent action plan. Additionally, the Group will include a commitment to external review at least every 4 years in the Management Plan.

#### Intended Outcome

At the 4<sup>th</sup> surveillance audit the client will demonstrate that:

- A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.
- Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.
- Evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.
- Evidence shows that shrimp fishing by client group members does not take place within areas which are closed to the shrimp fishery (e.g. by providing detailed VMS maps).

#### SI (a)(b)(c)(d) SG80.

The client provided a document, "North Sea Brown Shrimp Inspection Report 2018" that provides background to the two independent inspection agencies (IAs) ([Control Union Certifications](#) and [Landwirtschaftskammer Niedersachsen](#)) that have been appointed to conduct inspections of member vessels and sieving stations to ensure requirements of the Management Plan are being implemented correctly and to follow up with POs to ensure they are following up any non-compliances the IAs may have reported to them. The report provides an indication of the level of inspection effort and tabulates the number of infringements and penalties that were found and applied against specific articles in the Management Plan. In summary:

- 74 vessels were subject to on-board inspections. This equates to 17.5% of the total fleet that have signed up to the Management Plan. The Management Plan states that, "at least 20% of the vessels in each country shall be inspected each calendar year". The number of active vessels subject to the management plan is difficult to confirm. Using figures from the latest version of the Management Plan, suggests that this 20% target figure was not quite achieved for any fleet.

2018 inspections			
	MSC GBR	DFPO	CVO
No. vessels	20	5	49
No. of sieving station	19	5	8

Progress on  
Condition  
(SA 1 -  
2019)

- Infringements against Management Plan articles:

Article	Description of Article Requirement	No. of Infringements	No. of Penalties
C2.1	4,800 hr (200-day limit) fishing limit	No data from POs	No data from POs
C2.2	Maximum beam width	-	-
C2.3	Maximum gear weight	1	-
C3.1	Sieve net	4	-
C3.2	On board sorting machine specification	-	-
C3.3	Sieve minimum opening	2	-
C3.4	Sieavage must be crushed	-	-
C3.5	Sieavage percentage	196	96
C4.1	Mesh size 22 mm	19	-
C5.1	Harvest control Rule (LPUE)	5	5
D1.1	Participation in scientific sampling	-	-
E2.1	Recording of ETP catch	-	-
G1.1	Cooperation with Inspection Agencies	-	-

- Checks on POs - No checks were carried out.

The client highlighted that they have had challenges with respect to acceptance by some member vessels of the Management Plan requirements and have produced a document to explicitly set out the articles of the Management Plan that the IAs are obliged to check. Sieavage percentages at certain times of the year are also presenting a challenge, as indicated by the high number of infringements.

The client provided an example of how they sanction infringements. An email was provided that showed that the DFPO had sanctioned one of its member vessels for exceeding the 15% sieavage limit three times within a two-year period. An optional penalty was imposed, a €500 fine or a requirement to remain alongside for a 24-hour period on a specified date. No information was provided to confirm which option the vessel chose.

With respect to this part of the condition, the required outcome for this year's milestone have been met, i.e., the provision of a written report showing the management measures, strategies and rules that are enforced under the management plan; the number of inspections (vessels, sieavage stations, POs); what was inspected; the findings and any follow up action.

The client provided a copy of an email exchange between Dr Ralf Vorberg (P2 support for the Brown Shrimp Cooperative MSC Group) and Suitbert Schmüdderich (Managing Director, Consultants for Fishery, Aquaculture and Regional Development – [COFAD](#)). The email confirmed that COFAD had been approached by members of the PWG with a request for services in a context of a management review of the above brown shrimp fishery. COFAD expressed its willingness and availability to provide such services. A general scope of work and financial framework was discussed, but it was agreed that a detailed commitment could only be made once detailed Terms of Reference are available.

The audit team reviewed the COFAD [website](#) and consider the consultancy to be an appropriately qualified, independent organisation able to undertake the task of reviewing, assessing and reporting on:

- the ability of the management plans monitoring, control and surveillance (MCS) system to enforce the management measures, strategies and/or rules (including concerns about shrimp fishing in closed areas);
- how sanctions to deal with non-compliance have been applied and whether they provide an effective deterrent;
- whether fishers comply with the management system, including, when required, providing information of importance to the effective management of the fishery.

	<p>This part of the first audit milestone requires the client to present evidence of <u>appointing</u> an appropriately qualified organisation to undertake this task and so the milestone has not been fully met. The client will have to quickly address this if they are to achieve the next audit milestone of providing a written report showing the interim results of the independent review and assessment of the MCS mechanisms.</p> <p>Whilst this part of the condition was behind target, the audit team concluded that no remedial action was required currently, and that there was no requirement to revise the annual milestones.</p>																																																																																																																
Status	Behind target. In accordance with MSC CR v2.1 section 7.28.16.2, if progress against a condition is not back 'on target' within 12 months of falling 'behind target', the CAB shall consider progress as inadequate and commence the certificate suspension or withdrawal process in accordance with MSC V2.1 GCR 7.4.																																																																																																																
Progress on Condition (SA 2 - 2020)	<p>The client group provided information, in the form of email correspondence, with their respective national and/or regional authorities on whether there were any significant issues in respect to non-compliance of the brown shrimp fishery with national or EU regulations. The correspondence indicates that the main infringements were administrative, i.e. inaccurate / incomplete / late logbook and landing declarations, and that there were no reports of fishing in closed areas and, no issues that would constitute systematic non-compliance.</p> <p>The client also provided an annual report - "North Sea Brown Shrimp Inspection Report 2019" - produced by the two independent inspection agencies – Control Union Certifications (CUC) and Landwirtschaftskammer Niedersachsen (LWK) - that have been appointed by the client group to inspect and monitor vessels covered by the MSC certificate; the sieving stations at which they land; and, the POs, for appropriate follow up in regard to any warnings or infringements by their members. The following summarises the findings of the report:</p> <p><b>Findings of 81 vessel inspections (20% of the eligible vessels under the BSMP) in relation to articles in the BSMP.</b></p>																																																																																																																
	<table><tr><th>Article</th><th>Description of Article Requirement</th><th colspan="3">No. of infringements</th><th colspan="3">No. of penalties</th></tr><tr><th></th><th></th><th>DFPO</th><th>MSC GbR</th><th>CVO</th><th>DFPO</th><th>MSC GbR</th><th>CVO</th></tr><tr><td>C2.1</td><td>200 days</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>C2.2</td><td>Beam width</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>C2.3</td><td>Gear weight</td><td></td><td></td><td>1</td><td></td><td></td><td></td></tr><tr><td>C2.4</td><td>Mesh size 20 mm</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>C3.1</td><td>Sieve net</td><td></td><td>1</td><td>1</td><td></td><td></td><td></td></tr><tr><td>C3.2</td><td>Sorting onboard by sorting machine</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>C3.5</td><td>Sieavage percentage</td><td></td><td>14</td><td>3+20*</td><td></td><td>4</td><td>2+7*</td></tr><tr><td>C4.1/4.2</td><td>Mesh size 24 mm</td><td></td><td>2</td><td>14</td><td></td><td></td><td></td></tr><tr><td>C5.1</td><td>HCR</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>D1.1</td><td>Participation in scientific sampling</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>E2.1</td><td>ETP sheet on board + registrations</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>G1.1</td><td>Refused control</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Article	Description of Article Requirement	No. of infringements			No. of penalties					DFPO	MSC GbR	CVO	DFPO	MSC GbR	CVO	C2.1	200 days							C2.2	Beam width							C2.3	Gear weight			1				C2.4	Mesh size 20 mm							C3.1	Sieve net		1	1				C3.2	Sorting onboard by sorting machine							C3.5	Sieavage percentage		14	3+20*		4	2+7*	C4.1/4.2	Mesh size 24 mm		2	14				C5.1	HCR							D1.1	Participation in scientific sampling							E2.1	ETP sheet on board + registrations							G1.1	Refused control						
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### Findings of 27 inspections (100%) of the sieving stations in Denmark, Germany and the Netherlands

Article	Description of Article Requirement	No. of infringements	No. of penalties
C3.3	Sieving on land	0	0
C3.4	Sievage must be crushed/sievage balance	0	0

### Follow up action taken by the POs in relation to registered and written penalties against the articles in the BSMP.

Article	Description of Article Requirement	No. of penalties registered by Independent Inspection Parties (IIP)			No. of penalties given by the responsible PO		
		DFPO	MSC GbR	CVO	DFPO	MSC GbR	CVO
C2.1	200 days						
C2.2	Beam width						
C2.3	Gear weight						
C2.4	Mesh size 20 mm						
C3.1	Sieve net						
C3.2	Sorting onboard by sorting machine						
C3.5	Sievage percentage		4	9		2	4
C4.2	Mesh size 24 mm						
C5.1	HCR		5			5	
D1.1	Participation in scientific sampling						
E2.1	ETP sheet on board + registrations						
G1.1	Refused control						

The inspection report notes that the intent had been to inspect the DFPO in the spring of 2020, however, due to the COVID-19 pandemic the inspection was postponed.

An inspector from LWK was interviewed during the off-site audit and they confirmed that there were no significant issues with respect to non-compliance.

With respect to this part of the condition, the required outcome for this year's milestone have been met, i.e., a summary report of inspections, levels of compliance and sanctions since last audit, including how they have addressed concerns about shrimp fishing in closed areas.

With respect to the second part of this condition, the client provided a confirmation of a contract between the client group and Consultants for Fishery, Aquaculture and Regional Development ([COFAD](#)) and a report to the MSC North Sea Brown Shrimp Steering Committee, "Review of the Brown Shrimp Management Plan and its Implementation: Interim Findings" (May 2020) see Appendix 4.5. The report provides the interim

	<p>results of an independent review and assessment of the monitoring, control and surveillance mechanisms implemented through the BSMP.</p> <p>The audit team acknowledge the good quality of the COFAD report and look forward to seeing further versions and the development of an action plan by the client group to deal with any deficiencies or recommendations.</p> <p>The second year milestone has been met.</p>
Status	On target

### 3.2.7 PI 3.2.4 Condition 7

Performance Indicator	<p>PI 3.2.4 There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <ul style="list-style-type: none"> <li>There is effective and timely review of the fishery-specific management system.</li> </ul>
Score	70
Justification	<p><b>SI (b) SG 80 - The fishery-specific management system is subject to regular internal and occasional external review.</b></p> <p>National administrations undertake internal reviews of the management of the fishery and regularly correspond and/or meet to review the fishing activity and any associated issues of their respective fleets fishing in their and other member state waters. EU Commission inspectors regularly make short, or no-notice visits to audit the implementation of EU regulations by the member states, e.g. engine capacity requirements.</p> <p>As shown in SIa above, the management plan provides a commitment to have external scientific institutions review key aspects of the management plan. Some of these will occur on an annual basis. The decision-making body – the Steering Committee – are shown as meeting at least once a year and identified as taking decisions on, “...<i>matters that follow from</i>” the management plan. While not explicit in what that means in practical terms it was made clear to the assessment team by members of the Steering Committee that this will include a regular review of all the elements that contribute to the management plan.</p> <p>Given there will be a regular internal review of the management plan it is considered that SG 60 is met. The SG 80 and 100 are not met as it has not been made explicitly clear in the management plan that all its elements will be subject to either occasional or regular external review, e.g. the effectiveness of the independent control has not been identified as being subject to an external review.</p>
Condition	The client shall ensure by the fourth surveillance audit that the fishery-specific management system is subject to regular internal and occasional external review.
Milestones	<p><b>SI (b) SG80 - The fishery-specific management system is subject to regular internal and occasional external review.</b></p> <p>Condition 6 requires the client to have an independent review of the MCS mechanisms that have been implemented under the management plan. In so doing, the client will have initiated an external review that will report by the third audit.</p> <p>In order to meet this condition, the client will need to initiate a similar review on an occasional basis. In this instance, the assessment team considers a 4-year review cycle is appropriate for the scale and intensity of the fishery.</p>

	<p><b>At the first audit</b> the client will present evidence of appointing an appropriately qualified, independent organisation to review, assess and report on MCS mechanisms applied within the management plan (this is the same first audit milestone as Condition 6).</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 70</p> <p><b>At the second audit</b> the client will provide a written report showing the interim results of the independent review and assessment of the MCS mechanisms (this is the same second audit milestone as Condition 6).</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 70</p> <p><b>At the third audit</b> the client will provide a written report showing the final results and conclusions of the independent review and assessment of the management plans MCS mechanisms (this is the same third audit milestone as Condition 6).</p> <p>This milestone is an incremental step toward fulfilling the condition. Its successful completion will not result in a change of score to this PI. Interim Score: 70</p> <p><b>At the fourth audit</b> the client will provide evidence of an explicit commitment within the management plan to undertake an external review of the MCS mechanisms on a 4-year cycle.</p> <p>It is considered that the successful completion of this and previous milestones will demonstrate that the fishery-specific management system is subject to regular internal and occasional external review.</p> <p>This will result in a rescoring of this PI to at least 80.</p>
Client action plan	<p>The Group is convinced that independent enforcement of the Management Plan is necessary to ensure compliance across all 400 vessels. The Management Plan also sets specific targets for the level of controls for each type of inspection (vessel, sieving station, PO).</p> <p>To further strengthen the credibility of the control system, the Group will contract an external independent review.</p> <p><b>Surveillance 1:</b> The Group will provide a summary report of inspections, levels of (non-)compliance and sanctions since the start of the Management Plan.</p> <p>The Group will also provide evidence that an appointment has been made with an appropriate external body capable of reviewing the efficacy of the control system in delivering the goals of the Management Plan.</p> <p><b>Surveillance 2:</b> The Group will provide a summary report of inspections, levels of (non-)compliance and sanctions since last audit. The Group will provide interim findings of the external review.</p> <p><b>Surveillance 3:</b> The Group will provide a summary report of inspections, levels of (non-)compliance and sanctions since last audit.</p> <p>The Group will provide the results of the external review of the control system, as well as an action plan to deal with any deficiencies found.</p> <p><b>Surveillance 4:</b> The Group will provide a summary report of inspections, levels of (non-)compliance and sanctions since last audit.</p> <p>The client will report on changes made to the system on the basis of the review and subsequent action plan. Additionally, the Group will include a commitment to external review at least every 4 years in the Management Plan.</p> <p><b>Intended Outcome:</b> At the 4th surveillance audit the client will provide evidence that the fishery specific management system is subject to regular internal and occasional external review.</p>
Progress on Condition (SA1 - 2019)	<p>As for the second part of Condition 6, i.e. the need for an appropriately qualified, independent organisation able to undertake the task of reviewing, assessing and reporting on the MCS system applied by the client group has not yet been appointed and so the milestone has not been fully met.</p>

Status	Behind target. In accordance with MSC CR v2.1 section 7.28.16.2, if progress against a condition is not back 'on target' within 12 months of falling 'behind target', the CAB shall consider progress as inadequate and commence the certificate suspension or withdrawal process in accordance with MSC V2.1 GCR 7.4.
Progress on Condition (SA2 - 2020)	As for condition 6.
Status	On target

### 3.3 Client Action Plan

No updates to the Client Action Plan were required following the surveillance audit.

### 3.4 Re-scoring Performance Indicators

There were no changes to the scores for any of the Performance Indicators following the surveillance audit, and therefore the overall Principle level scores remain as they were in the Public Certification Report (PCR).

## 4 Appendices

### 4.1 Evaluation processes and techniques

#### 4.1.1 Site visits

The surveillance audit was carried out remotely by Skype from 25 to 27 May 2020. The Client meetings were attended by representatives of the three Client organisations, a Control Officer from the independent organisation undertaking Monitoring, Control and Surveillance activities under the Brown Shrimp Management Plan, brown shrimp scientists from Germany and the Netherlands, and an observer from the MSC. The following persons attended the surveillance audit Client meetings:

Name	Organisation	Role
Julian Addison	Lloyd's Register (LR) Audit Team Member	Team Lead and Principle 1 Specialist
Gudrun Gaudian	Lloyd's Register (LR) Audit Team Member	Principle 2 Specialist
Paul Knapman	Lloyd's Register (LR) Audit Team Member	Principle 3 Specialist
Deirdre Duggan	Lloyd's Register	CAB Representative
Philipp Oberdörffer	GbR	German Client
Sofie S. Mathiesen	DFPO	Danish Client
Eugene Kitsios	CVO	Dutch Client
Axel Temming (Principle 1 issues only)	University of Hamburg	Scientific contractor, WGCRAN member
Ulrika Beier (Principle 1 issues only)	Wageningen University	WGCRAN member
Ralf Vorberg (Principle 2 issues only)	Marine Science Service	German scientist specialising in Principle 2 issues
Holger Tilch (Principle 3 issues only)	Landwirtschaftskammer Niedersachsen	Independent Control Agency
Anne Floor van Dal'sen	MSC Netherlands	Observer

The following points formed the main focus of discussion for the meetings:

- Updates to the Management Plan
- Changes in scientific information including stock status and ecosystem issues
- Implementation of the HCR
- Evaluation of the benefits of increases in mesh size
- Monitoring, control and surveillance
- Progress against conditions and recommendations

A series of five client meetings were held as follows:

*Monday 25 May 2020*

1200-1300. Opening meeting  
1330-1500. Principle 1 issues  
1515-1700. Principle 2 issues

*Tuesday 26 May 2020*

1200-1330. Principle 3 issues

*Wednesday 27 May 2020*

1500-1600. Closing meeting

In addition, the audit team met separately on Tuesday 26 May 2020 with environmental stakeholders including eNGOs. The following persons attended the stakeholder meetings:

Name	Organisation	Role
Julian Addison	Lloyd's Register (LR) Audit Team Member	Team Lead and Principle 1 Specialist
Gudrun Gaudian	Lloyd's Register (LR) Audit Team Member	Principle 2 Specialist
Paul Knapman	Lloyd's Register (LR) Audit Team Member	Principle 3 Specialist
Deirdre Duggan	Lloyd's Register	CAB Representative
Eeke Haanstra	Waddenvereniging & Schutzstation Wattenmeer	Stakeholder
Eva Lages	WWF Germany	Stakeholder
Hans-Ulrich Rösner	WWF Germany	Stakeholder
Rainer Borcharding	Schutzstation Wattenmeer	Stakeholder
Christian Fischer	Schleswig-Holstein National Park Authority	Stakeholder
Anne Floor van Dalfsen	MSC Netherlands	Observer

The following points formed the main focus of discussion:

- MSC certification process
- Brown Shrimp Management Plan
- Fishing hours in Natura 2000 areas
- Speed of shrimp vessels when fishing for shrimps
- Working relationships with Client group, fishers' organisations
- Alleged fishing in closed areas
- Designation of ETP species
- Use of letter box bycatch reduction device in Dutch fishery
- Conditions raised against the fishery and the action required to meet those conditions

#### 4.1.2 Stakeholder Participation

In addition to the stakeholders listed above, a total of 100 stakeholder organisations and individuals having relevant interest in the assessment were identified and provided information on the date of surveillance audit and how they could



participate. The interest of others not appearing on this list was solicited through the postings on the MSC website and through the Lloyd's Register stakeholder communication channels.

## 4.2 Stakeholder input

In addition to the meeting between the audit team and the Environmental NGO Consortium described above, the audit team received a written submission from the eNGO Consortium. The questions raised by the eNGOs and the audit team's responses are given below.

Performance Indicator (PI)	Input summary	Input detail	Evidence or references	CAB response to stakeholder input	CAB response code
1.2.2 - Harvest control rules and tools	Harvest strategy may not be fully tested but evidence exists that it is achieving its objectives	<p><b>Fishing efforts/Limits of total hours of fishing /Engine power:</b></p> <p>Determining the actual fishing effort is a recurring issue in brown shrimp fisheries and essential for a successful harvest control rule. For the HCR to perform properly an accurate estimate of the effort is needed. We wonder if the effort in the LPUE is accurate and hence if the current HCR is effective.</p> <p>We want to stress two recent developments of major concern within the Shrimp fishery and considered by NGO's as alarming. First of all, we came across reports of increased fishing intensity in Dutch N2000 areas (shown in articles and reports provided, Annex; 1, 3-3e). Hintzen et al 2019 (Annex 7), recalculated the fishing hours of the Dutch fleet (and performed a back casting for the recent years). His results not only show an overpassing of fishing hours within almost all Dutch N2000 areas, but also show that a large part of the Dutch shrimp trawlers are fishing with higher fishing speed than usual. Shrimp fishing is not only carried out with speeds of a max. of 3.5 knots (as first estimated), but happens up to 5.5 knots. This of course results in a significant increase of effort (increase of more fished surface and an increase of bycatch). The increase of fishing hours and increase of effort by fishing with higher fishing speed did however not trigger the harvest control rule and this highly concerns us.</p> <p>This 'invisible' increase in effort is not incorporated in the current estimate of the LPUE and therefore not in the HCR. In the current situation the LPUE might stay the same, not triggering the HCR, while fishing effort has been increased significantly. We strongly plead to include a correct and accurate measure of effort to compute the LPUE.</p> <p>Real effort can be easily calculated nowadays, since all ships provide VMS data with information on fishing speed. With this data the real effort can be determined, conform the analysis of Hintzen et al. 2019 (Annex 7). We also advocate an analysis</p>	Annex 1, 2, 3, 3a, 7, 9, 9a-9d	<p>The assessment team asked questions of the client in relation to fishing hours and the towing speed of shrimp vessels. With respect to the fishing hours information was provided by the client that indicates how the original fishing hours were calculated for the Wnb-licence. The calculation was apparently contested by the fishing industry in 2019 and WMR was assigned to review the available information and provide a re-calculation based on VMS data, logbook data and fleet data from the Dutch register of fishing vessels. As a result, the report 'Garnalenvisserij in Natura 2000 gebieden' c100/19 Hintzen, N. 2019 was published. The audit team reviewed this report and noted that the revised total benchmark hours for 2015 were approximately 246,366 hours. The total hours fished in 2016 were 292,029 hours which exceeded the 2015 benchmark total hours, but in the most recent years for which full data were available, 2017 and 2018, the total hours fished were 228,241 and 213,036 hours respectively, confirming that in these years the 2015 benchmark hours were not exceeded. The audit team noted that the indicative benchmark hours stated in the Wnb-licence are meant to serve as a level/indicator for monitoring and in the Wnb-licence it is not stated that these hours are meant to serve as a maximum.</p> <p>The audit team asked the CVO client representative about the calculation of towing speed. CVO went back to the author of the report - Niels Hintzen - to confirm the rationale for using a towing speed as high as 5.5. knots. Hintzen confirmed that the average towing speed is in the range 2.5 - 3.5 knots. The point where steaming occurs is considered to be 5.5 knots. Towing speed was shown to vary between locations, which is likely a result of difference in tidal flow and sea bed. The audit team do not agree with the NGO comment that, "real effort can be easily calculated...since all ships provide information on fishing speed". As Hintzen notes in the report with respect to using VMS data, "...it cannot be said with certainty that a fisherman actually fished, but that it is only plausible, given a certain sailing speed, that the fisherman was fishing." (Google Translate).</p> <p>Follow up correspondence between CVO and Hintzen confirms that the average towing speed is in the range of 1.5 - 3.5 knots and appears to be dependent on the area</p>	Not accepted (no score change)

		corresponding to Hintzen et al. 2019 for the entire MSC fleet (The Netherlands, Germany and Denmark, also including fishing speed). Finally, we would like to urge a maximum fishing speed of 3.5 knots to make sure the effort stays within ecological limits. We strongly believe that controlling the effort is the key element for a sustainable MSC certified NS brown shrimp fishery.		being fished. This was taken into account within the report. Two of the Audit Team members have first-hand experience of brown shrimp trawling with gear similar to that in operation in this fishery and are of the informed opinion that fishing efficiency is severely compromised if gear is towed at too high a speed - the gear catches less shrimp as contact with the seabed is reduced and fuel consumption increases exponentially. In conclusion whilst the audit team agrees that accurate estimates of fishing effort are required, the team does not believe that a maximum fishing speed of 3.5 knots is required in the shrimp fishery as vessels do not exceed 3.5 knots as there are no advantages to doing so, and that the current estimates of LPUE used in the HCR are not significantly compromised. In addition, the audit team noted that WGCAN are developing methods to estimate overall fishing effort through analysis of VMS data, but these developments are hampered by restrictions on access to VMS data through the EU's GDPR regulation.	
<b>1.2.3 - Information and monitoring</b>	Relevant information is not collected in a standardized format or is hardly obtainable	Since changes in privacy regulations, the law of general data protection regulation (AVG, Holland), requesting VMS data became difficult. Is the VMS information obtainable for the CAB? Is there already a standardized LPUE protocol across national fleets? What is the progress on this topic?		Standardised LPUE are collected across all national fleets to assess against the agreed reference points used as a trigger for the HCRs. As noted in the report, WGCAN are developing methods for estimating fishing effort from VMS data, but as noted by the eNGOs, there have been problems encountered obtaining VMS data for all vessels in all nations in relation to the GDPR. WGCAN are working on this issue currently. The audit team received some VMS data which are described in Figures 7 to 9 of the report.	Accepted (no score change)
<b>2.1.1 - Primary species outcome</b>	RTC not effective?	"The assessment team recommends that in addition to the current technical measures, the client should at a future review, evaluate the potential benefits of seasonal or real time closures (RTC) – also see P11.2.1 and 2.1.2. " PCR report pag. 184. During the first Audit there was concluded that RTC were not effective for this fishery, the results will be incorporated in the next audit. Can we request these results?		At the first surveillance audit, the client stated that the potential of seasonal or real time closures were in regards to control and monitoring viewed not to be practical. The SC has discussed this issue again, and have not yet ruled this out. It should be noted that the Client is required to conduct a review of such alternative measures for minimising mortality of unwanted catch every 5 years in order to meet the SG80 for this PI. The Client has not completed any such review since that provided for the original certification in 2016/17, and therefore no new results are available currently.	Accepted (no score change)
<b>2.1.3 - Primary species information</b>	implementation of monitoring and management	How often and how complete is the bycatch monitored? Are there first evaluations of representative data? Is there independent scientific feedback on the methodology? Is a permanent implementation of a robust monitoring guaranteed?		Detailed information on bycatch was presented in the PCR. A Recommendation was raised to improve the design and implementation of catch composition data across all three countries, so that comparisons can be made. This is an involved process, considering that 3	Accepted (no score change)

	consequences?	How and with what time delay are monitoring results (e.g. occurrence of fish recruits) transferred to fishery management?		jurisdictions are participating. At the 4th May 2020 IRC meeting, where the NGO was present, progress on this work on bycatch monitoring was presented, including practical accommodation of the de minimis requirements. This is also addressed as part of Condition 2.	
<b>2.2.1 - Secondary species outcome</b>		Higher fishing speed which has been recently allowed by the Dutch government will result in more damage of bottom structures, benthos communities & bycatches per unit of landing (See also PI 1.1.2 of this template).		It is the audit team's understanding that no speed restrictions are applied by any member state for their shrimp fishers. Towing speed is an operational aspect that is left to the individual fisher to apply. From the audit team's experience, fishermen will choose a speed that is optimal for catching the target species while taking into account the fuel cost, and that shrimp vessels will tow at a maximum of 3.5 knots. As noted above, CVO and Hintzen confirm that the average towing speed in the Dutch fishery is in the range of 1.5 - 3.5 knots.	Not accepted (no score change)
<b>2.2.2 - Secondary species management</b>	Sieve net temporary usage	<p>"The assessment team recommends that in addition to the current technical measures, the client should at a future review, evaluate the potential benefits of seasonal or real time closures (RTC) – also see PI1.2.1 and 2.1.2. " PCR report pag. 184.</p> <p>During the first Audit there was concluded that RTC were not effective for this fishery, the results will be incorporated in the next audit. Can we request these results?</p> <p>We also noticed that the fishery extended its use of a alternative measure to reduce bycatch (letter box) instead of the use of a sieve net. We would like to raise that the sieve net is the appropriate measure to reduce larger species of (secondary) bycatch bycatch (the letterbox mainly reduces bycatch of flatfish species, PCR report pag. 184/ PI 2.2.2 e). By using the sieve net, the NSBS fishery made sure that SG80 of principle 2.2.2 was met (PCR report pag. 182/ PI 2.2.2 a). The other way of reducing would be to install RTCs, although RTC are considered not to be effective (report?). Therefore we would like to express our concerns regarding the bycatch of (larger) secondary species, now the sieve net is exempted for a larger part of the year than previously considered (May/June-October 15; See Annex 4 &amp; 4b). <i>We would like to ask the CAB if it is correct that the usage of a sieve net is obligatory for shrimp fisheries within the MSC label and no exemptions are optional? ("The "Letterbox" (Steenbergen et al. 2011) as alternative to the sieve net was considered but rejected, because there are</i></p>	Annex 4 & 4b	<p>The audit team has responded to the issue of RTCs in the response to the eNGOs comment on PI 2.1.1. It is the audit team's understanding that the letter box was used under special circumstances, time limited and officially sanctioned by the Dutch fisheries department. This only applied to the Dutch fishery. Special dispensation was sought because algae were clogging up the nets at certain times of the year. The letter box is an accepted device for reducing bycatch and therefore is permitted under section C3.1 of the Management Plan. This is not such an issue in the Danish and German shrimp fisheries (pers. comm. client group members). Furthermore, research is underway to test alternative gears to reduce the impact of algal clogging - example sieve mat, as described in the IRC presentation (4th May 2020) by Piek Molenaar. A number of ongoing projects on bycatch management were presented at the IRC meeting 4th May 2020.</p>	Not accepted (no score change)

		<i>no decisive advantages.' PCR report pag. 261 Appendix 4). Currently large amounts of shrimp under the MSC label are caught without the usage of a sieve net (Annex 4 &amp; 4b).</i>			
<b>2.2.3 - Secondary species information</b>	implementation of monitoring and availability of data?	see above; 2.1.3		Please see above, 2.1.3	Accepted (no score change)
<b>2.3.1 - ETP species outcome</b>	Sieve net temporary use	<i>"Larger, adult sized specimen of the ETP species are sorted via the sieve net, and thus escape and are not caught." (PCR report pag. 187/PI 2.3.1 b) See comment 2.1.2. the sieve net is only temporary used during the year, during this period the large ETP species are still easily caught.</i>	Annex 4 & 4b	Please see response for 2.2.2	Not accepted (no score change)
<b>2.3.3 - ETP species information</b>	implementation of monitoring and management consequences?	When will a trilaterally harmonized and scientifically approved monitoring with a significant sample size be implemented? Who will pay for it?		The timing of this work is outlined under the milestones for Condition 2. It is the audit team's understanding that intensive work is in progress to implement an effective bycatch monitoring scheme, of which ETP monitoring is a part. It is not possible for the audit team to comment on any financial implications of such a project, that is for the SC and other stakeholders to work out.	Accepted (no score change)
<b>2.4.1 - Habitats outcome</b>	Fishing gear disturbance from trawlers	<i>'Research has been conducted as to the impact of the fishing gear on such an area, and it was found that there is little difference between natural dynamic disturbance and the fishing gear disturbance' PCR report pag. 194. Eventhough, shrimp trawlers might have less impact on the bottom when compared to regular trawlers, their fishing intensity might be higher. When fishing intensity is high, destruction of habitats/benthic communities is more likely than not. Not only in terms of mechanical stress, but also in terms of sediment resuspension, chemical substances bound in silt particles resuspending and structural changes to the regional/local (benthic) communities/ecosystem. New scientific evidence shows new insights of the impact of regular trawlers. Furthermore; Higher fishing speed which has been recently allowed by the Dutch government will result in more damage of bottom structures, benthos communities &amp; bycatches per unit of landing (See also PI 1.1.2 of this template).</i>	Annex 5 & 6	Please note the audit teams response to fishing speed above, under 1.2.2. The impact of the shrimp fishing gear was discussed in detail in the PCR, which was consequently peer reviewed and reviewed by stakeholders. As a result it was deemed that the fishery meets the outcome requirements. Conditions were raised under management and information requirements for habitat.	Not accepted (no score change)

<p><b>2.4.2 -</b> Habitats management strategy</p>	<p>Fishing hours overpassed</p>	<p>However fishing hours set by Dutch law (in licenses) f or N2000 areas were severely overpassed by the fishery in past years. This means that not only was the effort higher than originally allowed in these N2000 areas, VME habitats may have suffered irreversible damage due to high fishing intensity. When compared with the study of Dureil et al 2019, data shows that the Wadden Sea and North Sea areas are subject to high fishing intensity even compared to global fishing pressure/intensity. Considering the information available, we have to conclude that the Dutch fishery has made severe infringements set out in the Public Certification Report (pag. 200) and by all means broke the law. The UoA seems once again not be able to identify closed areas, in accordance with the violations in the German Wadden Sea area (Kuechly et al 2016 &amp; Glorius et al 2015, PCR pag. 200). The government corrected the fishing hours within N2000 areas several times (Annex 9b, 9c, 9d), but also allowed a large increase in effort (due to an increase in fishing speed from 3.5 knots to 5.5 knots) See Annex 7 pag. 9. Higher fishing speeds are now licensed by the government. But what is the effect of this? We can only conclude that this will have a huge impact on the VME habitats. An increase in fishing intensity (by increasing fishing hours) + increasing fishing speed within those fishing hours, that must have major effects. Does the CAB know what the effects of this are on the habitat outcome? (The majority of shrimp fishery impact studies are based on lower fishing speed; 3.5 knots). The Black box would be a better alternative for VMS, also considering the privacy regulations. However, according to the last updates, the black box is still not working properly and not in-use on shrimp trawlers.</p>	<p>Annex 1, 7, 9a, 9b, 9c &amp; 9d.</p>	<p>It is the audit team's understanding that the issue of fishing hours (it applies to the NL only) has been researched, resulting in a published report by Hintzen (2019) as well as amended fishing hours as stated on the Wnb -licence. Details of this issue were presented in the SA2 for this fishery. As discussed above in relation to PI 1.2.2, CVO and Hintzen confirm that the average towing speed in the Dutch fishery is in the range of 1.5 - 3.5 knots. It is the audit team's understanding that the technical problems surrounding the use of the black box in the NL are currently being addressed - an update was also provided as part of the Condition 2 / year 2 update.</p>	<p>Not accepted (no score change)</p>
<p><b>2.4.3 -</b> Habitats information</p>	<p>Sabellaria mapping</p>	<p>There is not doubt that Sabellaria reef structures in the Waddensea were historically and can be destroyed by shrimp trawl nets still today. How does NSBS guarantee that no damage is done to possibly still existing Sabellaria reefs? Recently a previously unknown reef was discovered by scientists in dutch offshore waters</p>	<p><a href="https://www.sciencedirect.com/science/article/abs/pii/S1385110118300145">https://www.sciencedirect.com/science/article/abs/pii/S1385110118300145</a></p>	<p>From the maps available from this publication, the Sabellaria were found on the Brown Bank. This is outwith the area of this North Sea brown shrimp fishery. Marine habitat surveys are ongoing and become increasingly more sophisticated, often as part of EIA of marine engineering projects. Where such maps are published it is up to the local/ national stakeholders to flag up sensitive habitats for special consideration, which would then be incorporated into any fisheries management plan.</p>	<p>Accepted (no score change)</p>



<b>2.5.1 - Ecosystem outcome</b>	<p>New insights on impact of shrimp fishing on ecosystem in Denmark and the Netherlands.</p>	<p>Please consider the scientific article from Tulp et al 2019 &amp; McLaverty et al. 2019 regarding the effects of gear on bottom structure and organisms. Eventhough the results of that study are not inconclusive there is some evidence that gear does have an effect on bottom dwelling/burrowing organisms. We would like to stress the need for further research on this topic.</p>	<p>Annex 5 &amp; 6</p>	<p>Thank you for the information. It will be considered in any future update and full assessments if and when research becomes more conclusive.</p>	<p>Accepted (no score change)</p>
<b>3.2.3 - Compliance and enforcement</b>	<p>Closed areas respected?</p>	<p>There was serious evidence published by WWF (2016) that closed conservation areas in the northern Waddensea (Sylt, Rømø) were constantly violated by shrimp vessels. How does NSBS fishery control and prove that this does no longer happen? Is there a consistent and transparent self-control system in preparation or already in place?</p>	<p>"Wo die Krabben gefischt werden" WWF 2016</p>	<p>All three client groups provided email exchanges with their respective national/regional enforcement bodies that confirmed that there were no recorded instances of fishing within closed conservation areas. It was also noted that transiting through some of these closed areas is not prohibited but fishing is prohibited. Information on other European, national and regional compliance was provided and included in the report as well as a compliance report from the independent inspectors that have been appointed to monitor and support the implementation of the NSBS management plan requirements. Furthermore, as a requirement of conditions 6 and 7, the client has to provide evidence of a functioning monitoring, control and surveillance (MCS) system and effective and timely review of the fishery specific management system. Evidence in the form of interim findings of a review of the brown shrimp management plan was provided by the client group at the second annual audit. A copy of this report is available on request – see section 4.5 of the surveillance audit report.</p>	<p>Not accepted (no score change)</p>

General comments	Evidence or references	CAB response to stakeholder input	CAB Response Code
<b>Changes in scientific data</b>			
The points raised in tab 2 (PI 1.2.2 & PI 2.4.2) regarding increased effort are even more concerning when seen in the light of a recent scientific articles published by Tulp et al, 2019 and McLaverty et al. 2019. Although, results were not conclusive, there is strong evidence that shrimp trawls do have an impact on bottom life and bottom structures. increased effort in N2000 areas such as is the case in the Netherlands. We fear that damage or significant effects on VME and (sessile/long-lived) ETP species that live on the sea floor is imminent (C. 2.5.1)	Annex 5 & Annex 6	Thank you for the information provided in the reports by Tulp et al. 2019 and McLaverty et al. 2019. It will be considered in any future update and full assessments if and when research becomes more conclusive.	Accepted (no score change)
Additionally, Dureuil et al 2019 further supports the claim that MPAs in the EU (including the Wadden Sea area) are subject to high fishing intensity when compared to other MPAs globally.	Annex 8	Thank you for pointing us to the study by Dureuil et al. 2019. The audit team will continue to investigate the level, if any, of fishing in MPAs within the region covered by the UoA. Comparisons with similar activity in other fisheries globally are interesting but do not influence the outcome of MSC certification for the North Sea Brown shrimp fishery.	Accepted (no score change)
Next to increased fishing hours and motor capacity. There have been suspension allowed by Dutch government on bycatch devices. These are prolonged time frames in which the sieve net can be replaced by the letter box. We do not consider the letterbox a full alternative to the sieve net, since it targets different types of bycatch. We would like to ask the CAB if it is correct that the usage of a sieve net is obligatory for shrimp fisheries within the MSC label and no exemptions are optional? ('The "Letterbox" (Steenbergen et al. 2011) as alternative to the sieve net was considered but rejected, because there are no decisive advantages.' PCR report pag. 261 Appendix 4). Currently large amounts of shrimp under the MSC label are caught without the usage of a sieve net (Annex 4 & 4b).	Annex 4 & 4b	The CVO representative provided correspondence with the Dutch authorities requesting a derogation to use the 'letter box' in order to reduce the amount of algae caught in the shrimp trawl during certain months of the year when algae are more prevalent. The Dutch authorities initially granted a derogation to allow use of the 'letter box' as an alternative to the sieve net for the months of June, July and August in the Waddensea. This was subsequently extended until 27th September 2019. This is in full compliance with the BSMP (emphasis added by audit team): <i>BSMP Article C3.1 - Trawls used by the participating vessels fishing for brown shrimp must at any time contain – even if exemptions are allowed by national authorities – a sieve net with a maximum opening of 70 mm or a sorting grid with a maximum of 20 mm between the bars or an alternative measure that is qualified to reduce bycatch rates. All measures have to be placed in accordance with the national law and specifications that follow from EU technical rules (850/98 or later versions)</i>	Not accepted (no score change)
<b>Reports, items, legal procedures, exemptions</b>			

<p>We have seen reports of increased motor capacity. Although these infringements were not limited to the North Sea Brown Shrimp fishery, it means another way of increased effort in the areas already under pressure by the shrimp fishery.</p>	<p>Annex 2 &amp; 3</p>	<p>The audit team reviewed the EU Commission Report and submitted supplementary questions to the client group members after the site visit. The audit team asked if any shrimp vessels were identified in the report; what measures are in place to monitor engine power in the shrimp fishery; and, as a result of the report, have national authorities changed or plan to change how they monitor engine capacity.</p> <p>Each client group member consulted with their respective national authorities and the following summarises their responses or information provided in their response – in some instances, Google Translate was used by the audit team:</p> <p>Germany – One of the three beam trawlers mentioned in the study was a shrimp trawler. All three vessels were re-checked by the German-approved engineering company (RINA Services S.p.A.). These checks concluded that the variance was relatively small (&lt;10%) and could be justifiably explained, e.g. the original certification was several years ago and it was found that performance-related parts of the engine linkage were worn due to general use and the performance changed slightly over time. All three vessels were recalibrated and recertified. No changes have been made to the national control rules, the principle still applies that the engine performance for new and technically modified engines must first be certified before the vessel is allowed to fish.</p> <p>The EU Commission has used this study as an opportunity to discuss the issue of engine-power at a Member State level, and has started the process with the aim of improving control of engine power in the Member States. These proposals would be included in the EU Control Regulation and are positively supported by Germany.</p> <p>Denmark - The only vessel that was checked in Denmark was a shrimp trawler and no non-compliance was found. The CVO was informed at a meeting with the Danish Fishery Agency on the 13th of May 2020 that there would be an increased focus on engine power. This is to be carried out in the second half of 2020.</p> <p>Netherlands – In December 2019 a member of parliament submitted written questions to the Minister of the Directorate General for Nature Fisheries and Rural Area Written questions in relation to the study. The following is taken from the response to the questions.</p> <p>The Food and Consumer Product Safety Authority (NVWA), the Inspectorate Living Environment and Transport (ILT) and the Netherlands Enterprise Agency (RVO) conduct physical checks on vessel engines, including the power output, sealing and checking on the presence and condition of seals on engine components that play a role in engine performance. An Engine Power Working Group was established in 2016 and recommendations from this group have been implemented, including sealing of engine parts, certification logs, designation of 4 specialist companies to measure, monitor and seal engines and periodic coordination with relevant authorities to ensure compliance.</p> <p>Technical developments has meant mechanical regulation of engine performance has moved toward electronic control systems and these systems are more difficult to monitor and, as yet, there is no ability to 'electronically seal' these units. The Dutch authorities have argued at a European level for the introduction of a system whereby engine power is continuously monitored, however this system does not yet exist for fishing vessels. In the meantime, the Netherlands has established a NEN standardisation process for developing such a system with the aim of identifying the requirements and market for such a system.</p> <p>The study report makes several recommendations to the European Commission all of which are expected to be included in the revision of the EU Control Regulation and its implementation by Member States.</p>	<p>Not accepted (no score change)</p>
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<p>MSC NSBS certificate has a cap on fishing hours per year, set at 4800h per vessel. In the Netherlands, we have reports of increased fishing intensity in N2000 areas, exceeding hours set by the permits. However, this increased trend is not picked up by the conditions set in the MSC certificate. Nor has it shown up in the infringements table from last year based on the management plan of the Client. This seems concerning. Is this statement correct, and if so, does the MSC certificate for this fishery needs extra conditions or additional measures to further reduce fishing intensity/effort?</p>	<p>Annex 1-1a, Annex 3-3e, Annex 9-9d, Table Management plan Condition 6; table infringements; p. 66 Surveillance Audit 1 Report ( C2.1 4,800 hr (200-day limit) fishing limit , this column sais "No data from POs " )</p>	<p>The audit team were provided with information that shows the number of fishing hours has been reviewed and subsequently revised upward for Wnb licences. The audit team were also provided with an annual inspection report for 2019 that shows no incidents of exceeding the 200 day limit. No evidence was presented by any stakeholder to show that the 200 day limit was exceeded.</p>	<p>Not accepted (no score change)</p>
<p><b>Fishing hours added/changed in the licenses for N2000 areas for Dutch permit holders Shrimp fishery.</b> The increase of fishing hours in protected areas/ vulnerable areas in the Shrimp fishery licences will consequently lead to an intensification of the impact on these areas. Adding more stress to these vulnerable habitats and ecosystems is something we should avoid by all means, considering the great importance of N2000 areas. Furthermore, allowing fishing on shrimps with a higher fishing speed (an increase of 3,5 knots to 5,5 knots), is one of our major worries. This invisible increase of effort, since the harvest control rule will not respond (see PI 1.2.2. tab 2), will enhance the pressure even more on vulnerable areas. In both ways (increase fishing hours and speed) the brown shrimp fishery is decreasing its sustainability instead of taking steps forward in reaching the sustainability objectives in our opinion. The current developments raise many questions amongst eNGOs; Do we control the effort in an appropriate way? Does the HCR work properly? Did we check the fishing hours enough? • We plead for periodic check on fishing effort comform the analysis of Hintzen et al. 2019 (Annex 7). Furthermore, we would like to urge a maximum fishing speed of 3.5 knots to make sure the effort stays within ecological limits. We strongly believe that controlling the effort is the key element for a sustainable MSC certified NS brown shrimp fishery. We strongly believe that the key element of a sustainable fishery is a controlled effort.</p>	<p>Annex 7, 9, 9a-9d</p>	<p>The assessment team asked questions of the client in relation to fishing hours and the towing speed of shrimp vessels. With respect to the fishing hours information was provided by the client that indicates how the original fishing hours were calculated for the Wnb-licence. The calculation was apparently contested by the fishing industry in 2019 and WMR was assigned to review the available information and provide a re-calculation based on VMS data, logbook data and fleet data from the Dutch register of fishing vessels. As a result, the report 'Garnalenvisserij in Natura 2000 gebieden' c100/19 Hintzen, N. 2019 was published. The audit team asked the CVO client representative about the calculation of towing speed. CVO went back to the author of the report - Niels Hintzen - to confirm the rationale for using a towing speed as high as 5.5. knots. Hintzen confirmed that the average towing speed is in the range 2.5 - 3.5 knots. The point where steaming occurs is considered to be 5.5 knots. Towing speed was shown to vary between locations, which is likely a result of difference in tidal flow and sea bed. Follow up correspondence between CVO and Hintzen confirms that the average towing speed is in the range of 1.5 - 3.5 knots and appears to be dependent on the area being fished. This was taken into account within the report. In conclusion the audit team agrees that controlling fishing effort is a key element in the sustainability of the fishery, but do not believe that shrimp vessels fish at speeds greater than 3.5 knots, and this is confirmed by CVO and Hintzen. As noted above, the annual inspection report for 2019 shows no incidents of vessels exceeding the 200 day limit.</p>	<p>Not accepted (no score change)</p>

### 4.3 Revised surveillance program

Due to travel restrictions caused by the COVID-19 pandemic, this year's planned on-site surveillance audit was replaced by a remote, off-site visit. The audit team confirms that the Year 3 and 4 audits will be unchanged (Table 6). The third surveillance audit is planned for May/June 2021 (Table 7) with three auditors on site (Table 8).

**Table 6. Fishery surveillance program**

Surveillance level	Year 1	Year 2	Year 3	Year 4
<b>Level 6</b>	<b>On-site surveillance audit</b>	<b>Off-site surveillance audit (MSC COVID-19 derogation)</b>	<b>On-site surveillance audit</b>	<b>On-site surveillance audit &amp; re-certification site visit</b>

**Table 7. Timing of surveillance audit**

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
<b>2021</b>	<b>June 2021 (following universal extension of 6 months for all certificates due to the COVID-19 pandemic)</b>	<b>May/June 2021</b>	<b>The main 2020/2021 fishery will have been completed by May/June, and so fishing activity will be at a minimum, and stakeholders will be more likely to be available.</b>

**Table 8. Surveillance level rationale**

Year	Surveillance activity	Number of auditors	Rationale
<b>3</b>	<b>On-site audit</b>	<b>3 auditors</b>	<b>There are a large number of open conditions for this fishery and a high level of interest amongst stakeholders.</b>

### 4.4 Harmonised fishery assessments

Since the North Sea Brown Shrimp fishery was certified, another brown shrimp fishery in The Wash on the east coast of England has been certified. Although The Wash fishery uses the same gear and targets the same shrimp species, the fisheries do not overlap and therefore there is no requirement for harmonisation of assessment results. The stock (or stock management unit) boundary for the Wash Brown Shrimp Fishery is the English East Coast inshore stock, whereas the North Sea Brown Shrimp Fishery has a defined stock management unit of "North Sea Continental Brown Shrimp" along the North Sea coastlines of Denmark, Germany and the Netherlands. The two fisheries are managed by means of different management plans within different jurisdictions.

In spite of concluding that there is no need for formal harmonisation, the assessment team for The Wash Brown Shrimp Fishery gave due regard to the scoring and outcomes of the North Sea Brown Shrimp Fishery.

There are however multiple certified and a small number of in-assessment fisheries that operate in the North Sea that share aspects of the "Governance and Policy" component of Principle 3 with the North Sea Brown Shrimp Fishery. The original certification report identified some differences in the scores between the North Sea Brown Shrimp Fishery and other certified fisheries for particular Performance Indicators but considered that the differences in scores were fishery specific and did not apply to the brown shrimp fishery and so harmonisation of those scores was not required. In addition, a review of all the other scores showed no material difference to those assigned for the North Sea Brown Shrimp Fishery and so those scores were considered to be harmonised.

## 4.5 COFAD report

This report is available from LR and will be shared with interested stakeholders. For a copy please contact [fisheries-ca@lr.org](mailto:fisheries-ca@lr.org).

## 4.6 List of vessels in the UoC

**Table 9.** Full list of the vessels in the UoC as of July 2020. (Source: Clients)

Vessel no.	Flag state	Producer Organisation
ACC-001	D	EZDK
ACC-002	D	EZDK
ACC-003	D	EZDK
ACC-004	D	EZDK
ACC-008	D	TEEW
ACC-010	D	EZDK
ACC-012	D	EZDK
ACC-014	D	EZDK
ACC-016	D	KüNo
ARM-014	NL	Urk
ARM-025	NL	Nederlandse Visserbond
ARM-033	NL	Nederlandse Visserbond
ARM-046	NL	Nederlandse Visserbond
BEN-001	D	Rousant
BOU-024	BE	Delta Zuid
BR-008	NL	Delta Zuid
BR-010	NL	Delta Zuid
BR-029	NL	Delta Zuid
BRA-007	D	EZDK
BUES-005	D	EZDK
CUX-008	D	TEEW
CUX-009	D	EZDK
CUX-014	D	EZDK
DAN-001	D	EZDK
DIT-001	D	EZDK
DIT-003	D	EZDK
DIT-005	D	EZDK
DIT-006	D	KüNo
DIT-018	D	EZDK
DOR-001	D	EZDK
DOR-005	D	EZDK
DOR-006	D	EZDK
DOR-010	D	TEEW
E-004	DK	DFPO
E-035	DK	DFPO
E-041	DK	DFPO



E-061	DK	DFPO
E-710	DK	DFPO
E-426	DK	DFPO
E-567	DK	DFPO
FED-002	D	EZDK
FED-004	D	EZDK
FED-005	D	TEEW
FED-008	D	EZDK
FED-012	D	EZDK
FED-014	D	EZDK
FRI-020	D	TEEW
FRI-035	D	EZDK
GO-029	NL	Nederlandse Visserbond
GO-057	NL	Nederlandse Visserbond
GO-058	NL	Nederlandse Visserbond
GRE-001	D	KüNo
GRE-002	D	KüNo
GRE-003	D	KüNo
GRE-004	D	KüNo
GRE-006	D	KüNo
GRE-008	D	EZDK
GRE-009	D	KüNo
GRE-010	D	KüNo
GRE-011	D	KüNo
GRE-012	D	KüNo
GRE-013	D	KüNo
GRE-014	D	KüNo
GRE-015	D	EZDK
GRE-016	D	KüNo
GRE-017	D	KüNo
GRE-018	D	KüNo
GRE-019	D	EZDK
GRE-020	D	KüNo
GRE-022	D	KüNo
GRE-023	D	EZDK
GRE-026	D	EZDK
GRE-029	D	KüNo
GRE-032	D	KüNo
GRE-036	D	KüNo
HA-004	NL	Nederlandse Visserbond
HA-013	NL	Nederlandse Visserbond
HA-040	NL	Nederlandse Visserbond
HA-041	NL	Nederlandse Visserbond
HA-043	NL	Rousant
HA-062	NL	Nederlandse Visserbond

HA-075	NL	Urk
HAR-007	D	KüNo
HD-005	NL	Nederlandse Visserbond
HD-032	NL	Nederlandse Visserbond
HD-042	NL	Nederlandse Visserbond
HF-567	D	TEEW
HK-080	NL	Nederlandse Visserbond
HK-081	NL	Nederlandse Visserbond
HK-082	NL	Nederlandse Visserbond
HK-083	NL	Nederlandse Visserbond
HOO-001	D	EZDK
HOO-052	D	KüNo
HOO-060	D	EZDK
HUS-007	D	EZDK
HUS-018	D	EZDK
HUS-019	D	TEEW
HUS-056	D	FGE
HV-016	DK	DFPO
HV-035	DK	DFPO
HV-042	DK	DFPO
HV-067	DK	DFPO
HV-080	DK	DFPO
IJM-008	NL	Nederlandse Visserbond
IJM-018	NL	Rousant
IJM-022	NL	Nederlandse Visserbond
IJM-031	NL	Nederlandse Visserbond
KG-009	NL	Delta Zuid
KG-018	NL	Nederlandse Visserbond
KW-072	NL	Delta Zuid
L-217	DK	DFPO
L-223	DK	DFPO
L-248	DK	DFPO
L-299	DK	DFPO
L-610	DK	DFPO
LO-004	NL	Rousant
LO-005	NL	Nederlandse Visserbond
LO-007	NL	Rousant
LO-008	NL	Nederlandse Visserbond
LO-013	NL	Nederlandse Visserbond
LO-014	NL	Delta Zuid
LO-017	NL	Nederlandse Visserbond
LO-020	NL	Nederlandse Visserbond
LO-028	NL	Nederlandse Visserbond
N-079	BE	Delta Zuid
NEU-217	D	EZDK

NEU-225	D	EZDK
NEU-230	D	EZDK
NEU-232	D	EZDK
NEU-233	D	EZDK
NEU-240	D	EZDK
NEU-245	D	EZDK
NOR-201	D	KüNo
NOR-202	D	KüNo
NOR-205	D	KüNo
NOR-208	D	KüNo
NOR-210	D	KüNo
NOR-211	D	KüNo
NOR-225	D	KüNo
NOR-231	D	KüNo
NOR-232	D	KüNo
O-083	BE	Urk
OD-002	NL	Nederlandse Visserbond
OD-003	NL	Nederlandse Visserbond
OL-002	NL	Rousant
OL-005	NL	Rousant
OL-012	NL	Rousant
OL-037	NL	Rousant
OLD-056	D	KüNo
PEL-002	D	EZDK
PEL-005	D	EZDK
PEL-012	D	EZDK
PEL-015	D	EZDK
PEL-016	D	EZDK
PEL-021	D	EZDK
PEL-032	D	EZDK
PEL-033	D	EZDK
POG-001	D	EZDK
RI-078	DK	DFPO
RI-093	DK	DFPO
RI-157	DK	DFPO
RI-159	DK	DFPO
RI-320	DK	DFPO
RI-323	DK	DFPO
RI-124	DK	DFPO
RI-426	DK	DFPO
RI-450	DK	DFPO
RI-557	DK	DFPO
RI-562	DK	DFPO
SAS-110	D	EZDK
SC-003	D	EZDK

SC-007	D	FGE
SC-009	D	EZDK
SC-011	D	FGE
SC-012	D	EZDK
SC-013	D	EZDK
SC-014	D	TEEW
SC-020	D	TEEW
SC-023	D	EZDK
SC-034	D	EZDK
SC-036	D	TEEW
SC-043	D	TEEW
SC-058	D	EZDK
SCH-010	NL	Nederlandse Visserbond
SCH-018	NL	Nederlandse Visserbond
SCH-045	NL	Nederlandse Visserbond
SD-001	D	EZDK
SD-005	D	EZDK
SD-006	D	FGE
SD-007	D	EZDK
SD-008	D	EZDK
SD-009	D	EZDK
SD-010	D	EZDK
SD-011	D	EZDK
SD-013	D	EZDK
SD-014	D	TEEW
SD-015	D	EZDK
SD-016	D	EZDK
SD-017	D	EZDK
SD-019	D	FGE
SD-021	D	TEEW
SD-022	D	EZDK
SD-023	D	EZDK
SD-024	D	EZDK
SD-026	D	TEEW
SD-028	D	EZDK
SD-034	D	TEEW
SD-035	D	EZDK
SH-003	D	TEEW
SK-042	D	FGE
SL-013	NL	Delta Zuid
SL-028	NL	Delta Zuid
SPI-001	D	Rousant
SPI-003	D	Rousant
ST-004	NL	Nederlandse Visserbond
ST-004	D	EZDK

ST-007	D	TEEW
ST-010	D	TEEW
ST-018	D	EZDK
ST-020	NL	Wieringen
ST-021	D	EZDK
ST-022	D	EZDK
ST-022	NL	Wieringen
ST-023	D	EZDK
ST-025	NL	Nederlandse Visserbond
ST-027	NL	Nederlandse Visserbond
ST-028	D	EZDK
SU-001	D	EZDK
SU-003	D	TEEW
SU-006	D	EZDK
SU-009	D	EZDK
SU-014	D	FGE
SU-016	D	EZDK
SW-001	D	EZDK
SW-002	D	TEEW
SW-004	D	EZDK
SW-008	D	EZDK
TH-005	NL	Nederlandse Visserbond
TH-006	NL	Delta Zuid
TH-010	NL	Nederlandse Visserbond
TH-119	NL	Nederlandse Visserbond
TM-019	NL	Rousant
TOEN-022	D	EZDK
TS-002	NL	Nederlandse Visserbond
TS-006	NL	Nederlandse Visserbond
TS-009	NL	Nederlandse Visserbond
TS-010	NL	Nederlandse Visserbond
TX-021	NL	Texel
TX-027	NL	Texel
TX-033	NL	Texel
TX-034	NL	Texel
TX-042	NL	Texel
TX-065	NL	Texel
UK-012	NL	Nederlandse Visserbond
UK-016	NL	Urk
UK-044	NL	Urk
UK-071	NL	Nederlandse Visserbond
UK-080	NL	Rousant
UK-092	NL	Nederlandse Visserbond
UK-094	NL	Nederlandse Visserbond
UK-129	NL	Urk

UK-155	NL	Urk
UK-156	NL	Urk
UK-162	NL	Urk
UK-163	NL	Urk
UK-165	NL	Urk
UK-166	NL	Rousant
UK-168	NL	Rousant
UK-171	NL	Urk
UK-179	NL	Urk
UK-236	NL	Urk
UK-266	NL	Urk
UK-271	NL	Nederlandse Visserbond
UK-368	NL	Rousant
UQ-006	NL	Rousant
UQ-015	NL	Rousant
UQ-017	NL	Nederlandse Visserbond
UQ-021	NL	Rousant
VAR-006	D	EZDK
VD-006	NL	Nederlandse Visserbond
VLI-007	NL	Nederlandse Visserbond
VLI-027	NL	Delta Zuid
WK-010	NL	Nederlandse Visserbond
WL-002	NL	Rousant
WL-003	NL	Nederlandse Visserbond
WL-004	NL	Nederlandse Visserbond
WL-008	NL	Nederlandse Visserbond
WL-015	NL	Nederlandse Visserbond
WL-018	NL	Nederlandse Visserbond
WL-020	NL	Nederlandse Visserbond
WL-022	NL	Nederlandse Visserbond
WL-025	NL	Nederlandse Visserbond
WL-028	NL	Rousant
WL-033	NL	Rousant
WL-039	NL	Nederlandse Visserbond
WON-017	NL	Nederlandse Visserbond
WON-050	NL	Nederlandse Visserbond
WON-077	NL	Nederlandse Visserbond
WR-001	NL	Wieringen
WR-002	NL	Rousant
WR-007	NL	Wieringen
WR-008	NL	Nederlandse Visserbond
WR-009	NL	Nederlandse Visserbond
WR-012	NL	Wieringen
WR-014	NL	Wieringen
WR-018	NL	Nederlandse Visserbond



WR-020	NL	Wieringen
WR-021	NL	Wieringen
WR-022	NL	Nederlandse Visserbond
WR-023	NL	Wieringen
WR-027	NL	Wieringen
WR-029	NL	Wieringen
WR-030	NL	Wieringen
WR-036	NL	Wieringen
WR-050	NL	Wieringen
WR-054	NL	Wieringen
WR-057	NL	Wieringen
WR-071	NL	Delta Zuid
WR-072	NL	Nederlandse Visserbond
WR-075	NL	Rousant
WR-080	NL	Wieringen
WR-084	NL	Wieringen
WR-085	NL	Wieringen
WR-088	NL	Wieringen
WR-089	NL	Wieringen
WR-098	NL	Wieringen
WR-103	NL	Nederlandse Visserbond
WR-106	NL	Nederlandse Visserbond
WR-108	NL	Wieringen
WR-109	NL	Wieringen
WR-112	NL	Wieringen
WR-117	NL	Wieringen
WR-122	NL	Wieringen
WR-123	NL	Nederlandse Visserbond
WR-126	NL	Rousant
WR-129	NL	Nederlandse Visserbond
WR-130	NL	Wieringen
WR-143	NL	Nederlandse Visserbond
WR-181	NL	Wieringen
WR-189	NL	Nederlandse Visserbond
WR-212	NL	Wieringen
WR-213	NL	Wieringen
WR-222	NL	Wieringen
WR-226	NL	Rousant
WR-230	NL	Wieringen
WR-244	NL	Nederlandse Visserbond
WR-274	NL	Wieringen
WR-289	NL	Nederlandse Visserbond
WR-291	NL	Wieringen
WRE-001	D	EZDK
WRE-003	D	EZDK

WRE-004	D	EZDK
WRE-005	D	EZDK
WRE-006	D	EZDK
YE-003	NL	Nederlandse Visserbond
YE-006	NL	Delta Zuid
YE-063	NL	Nederlandse Visserbond
YE-076	NL	Nederlandse Visserbond
YE-078	NL	Delta Zuid
YE-088	NL	Delta Zuid
YE-138	NL	Delta Zuid
YE-139	NL	Nederlandse Visserbond
YE-238	NL	Delta Zuid
Z-008	BE	Delta Zuid
Z-055	BE	Delta Zuid
Z-080	BE	Urk
Z-431	BE	Delta Zuid
ZK-001	NL	Rousant
ZK-002	NL	Nederlandse Visserbond
ZK-005	NL	Rousant
ZK-008	NL	Rousant
ZK-010	NL	Nederlandse Visserbond
ZK-011	NL	Nederlandse Visserbond
ZK-012	NL	Nederlandse Visserbond
ZK-013	NL	Nederlandse Visserbond
ZK-014	NL	Nederlandse Visserbond
ZK-017	NL	Rousant
ZK-018	NL	Rousant
ZK-020	NL	Wieringen
ZK-021	NL	Rousant
ZK-023	NL	Rousant
ZK-037	NL	Nederlandse Visserbond
ZK-043	NL	Rousant
ZK-044	NL	Rousant
ZK-046	NL	Nederlandse Visserbond
ZK-047	NL	Nederlandse Visserbond
ZK-049	NL	Nederlandse Visserbond
ZK-050	NL	Rousant
ZK-080	NL	Rousant
ZK-081	NL	Rousant
ZK-087	NL	Nederlandse Visserbond
ZK-092	NL	Nederlandse Visserbond

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